

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

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British Medical Association PROCEEDINGS OF COUNCIL

Wednesday, November 6, 1946

A meeting of the Council was held on Nov. 6, with Dr. H. Guy Dain in the chair. The deaths of two former members were reported, namely, Dr. C. G. Gooding, of West Liss, and Dr. Ashton Street, of Crowborough, and votes of condolence were passed. Mr. Zachary Cope was appointed representative of the Association on the Central Council of Physical Recreation in place of the late Sir Kaye Le Fleming, and Dr. L. D. Callander was appointed to fill a vacancy in the B.M.A. directorships on the board of the British Medical Bureau.

In conformity with a resolution of the Annual Representative Meeting, the Council agreed to set up a committee to investigate and report upon the treatment and care of the elderly and infirm. In addition to several members of Council, it was decided to request certain people from outside the Council to serve on the committee.

The Insurance Capitation Fee

Dr. E. A. Gregg, chairman of the Insurance Acts Committee, in presenting his committee's report, recounted the course of events in connexion with the insurance capitation fee, including the conversations with officers of the Ministry, and said that a meeting with the Ministry on the reference of the Spens Report to the current capitation fee was to take place on Nov. 13. The Annual Conference had endorsed the action of the committee, and he was satisfied that they had behind them the solid support of doctors in insurance practice.

General Practice Committee

The following recommendations of the General Practice Committee (Dr. S. Wand) were agreed to without discussion: that the Minister of Health be asked to use his powers to urge local authorities to give priority to medical practitioners in the allocation of housing accommodation; that when a practitioner is asked by an insurance company or solicitor to be present at the examination of his patient by another doctor, the practitioner should negotiate an appropriate fee with the company or solicitor as the case may be; that the exhibition of "doctor" signs on cars is no longer desirable or necessary, and that steps be taken so to advise the profession.

It was agreed to set up a special committee to review and report on the working of the Coroners Acts, to consist of six members appointed by the General Practice Committee, two by the Coroners' Society, and the chairman for the time being of the Pathological Group Committee or his nominee. The Council endorsed the committee's proposal that further representations should be made to the War Office for an increase in the remuneration of civilian medical practitioners employed by the War Office for the medical examination of military personnel on release.

Priority Milk Certification

Dr. F. Gray called attention to the statement issued by the Ministry of Food which appeared in the *Journal* of Nov. 2 (p. 661). It contained, he said, the gravest possible accusation against a whole section of the profession. What it amounted

to was that, practically, out of every three milk certificates one was dishonest. He submitted that the difficulty was not due to the dishonesty of certifying doctors but to the fact that the people of this country, having hesitated to claim their full rights in matters of this sort during the war, felt such hesitation no longer now that peace was restored, and doctors, faced with justifiable claims for special diets, could do no other than give the necessary certificates. There had been no consultation with the Association before this statement was issued, and this attack had been made on medical practitioners, who were being used as a scapegoat for the incompetence of a Government department which had miscalculated the amount of milk required for both priority and ordinary consumers. He hoped also that the Council would express its regret that a specialist body, the Food Rationing (Special Diets) Advisory Committee, should have expressed an opinion without making itself fully conversant with the facts.

Dr. A. T. Rogers said that though he felt that this matter had been handled badly, and the Association should certainly have been consulted, he hoped no resolution would be passed which would result in the further cutting down of the milk supply to the normal population because of this rise in the amount of milk consumed by those who received priority certificates. Dr. H. M. Golding said that, while keeping strictly within the schedule, the medical profession could order a great deal more than it actually did at present. For example, under Schedule 2 (a) an active worker, during the first six weeks of his incapacity, could draw one pint of milk daily, which was not usually done. Mr. A. S. Gough pointed out that, under the present regulations, on a certificate of peptic ulcer two pints daily were allowed, and this went on indefinitely because there were no means of saying that at a certain point the man needed only one pint. Dr. Wand suggested that the increase was largely explained by men coming back from the Forces with gastric trouble which redeveloped in civil life.

Dr. J. A. Brown hoped that when the Association went to the Ministry on this subject they would not suggest many economies or a limitation of the conditions for which priority milk was given. The case of old duodenal ulcer might be cut down to one and a half pints or even one pint, but the case of new duodenal ulcer should not be given less than two pints. The suggestion that invalids and old people should be asked to go without milk was scandalous so long as such large quantities of milk were allocated to canteens and milk bars frequented by healthy persons. Dr. H. H. D. Sutherland said that the question of reducing the quantities allowed might very well be left to general practitioners, but he resented very strongly the statement that general practitioners were lax when in fact many of them were taking special precautions—including radiographic examination—to determine whether in a given case there was an ulcer which justified this extra allowance. The following resolutions were passed:

That the Council strongly protests at the action of the Minister of Food in issuing a public statement in which the medical profession is blamed for improper certification without proper evidence and

without consultation with the B.M.A., the body which since 1941 has been consulted by the Ministry on this subject.

That the Minister be informed that the B.M.A. will be glad to confer with him on the milk arrangements generally and on any steps he proposes to secure the Minister's objective of reducing the consumption of milk by invalids.

That the Council express to the Medical Research Council its regret that the Food Rationing (Special Diets) Advisory Committee should have made to the Minister of Food a statement implying that the medical profession is not maintaining a high standard of accuracy in its certification, there being no valid evidence to support such an allegation.

Public Health

It was agreed, on the recommendation of the Public Health Committee (Dr. J. Fenton), to appoint a special committee to formulate for submission to the Ministry of Education proposals for the revision of the scale of fees for medical treatment of school-children, embodied in Ministry of Education Circular 102.

The chairman of the committee reported that the local authority associations were proposing to hold discussions with the employers' side of the National Joint Council for local authorities' professional and technical services on the question of salaries of chief officials. The committee had decided that if the Association were invited to these discussions it should reply that it was a party to the Askwith scales relating to the public health service as a whole, and therefore could not participate in separate negotiations, but would be willing to send observers to the conference. The committee had also some evidence that the interim Askwith scale was being regarded as a future permanent scale for the public health service, and it was felt that this erroneous impression should be corrected. It was proposed, therefore, to circulate the proposed new scales for whole-time hospital and public health medical officers to all medical officers of health with appropriate explanations, and with a request that they should make known to their colleagues and to their authorities the existence of the proposed scales and the purpose for which they have been formulated.

The committee brought forward a recommendation that a request be made to amend the Medical Practitioners (Fees) Regulations, 1940, to provide that the minimum fee for attending a full confinement under local authority arrangements should be five guineas. This was in conformity with a resolution of the Annual Representative Meeting. To make it correspond more closely with the phraseology of the regulations, the committee proposed to add after "full confinement" the words "and subsequent visits during the first fourteen days inclusive of day of birth." The recommendation was agreed to, and the committee undertook to consider further the whole question of the fees to be paid to practitioners in midwifery cases.

The "Closed Shop"

The question of the "closed shop"—an issue which has arisen in consequence of the repeal of the Trade Disputes Act, 1927—arose on the reports of the Public Health Committee, the Liaison Committee of the B.M.A., and the Royal College of Nursing. Dr. R. W. Cockshut said that no one appeared to know exactly what the "closed shop" meant, but it was possible that it might affect some members of the medical profession. It was most undesirable that there should be any compulsion by local authorities on their medical officers to join any medical body, whether trade union or professional association, and if any man in the local authorities' health services was prepared to stand out, the Association ought to support him with all its power.

The Secretary explained that there were three kinds of resolutions passed by local authorities on this subject: (1) Requiring employees to be members of a trade union or professional association; (2) requiring employees to be members of a trade union, but accepting membership of "Nalgo" as satisfying the condition, "Nalgo" being a certified but unregistered trade union not affiliated to the T.U.C.; and (3) requiring employees to belong to a trade union affiliated to the T.U.C. Dr. J. A. Pridham said that they could see in this the implications for a future health service. To compel members of the profession to join an organization which must be a trade union—which the British Medical Association could never be—would be a very insidious way of controlling the profession. He felt that

they must take their stand now without any equivocation and have nothing whatever to do with it.

The Chairman of Council said that they properly objected to anybody's being forced to join any organization, even including the B.M.A. He also pointed out that the effect of any resolution of that kind would be the non-acceptance in the *Journal* of advertisements of public authorities which made any stipulation as to membership of any professional body (other than a medical protection organization), and a decision would have to be taken to stand by any member who suffered as a result. The Council decided to appoint a committee to examine the implications of the whole subject and to report. The members of the committee appointed were Drs. G. F. Buchan, O. C. Carter, R. W. Cockshut, J. Fenton, R. Forbes, F. Gray, J. A. Ireland, and J. A. Pridham, with the Officers of the Association. It was stated that no policy had been laid down by the Representative Body, though the subject was debated at the A.R.M. in 1925.

Hospitals

On the recommendation of the Hospitals Committee (Mr. R. L. Newell), it was agreed to recommend to voluntary hospitals that, without prejudice to future arrangements under the National Health Service, the visiting specialist staffs of such hospitals be paid salaries during the interim period assessed on the basis of five guineas a session, and to urge the Ministry of Health to provide financial assistance to the extent necessary to enable the hospitals to adopt this course. Mr. Lawrence Abel urged strongly that a session should be closely defined. In order to safeguard themselves and their colleagues, a session should be limited to two hours. He asked that that point be pressed upon the hospitals. Mr. A. M. A. Moore said that the whole question of the remuneration of consultants in a State medical service was coming forward, and the new Consultants and Specialists Committee had appointed a subcommittee to go into the question. This whole matter, including the question of the length of session, might very well be referred to that subcommittee.

Mr. Newell stated that the Hospitals Committee had now recorded its opinion that the imposition in the terms of service of a resident hospital officer of any condition relating to future practice in the area served by the hospital was undesirable. Dr. H. R. Frederick disagreed with this decision and moved the reference back of the paragraph in which it was embodied, and this was seconded by Dr. W. D. Steel. Dr. Gray supported the case for reconsideration, and thought that the General Practice Committee should also look into the subject and consider its bearings in different areas. Mr. Lawrence Abel wanted it referred back for a different reason. In his view there should be complete freedom, and he desired to see a strong recommendation brought forward to that effect.

The reference back was carried by 15 to 13.

Consultants and Specialists

Mr. A. M. A. Moore, as the new chairman of the Consultants and Specialists Committee (formerly the Special Practice Committee), brought forward a report containing seven recommendations, all of which were agreed to. Before putting them he paid a tribute to the long service of Prof. A. H. Burgess as chairman of the committee.

The first recommendation was to approve certain new rules for the government of Groups and for consultants' and part-time consultants' rolls to replace the rules which had been previously approved by the Council in 1938 and revised in 1939. Consideration had been given to these rules in view of the change of status of the representative committee of consultant members of the Association. Another recommendation was that a letter be issued to all consultants and specialists summarizing the proposals for the National Health Service which concerned consultants and specialists, with particular regard to certain points—e.g., that consultants and specialists will become salaried officers of regional bodies, undertaking all their hospital work in hospitals owned by the State; that only those specialists who enter the Service will be permitted to undertake the treatment of patients in hospital, whether in the public or private accommodation; and that there is no real freedom of choice for the consultant or specialist faced with the decision whether or not to enter the new Service.

The Secretary drew attention to a House of Lords amendment which had been accepted:

The Minister may allow any medical practitioner serving, whether in an honorary or paid capacity, on the staff of a hospital . . . to make arrangements for the treatment of his private patients.

He said that the significance of those words was not clear, and they were capable of more than one interpretation. Mr. Lawrence Abel suggested that representatives of consultants and specialists should join in a letter to encourage their colleagues who were isolated and perhaps not very well informed in these matters. The recommendation of the Committee was agreed to.

Another recommendation which was agreed called for better facilities for necropsies undertaken at the request of coroners. It was also agreed, at the instance of the Committee, to request that, in connexion with the planning of the post-war organization of the medical services of the Armed Forces, dermatology be recognized as a separate specialty divorced from venereology.

Practitioners with Heavy Financial Commitments

Dr. H. H. D. Sutherland moved:

That in order to ensure the loyalty of members of the Association urgent consideration should be given by the Council to the position of practitioners with heavy financial and educational commitments.

He was concerned with the difficulties of the young or middle-aged practitioner in his area, a man perhaps who had had to borrow money from his banker or from an insurance company in order to start in practice, and who was faced with heavy family obligations. In the fight which lay ahead all of them must be prepared to run a financial risk, and quite rightly so, but it was necessary to consider those who, with an intense desire to be loyal to the Association, might be faced with commitments which would prevent them from giving a decision in accordance with their beliefs. A group or committee ought to be set up to consider this matter and to work out some rather longer term plan whereby these people could be assisted. It is possible that the banks or insurance companies concerned might see their way clear to allowing the men who had these loans to be in a position to line up with the rest of the profession in this fight?

Mr. A. M. A. Moore seconded, and said that all these considerations applied equally to young consultants. Dr. Cockshut, while supporting the motion, thought there was no need to take a gloomy view, especially having in mind what had happened over the insurance capitation fee. Dr. F. Gray said that it was important to give these possible waverers the reassurance that in their special difficulties they would have the profession behind them. Dr. J. A. Brown said that it must not be supposed that if the fight came about there would be a big cessation of income. The people they had in mind would surely be able to make a sufficient income to carry them on with the help of the National Insurance Defence Trust. Dr. O. C. Carter hoped that prominence would be given to the fact that there was a very considerable sum available to meet cases of hardship, that the Emergency Guarantee Fund had very large guarantees from the National Insurance Defence Trust, from the British Medical Association, and from individual guarantors, and that the whole resources of the Association would be available if necessary in the circumstances outlined.

This statement was endorsed by a general expression of agreement by the Council, which then passed the resolution unanimously, and agreed to the setting up of a special committee whose reference would be generally to examine and report upon ways of assisting practitioners incurring hardship as a result of following the advice given to them by the Association in connexion with the proposed National Health Service.

Ex-Service Practitioners

Dr. Martin Brodie introduced the report of the Ex-Service Practitioners Committee, which had been considering two principal matters—namely, the position of the unemployed specialist and the position of the ex-Service practitioner who intended to enter general practice. On the position of the specialist Dr. Brodie said that the committee had had before it the scheme to which the Ministry of Health had given authority. Under this scheme the Ministry proposed, in the

case of fully qualified specialists able to take senior posts in hospitals, to invite local authorities and the larger voluntary hospitals to increase their establishments by creating additional whole-time posts wherever the volume of specialist work justified it. For practitioners who, though unable to prove intention to specialize before recruitment, had attained full specialist status in the Forces, the Ministry had agreed that, subject to approval by the deans and directors of postgraduate studies, Class III posts should be available under the Government's postgraduate scheme.

The committee had given further consideration to this whole problem and was addressing a communication to the deans and directors of postgraduate studies urging that the postgraduate scheme should be applied in a flexible manner in the case of ex-officers of graded status who contemplated taking up a specialty, and that such officers should be appointed to Class I posts and transferred, after a suitable period of training and a satisfactory report, to Class III posts. It was also putting to the Ministry and to the Director of the Postgraduate Federation a number of other points—for example, that further appointments should be made in municipal hospitals for Class I and Class III posts, and that the department should consider what practical help could be given to the ex-Service practitioner who was experiencing difficulty in obtaining employment between the date of his demobilization and his appointment to a Class I post.

Concerning the ex-Service doctor who intended to enter general practice, a discussion had taken place with representatives of the Ministry in the course of which the main difficulties had been stressed. These were shortage of houses, shortage of cars, and uncertainty about the compensation proposals as affecting both men approaching retirement and young practitioners who wanted an interpretation of the section of the Act regarding possible payment of compensation where financial hardship could be proved. Sir Arthur Rucker had given an undertaking that his department would look into the question of compensation being paid at or immediately subsequent to the appointed day to ex-Service practitioners who had incurred a heavy debt in the purchase of a practice. The anomalous position was duly pointed out whereby a practitioner might have to pay 4½% interest on a loan, whereas after the appointed day he was credited with a sum of money presumably sufficient to pay off the loan but not redeemable until death or retirement, on which sum he would be paid only 2½% interest.

The report was approved.

Organization

Dr. J. A. Pridham brought forward a report of the Organization Committee which was principally concerned with regional organization. A plan had already been proposed whereby the five Assistant Secretaries had each been apportioned one-fifth of the country so that the services of the central medical staff would be made available to all Divisions and Branches. The committee thought that this plan for regional visits by the Assistant Secretaries should be put into operation as a temporary measure, and that arrangements should now be made for the appointment of two additional Assistant Secretaries during the present session. Under this plan there would eventually be seven Assistant Secretaries available for part-time regional work, the share of their time devoted to regional work being approximately equal to the whole time of four officers. The entire problem is to be reviewed at the beginning of next session in the light of experience gained. It was pointed out that the inception of a National Health Service would raise problems within the structure of the Association, possibly necessitating a recasting of its central and local machinery.

Dr. Pridham also reported on the recent International Medical Conference held at B.M.A. House in London, and proposed that the Association accept membership of the World Medical Association, and that the payment of the provisional annual subscription (approximately £86) be approved. This was unanimously agreed to.

Dr. Pridham remarked that the International Conference was extraordinarily successful, thanks very largely to the outstanding chairmanship of the President of the Association (Sir Hugh Lett). Dr. Routley, the Canadian delegate, also contributed

in a marked degree to the success of the proceedings. He added that since the Conference the Americal Medical Association had joined the World Medical Association.

Retirement of the Editor

Dr. O. C. Carter, chairman of the Journal Committee, in bringing forward a report of his committee, said that it was with great regret he had to report the retirement, at the end of the present year, on his reaching the age-limit, of Dr. N. G. Horner, who had filled the editorial chair with great distinction since January, 1928, and before that had been, from 1917 onwards, Assistant Editor. Dr. Horner had conducted the *Journal* with great ability and success during an editorial reign which had included more than one very trying period. They all wished him good health and happiness in his retirement.

This expression was received with the most cordial acclamation by the whole Council.

Psychiatry and the Law

Dr. J. Thwaites (on behalf of Dr. Doris Odum, the chairman of the committee) brought forward a report from the Psychiatry and the Law Joint Committee, the membership of which is composed of representatives of the B.M.A. and of the Magistrates Association. The first subject dealt with was corporal punishment. The committee had previously brought forward resolutions in favour of the abolition of judicial corporal punishment both for juvenile delinquents and for adult offenders, but after some discussion the Joint Committee had been asked to bring up the matter again. It now reaffirmed these resolutions, and gave the text of its reconsideration of the subject. The form of the report was criticized by certain members, and in view of the importance of the subject, the controversy likely to arise out of it, and the lateness of the hour, it was agreed to defer further consideration to the next meeting of Council.

Another report brought forward by the Joint Committee on "The Unstable Adolescent Girl" was unanimously approved as a most excellent document, and it was agreed that it be forwarded to the appropriate Government departments for consideration, published in the *Journal*, and reprinted as a joint B.M.A. and Magistrates' Association publication, subject to the concurrence of the latter body.

The General Medical Council

Mr. Dickson Wright presented the report of a special committee of the Association which has been considering the disciplinary powers of the General Medical Council. He said that the committee had had before it the G.M.C.'s own draft Medical Bill and the proposals of the Defence Societies. There were 31 recommendations set out in the committee's report, many of them of a far-reaching character.

Dr. J. W. Bone considered that it would be very unfortunate if this report, without much more consideration, went forward to the Government as the Association's view. He thought it should be sent back to the committee to deal with points which admittedly they had not as yet taken up, and that if possible another conference should be held with representatives of the G.M.C. and of the Defence Societies. After some slight discussion it was agreed that this report should stand over and be considered, along with part of the report of the Psychiatry and the Law Committee and other held-over business, at an extra meeting of the Council on Dec. 11.

Other Committee Reports

Dr. Vaughan Jones presented a progress report by the Industrial Medicine Committee. He said that the committee was proposing to give immediate consideration to the question of the development of an industrial medical service. It was understood that the Minister of Labour had asked his advisory committee to prepare a practical scheme, and the B.M.A. had been invited to submit a memorandum.

Gen. R. W. D. Leslie, for the Naval and Military Committee, reported that a request had been made to the India Office to receive a deputation on the terms of compensation to be offered to officers in the I.M.S. consequent upon the constitutional changes in India. On the recommendation of the Dominions Committee the Colonial Office is to be asked again to consider the appointment of a representative of the Association on the

Colonial Advisory Medical Committee. It appeared that the Secretary of State had been under a misapprehension when this request was first made, supposing the concern of the Association to be primarily with terms and conditions of service, whereas the Association was in a position to offer constructive advice on matters of medical policy.

The Liaison Committee of the B.M.A. and the Royal College of Nursing reported that it had had a preliminary discussion on the status of the nursing profession, and hoped to report fully to the Council after its next meeting at which a memorandum of practical proposals would be submitted by the Royal College.

On the Scottish Committee report Dr. G. MacFeat stated that in view of the imminence of a National Health Service Act for Scotland a Public Health Subcommittee had been appointed, with suitable representation.

On the motion of Dr. Waterfield, chairman of the Central Ethical Committee, it was agreed to ask the British Dental Association to consider the advisability of an arrangement between its Law and Ethics Committee and the Central Ethical Committee whereby two representatives of each committee should attend meetings of the other when ethical matters of mutual interest were under discussion.

The reports of the Finance, Building, and Science Committees, which dealt with routine matters, were approved. On the report of the Office Committee it was agreed unanimously to recommend to the Representative Body that Dr. J. C. Matthews and Dr. H. W. Pooler be elected Vice-Presidents of the Association. On the Public Relations Committee Dr. W. D. Steel urged that there should be a scrutiny of all newspapers for inaccurate reports, which should be countered forthwith, and that an effort should be made to secure a representation of Association intelligence in local newspapers. Dr. Dain, the chairman of the committee, replied that for some time past the committee had been doing these very things though it was not always possible to scotch a misleading report.

The Film Committee reported that it had devoted three meetings to preliminary discussions and proposed to draw up a report on the use of visual aids in medical teaching.

The Chairman of Council reported that, in view of the urgency of the matter, he had appointed a special committee to prepare a memorandum of evidence, the submission of which had been invited, for the special committee set up by the Home Secretary to inquire into various matters of health, welfare, and safety at places of employment other than those regulated under the Factories and similar Acts.

An invitation to the Association to become a member of the new National Association for Mental Health presently to be incorporated was accepted, and Dr. R. G. Gordon was appointed as the Association's representative on the Council of that body.

THE DANISH MEDICAL ASSOCIATION

The accounts appearing from time to time of the activities of the Danish Medical Association in its weekly organ, *Ugeskrift for Læger*, show how varied are the claims made on it. There are however, times when a limit has to be put on such claims, as when for example, the secretariat of the Association is asked to play the part of a travel agency or a money exchange. Among the legitimate claims are those made by Branches of the Association seeking advice on ethical problems such as the limits within which members of the Association can work without impairing the dignity of the medical profession. What, a local Branch of the Association asked, was to be done with one of its members who had been fined 800 kroner (or 30 days) for having issued a wealth of prescriptions for alcohol without any definite medical indication for the need thereof? The advice given from headquarters was that the offender should be reprimanded and warned that in the event of a relapse he might find himself excluded.

Another problem referred to headquarters concerned a doctor who had been invited to act as a judge for an examination at a "beauty institute." Could he do so without prejudice to the ethical exercise of his profession? Headquarters replied that the statutes of the Danish Medical Association did not directly forbid judicial activities on the part of its members in the course of an examination in "beauty culture." Nevertheless, the Association would consider such co-operation on the part of its members as exceedingly unfitting for experience had shown that the next step to a doctor's acting as a judge at a beauty institute was the appearance of an advertisement to the effect that such and such a person had satisfactorily passed a medical examination in "beauty culture."

HEARD AT HEADQUARTERS

"Yes" or "No"

The organization of the plebiscite has meant another big effort by Headquarters staff, which by now, however, is inured to exceptional calls upon its energies. To address and place the eight enclosures in 58,000 envelopes is no small undertaking. The Council decided to accompany the forms by return postage, or because it supposed that any practitioner would regard his reply as not worth twopence-halfpenny but because it was anxious that no form should be put on one side and forgotten wing to a stamp not being immediately available. That decision, as a little arithmetic will show, cost the Association something like £600.

Time Lag

Dr. J. B. Cook, who is the new president of the Hunterian Society, delivered a learned and interesting address from the chair of that body on the subject of "Municipal Medicine." He was carefully non-controversial, keeping largely to history. Out some of those who followed him in discussion observed much self-denying ordinance. One of them pointed out the considerable time-lag which has always intervened between the discovery of a new remedy or method of prevention and its acceptance by the "authorities." He mentioned advances in the treatment of tuberculosis, the campaign against venereal diseases, the institution of antenatal care, and many other movements, some of which were begun by pioneers fifty years before the ideas came to be adopted by municipal medicine, though when they were adopted they were carried to a degree of efficiency beyond what was possible so long as they were in voluntary or private hands. "But what," asked one speaker, "is to happen when medicine becomes entirely 'municipalized'? With a total State service this outside voluntary pioneering stimulus will be damped down." The municipal hospitals had their critics and defenders in a lively debate.

Service Medical History Records

Doctors who act as medical referees to insurance companies have found lately that if they wish to have particulars of the service medical history of an applicant for life assurance the Ministry of Pensions refuses the information on the ground that it is confidential. This matter has been taken up by the Association with the Ministry, but the reply is that the Ministry is only a custodian of the documents for the Service Departments. Therefore the question was shifted to the War Office, and it was asked that such records should be available for the purposes of a life assurance proposal, as they are already to insurance practitioners for the purposes of treatment. The Army Council, however, with the concurrence of the Board of Admiralty and the Air Council, has replied that, while the medical particulars available in Service documents are given to the doctor who needs them for the purposes of treatment, they are not to be given for a different purpose—namely, insurance. "The considerations that many ex-Service men might consent to their medical history being given, and that the information would be carefully safeguarded, do not affect the [Army] Council's views that the interests of Service personnel generally, and of medical officers in the Service who have to report on them, would be adversely affected by any measure of disclosure of medical particulars for a purpose other than medical treatment."

SCOTLAND'S HEALTH SERVICE BILL

Full consultations with the local authority associations at all stages in the setting up of the service to be provided under the National Health Service (Scotland) Bill were promised by the Secretary of State for Scotland when he met representatives of the Convention of Royal Burghs, the Association of Counties and Cities, and the Association of County Councils in St. Andrew's House, Edinburgh, on Nov. 15. On Nov. 18 members of the medical profession met the Secretary of State, and in the afternoon he had discussions with representatives of the British Hospitals Association, who presented the views of the voluntary hospitals.

WHOLE-TIME NON-PROFESSORIAL MEDICAL TEACHERS, LABORATORY AND RESEARCH WORKERS GROUP

REPORT ON WORK OF GROUP COMMITTEE

The first meeting of the Group of Full-time Non-Professorial Medical Teachers, Laboratory and Research Workers was held at B.M.A. House, on March 25, 1938. The meeting decided to appoint an executive committee on a territorial basis, as follows:

Area	Members
London	2
Oxford and Cambridge	1
Manchester and Liverpool	1
Durham, Leeds, Sheffield	1
Birmingham, Bristol, Wales	1
Scotland and Northern Ireland	2

Dr. W. Susman was subsequently appointed chairman of the committee, and held this office until August, 1946.

The committee, empowered to conduct the business of the Group, is responsible for representing the interests of its members. Its findings are placed before the Consultants and Specialists Committee and through the latter before the Council and Representative Body. The Group Committee is represented on the Consultants and Specialists Committee and may also send a representative to attend meetings of other committees and Council when matters affecting the Group are being considered.

Membership of the Group

Membership of the Group is open to members of the British Medical Association engaged full-time as non-professional medical teachers, laboratory or research workers. All applications for membership of the Group are first considered by the Group Committee, and the membership now totals 119.

Matters of Interest considered by the Group Committee

The greater part of the committee's time has been taken up with the drafting of a revised scale of salaries for whole-time non-professional medical teachers, laboratory and research workers. The committee found that comparatively few of the posts of demonstrator or "assistant" carried a commencing salary of £300 a year, that few readerships or senior lectureships carried a commencing salary of £750 a year, and that the salaries of intermediate appointments were far from uniform even in one and the same university, and in many cases were considerably below the minimum considered appropriate.

Remuneration of Whole-time Non-professorial Medical Teachers, Laboratory and Research Workers

The committee has collected information both on present scales of salaries for whole-time non-professional medical teachers, laboratory and research workers, and on scales likely to be appropriate in the future, and will shortly be submitting the latter to a special subcommittee of the Consultants and Specialists Committee set up to consider the remuneration of consultants and specialists generally.

Miscellaneous Business

The question of superannuation and the disability of research workers in connexion with scientific grants were under consideration in 1938 and inquiry has been made regarding the extent to which educational allowances for children of non-professional medical teachers were available at the various universities and medical schools. In addition the provision of compensation for illness contracted in the carrying out of professional duties was discussed. The Group Committee recorded its opinion that it was desirable that the universities should bear a proportion of the expenses incurred in travelling to and from scientific meetings on not more than two occasions in the year.

The Group Committee has recently been re-elected as follows, and with a return to more normal conditions can look forward to an interesting session:

Dr. Georgiana M. Bonser, Leeds.
Dr. C. J. C. Britton, London.
Dr. J. Gough, Cardiff.
Dr. J. W. Howie, Aberdeen.
Dr. A. C. Lendrum, Glasgow.
Dr. W. R. M. Morton, Cambridge.
Dr. A. J. Rhodes, F.R.C.P.Ed., London.
1 vacancy.

It is intended to arrange a meeting of members of the Group on Jan. 2, 1947, at which an opportunity will be given to all

members to put forward suggestions and recommendations which they wish to be considered by the Group Committee.

Finally, the Group, if it is to be effective, must be as large and representative as possible. If you are a full-time non-professional medical teacher, laboratory or research worker and do not belong to the Group you are invited to complete the appended form and send it to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1.

I wish to apply for membership of the Group of Full-time Non-Professorial Medical Teachers, Laboratory and Research Workers. I understand that the inclusion of any individual within the Group is at the discretion of the Group Committee subject to appeal to the Council of the Association. I am a member of the Association and am engaged full-time as a ^{* non-professional medical teacher.} laboratory or research worker.

Signed

Address

NAME (IN BLOCK CAPITALS)

QUALIFICATIONS:

APPOINTMENTS:

DATE:

* Delete whichever is inapplicable.

Correspondence

The "Closed Shop"

SIR,—Recently I answered an advertisement in your columns for the post of full-time medical officer at a borough council. I received in reply an application form and the following notice. No covering letter was included. [Extract of notice:]

"(1) That trade union membership be a condition of employment of all persons continuing in or entering the service of the Council, and that present employees who are not members of a trade union be advised of this decision and given a reasonable time—i.e., by Nov. 1, 1946—in which to join a trade union.

(2) That each Chief Officer be instructed to report to the December meeting of the Establishment Committee upon the position in his department, and subsequently as the Establishment Committee may direct."

I will not comment upon the manner of reply but will confine my remarks to the contents of the notice. The full implication of the first paragraph must be obvious to all. This is that the medical officer will be controlled by a trade union, which will show, I imagine, scant respect for his profession. He will be one tool in the hand of the ruling power behind the Government.

Surely it is obvious to all that the curtains are now drawn and the set of the Government stage is plainly visible. This setting is, in my opinion, very terrifying and reminiscent of past events in other lands. I sometimes feel that there are not enough original thinkers left in the medical profession to form a unity that will break the regimentation and coercion that is threatening to engulf and destroy us.

I will end by suggesting that the B.M.A. should take an immediate and strong stand with regard to the first paragraph of the above notice, and that no medical journal should accept any advertisement originating from a Labour source without investigating first the conditions imposed.—I am, etc.,

F. R. ELLIS.

*. Note by the Secretary of the B.M.A.: A statement will shortly be made by the Association on the important problem raised by Dr. Ellis.

SIR.—It is to be hoped that the profession is considering the implications of the present "closed shop" campaign with reference to the new National Health Service. I have already heard of one group of nine applicants for an appointment being reduced to two who were members of a certain medico-political organization.—I am, etc.,

London, W.11.

"NON-UNIONIST."

Medical Unemployment

SIR,—I would like to draw attention to one aspect of medical unemployment which has received little publicity. I refer to that existing among ex-Service holders of the D.P.H. Certificate appears to be remarkably keen for even the unattractive humbler posts, so miserably paid. No doubt this is in accordance with the general situation, but my grievance is the complete absence of any expressed preference for ex-Service doctors, and the conspicuous absence of any space for details of Service experience in the application forms provided, apparently obtains in all local authority appointments and surprisingly, in departments of central government, as can be seen in the many pages of advertisements appearing each week in the *Journal*. All honour to the Government of Northern Ireland, the outstanding exception! But I fear will be inundated with applications on that very account.

I can hear the question being asked, "Why should Servicemen get preference?" Which is quite reasonable—but national service should not be the positive handicap which it appears to be at present. We have heard that there was to be "a gentleman's agreement" to ignore the 5 or 6 years war service when it came to job hunting. What a conceit—as if in effect to say, "We know you've been in the 5 or 6 years, old chap, but we won't hold it against you." At my own experience it has not even worked out like that. I have had the impression strengthened that war service actually a deterrent to getting a job.

I have yet to meet a doctor (other than a holder of a D.P.H.) who does not think the D.P.H. "a very good thing to have these days." But I would warn aspirants to think before spending the time and the money. So far it has had the effect of diverting me from the serious business of finding a place in general practice. I have been sorry to see the waning of the correspondence on this subject. I do believe that the problem has been solved. Perhaps, like the despairing victims are busy casting round for reasons to prospects outside medicine.

To prevent repercussions I ask leave to sign myself

Aberdeen.

ANOTHER OF THE UNEMPLOYED

Remuneration of Doctors' Wives

SIR,—The point has been raised before but should again be considered. I feel that whatever scheme is operated in the future the proper remuneration of the doctor's wife should be considered. At the present moment I believe one may pay an annual allowance of about £90, but in my view, though it gives some tax relief, an adequate salary for services rendered—receptionist, clerk, telephonist, etc.—would be more in the region of £300 a year. I suggest, therefore, that this be a matter for negotiation—if negotiation is to continue with the Minister. Presumably he is ideologically opposed to any form of sweated labour? Or should I write Labour?—I am,

Colchester.

G. C. PETHE

H.M. Forces Appointments

ARMY

Major-Gen. Sir E. W. C. Bradfield, K.C.I.E., O.B.E., has been granted the honorary rank of Lieut.-Gen.

Col. D. G. Cheyne, C.B.E., M.C., having reached the age of retirement is retained on the Active List supernumerary.

Lieut.-Col. G. D. Gripper, from R.A.M.C., to be Col.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. J. H. C. Walker to be Col.

Lieut.-Cols. L. M. Rowlette, D.S.O., M.C., C. F. Anthonisz, J. McFadden have retired on retired pay and have been granted the honorary rank of Col.

Lieut.-Col. J. M. MacKenzie, C.B.E., M.C., is Seconded Service.

Lieut.-Col. H. A. Ferguson and Major (War Subs. Lieut.-Col.) A. D. Bourne have retired, receiving gratuities, and have been granted the honorary rank of Col.

Lieut.-Col. R. M. Davies, retired, re-employed, has reverted to retired pay, on account of disability.

Major W. D. C. Kelly, D.S.O., M.C., has been restored to rank of Col. on ceasing to be re-employed.

Majors (War Subs. Lieut.-Cols.) W. A. Y. Knight and C. S. Gross be Lieut.-Cols.

Majors T. M. Corcoran, J. B. George, D. P. F. Mulvany, and J. Curran to be Lieut.-Cols.

The initials of Major M. F. Kelleher, M.C., are as now described but as stated in a *Supplement to the London Gazette* dated April 26.

Major C. J. Blaikie, retired pay, re-employed, has been restored the rank of Lieut.-Col., on ceasing to be re-employed, and has been granted the honorary rank of Col.

Major C. McQueen has ceased to be employed on account of disability, has reverted to retired pay, and has been restored to the rank of Lieut.-Col.

War Subs. Lieut.-Col J. B. M. Milne, O.B.E., to be Major.

Capt. (War Subs. Major) M. Kosloff has retired and has been granted the honorary rank of Lieut.-Col.

Short Service Commission.—War Subs. Major J. C. A. Marchand is retired on account of disability and has been granted the honorary rank of Lieut.-Col.

Capt. (War Subs. Lieut.-Col.) J. B. Bunting to be Major.

War Subs. Majors R. G. Davies and A. L. J. Webb to be Majors.

Capt. (War Subs. Major) F. B. Bagshaw to be Major.

Capt. H. J. Anderson, E. D. H. Williams, J. A. Allen, R. D. H. G. L. Humphreys, F. J. Ingham, A. B. Fountain, G. E. Gray, and W. J. A. Craig to be Majors.

Capt. D. M. Macdonald has retired on account of disability, and has been granted the honorary rank of Major.

Short Service Commissions.—War Subs. Major D. W. Davies, from A.M.C., T.A., to be Lieut., and to be Capt. Capt. (War Subs. Major) D. W. Davies has been appointed to a permanent commission.

War Subs. Capt. D. Gill, H. J. Elverson, O. G. Jones, G. M. Ewan, and W. S. Rhodes, from R.A.M.C., Emergency Commissions, to be Lieuts., and to be Capt. Lieuts. (War Subs. Capt.) I. F. Fraser and C. E. Perry, from A.M.C., Emergency Commissions, to be Capt. Lieuts.

War Subs. Capt. I. M. Grant, from R.A.M.C., T.A., to be Lieut. and to be Capt.

War Subs. Capt. J. L. Huggan and W. P. Lee, from R.A.M.C., Emergency Commissions, to be Capt. Lieuts.

Capt. E. D. H. Williams, E. M. Ensor and A. J. Moss-Blundell have been appointed to permanent commissions.

Capt. D. E. S. Steele, from R.A.M.C. (Regular Short Service Commission), has been granted a short service (specialist) commission the rank of Capt.

REGULAR ARMY RESERVE OF OFFICERS

Col. C. M. Finny, O.B.E., late R.A.M.C., has been restored to the rank of Major-Gen. on ceasing to be employed.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major R. Pollok has relinquished his commission on account of disability and has been granted the honorary rank of Major.

Capt. C. J. Mill-Irving, M.C., has relinquished his commission on account of disability and has been granted the honorary rank of Major.

Lieut. (War Subs. Capt.) J. P. P. Mackey to be Capt.

Senior Training Corps.—Lieut. A. H. Cruickshank, supernumerary for service with Aberdeen University Senior Training Corps (Med. Unit), has resigned his commission.

Lieuts. J. W. Chambers and A. Slessor, supernumerary for service with Glasgow University Senior Training Corps (Med. Unit), have resigned their commissions.

Major A. H. M. Eaton, supernumerary for service with Queen's University, Belfast, Senior Training Corps (Med. Unit).

Lieut. J. R. Wheeler, supernumerary for service with Queen's University, Belfast, Senior Training Corps (Med. Unit), has resigned his commission.

Lieut. J. A. Barclay, supernumerary for service with Birmingham University, Senior Training Corps (Med. Unit), has resigned his commission.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Cols. R. C. Speirs, R. Walkingshaw, M.C., and M. P. Campbell have relinquished their commissions and have been granted the honorary rank of Col.

Major J. N. P. Moore has resigned his commission.

War Subs. Major D. W. C. Gawne has relinquished his commission on reversion to the Southern Rhodesian Forces.

War Subs. Majors J. B. Arthur and A. Bigham have relinquished their commissions on account of disability and have been granted the honorary rank of Lieut.-Col.

War Subs. Majors G. King and J. C. Busby have relinquished their commissions and have been granted the honorary rank of Lieut.-Col.

War Subs. Capt. W. A. Elliott and H. D. Johnson have relinquished their commissions on account of disability and have been granted the honorary rank of Major.

War Subs. Capt. H. W. Webb, R. W. C. Kelly, A. L. Dunlop, A. Gellert, F. B. Notley, G. A. Williams, O. N. Ransford, and J. S. Sergeant have relinquished their commissions and have been granted the honorary rank of Major.

War Subs. Capt. S. Bayne, L. L. Bromley, G. R. Williams, W. L. Cooper, C. C. Ross, J. H. Maughan, J. A. Sykes, and D. F. G.

Moir have relinquished their commissions on account of disability and have been granted the honorary rank of Capt.

War Subs. Capt. D. S. Gibbs, R. Nicklin, P. H. D. Stone, and M. Makin have relinquished their commissions and have been granted the honorary rank of Capt.

War Subs. Capt. H. Polak, H. Fugs, R. F. H. Hinrichsen, G. H. Goldstucker, V. Dennis, and A. S. Manugian have relinquished their commissions.

Lieuts. R. Mendick and A. C. Arthur have relinquished their commissions on account of disability and have been granted the honorary rank of Lieut.

Specialist Short Service Commissions.—To be Lieuts.: J. M. Pullan, A. Brown, A. J. Heriot, J. L. Penistan, J. A. Rich, L. J. Wolfson, C. F. Chapple, G. D. Owen, N. H. Ashton, F. Post, W. J. L. Francis, T. M. J. d'Offay, W. M. Van Essen, J. Y. D. Wageham, P. Pau, F. S. Airey, I. Lopertas, A. B. McGrigor, A. C. Cunliffe, J. M. Mallett, N. Moulson, R. P. Parker, R. W. Wyse, R. R. Henderson, and E. E. O'Malley.

To be Lieuts.: C. F. Chapple, L. H. Tan, J. C. Busby, G. S. Andrew, R. A. Drury, F. Houston, O. D. Cuthbert, J. M. Park, R. C. B. Arthur, J. B. Brooks, M. Brown, E. S. Clarke, G. R. Cottrell, N. K. Crooke, L. F. G. Cruickshank, L. K. Dawson, R. B. Fitzgerald, A. H. Fraser, E. B. Gethen-Smith, W. T. Harrett, V. F. Harrison, P. W. Harvey, H. E. S. Pearson, C. B. S. Schofield, R. R. Stevenson, C. M. Taylor, D. M. Williams, J. Bauer, J. Armstrong, E. F. Riley, D. C. V. Stewart, and A. B. Wood.

War Subs. Lieut. W. F. Wille, from R.A.M.C., Non-medical Section, T.A. General List, to be Lieut.

ROYAL AIR FORCE

RESERVE OF AIR FORCE OFFICERS

Squad.-Ldr. R. F. Courtin, M.B.E., has resigned his commission, retaining the rank of Wing Cmdr.

Association Notices

GROUP OF ANAESTHETISTS OF THE B.M.A.

The newly formed Group of Anaesthetists of the British Medical Association held its first meeting at B.M.A. House on Nov. 1. There were present:

R. E. Angel, J. H. Attwood, T. H. Baillie, B. N. P. Bannatyne, Freda B. Bannister, V. T. Baxter, R. Binning, F. H. Blackburn, W. M. Brown, J. D. Buxton, S. Carden, Aileen M. Chesier, W. F. Chesters, S. Coffin, R. W. Cope, E. S. Curtis, H. W. Lofus Dale, M. H. A. Davison, A. De Freitas, O. P. Dinick, D. Divine, H. B. Dodwell, A. G. Donald, R. Erskine-Grav, H. W. Featherstone, D. K. Fisher, A. C. Forrester, Hilda M. Garry, Edith Gilchrist, J. Gillies, H. Girling, E. G. Godwin, V. A. Goldman, W. B. Gough, Marion Green, F. R. Gusterson, A. G. J. Harris, Beryl L. Harrison, J. K. Hasler, J. S. Hawes, P. J. Halliwell, G. R. Hopper, D. C. Howard, A. R. Hunter, Ronald Jarman, B. Johnson, H. Kahlenberg, G. S. A. Knowles, R. C. Lawrence, E. L. Littler, D. Lloyd-Davies, W. A. Low, B. G. B. Lucas, Florence M. McClelland, Dorothy McNair, A. D. Marston, J. Mennell, J. Montgomerie, F. I. R. Moore, T. T. P. Murphy, B. L. S. Nurtag, H. Newton-Andrews, A. Offenheim, G. Organe, G. F. Pantion, H. H. Pinkerton, R. E. Pleasance, Dorothy S. Price, W. K. Rae, S. G. Ransom, Frances A. Redhead, Mary M. Richmond, F. W. Roberts, K. M. Ross, W. H. Scriven, G. F. R. Smith, R. J. M. Steven, S. V. Strong, K. S. Thom, F. L. Turner, Daphne Veale, K. Mary Watson, S. Walters, G. L. Way, Marion E. Williams, Helen M. Wood, F. G. Wood-Smith, A. D. Woolf, Edith Winternitz, H. R. Youngman.

The Secretary opened the meeting by extending, on behalf of the Council of the Association, a warm welcome to all those present. Dr. A. D. Marston was appointed chairman of the meeting.

The meeting decided to recommend to the Council of the Association that the constitution of the Group Committee should be ten members directly elected on a territorial basis by members of the Group in the following regions:

	Members of Committee elected by members of the group in the regions
London	3
Provinces	5
Scotland	1
N. Ireland	1

together with a nominee of the Council of the Association of Anaesthetists of Great Britain and Ireland and a nominee of the Council of the Section of Anaesthetics of the Royal Society of Medicine.

It was reported to the meeting that 424 applications for membership had been received.

Dr. A. D. Marston was appointed the representative of the Group on the Consultants and Specialists Committee until such time as the Group Committee assumed office and appointed one of its members.

A number of important matters await consideration by the Group Committee, including the status of anaesthetists in the proposed National Health Service and safety in modern anaesthesia.

The Council has since approved the constitution of the Group Committee and arrangements are now being made for the election of members to the committee.

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows: an Ernest Hart Memorial Scholarship, of the value of £200, a Walter Dixon Scholarship of the value of £200 and four Research Scholarships, each of the value of £150. These Scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State Medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession. Each Scholarship is tenable for nine months, commencing on Feb. 1, 1947. A Scholar may be re-appointed for not more than two additional terms. A Scholar is not necessarily required to devote the whole of his or her time to the work of the research, but may hold a junior appointment at a university, medical school, or hospital, provided the duties of such appointments do not interfere with his or her work as a Scholar.

Conditions of Award, Applications

Applications for Scholarships must be made not later than Saturday, Dec. 28, 1946, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association B.M.A. House, Tavistock Square, London, W.C.1. Applicants are required to furnish the names of three referees who are competent to speak as to their capacity for the research contemplated.

Diary of Central Meetings

DECEMBER

5 Thurs. Publishing Subcommittee, 11 a.m.

Branch and Division Meetings to be Held

EAST HERTS DIVISION.—At County Hospital, Hertford, Thursday, Nov. 28, 8.30 p.m. Dr. H. Guy Dain, Chairman of B.M.A. Council: The National Health Service. All medical practitioners in the area of the Division are invited.

SALISBURY DIVISION.—At Cathedral Hotel, Salisbury, Wednesday, Nov. 27, 7.30 p.m., Dinner 8.30 p.m., Dr. G. D. Kersley: Differential Diagnosis and Treatment of Rheumatoid Arthritis: Illustrated by lantern slides. All medical practitioners in the area of the Division are invited.

SWANSEA DIVISION.—At General Hospital, Swansea, Thursday, Nov. 28, 8.15 p.m. Address by Mr. A. L. D'Abreu: Wales and Thoracic Surgery.

Meetings of Branches and Divisions**COVENTRY DIVISION**

An ordinary general meeting of the Division was held in the Board Room of the Coventry and Warwickshire Hospital on Nov. 5. Dr. E. C. K. Kenderdine was in the chair, more than thirty members of the Division were present. The chairman introduced Dr. Douglas Guthrie—the eminent medical historian and librarian of the Royal College of Surgeons of Edinburgh, who was to deliver the annual B.M.A. lecture.

Dr. Guthrie's subject was "The Patient in Medical History," and he took as his text a quotation from Wilfred Trotter commenting on the heroism of the first man to submit to surgical treatment for cerebral tumour. First, slides showing evidence of disease in the pre-Christian era were shown, and as later centuries came into view Dr. Guthrie dealt with known patients such as Alexis St. Martin and James Phipps. He also reviewed the work of medical men themselves patients, and he spoke of inventions of importance to medicine made by laymen—instancing the laryngoscope. Dr. Guthrie pointed out that in any advance in medical treatment the patient must be considered a partner—sometimes active, sometimes passive—and he deplored the habit of patients being known by numbers or initials. He emphasized that the tendency to ignore the patient and treat his disease must be discouraged, and he felt that there was a danger of so much attention being paid to the chemistry of the patient that he as an individual might be forgotten, and he reminded his audience that the doctor could learn a very great deal from an intelligent patient.

An enthusiastic vote of thanks, proposed by Dr. H. N. Gregg, G.M., and seconded by Dr. Gloria Richards, was accorded to Dr. Guthrie. In his reply Dr. Guthrie laid stress on the point that whatever happened to medical practice in the future the doctor-patient relationship must be preserved.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Dr. Yates: Antibiotics and Antiseptics in the Control of Infection.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, Tues., 5 p.m. Mr. D. M. Douglas: Experimental Approach to Surgery.

LONDON SCHOOL OF DERMATOLOGY. 5, Lisle Street, Leicester Square, W.C.—Thurs., 5 p.m. Dr. H. Gordon: Limitations of X-ray Therapy in Dermatology. Thurs., 5 p.m. Dr. A. D. Porter, Vitamin A in Dermatology.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn F.W.C.—Thurs., 5 p.m. Erasmus Wilson Demonstration by R. W. Raven: Diseases of the Pharynx and Oesophagus.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS, 58, C. Ann Street, W.—Fri., 5 p.m. Dr. J. F. Loutit: The R. Facor.

ROYAL SOCIETY OF MEDICINE

Section of Odontology.—Mon., 5.30 p.m. Mr. D. Greer Wa Severc infections of the mandible. Prof. M. A. Rushon: Reg osteitis fibrosa affecting the facial bones: 2 cases.

Section of Medicine.—Tues., 5 p.m. Discussion: Birth con some medical and legal aspects. Openers: Dr. E. B. Ford, Aleck Bourne, Dr. Kenneth McFadyean, and Mr. Justice Humph.

Section of Urology.—Thurs., 8 p.m. Presidential address: Mr. R. H. O. B. Robinson: Some problems of renal lithiasis.

Section of Endocrinology.—Fri., 5.45 p.m. (Cases at 5 p.m.)

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Sq W.—Mon., 8.30 p.m. Discussion: Diagnosis and treatment Aural Vertigo. To be introduced by Mr. W. M. Mollison Dr. Philip Cloake.

SOCIALIST MEDICAL ASSOCIATION.—At Denison House, 296, Vau Bridge Road, S.W., Thurs., 7.30 p.m. Dr. F. Avery Jo Social Aspects of Peptic Ulcer.

SOCIETY OF CHEMICAL INDUSTRY: Food Group (Microbiolo Panc).—At Chemical Society, Burlington House, Piccadilly, Wed., 6.15 p.m. Mr. H. C. S. De Whalley and Miss M. Scarr: Micro-organisms in Raw and Refined Sugar and Intermediate Products.

APPOINTMENTS

BANNISTER, Freda B., M.D., D.A., Honorary Anaesthetist, Chester Infirmary.

CHIEFSEA HOSPITAL FOR WOMEN.—Director of Pathology, Magnus H M.D. Genito-urinary Surgeon, Terence Millin, F.R.C.S.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Orthopaedic Fracture Surgeon, J. C. R. Hindenach, F.R.C.S. Honorary Physiotherapist, John Enzer, M.R.C.S., L.R.C.P.

HERVEY, W. A., F.R.C.S. Ed., Honorary Oto-Rhino-Laryngologist, (Maly's Hospital for the East End, Stratford, E.)

LANELAND DISTRICT MEDICAL SERVICE.—Consulting Physician, I. Swick, M.D., M.R.C.P. Second Surgeon, J. F. Dignam, M.B., B.Ch., F.R.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon to Aural Department, A. Bowen-Davies, M.B., F.R.C.S. Assistant Surgeon to The Department, Vernon C. Thompson, F.R.C.S. Assistant Surgeon to C poedle and Accident Department, O. J. Vaughan-Jackson, F.R.C.S. As Physician to the Hospital, Kenneth M. A. Perry, M.D., M.R.C.P.

PRESTON, J. R., M.B., Ch.D., D.P.H., Medical Officer of Health, Borough Sutton Coldfield.

RAFTERY, Lillian, M.R.C.S., L.R.C.P., M.R.C.O.G., M.M.S.A., Hon Visiting Gynaecologist, British Red Cross Society's Clinic for Rheumatism.

SMITH, A. G., M.D., F.R.C.S., medical referee for dermatological under the Workmen's Compensation Act, 1925, for county court district Norfolk and Suffolk (Circuits 32 and 33).

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or Extra words 3s. 6d. for each six or less. Payment should be forwarded the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BINTCLIFFE.—On Nov. 8, 1946, at Birmingham, to the wife of E. W. Blat M.B.E., M.S., F.R.C.S., a son.

COATES.—On Nov. 13, 1946, at the Mornington Nursing Home, Bradford Margaret (née Gatenby), wife of J. C. Coates, F.R.C.S., a daughter.

EVANS.—On Nov. 10, 1946, at Nuffield House, Guy's Hospital, to Winifred wife of Dr. M. L. Hudson Evans, of Lewisham, a son—Timothy.

HATFIELD.—On Nov. 15, 1946, at Ongar House, Ongar, to Sylvia Hertford, wife of F. E. S. Hatfield, M.B., B.Chir., a daughter.

HOVENDEN.—On Nov. 9, 1946, to Mary (née Powell), wife of Dr. T. G. Geor Hoven, 99, Church Road, Barnes, S.W.13, a daughter.

MACFARLANE.—On Nov. 15, 1946, at the City of London Maternity Hospital Dorothy (née Griffin), wife of Dr. J. A. Macfarlane, a son.

MATTHEWS.—On Nov. 16, 1946, at the Wickham Nursing Home, Lewes Diana (née Sykes), wife of Philip Matthews, a daughter.

OWLES.—On Nov. 1, 1946, to Norah (née Ryan), wife of Wilfred Harri Owles, D.M., M.R.C.P., of 7, South Parade, Llandudno, a son.

PEPLER.—On Nov. 14, 1946, at the South London Hospital for Women, S.V. to Cecily, M.B., B.S. (née Stuart-Bunning), wife of D. S. Pepler, of Clare Court, W.C.1, a son.

PRICHARD.—On Oct. 9, 1946, at the London Hospital, to Joan (née Webb) wife of John Stobo Prichard, M.C., 2, Hanway Place, W.1, a daughter.

WAGGOTT.—On Oct. 26, 1946, to Winifred (née Cunningham), M.B., B.Ch. wife of John Waggon, 40, Barnsdale Avenue, Thingwall, Cheshire, a son.

WHILES.—On Nov. 2, 1946, at 57, Burton Road, Derby, to Marjorie, wife Dr. W. H. Whiles, a daughter—Della Sylvia.

DEATH

RINGROSE.—On Nov. 7, 1946, at the Brotherton Wing, Leeds, Doris M Ringrose (née Hopps), M.B., Ch.B.Ed., D.P.H., of Westfield, Arcliffe Rd Leeds, 6, aged 46.

LONDON SATURDAY NOVEMBER 30 1946

CHEMOTHERAPY OF TUBERCULOSIS

RESEARCH DURING THE PAST 100 YEARS*

BY

P. D'ARCY HART, M.D., F.R.C.P.

Scientific Staff, Medical Research Council

PART I

Viewed historically, the conception of treatment in tuberculosis has been as complex and as changing as in any branch of medicine. Emphasis on it as a social disease, a hereditary stigma, a contagion, an inflammation, or a bacterial infection has determined the approach to treatment and prevention. In the present lecture I shall attempt to trace the historical development of the chemotherapeutic aspect of tuberculosis treatment, so that the physician, more particularly the non-specialist, may be helped to see in perspective the successes which, if not already in the foreground of the future, are perhaps no farther away than its middle distance. I shall aim to present this development in relation, on the one hand, to the tremendous advances in general chemotherapy, and, on the other, to the advances in the broad knowledge of tuberculosis and of its management and treatment; and I shall attempt to weave into the complex historical pattern the development of the use of antibiotic substances.

First, I must make clear how I propose to use the term "chemotherapy." Most revolutionary concepts are not static, and chemotherapy in the sense of Ehrlich, who first coined the word, is no exception. Conceived by him as a science which "treats of the action and mechanism of the effects of chemical substances upon cells, and especially of drugs upon disease-producing organisms" (see Kolmer, 1926), it has been restricted by some to artificially produced chemicals and expanded by others so as to include the pharmacotherapy of non-infective disease. All agree, however, that chemotherapy is to be differentiated from therapy by means of immune bodies or such microbial products as tuberculin, and that it excludes the chemical treatment of symptoms. I propose to follow Galdston (1940) and keep in mind the *objective* of chemotherapy given by one worker: "to destroy the parasites in the body of the host, or at least so to injure them that they will prove vulnerable to the host's own defensive powers," taking this definition to cover bacteriostatic as well as bactericidal action, and to imply the proviso of relative harmlessness to the host. I shall include, therefore, consideration of antimicrobial agents that are inorganic substances, that are purely synthetic organic compounds, and that are organic compounds obtained from natural or biological sources—e.g., those products of microbial origin now known as antibiotics, even though relatively few of these last have been isolated, purified, and characterized, and fewer still fully understood structurally. Divisions are rather artificial here, for what is obtained from biological sources to-day may be synthesized in the chemical laboratory to-morrow, and series of related compounds may be made the week after. Too precise a definition of chemotherapy is unwise, for, as originally visualized by Ehrlich in the strict sense, it involves complete internal disinfection in the living body with one or two doses; but Ehrlich himself allowed this interpretation to be widened as a result of experience. Again, Ehrlich undoubtedly conceived throughout his life the effect of chemotherapeutic agents as being produced primarily by direct and specific action upon the invading organisms—though the host's tissues might oxidize, reduce,

or otherwise convert an inactive drug to an active form. Yet there are instances where the action has been presumed to be wholly indirect—viz., stimulatory to the natural defensive mechanisms of the body (reticulo-endothelial system, etc.); such instances are properly regarded as examples of chemotherapy, and one of them—gold therapy—has been prominent in tuberculosis. Nevertheless it is true to say that the most successful recent efforts at specific chemical treatment can be explained on the basis of primary direct action of the agent on the micro-organisms.

The hundred years covered by the present review will, for convenience of discussion, be divided into four periods: 1850–80, 1880–1910, 1910–35, and 1935–46. The reasons determining these arbitrary divisions will be evident from Table I.

TABLE I

1850–1880
Pre-chemotherapeutic period—the background (A few traditional specifics of value in infective diseases—e.g., cinchona for malaria, mercury for syphilis)
1880–1910
Tentative period of chemotherapy (1880–1900) Period of first successes with synthetic substances (trypan red, salvarsan, etc.) in protozoal and spirochaetal infections (1900–10)
in tuberculosis
1910–1935
mental tuberculosis negative or inconclusive Gold therapy in clinical tuberculosis flourished (1925–35)
1935–1946
First success with synthetic drug (sulphanilamide) in systemic bacterial (streptococcal) infection in man (1935)
infection in man (1940–41) Streptomycin in experimental and clinical tuberculosis (1945–6)

1850–1880

The period 1850–80 was remarkable because the first foundations of modern chemotherapy were being rapidly laid, although success in this new branch of science, as a result of purposeful experiment and synthetic chemical search, was to come only later. Indeed, as Dale (1923, 1943) points out, there were few drugs of that time which, in the light of present knowledge, had remedial value due to action on the infective agents responsible for the diseases in which they were used—mercurials and iodides for syphilis, cinchona and quinine for malaria, and ipecacuanha for (amoebic) dysentery, to which we should probably add chaulmoogra oil for leprosy; and these remedies—triumphs of empiricism—antedated by some hundreds of years the discovery of the parasitic causes of their

* The Mitchell Lecture, delivered at the Royal College of Physicians, London, on July 9, 1946.

† An antibiotic substance may be defined shortly as a chemical substance produced by a micro-organism and found to be inhibitory to the growth or activity of other species of micro-organism (see also Waksman, 1945; Oxford, 1945).

respective diseases, and, in the cases of the biological products cinchona, ipecacuanha, and chaulmoogra, the elucidation of their active components.

In this pre-chemotherapeutic era we have the background of our subject. The most relevant of the many and exciting developments in science may be enumerated.

1. A phenomenal expansion of synthetic organic chemistry was accompanying the rise of the synthetic coal-tar dyestuffs industry. (This development was most prominent in Germany, due to the stimulus of economic demands and the lack of available natural products: yet it was an Englishman, Sir W. H. Perkin, who in 1856 prepared the first aniline dye (see Clegg, 1938).)

2. The science of human microbiology was being founded by the proof that micro-organisms could be factors in the causation and transmission of infectious diseases. Human diseases in which this was demonstrated included anthrax, relapsing fever, leprosy, gonorrhoea, and typhoid fever—but not yet tuberculosis. Pasteur and Koch were, of course, two of the giants in this field.

3. Pharmacology was ceasing to be a purely empirical subject, with the effects of drugs judged only at the bedside; and the advances both in synthetic organic chemistry and in physiology led to the union of these into an experimental science, and so to the study of the action of drugs on abnormal and artificially diseased animals—i.e., experimental pathology.

4. The selective staining properties of newly synthesized aniline dyes were being used by Weigert, Koch, and others.

5. Knowledge of local antiseptics was arising through the work of Lister and others; this advance, with phenol as starting-point in 1867, again illustrated how the influence of the distillation products of coal tar permeated the developments of this epoch.

In this pre-chemotherapeutic period, too, even the use of antibiotic substances in medicine was foreshadowed, for microbial antagonisms were first described in 1877 by Pasteur and Joubert, who had observed that the growth of anthrax bacilli *in vitro*, and the development of the disease *in vivo*, could be inhibited by certain air-borne micro-organisms; and these authors suggested that such antagonisms between different species might eventually have therapeutic applications.

As regards the advancing knowledge of tuberculosis, this period includes what Pagel (1927) has called the era of definite morphological investigation, arising out of Laennec's work and leading immediately into the period of experimental pathology and of the bacteriological study of experimental infections; thus we can see a thread running from Virchow's contributions to cellular pathology (1858), through Villemin's proof in 1865 of the specificity and transmissibility of tuberculosis, to Koch's discovery of the causative parasite in 1882. In the therapeutic field the principal measures recommended at this time were rest, sometimes tempered with exercise, and plentiful diet, often to the point of overfeeding, where the patient could afford it. The Brompton Hospital had been founded in 1848 and a sanatorium was started in Germany in 1859, but it was not till the end of the century that these methods began to be generally accepted; while fresh-air treatment was still a novelty to many and the rationale of isolation was disputed.

Among these general measures of treatment drugs found their place merely as one more weapon in the physician's armoury, and one which, perhaps wisely, many regarded as too blunt to use. There were, however, many others of whom Wells and Long (1932, p. 194) have written: "It was a time when a drug was seldom dropped, although it was a routine procedure to add one." Among the drugs there were quite an array which were commonly believed to strike at the root causes of tuberculosis and not merely at its symptoms—even though the bacillus was yet to be discovered—and their administration therefore deserves to be considered as an effort at empirical chemotherapy. These drugs were based largely on the traditions of the past, and showed little evidence of the impact of current advances in understanding of the pathology of tuberculosis. A patient of this time might have been treated with one or more of the following popular drugs in this class: (1) inorganic arsenical compounds, traditional for phthisis since antiquity (Hippocrates, Pliny); (2) tannin, an ingredient of anti-phthysical medicaments known to Avicenna in the 11th century; (3) cod-liver oil in very large doses, this product having been prescribed for consumption in 1774 by Thomas Percival, but having probably been in use among fisherfolk much earlier; (4) iodine or iodides, which, in the form of sea-

weed, had been recommended for scrofula by the Salerno School in the 11th and 12th centuries; (5) mercury and gold, the use of both of which for phthisis and for scrofulous glandular swellings, as well as for syphilis, dates from the time of Paracelsus and Fracastorius, early in the 16th century; and (6) creosote, which had originated more recently, around 1830. In addition to these drugs of international popularity there were countless supposed specifics of indigenous vegetable origin in various parts of the world—e.g., garlic in the Ayurvedic and Unani systems of medicine.

Clearly the controlled experimental search for chemotherapeutic agents in tuberculosis had not yet begun. Moreover, unlike the use of the traditional drugs—ipecacuanha, cinchona, and mercury—in protozoal and spirochaetal diseases, subsequent experimental work has failed so far to show a definite scientific basis for success of any of the early empirical "specific" remedies in tuberculosis, with the possible exception of the ingredients of cod-liver oil. However, we should keep an open mind on this matter.

1880-1910

The 30 years 1880-1910 saw the establishment of chemotherapy as a flourishing branch of medical science, but (apart from antiseptics through local application) the bacterial infections remained resistant, even though the micro-organisms causing most of them had been discovered by the end of this period.

In the first part of the period—viz., the last two decades of the century—the foundations of chemotherapy were being strengthened and many of its tools fashioned. The expanding production of synthetic coal-tar derivatives was creating a pharmaceutical science. Many new dyes were being synthesized, the bacteriostatic and bactericidal action of some of them demonstrated, and their power of manifesting micro-organisms, both in isolation and in the tissues, through selective staining (e.g., acid-fast stain) exploited. Knowledge of immunology was being rapidly accumulated. The scope of the new experimental pathology was widening, attention being directed to the infective causes that were being discovered in one disease after another, including tuberculosis, with the implication that the ultimate objective of treatment should be to cure through the eradication of the parasites by the specific action of immune bodies or antiseptic chemical substances, and not merely to assist Nature by alleviating symptoms. Furthermore, current reports of the antagonistic power of certain bacterial species against others were opening up the therapeutic potentialities of chemical substances synthesized by micro-organisms themselves, thus bringing the anticipations of Pasteur and Joubert nearer. Ehrlich, greatly influenced by this complex of developments, to which he was himself a contributor, was paving the way for his great work in the theory and practice of chemotherapy by forming his conception of selective and specific chemical affinities.

First Experiments in Chemotherapy

But laboratory chemotherapeutic experimentation had already started, and it is interesting for our purpose that what was probably the first such experiment in animals, using a definite chemical entity—i.e., an attempt to produce internal disinfection in a systemic infection—was made by Robert Koch in 1881, a year before he announced his discovery of the tubercle bacillus. Koch's experiment—a test of mercuric chloride, which was very active against anthrax bacilli in the test-tube, in anthrax-infected guinea-pigs—was not successful; nor were most of those experiments made subsequently in various protozoal and bacterial infections, including tuberculosis, by himself, Behring, Ehrlich, and other contemporary workers, using the older antiseptics and the newer synthetic dyes (methylene blue, however, was shown by Ehrlich and Guttman in 1891 to have some value in malarial infection). Indeed, by 1900 the number of chemical remedies that could be said on scientific evidence to deal directly with the causes of infective diseases had scarcely increased, and Dale (1943) describes this point as about the low-water mark of interest and confidence in the remedial value of drugs. The hope of bringing specific chemical substances into therapeutics, which the discovery of the aetiological role of micro-organisms

ad aroused, gave way to hopes based on specific immunotherapy, which had already produced such signal successes.

Yet, a few years later, the general outlook changed when the first great advance was made in the use of synthetic substances in chemotherapy; for in 1904 Ehrlich and Shiga produced virtually the first modern chemotherapeutic achievement—the rapid sterilization of an experimental trypanosomal infection (*T. equinum*) with a chemical synthesized for that particular purpose (trypan red). This was followed by further successes in the field of trypanosomal and spirochaetal infection, culminating in the first unequivocal application to human therapy—the use of salvarsan in syphilis in 1910 by Ehrlich and Hata. These successes were largely due to the systematic search by Ehrlich and his colleagues among synthetic coal-tar dyes and organic arsenicals in conjunction with test-tube and animal-infection tests. Here was the exploitation of the relation of the activity of therapeutic agents to their chemical structure, the “biological experimentation carefully co-ordinated with constructive chemical manipulation” (Lewis, 1917a) that is the very essence of therapy with synthetic chemicals. In contrast to these successes among the protozoa, in vivo laboratory experiments with synthetic substances in systemic bacterial infections during this decade were still negative or inconclusive, even though the substances used might be strongly inhibitory to bacterial growth in vitro.

A few years before Ehrlich and Shiga's historic success with a synthetic substance there was also a small but significant advance in the use of agents of microbial origin in chemotherapy when in 1889 Emmerich and Löw published their experiments on “pyocyanase” from *Ps. aeruginosa*. This work had been preceded, as Florey's (1945) fascinating review shows, by 20 years of scattered observations on the antagonistic relations of micro-organisms, following Pasteur and Joubert's original report, and including attempts to cure or protect animals infected with one species by administration of an antagonist. In these earlier *in vivo* experiments the antagonist had been provided mainly by whole bacterial cultures (living or sterilized), and, indeed, Cantani (1885), of Naples, claimed some success in human pulmonary tuberculosis by the insufflation of a particular saprophytic bacterial culture designated as “*Bact. termo*.” Now, however, apparently for the first time, a bacterial extract was found efficacious in experimental infection, for Emmerich and Löw reported that the injection of pyocyanase preparations could protect rabbits against anthrax; and cures of animals after infection were also noted with similar preparations. In the first decade of the century pyocyanase came into widespread clinical use in various infections, at first internally and later mainly by local application, but in spite of promising early results its use was eventually more or less abandoned, possibly with insufficient reason. During this period little further success was evidenced in microbial therapy in general, in either experimental or human infections; and I can find no record of the inhibition of growth of tubercle bacilli by the actual products of micro-organisms, even *in vitro*, before 1912.

Reversion to General Measures

What was happening during these 30 years in the field of human tuberculosis? The modern conception of immunity in this infection originated from Koch's experiments from 1891 onwards, and was added to by the results of necropsy series (Küss, Nageli, etc.) and of the diagnostic tuberculin test (Koch, Pirquet, Mantoux, etc.) in man; while the concrete turn given to the idea of contagiousness by knowledge of the transmission of the infecting micro-organism canalized preventive action into hygienic measures, sputum disinfection, etc. As regards treatment, after the initial high hopes of specific cure of tuberculosis by chemical agents which were raised by Koch's discovery of the bacillus, the change of emphasis from chemotherapy to immunotherapy (to which we have already drawn attention generally) became particularly evident, since Koch's production of old tuberculin in 1890, and his experiments on guinea-pigs with this and later similar products, caused his attention to be focused on tuberculin as a remedy in man; and in so doing he may have actually impeded therapeutic progress. Thus, Koch prefaced his description of tuberculin by naming a number of drugs (mercury salts, gold cyanide, etc.) that he

had found tuberculostatic in the test-tube but ineffective in animals; whereas he had found that tuberculin specifically and effectively acted on tuberculous tissue and in that way rendered the pathogenic bacteria harmless without injuring the body. Small wonder if the aim of chemotherapy, as applied to tuberculosis, received a setback and tuberculin therapy became the vogue. But when, after a tremendous wave of enthusiasm, confidence in specific treatment with the various tuberculins also began to wane in many quarters, and still no chemotherapeutic agent appeared to stand the test of controlled scientific experiment, many of the more critical physicians fell back on general measures to strengthen the patient's resistance—fresh air, rest, diet, etc. The still few but increasing number of sanatoria and special hospitals assisted in these measures, though ultimate results were so often disappointing. It may be recalled also that the first dispensary was opened by Robert Philip in 1887, and that in 1894, following isolated preliminary observations during the previous 70 years, Forlanini published his first series of results of artificial pneumothorax, though the latter treatment was not to become general for another 20 to 30 years.

Certain anti-phthisical drugs of the period, nevertheless, had a reputation for exerting either a specific direct action on the infecting organisms or an indirect effect through stimulation of host defences. These were substantially the same empirical and traditional remedies that we have listed as in use before the discovery of Koch's bacillus, though new reasons, often of tenuous nature, were offered for their supposed effects: salts of inorganic arsenic (and the recently introduced organic cacodylate), which not uncommonly resulted in liver damage; iannin, despite the fact that no inhibition was found in contemporary guinea-pig experiments; creosote and its derivatives, sometimes in enormous dosage, on the dubious rationale that a protective tissue reaction was promoted around the tubercle; cod-liver oil; iodides; and a revival of calcium administration (popular in antiquity, recommended in the 10th century by the Persian physician Mowaffak, in the form of powdered crayfish), on the assumption that it counteracted a supposed demineralization accompanying tuberculosis (see Piéry and Roshem, 1931). In addition to these standard remedies, salts of copper (A. and E. Luton in France) and gold (White (1891) and Gibbs and Shurly (1892) in the U.S.A.) were used sporadically; while a few clinicians attempted straightforward internal disinfection of their patients with antiseptics, despite lack of evidence of efficacy in non-toxic doses in animals. Thus, Dr. Vere Pearson recalls (1946) that Dr. Robert Maguire, a physician to St. Mary's and Brompton Hospitals around the turn of the century, gave a weak solution of formaldehyde intravenously, and that this, as well as a weak silver salt, had a vogue for a few years. I have omitted mention of the innumerable “consumption cures” of this period, whose patent lack of scientific basis did not get them far; and we are not concerned with symptomatic medication, for which, of course, a considerable number of drugs (including creosote) were used for apparently sound reasons.

1910-1935

So far, even taking into account the very suggestive experiments with pyocyanase, there had been no unequivocal demonstration of the chemotherapeutic sterilization of a general infection of bacterial origin in the animal living body. The cure of pneumococcal septicaemia in mice by Morgenroth and Levy in 1911, using “optochin,” a synthetic homologue of quinine, raised hopes in this direction, even though this experiment proved inapplicable to human therapy. But while, during the next 25 years, important new local antiseptics came to the fore in the control of bacterial wound infection and infected mucous membranes, particularly as a result of the first world war, attempts to effect cure of a systemic bacterial infection in man by internal chemotherapy were persistent failures. With the possible partial exceptions of new chaulmoogra derivatives in leprosy, and of sanocrysin and related compounds in tuberculosis (see later), mycobacterial infection shared in this failure. Ehrlich's (1914) warning, given at the International Medical Congress in London two years before his death, of the hard struggle that would be required for success in antibacterial chemotherapy—above all in tuberculosis—proved only too correct. Even local disinfection in tuberculosis was fraught with difficulty—witness the inconclusive

results with certain essential oils, such as "gommenol," in the pleural cavity.

Of the many chemicals—both new ones, and old ones in new forms—that were tested in the laboratory for anti-tuberculous activity during this period, some of the more important will be briefly discussed (for fuller surveys see Cummins, 1930; Wells and Long, 1932; Findlay, 1940).

Dyes—Cod-liver Oil—Chaulmoogra Oil

Various aniline dyes and chemical modifications thereof were investigated by Paul Lewis (1912-17), De Witt (1913-23), and others. Some—e.g., azo-dyes, members of the acridine series, and other basic dyes—showed selective inhibition of growth of the bacillus in the test-tube as compared with other bacterial species. Some, either alone or in a chemical combination with other agents such as metals, phenol, or iodine, penetrated and inhibited the bacilli *in vitro* and were able to penetrate the tubercles in the body; but while they might extend the life of infected guinea-pigs and rabbits and reduce the anatomical extent of the lesions—one of the most encouraging in this respect being methylene blue and its derivatives—they did not prevent or cure the experimental disease. None of these dyes found a place in internal medication in man.

Another group tested experimentally was crocetes and many allied preparations (e.g., thymol)—popular empirical remedies, as already stated. They were not found to be very highly bacteriostatic *in vitro*, and animal infection experiments failed to give evidence definite enough to justify their clinical use in tuberculosis on grounds of specific antibacterial action—any good results were more likely to be due to non-specific symptomatic effects.

Much experimental work was done during this period to find a rationale for the traditional use of cod-liver oil in human tuberculosis. On analogy with the apparent value of fatty acid fractions of chaulmoogra oil in leprosy, sodium morrhuate was investigated in the laboratory and was applied clinically in pulmonary tuberculosis, in lupus vulgaris, and in sarcoidosis, but the results were inconsistent (Cummins, 1925). Despite this, the presumed benefit of cod-liver oil was—and still is—attributed by some to a direct antibacterial action of component fatty acids. After the discovery of the fat-soluble vitamins, another hypothesis for the clinical benefit of cod-liver oil arose—namely, its A or D content. The few experiments on the effect of vitamin A deficiency in experimental tuberculosis were inconclusive (Steiner, Greene, and Kramer, 1937b), but the more commonly held possible explanation was the mobilizing action of vitamin D on calcium. In spite of the apparent association of calcification with healing, there was little clear direct experimental evidence in support of either calcium or vitamin D therapy (Mayer and Wells, 1923; Grant *et al.*, 1927, 1930; Steenkens and Baldwin, 1937; Steiner, Greene, and Kramer, 1937a); nevertheless, the value of these substances has been persistently maintained by many clinicians, and one hesitates to deny that the importance of calcium or phosphorus metabolism in tuberculosis treatment may yet be revealed—certainly the vitamin D factor in cod-liver oil requires re-examination in view of the recent clinical reports by Charpy and Dowling of regression of lupus after giving calciferol.

The possibilities in tuberculosis of the leprocidal chaulmoogra oil itself, and of its cyclic unsaturated fatty acid constituents—e.g., chaulmoogric and hydnocarpic acids (which had been isolated a little before the beginning of this period)—were also investigated; and structurally similar many-carboned fatty acids, containing rings or branched chains, were synthesized (see Robinson, 1940). Many of these natural and synthetic substances were tuberculostatic in the test-tube (Walker and Sweney, 1920; Stanley *et al.*, 1932). A number of them were tested in experimentally infected animals, and some prolongation of life and suppression of lesions claimed, but the matter remained in doubt; trials in human pulmonary tuberculosis also were inconclusive (see Wells and Long, 1932; Emmart, 1946). As will be noted later, interest in chaulmoogra derivatives and allied synthetic compounds, as well as in long-chain fatty acids in general, has been recently revived, and with more promise.

It is not possible to enumerate more than a few of the many other chemical substances that were investigated or reinvestigated *in vitro* or in experimental animal-infection during these 25 years. They include cinnamates, terpenes from essential oils (Courmont), and a variety of other organic compounds (e.g., see Kuroya, 1929; Meissner and Hesse, 1931; Hesse and Meissner, 1931); iodine and iodides; minerals such as coal (Cummins and Weatherall, 1931); and compounds of metals such as arsenic, mercury (De Witt, 1921), copper (Linden, 1912, 1920), and, above all, gold (Feldt, De Witt, Möllgaard), both in organic and in inorganic forms. The *in vitro* activity of some of these substances was high, but either they were toxic or the results in infection experiments proved mostly negative or indecisive. Where they were apparently positive, as with some compounds of the heavy metals, the benefit was ascribable usually to an indirect effect of local tissue reaction or of stimulation of

immunological or other defence mechanisms. The approach of Walbum (1921-9; Walbum and Boas, 1931) mentioned; the use of minute doses of a number of metal certain conditions, especially cadmium and manganese, was to affect the immunological reactions of the body towards infecting tubercle bacilli.

Early Work with Antibiotics

In comparison with the many chemotherapeutic against tuberculosis, using the above-mentioned natural synthetic compounds, reports of results obtained with biotic substances of microbial origin during these 25 years very few; and, reading the literature, one is struck by the of connexion between these two streams of scientific ende-

Rappin (1912), having found that filtered broth cultures of spore-forming bacteria—*B. subtilis*, *B. mesentericus*, and *B. ltherium*—were active *in vitro* against *M. tuberculosis*, in tubercle-infected guinea-pigs with culture filtrates from *B. lthericus*, and reported that the disease was thereby prevented suppressed and that no toxic manifestations followed the injection. About the same time another Frenchman, Vaudremer (191) described a substance obtained from *Aspergillus fumigatus* contact with which tuberculin was inactivated and tubercle lost "their pathogenicity for guinea-pigs and rabbits." Alt Vaudremer apparently made no direct protection experiments infected animals, he reported that clinical trials of his extract in progress in cases of pulmonary tuberculosis in Paris hospital the extract was well tolerated, but preliminary results on patients were inconclusive. These, probably the first chemotherapy experiments with antibiotics in tuberculosis, particularly interesting in the light of present intensive laboratory study of the potentialities, both of the genus *Aspergillus* and the *B. subtilis* group of spore-formers, against this mycobacter. Little further progress seems to have been made as an immediate result of the observations of Rappin and Vaudremer, and in of the publications during the next 25 years on antagonisms against tubercle bacilli the antagonist was in the form of whole culture and not the latter's separated antibiotic products. These results provide evidence of lysis, death, or loss of virulence of tubercle bacilli produced by cultural association with, or by addition the antagonistic micro-organism: the latter included *B. subtilis* (Van Canneyt, 1926; Schiller, 1930); *B. mycoides* (Much Sartorius, 1924; Kimmelsstiel, 1924); "*B. tuberculoiphilus*" (Pum and Favia, 1934); an anaerobic bacillus (Passini, 1926); *Escherichia coli* (Peretz, Newler, and Larionow, 1936); a staphylococcus designated *M. antibioticus* (Dujardin-Beaumetz, 1932, 1934); and yeast (Schiller, 1925, 1927). It may be noted that culture filtrates from Much's cytolytic bacillary strains were active as well as whole cultures, and that a lysate of tubercle bacilli was used in human therapy; while in Schiller's experiments with yeasts and *B. subtilis* the organism to be attacked apparently played a part in "forcing" the antagonism: but neither of these authors produced clear evidence of inhibition of the tuberculous process in the body through antibiotic effect.

While the tremendous amount of information accumulated by all this anti-tuberculosis chemotherapeutic research has been and will be of considerable value, and some of the synthetic and natural substances are being submitted to further study and development, the sum total of short-term practical gain to the clinician must, in retrospect, be regarded as meagre. A number of the drugs investigated in the laboratory found their way into contemporary therapeutics, often without full justification, but their favour was mostly short-lived or local; and the same applies to Vaudremer's antibiotic. The outstanding exception was gold therapy.

The "Gold Decade"

The years 1925-35 might be termed the "sanocrysin" or "gold" decade in tuberculosis treatment. The more recent background to that period was as follows. Koch in 1890 reported that simple gold salts were strongly inhibitory to the growth of tubercle bacilli *in vitro*, but ineffective in experimental tuberculosis in guinea-pigs. Nevertheless, success was claimed with gold salts in phthisis by some clinicians of that time (see above). Spiess and Feldt in Germany during the 1914-18 war recommended a gold-canharidin compound, followed (Feldt, 1917) by an aromatic compound of gold called "krysolgan," which was used principally in German clinics but had lost much of its popularity by the time "sanocrysin" became general. While highly active *in vitro*, this compound's introduction into clinical practice had a rather insecure foundation in animal experiments. Meantime De Witt, in the

U.S.A., investigated various gold compounds in experimental tuberculosis, with negative results, so that gold therapy did not look promising (De Witt *et al.*, 1916, 1918; De Witt, 1918). Then, in 1923, Möllgaard introduced a preparation of sodium aurothiosulphate as "sanocrysin," believing this to be the answer in Ehrlich's sense—i.e., a substance that would reach and attack the bacilli, active *in vitro*, and able to prevent the experimental disease in animals without serious damage to the host's tissues. Rarely, wrote Secher (1927), who first applied the drug clinically, had a therapy been so well based on experimental work. Subsequent events threw doubt on this assertion, for while some eminent workers (e.g., Madsen and Mörch, 1926-7) confirmed and extended Möllgaard's striking claims in experimental tuberculosis, others reported in an opposite sense, and Okell and Parish (1931) concluded that "tuberculosis in guinea-pigs is not influenced by sodium aurothiosulphate." Again, the *in vitro* inhibitory action of sanocrysin was found to be markedly affected by body constituents, etc., and the view gained ground that its action *in vivo* was not directly bactericidal but was indirect, through stimulation of tissue cells, possibly of the reticulo-endothelial system, or through excitation of hyperaemia in the tissues round the tuberculous foci, rather as tuberculin and other salts of gold and various heavy metals were presumed to act (see Cummins, 1930; Wells and Long, 1932).

Sanocrysin was given to the medical world in 1924 as a specific, and most of the profession accepted it, partly perhaps as a welcome change from tuberculin. Möllgaard's preparation was followed by others from various sources, some of which could be given intramuscularly instead of in the vein. A mass of papers was published (those up to 1933 are reviewed by Cummins, 1933). Gold caught the public imagination, as is evidenced by the popularity of the rhymes technical and not so technical that were written around it.

After a period of rather indiscriminate application with high dosage, a more cautious attitude gained ground; and more mature views as to the best indications for gold therapy in pulmonary tuberculosis may be expressed as follows (there being some overlap): (1) in recent "exudative" lesions; (2—perhaps the best indication) to check exacerbation—e.g. in subacute or chronic disease with fresh spread; or in contralateral extension occurring in the course of pneumothorax treatment; (3) to check constitutional disturbance. Gold was, however, persistently used in a variety of cases, in some of which it could, at the best, provide only a placebo.

Although the fatalities of the earlier years were reduced by general acceptance of smaller dosage, objectionable and sometimes dangerous acute or subacute complications were increasingly and persistently reported. The recognition of toxicity, and the inconclusive nature of the benefit conferred, were the main factors in the decline in the use of gold in tuberculosis.

A rough measure of the waxing and waning of interest in this therapy is given in Fig. 1, which shows, from 1925 (when sanocrysin

there is a steady decline up to 1939 and after. It will be seen further that, after a virtual absence during the first six years of papers reporting primarily on toxic effects, their number rises and remains a substantial proportion of the total. The low level of the curve of publications at its end-point is a reflection of the fact that at the present time gold is seldom used for the commoner forms of tuberculosis, except by a few stalwarts: thus, inquiry at three large county tuberculosis institutions in the London area elicited that in 1944 the percentages of patients discharged in whom gold therapy was used were 3.1 (Clare Hall), 0.9 (Harefield), and 0.7 (Colindale), as compared with corresponding percentages in 1938, in the first two hospitals, of 17.8 and 5.7.

This astonishing acceptance of a remedy, and its subsequent rejection without any immediate better substitute, is only equalled by the preceding, but overlapping, dramatic rise and fall of tuberculin therapy. I have considered this phase at some length because the several probable explanations serve also as a lesson for future chemotherapeutic assessments. (1) The laboratory groundwork on the curative effect of sanocrysin was insecure, and the drug was heavily sponsored for general therapeutic use without adequately critical clinical trials. (2) The drug's toxicity relative to presumed effective dose was at first underrated. (3) The clinical benefit was not dramatic or constant enough to dispense with balanced controls, which were in fact rarely used, and where they were (Amberson *et al.*, 1931) the results were discouraging. (4) Investigation was rendered difficult because, as Cummins (1933) points out, pneumothorax treatment (which was extending rapidly contemporaneously) was naturally given preference, with the result that sanocrysin tended to be elbowed out and to be used on the less favourable forms of the disease, in which assessment of effect is equivocal; this is less likely to happen now when the more discriminating use of collapse therapy leaves opportunity for many early cases to be submitted to controlled chemotherapeutic test.

Opinion is still divided on the real value of gold therapy in pulmonary tuberculosis. A few—e.g., Cohen (1943)—hold that, prudently administered on judiciously selected cases, it still has a place; but the undoubted majority consider that, although, like tuberculin, it may produce some advantageous effect in certain types of lesion, the danger makes the risk hardly worth taking.

To bring the use of heavy metals up to date, I should add that (in addition to Walbum's special application) cadmium has been advocated as a less toxic substitute for gold, but without finding much general favour (see Heaf, 1937; Cornwall, 1938; Schedtler and Rodiger, 1941).

The End of the Period

The end of this section of our survey—1935—saw a general and probably healthy reaction among clinicians against drugs in tuberculosis, apart from a few valued symptomatics. The lack of a scientific basis for most of the traditional empirical "specifics" mentioned earlier had won more or less general acceptance among the medical profession, with their consequent virtual disappearance from therapeutics. Two important exceptions were cod-liver oil, still enjoying world-wide repute, and calcium preparations (e.g., calcium gluconate), strongly advocated in some Continental countries. Replacements of the traditional remedies by newer drugs reported on favourably from the laboratory, sometimes on inconclusive evidence, had been limited and temporary. The crest of the wave of interest in gold therapy had been passed. If we add to this negative list the fact that tuberculin as a means of treatment had been generally abandoned except for certain eye, genito-urinary, and other special conditions, a diminution in faith in the specific approach—immunological or chemotherapeutic—to the treatment of tuberculosis is hardly surprising. "No treatment at present can be aimed directly against the causal agent . . ." concludes Browning (1935) in a lecture on chemotherapy; "immunization does not appear to influence the established disease, and the only procedures commonly approved consist in conserving general health, resting affected parts, and removing necrotic tissue"; but he adds that "it is difficult to believe that we must remain bankrupt in methods of directly attacking the tubercle bacillus."

Positive advances in other fields of anti-tuberculosis activity during the preceding 25 years provided compensation for the

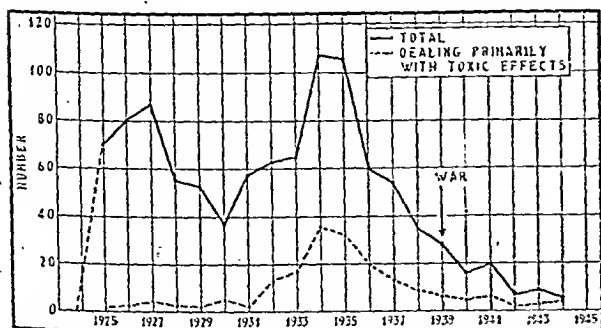


FIG. 1.—Graph showing the number of papers on gold treatment in tuberculosis listed in the *Index Medicus* during the years 1925 to 1944.

was first in general use) to 1944, the total annual number of papers referred to in the *Index Medicus* under the heading "Gold Therapy in Tuberculosis," and the number of papers dealing primarily with toxic effects. The graph shows a first wave of publications, then a decline, then a second wave reaching its peak in 1934-5, after which

setback in specific treatment. Sanatoria had expanded in number and developed in scope, both for pulmonary and for non-pulmonary cases. In Britain the National Tuberculosis Scheme, inaugurated in 1912, had proved its worth. Artificial pneumothorax and other forms of collapse therapy had come into their own, particularly from 1920 onwards, when radiographic control became reasonably practicable. Much greater emphasis was being laid upon preventing the disease by reduction of contagion and by insistence on contact examinations. The understanding of the immunology and epidemiology of tuberculous infection had been advanced by the work of Ghon, Opie, Cummins, and many others.

[Part II, with a full list of references, will appear in our next issue.]

WEIL'S DISEASE: A RARE CONDITION?

BY

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An attempt is here made to establish a number of conclusions relating to this disease, which is still generally regarded as of academic interest only. In the first place, we are convinced that the infection is not by any means a rare one, nor is it likely to be encountered only by those whose work brings them into contact with certain industrial groups, such as sewer workers and miners. Secondly, we believe that it is not unreasonable to expect a diagnosis to be made within the first few days of the illness upon clinical methods alone, and that the only requirements are a familiarity with the characteristic picture as seen at this stage of the disease and a knowledge of a number of special points to be looked for and of simple laboratory investigations which must be carried out. Thirdly, as a result of our early recognition of suspected cases we have had the opportunity of watching the effect of specific treatment given at this stage of the infection, and our observations have left a feeling of confidence that this is of real value and may even be life-saving. Finally, as a result of considerable familiarity with the condition, a number of observations have been made which we believe have not been recorded before. We feel that a note on these may be of value.

Frequency of the Disease

In July, 1936, when Weil's disease was to us nothing more than an almost forgotten name, a case came under our care which proved to be a very typical example of this illness. A year later a second case was recognized, and by June, 1938, we had dealt with four such cases. These four cases were of particular local interest, for it appeared that in each case infection had been the result of bathing or working in the same stream (Robertson, 1938). During the next seven years a further 30 cases have been seen—that is to say, we have been encountering the condition four or five times every year.

So far as we have been able to ascertain, the total number of cases recognized during this time in the area in which our work is carried out has certainly not exceeded 40. These rather remarkable figures can surely indicate only two things: the relative frequency of the infection, and the ease with which it has been able to evade recognition.

Recognition

Excellent accounts of the clinical picture are available in textbooks and have been elaborated by numerous workers elsewhere, so that only a brief reference to this is needed here. The infecting organism, *Leptospira icterohaemorrhagiae*, is carried by the rat, and it can be assumed that something like 40% of all rats are infected. The leptospira leaves its host by way of the animal's renal tract. Human infection occurs as the result of contact with water which has been contaminated by rats' urine. Only fresh water can become infective, as quite small amounts of salt render the organism inactive; while direct sunlight has a similar tendency. Stagnant water is more dangerous than that of a freely flowing stream.

Under these conditions the leptospira can probably survive indefinitely. The incubation period appears to be about ten days.

No age is immune, and we have seen the disease at all ages from 5 to 78 years. Characteristically, the onset is abrupt and the victim has been in good health. The symptoms are high fever, often a rigor, severe headache, generalized pains, not infrequently gastro-intestinal symptoms, haemorrhages from some part of the body, and in about half the cases jaundice of varying degree after the fourth or fifth day. In some of the more severe and jaundiced cases serious renal impairment appears, with an increasing retention of nitrogen, sometimes terminating in anuria. It is in this group of cases that fatalities occur.

It must be emphasized that half the cases, whether treated early or not, show no jaundice at any stage of the illness, and among these the incidence of a lymphocytic leptomeningitis is very high. Probably all cases show a peculiar conjunctival suffusion at some time, though this may be transient and may be missed.

Of particular significance are the muscle pains. These are often intense and may persist for several days. The pains are in muscle and are not related to the joints. During this phase pressure over muscle, particularly in the limbs, is often intolerable, and this objective finding almost always persists for several days after the subjective symptoms have subsided.

The headache is severe and by its occipital predilection suggests meningeal involvement; this is often further emphasized by the presence of neck rigidity and a positive Kernig's sign. These findings usually make lumbar puncture inevitable; indeed, several of our cases reached us with the diagnosis of meningitis already made. The cerebrospinal fluid is frequently under pressure and is always water-clear. Pathological examination even in a case with very pronounced meningism may be quite normal when the routine tests are applied; but more often there is slight increase in protein, with a pleocytosis which may reach several hundred cells per cubic millimetre. The sodium chloride level is always normal. If the urea content of the fluid is investigated it is found invariably to be raised above the level which would be regarded as normal for the patient's age. In the laboratory which carries out most of our work the urea content is determined in all lymphocytic fluids which show a normal amount of chloride. This simple arrangement has been of great help in detecting a few early cases.

Haemorrhages are seen at some stage of the illness in most cases, and these may appear early. They may be from the nose, the gums, the gastro-intestinal tract, or into the skin and mucous membranes. When herpes labialis is present it is often haemorrhagic. In some cases a curious mottled appearance of the palate is seen; this was first pointed out to us by Dr. Evan Jones, and has been seen four times. It has not been possible by haematological investigation to determine the cause of this tendency to bleed. Bleeding times, clotting times, and platelet counts have always been normal; the prothrombin level has not been estimated in our cases.

The urine usually shows the presence of albumin, often cylindruria is observed, and not infrequently red cells are present, but a normal urine does not exclude the diagnosis. Often the white cell count is unaltered in the first few days. This statement is the reverse of what has usually been recorded, but time and again we have noted this normality. When jaundice has appeared the rule is a polynuclear leucocytosis, thus helping to differentiate leptospiral jaundice from that due to infective hepatitis. By far the most important single pathological investigation is undoubtedly the determination of the blood urea level. In all our cases this has been raised from the earliest stages, and the level to which this has reached has always provided a useful indication of the severity of the infection.

It should be possible to detect the infecting organism in the blood stream during the first five or six days of the illness, either by direct examination of blood smears with dark-ground illumination methods, or by animal inoculation of the infected blood. We have been successful only once in this, and then by the latter method. It is our view that these diagnostic methods are unnecessary.

Finally, when suspicion has been aroused, a most careful inquiry into the patient's work, home surroundings, and habits with regard to bathing, etc., in fresh water must be made. In nearly all our cases there has been some quite obvious source of possible infection; and in those suspicious cases where no such possibility has been obvious we have almost always failed to prove the diagnosis. We regard this part of the investigation of cases as of the utmost importance.

It is well known that during the septicæmic stage of the illness—that is to say, during the first five or six days—antibodies upon which the diagnostic agglutination reaction depends have not developed in sufficient amount to give a positive finding even at the lowest dilutions. It is therefore useless to expect such a finding until after this stage is over.

At this point I would like to record our deep appreciation of the help we have received from Dr. J. C. Broom and his colleagues of the Wellcome Research Institution, who have carried out all our serum testing for us.

At the appropriate time blood has been sent to Dr. Broom for agglutination testing. Where possible, samples have been forwarded at intervals. This has been done for two reasons. In the first place, a rising titre at which agglutination can be demonstrated is clearly of more diagnostic value than any single test, and, in the second place, we have observed that in the more severe cases the first positive finding has not appeared at the usual time—that is to say, the fifth or sixth day—but has been delayed for several days. In one fatal case the test was negative on the 9th day but positive 1:100 on the 11th, death ensuing on the following day. In another fatal case the test was negative on the day of admission to hospital—the 7th day of illness—positive 1:30 on the 8th day, 1:100 on the 9th, and 1:300 on the 10th, the day of death. In yet another case seen recently the patient's serum showed a mere trace on the 8th day but was positive 1:300 three days later, when heart blood was taken as the patient was actually breathing his last.

We have been quite unsuccessful when attempting to demonstrate the leptospira in patients' urine. It should be possible to do this for varying lengths of time after the first week; but the urine must be freshly passed and neutral in reaction.

Personal Diagnostic Experience

With growing familiarity with the disease an increasing number of cases are diagnosed early. About 70% of our cases were suspected within forty-eight hours of being seen. Some of these cannot qualify as early cases as they did not reach us until late in the illness. Nearly 50% of our cases have been diagnosed within the first four days of the illness and specific treatment started. We believe that this facility in diagnosis is rapidly achieved after quite brief contact with the condition: succeeding house-physicians very rarely failed to detect suspicious cases, and after leaving our district they continued to make the diagnosis with accuracy in other places.

Dr. Broom, in a personal communication, mentions that he has on a number of occasions noticed that positive sera have been received in his laboratories from districts where previously the infection had not been noted, only to find that these sera have been sent to him by doctors who had worked as colleagues with us in this district.

Treatment

Writer after writer has lamented that specific treatment in the early stage of the illness is almost impossible because of diagnostic difficulties. Hutchison, Pippard, Gleeson-White, and Sheehan (1946), record the treatment with penicillin of 6 out of 17 cases appearing in British soldiers in Italy. They state that "unavoidably penicillin could not be started in the pre-icteric stage, but between the 6th and 10th days of the illness." In 1934 Davidson *et al.* wrote: "Hence it appears to us that the clinical diagnosis in the early stage, before jaundice occurs, presents almost insuperable difficulties. Accordingly the full benefit of serum treatment is unlikely to be realized."

Of our cases 12 have been given specific antileptospiral serum during the first four days of the illness, and one other received penicillin within the first two days. In this group there has been no mortality. This compares favourably with the remainder of our cases—about a score—none of which

received treatment until after the fourth day, and among which there were six fatalities—a mortality of 30%.

The story of one very severe case seems to support our impression that serum given early can influence the infection.

In October, 1942, Mrs. F., aged 20, who had had an attack of abortus fever ten months previously, was admitted after three days' high fever. She was very ill, and our investigations seemed to support our suspicion that she was suffering from Weil's disease. Intensive intravenous serum treatment was started at once. She became jaundiced two days later, and finally anuric with a blood urea of 295 mg. per 100 ml. Certain special measures, which will be referred to later, were instituted in an attempt to re-establish renal function. These were successful. She had received 480 ml. of serum, all given intravenously. A week later there was an abrupt rise of temperature with clinical deterioration. The titre of her abortus reaction rose steeply, and it was thought that possibly her old infection had been reactivated. Consequently she was treated with intramuscular "soluspesatine." As this failed to produce the usual rapid reduction of the fever we were driven to the conclusion that her relapse represented the commonly seen secondary rise of Weil's disease. She was desensitized and further intravenous serum given—in all 280 ml. Her fever fell by crisis in twenty-four hours, and she gave no further anxiety.

Penicillin

Alston and Broom (1944) reported that nine strains of *L. icterohaemorrhagiae* and one of *L. canicola* were found to be sensitive to penicillin *in vitro*, and that penicillin exerted a protective action in guinea-pigs infected with leptospira provided treatment was started within twenty-four hours of infection.

Lloyd Hart (1944) reported the rapid disappearance of organisms from a patient's urine after the use of penicillin given late in the illness; and Baldry, in a personal communication, stated that a severe case was treated with penicillin rather late in the illness, apparently with immediate improvement, followed by deterioration when penicillin was withdrawn, and subsequent complete recovery consequent upon the re-establishment of penicillin treatment in larger doses. In the Italian cases already referred to the workers were not impressed by the effect of penicillin given in the icteric stage.

On July 24, 1945, a boy aged 8 years was sent into hospital as a suspected case of Weil's infection by Dr. Loveless, of Stockbridge. He had been ill for forty-eight hours. Our own examination and investigations proved the suspicion to be correct by the finding of a strongly positive agglutination reaction. Penicillin in 20,000-unit doses was given every three hours from July 24 to 28. The boy's temperature, which was 103° F. (39.4° C.) on admission, was normal within twenty-four hours. His blood urea, which had been 65 mg. per 100 ml. on admission, had fallen to 35 mg. by the 29th, and he was discharged from hospital in full health on Aug. 1. No observations of any importance were subsequently made.

Little can be judged from a single case, but it should be noted that the infection appeared to be a severe one, as judged both by the clinical condition and by the blood urea level of 65 mg. per 100 ml. within forty-eight hours of the onset. Furthermore, in spite of this, his fever lasted only three days, as compared with the usual five or six days, and he developed no icterus. One was certainly left with the impression that a severe case had made an unexpectedly rapid recovery. Penicillin was given to two other late cases, when icterus had been established for several days and nitrogen retention had become extreme, with no suggestion of benefit. In one other case, mentioned on page 812, penicillin was given on the sixth day after serum had failed to influence an unusually prolonged febrile stage. The temperature fell by crisis, but there was no clinical improvement, and the boy died the next day, non-icteric.

A farmer of 53, seen in October, 1946, had been treated with 50,000 units of penicillin every four hours from the second day of an acute febrile illness. He became anuric on the seventh day and secreted no urine for 36 hours. Clinical jaundice was not present. When I saw him, on the ninth day, diuresis had set in and his temperature had subsided. A petechial rash, haemorrhagic herpes, and slight conjunctival icterus suggested that he was suffering from Weil's disease. His blood urea on that day was 250 mg. per 100 ml. and he had an icteric index of 11 units. His blood agglutinated leptospira up to a dilution of 1:1,000. There was no further rise in his icteric index, and he has made a good recovery.

The importance of this case appears to be the suggestion that the penicillin had protected his liver while failing to prevent

the renal complications. We have never seen blood urea figures approaching 250 mg. in any case which was not frankly jaundiced, except for the fatal case reported in this paper.

These observations, taken with the experimental evidence reported by Alston and Broom, strengthen our belief that, provided it can be used during the early septicæmic stage and that it is used freely, we have in penicillin a specific of probably greater usefulness than serum. It may well be that the best results will be obtained by a combination of both agents.

Other Points about Treatment

In addition to the questions relating to specific treatment, a number of observations have been possible with regard to the more general aspects of treatment. Immediately a diagnosis has been made—indeed, when it remains only a suspicion—the patient should be put on a low-protein diet. Fluids should be pressed and glucose used freely. The urine should be rendered alkaline by the use of potassium citrate, and a very careful intake and output record should be kept for each twelve hours. At the first sign of a falling output more drastic measures to overcome this should immediately be started. We have found valuable the free use of 50% glucose intravenously, and it is our habit to give 50 ml. every eight hours. We have not hesitated to employ continuous intravenous drip methods, using saline, glucose-saline, plain glucose, and sodium sulphate, great care being taken to maintain a proper salt balance in order to avoid pulmonary complications. This last is of particular importance, as the bad cases have frequently shown pulmonary congestion, and even consolidation, quite apart from intravenous therapy. We have used heat and even short-wave diathermy to the renal areas, and have brought heat to the kidneys from in front by means of hot colonic irrigation as suggested by Hamilton Fairley.

Finally, we have in three desperate cases attempted by the use of high spinal analgesia to re-establish renal function by invoking sympathetic release. In each of these three cases the anuric state gave place to secretion following the spinal analgesic. In one—Mrs. F., already referred to—this went on to full renal function and complete recovery; but in the other two, both of whom showed blood urea figures of over 500 mg. per 100 ml., in spite of restarting secretion recovery did not follow. One of these men excreted 30 oz. (0.85 l.) of urine on the day before death, and his blood urea had fallen.

The value of high spinal analgesia in certain cases of anuria was well shown in the case of a 5-year-old girl who had sustained an extensive third-degree burn of the thigh. Five days after her accident she was found to be completely anuric and her blood urea had reached 520 mg. per 100 ml. Three days later, after complete failure of all other methods of treatment, high spinal analgesia was induced, with subsequent re-establishment of renal function and ultimate total recovery. In using this drastic method of treatment anxiety is bound to be experienced, as these cases invariably have a very low systolic pressure. Figures as low as 70 mm. Hg systolic have been seen. We have used injections of ephedrine before and during the treatment. In future we propose to use this method earlier in the threatening cases rather than leave it as a last almost hopeless attempt to save life.

It seems clear that the anuric state seen in the more severe cases will have to be regarded as an example of what Maegraith and others (1945) have called the "renal anoxia syndrome"; the appearance, naked-eye and microscopical, of the kidneys in fatal cases being to all intents and purposes identical with that seen in conditions such as crush syndrome, blackwater fever, incompatible blood transfusion, and so-called traumatic uræmia.

The part, if any, played by spinal analgesia or splanchnic block in the therapy of this condition is not as yet clear, but it should be recalled that in discussing this syndrome following trauma Trueta suggests the possibility that vascular spasm is in part responsible. Our results with spinal analgesia would seem to support this suggestion.

Serum Diagnosis

The final diagnosis in our cases has always rested upon the demonstration of agglutinins, if possible in rising titre, in the patient's blood. It has been suggested from time to time that where specific serum has been given this may influence such

investigations, possibly falsifying diagnosis. This possibility is freely admitted, though in 1934 Schüffner, speaking of individuals incorrectly treated with serum and later proved not to be suffering from leptospiral infection, stated that in these people the agglutination reaction remained negative.

Alston (1940) carried out an experiment with rabbits in an attempt to determine the fate of specific antileptospiral serum. In four animals used, a positive agglutination reaction was obtained immediately after a test dose of serum. The titre of this reaction subsequently fell rapidly, and at the end of 12 hours antibodies could no longer be detected. In an attempt to repeat this experiment in the human subject 100 ml. of antileptospiral serum was injected intravenously into a patient suffering from influenza. Blood was tested for the presence of agglutinins at intervals of five minutes, one hour, twelve hours and twenty-four hours after the serum injection. Though they were present in considerable concentration at five minutes and one hour, there was a steep reduction at twelve hours, and at twenty-four hours they had almost disappeared from the blood. In our case a dose equivalent to about three times the dose used by Alston, and considerably in excess of the usual therapeutic dose, was given, while the fall in titre seems to have been even more rapid than in the animal experiment. If more than one test is carried out, and a rising titre is obtained, we feel that this possibly disturbing factor in diagnosis can be safely discounted.

It must be remembered that a previous infection may be responsible for a positive agglutination reaction. Our first two cases had positive agglutination three and four years respectively after their illness, though not in high dilution. In such a case a rising titre would be required to establish the diagnosis, though, so far as we know, no case of second attack has ever been recorded.

Schüffner's often-quoted dictum, that where there is a icterus there is no mortality in this illness, is almost invariably correct. Indeed, we can find no reference to any fatal non-icteric case from the British Isles. This makes the following story seem worthy of mention:

In November, 1944, a boy of 15 was admitted to hospital on the surgical side with a tentative diagnosis of acute appendicitis. He had then been ill for three days and his temperature was 103° F. (39.4° C.). His white cell count showed 4,700 leucocytes with a normal differential count. His temperature was maintained and three days later we were asked to see him as he had developed a generalized rash, and the question of measles had been raised.

Upon examination he was clearly very ill. The rash was morbilliform and generalized, but the buccal mucosa showed no change. Furthermore, he had had measles three years before. His white cell count had risen to 12,700, with 95% of polynuclears. His blood urea was 73 mg. per 100 ml., and the icteric index 4 units; the urine showed a cloud of albumin only.

This was now the sixth day of his illness and blood was sent Dr. Broom for testing. This first sample gave a very weak positive reaction at 1:10. Serum treatment had been started at once, but the boy's condition had deteriorated by the next day and his blood urea had reached 146 mg. per 100 ml. His temperature showed a sign of falling. Penicillin was substituted for serum, and though his temperature became normal in about 12 hours he continued to go downhill, and died on the eighth day of illness.

Two subsequent agglutination tests were both positive at 1: and 1:30 respectively. At no time was any suggestion of jaundice noticed, and his icteric index remained within normal limits.

Dr. Broom, in a personal communication, says that he has sometimes seen guinea-pigs infected with leptospira die very quickly and without the development of either jaundice or haemorrhages, as if they had been overwhelmed by the toxæmia before there had been time to develop the usual signs. Such, we feel, must have been the experience of this boy. Unfortunately it was not possible to carry out a necropsy in his case.

Weil's disease is not included in the schedule of diseases which call for notification under the Industrial Diseases Act in England, but in cases where it is possible to establish that the victim contracted his infection while at work the employer's liability under the Workmen's Compensation Act is obvious. In one of our fatal cases, that of a farm labourer who had been employed in thatching ricks about the time when he probably became infected, the judge in the Winchester County Court supported the claims of the appellants, and the man's widow

was granted a considerable sum in compensation for the loss of her husband. In two subsequent fatal cases, and under almost identical circumstances, it appears that the insurance companies concerned do not propose to question their liability, though a careful scrutiny of the cases has been made from the diagnostic aspect. Thus the need for solid and unquestionable diagnosis in these cases becomes of more than purely medical and scientific interest.

Since the writing of this paper Williams has treated a severe case of Weil's disease in a man of 53, deeply jaundiced, oliguric, and with a blood urea of over 300 mg. per 100 ml., by methods devised to raise the blood pressure—intravenous plasma and injections of ephedrine, combined with high spinal analgesia. The result was dramatic. There was no further increase in blood urea, and within twelve hours a considerable diuresis had been established which went on to a veritable deluge, with rapidly falling blood urea and uninterrupted recovery. This case, as judged by all the standards which our experience in the past had led us to accept as of importance prognostically—age, depth of jaundice, degree of nitrogen retention, and absence of early specific treatment—caused us to predict a fatal outcome. This prognostication was triumphantly disproved by the course of the illness.

No case has come under our care since the publication of Zondek's (1946) stimulating paper on extrarenal azotaemia and extrarenal uraemia, so that we have had no opportunity of investigating his suggestions with regard to Weil's disease, though we have fully confirmed his findings in severe gastrointestinal bleeding and relapsed pernicious anaemia, in which the normal relationship between the urea and chloride excretion has been grossly disturbed in the direction of relatively reduced chloride excretion. Nevertheless, we feel confident that his findings would almost certainly be available in these cases, as the urea content in the urine of oliguric patients has always been above 2%.

Our observations in this disease lead us to believe that the mechanism of cortical renal ischaemia, as described by Trueta and others (1946), is of great importance in the aetiology of the syndrome of water and nitrogen retention seen in the more severe cases of this infection, and the explanation of the apparent success of spinal analgesia in these cases becomes more easily understandable. This work appears to emphasize the need for earlier use of this method of treatment in oliguric cases.

I would like to record again my sense of indebtedness to Dr. J. C. Broom for all his help and encouragement in this work. Dr. Wrigley, Honorary Pathologist, Royal Hampshire County Hospital, has been responsible for all the other pathological work done in our cases, and my sincere thanks are due to him. I am most grateful to numerous house-physicians for their help, and to the local practitioners who have been responsible for referring cases to me.

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In pursuance of the statutory procedure under the Factories Act, 1937, the Minister of Labour and National Service proposes to make, under Section 65, regulations entitled the Dangerous Occurrence (Notification) Regulations, 1946. The Dangerous Occurrences (Notification) Order, 1935, which would be revoked, extended the provisions with regard to notice of accident to the same classes of occurrences as are specified in the Schedule to these Regulations. The Order was, however, limited to factories or workshops within the meaning of the Factory and Workshop Act, 1901, and places which, for the purpose of the provisions of that Act with respect to accidents, were a factory, or workshop or were part of the factory or workshop. The proposed Regulations require notification of the same classes of occurrences happening in factories as defined in the Factories Act, 1937, or in premises or places, or in the carrying on of processes or operations or work, to which Part V of that Act (which relates to the notification and investigation of accidents and industrial diseases) is applied by Sections 103 to 108. Copies of the Regulations may be had from H.M. Stationery Office or through any bookseller, price 1d.

AN UNUSUAL CASE OF WEIL'S DISEASE

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Evidence is accumulating which indicates that Weil's disease is not rare in this country. Gardner and Wylie (1946) report that over the past six years they have examined 182 sera which gave positive serological evidence of Weil's disease, and also that in various laboratories throughout Great Britain and Northern Ireland 488 cases have been serologically diagnosed during this period. It is probable that many mild and anicteric cases have escaped diagnosis. The present case is being recorded in order to stress the need to consider Weil's disease in the differential diagnosis of any case of jaundice or nephritis, and to report the occurrence of the clinical syndrome of bilateral adrenal haemorrhages in Weil's disease.

Case History

The patient, a heavily built man aged 56, was a butcher living in a village twenty miles from Manchester. For some days before the onset of his illness he had felt unusually tired, but continued normally with his work. On Oct. 25, 1945, he had a severe frontal headache, and the next day, having developed a high fever, he sought medical advice. On Oct. 29, the fever having persisted, a course of sulphapyridine was started, a total of 16 g. being given in four-hourly doses. On this day he began to vomit frequently, and, in his own words, "it has been a case of drink and vomit since." The vomitus became greenish black with a foul smell, and was described by a visiting relative "as if his motions were coming up the wrong way." In view of the vomiting it is difficult to say how much of the sulphapyridine was retained. On Oct. 30 jaundice started, and the patient was troubled by a persistent hiccup. No urine had been passed since Oct. 28, apart from a few drops of blood-stained fluid, and he had been constipated throughout the illness except for a small dark stool on Oct. 30.

The patient was admitted to the Manchester Royal Infirmary on the evening of the 31st, and died twenty hours later. On admission he was mentally clear but extremely anxious; retching and hiccup were frequent, and he complained of an intense thirst. The temperature was 96° F. (35.6° C.), pulse 130, and respirations shallow at 30 to the minute. On examination the most striking feature was jaundice. There was severe circulatory collapse, the pulse was thready, the extremities were very cold, and the systolic blood pressure was only 80 mm. Sweating was profuse yet dehydration was severe. The tongue was dry but clean, and the conjunctivae were congested. The pupils were constricted, probably as a result of morphine given before the journey to hospital.

Examination of the abdomen revealed numerous small purple petechiae on both flanks. No marked distension or rigidity was observed, but there was great tenderness. The liver was not felt—in fact, it seemed as if the area of liver dullness was diminished. No significant physical signs were found in the chest or central nervous system. A provisional diagnosis of acute hepatic necrosis or hepato-renal syndrome was made. Soon after admission it was pointed out that, apart from the jaundice, the general picture suggested acute adrenal insufficiency as in the Waterhouse-Friederichsen syndrome. There was also the possibility that the sulphapyridine administered might be implicated to some degree. Intravenous glucose-saline was given; unfortunately cortin was not available. The white cells numbered 14,200 and the haemoglobin was 13.5 g.%. The next morning he passed half an ounce (14 ml.) of urine, but the state of circulatory collapse continued.

The possibility of leptospiral infection was meantime considered and blood was taken for serological and biochemical investigation. The patient now lapsed into a state of muttering delirium, the pulse weakened and became imperceptible, the temperature rose to 100° F. (37.8° C.), and he died twenty hours after admission.

Laboratory investigations on Nov. 1 showed: W.B.C., 10,600 per c.mm. (polymorphs 76.5%, lymphocytes 10%, monocytes 3.5%, eosinophils 0.5%, myelocytes 6%, metamyelocytes 3%, Türk cells 0.5%, plasma cells 1%, nucleated R.B.C. 5/100 W.B.C.). Haemoglobin, 12.1 g.%. Blood urea, 270 mg. per 100 ml. Whole blood chlorides, 316 mg. per 100 ml. (as NaCl). Serum colloidal gold reaction: 2332110000. Van den Bergh test: immediate direct reaction with maximum colour in two minutes (bilirubin 32 mg. per 100 ml.). Serum proteins: albumin, 3.2 g.%, globulin, 3 g.%. Urine: centrifuged deposit showed numerous red cells and pus

cells, renal epithelial cells, but no casts. No leptospirae could be found on dark-ground examination, but the urine was examined after some delay.

Serum for agglutination against *Leptospira icterohaemorrhagiae* was sent to the Reference Laboratory at Oxford. The result showed a positive agglutination in a dilution of 1/400; the reaction was a partial agglutination, atypical microscopically.

The necropsy was performed twenty-two hours after death; the report was as follows (Dr. Susman):

Lungs: scattered haemorrhages in both pleurae; both lungs distended with fluid; many haemorrhages throughout. **Stomach:** scattered haemorrhages over the mucosa; massive haemorrhage involving five to six feet (1.5-1.8 metres) of the terminal ileum. **Liver:** enlarged; yellow colour throughout; no macroscopic necrosis; biliary pathway normal. **Spleen:** enlarged; brick-red colour. **Adrenals:** bilateral enlargement; complete disorganization by extensive haemorrhages. **Kidney:** abundant pelvic haemorrhages; fresh fatty degeneration.

Histological Findings.—Liver:—There were dissociation and loosening of the hepatic cells, scattered areas of fatty degeneration, and areas of hepatic regeneration with enlarged and binucleated liver cells. No leptospirae could be found on sections stained by the Levaditi technique. **Kidney:**—There were a few hyalinized glomeruli, some tubular necrosis, scattered foci of polymorph and lymphocytic infiltration, and many dilated blood vessels. Sudan IV section failed to reveal fatty degeneration, but sections stained by the Levaditi technique showed many leptospirae, particularly around the tubules.

The finding of spirochaetes in the kidney but not in the liver, and the rarity of the organisms in the liver, were commented upon by Ashe *et al.* (1941).

Discussion

The clinical history of a febrile disturbance followed by severe renal and hepatic failure accompanied by a haemorrhagic rash, associated with the laboratory and necropsy findings, proves the diagnosis of Weil's disease. The hepatic and renal failure noted in this case has been the subject of previous comment. Ashe *et al.* (1941) speak of a hepato-renal syndrome in the disease; Walch-Sorgdrager (1939) refers to the frequent misdiagnosis of acute yellow atrophy; and Davidson *et al.* (1934) consider the association of jaundice and nephritis of great diagnostic value. The presence of an atypical agglutination of 1/400 against leptospirae is probably explained by the fact that the reaction was performed early in the disease, and in those cases terminating fatally the development of antibodies may be delayed.

This case, with severe peripheral collapse, cold extremities, a low blood pressure, and profuse sweating, resembled clinically the acute adrenal apoplexy of the Waterhouse-Friederichsen syndrome. That syndrome occurs classically in meningococcal meningitis or meningococcal septicaemia, and, so far as we know, this clinical picture has not been reported in Weil's disease, though bilateral adrenal haemorrhages are a common necropsy finding (Ashe *et al.*, 1941).

Gardner and Wylie (1946) found that 3.3% of their 182 cases were in butchers, but did not specify the actual work done by these men. Our case is interesting in that it occurred sporadically in a butcher who did not frequent slaughterhouses or kill his own cattle. A case has been reported in which the infection was derived from meat that had been contaminated by rat urine, and the disease is a known hazard of slaughtermen (Walch-Sorgdrager, 1939).

In order to pursue the epidemiological aspects further, two rats were obtained from behind the patient's home and close to a small stream. On post-mortem examination they were normal, but leptospirae were seen in the kidney on sectioning and staining by the Levaditi technique. The kidneys of the rats were ground up and injected into guinea-pigs, and the latter died on the ninth and tenth days, presenting at necropsy the typical appearances of Weil's disease. They showed jaundice, haemorrhages into the lungs (butterfly appearance), kidneys, and adrenals, and on section the kidneys, liver, spleen, adrenals, and lungs contained numerous spirochaetes. Weil's disease, which is mild and asymptomatic in rats, has an incidence of between 10 and 30% in wild rats in this country, and it is highly probable that infection in the present case was derived from the local rat population.

The death rate in Weil's disease has been variously put between 4 and 48% (Walch-Sorgdrager, 1939; Wood, 1943),

but as more of the milder cases come to be diagnosed it is probable the death rate will fall. It is interesting that most of those who die from the disease have severe renal failure, with associated uraemia and oliguria (Wood, 1943; Hutchison *et al.*, 1946), and the case presented here was no exception to this rule.

Summary

A case of Weil's disease occurring sporadically in a butcher and presenting the clinical signs of acute adrenal insufficiency is described. The importance of considering Weil's disease in the differential diagnosis of jaundice and nephritis is stressed.

We acknowledge our gratitude to Dr. W. Brockbank for permission to publish a report of this case.

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GRAVITY DRAINAGE IN THE PRONE POSITION IN TREATMENT OF DIGESTIVE FISTULAE OF THE ABDOMINAL WALL

BY

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A fistula of the abdominal wall which communicates internally with a segment of the alimentary canal rich in digestive juices (e.g., duodenum, jejunum, ileum, and to a lesser extent caecum or with a digestive gland (e.g., pancreas), may constitute a serious trial to the patient and a test to medical and nursing attendants. The special feature of these cases is the digestion of the skin which occurs around the fistula, often to a considerable distance. When the discharge is abundant it may flow round the back and down to the groin and crutch, so that areas of skin outside the abdominal wall may also be digested. The raw digested skin is extremely painful and sensitive, and a patient with an extensive digestive fistula is usually miserable and his appetite and sleep are upset. From these causes alone quite apart from any nutritional loss from the fistula, his general condition may progressively deteriorate, and a vicious circle be set up that may preclude the direct surgical attack which alone can cure the fistula. Minor digestive fistulae may lend themselves to treatment by the application of protective or neutralizing pastes and ointments to the abdominal wall; a rather more severe fistula may be successfully treated by some suction method of removing the digestive juices as they exude; but for a real pouring digestive fistula all these methods usually fail.

We have successfully treated a number of cases of this type during the past few years by gravity drainage in the prone position. As this method of treatment of digestive fistulae does not seem to be widely known, we have thought it worth while to record the method, together with some practical points of importance and a review of four cases.

Case I

The first case was the most dramatic, and it was in this one that the method was worked out. It was that of a schoolboy, aged 15, who was admitted on March 7, 1943, from another hospital to the care of Surg. Rear-Admiral Sir Gordon Gordon-Taylor. Three months previously his gangrenous appendix had been removed. Small-gut obstruction and pelvic abscess formation had followed, for which ileostomy was performed. Subsequent attempted closure failed, and a further laparotomy revealed sloughing of coils of small gut which later formed three other spontaneous jejunal fistulae. His condition when first seen was extremely bad. He was distressingly emaciated (weight, 5 st. 3 lb.=33.1 kg.), while, on to his abdominal wall, raw and semi-digested from costal margin to pubis,

quantities of fluid and semi-solid intestinal contents discharged, and the mere approach of a medical attendant caused screams of apprehension. At the same time the boy was ravenously hungry; meals were crupted together with succus entericus on to his abdomen within half an hour of ingestion. During the two days following admission a variety of nursing methods applicable to intestinal fistulae were unsuccessfully adopted. Protective pastes could not adhere to the abdominal wall, oiled-silk sheeting failed to maintain watertight connexion with the indrawn mouths of the stulae, while mechanical suction was subject to obstruction from semi-solid matter and prolapsed intestine and was unable to cope with sudden peristaltic rushes. Local percaïne application did, however, alleviate his pain. Meanwhile a large sacral sore was also causing much distress, and the decision was taken to nurse the patient in the prone position on slings in the hope that the sore could be given an opportunity to heal, and that simultaneously the intestinal contents would discharge downwards from the stomata without further irritation and digestion of the parietes.

Although the success of this measure was immediately evident, the uneven weight distribution with the slings proved uncomfortable to the patient's back. The carpenter then made a special wooden frame. But finally the method described and illustrated was evolved and the boy lay in the prone position day and night almost without interruption for nearly three months.

The improvement of his condition was striking. Six pounds (2.7 kg.) in weight was gained in six days. The abdominal wall began to heal, and it was interesting to note that the intestine prolapsing through hitherto recessed openings formed valves which assisted in slowing the intestinal emptying time, thus aiding nutrition, and occasional rectal motions were achieved. By June 3 his weight was 6 st. 7 lb. (41.28 kg.). Operation, consisting of multiple resection and anastomosis, was possible, and with saline, glucose, plasma, blood, and sulphamezathine preparation this was successfully performed by Sir Gordon Gordon-Taylor. When last seen in February, 1944, the boy was in excellent health and spirits.

Case II

This patient was a man aged 49 on whom laparotomy had been performed with a view to resection of a gastric ulcer. Owing to the size, difficult access, and adhesions it was decided to do a jejunostomy instead, by cutting across the jejunum and making an anastomosis in Y, bringing the cut distal end out through the abdominal wall. Owing to the extreme regurgitation of digestive juices the jejunostomy was not a technical success. The abdominal wall, groins, and back became very raw. The patient was nursed in the prone position, when the condition of the abdominal wall at once improved and it was found possible to maintain the jejunostomy feeding for nearly five months. It was then operated on uneventfully and closed.

Case III

This man, aged 25, had a terminal ileostomy performed in May, 1943, for acute ulcerative colitis with haemorrhage which had failed to respond to medical treatment. The abdominal wall became badly digested from the discharges from the ileostomy. Treatment in the prone position rapidly cleared up the condition of the abdominal wall. The patient died in November, 1943, after operation for intestinal obstruction, but the condition of the abdominal wall had in the meantime been satisfactorily controlled by nursing in the prone position.

Case IV

This patient, a man aged 34, also suffered from ulcerative colitis which had failed to respond to medical treatment. Terminal ileostomy was performed in June, 1945, and again there was much digestion of the abdominal wall by the small-intestine discharges. Treatment in the prone position was successfully adopted, and was carried out with intervals over several months. At the end of this time the ileostomy discharge was semi-solid and much less irritating. Subsequently total colectomy was successfully performed. In this case the prone position did lead to a moderate prolapse of the ileostomy, up to about 6 in. (15 cm.) protruding, but this went back when he was able to resume the supine position.

Some Practical Points

The accompanying illustration shows the arrangement of the bed and mattresses that was found to be the simplest and most efficient. The mattress at the head of the bed is the top third of a divided mattress, and that at the bottom an ordinary mattress folded as illustrated so that the dorsa of the feet are comfortably supported. A flat tray can thus be introduced between the two mattresses to catch the discharges. In addition pillows may be arranged round the division in the mattresses to suit the comfort of the patient. He may lie in this position continuously day and night as the first case did, or may be turned back for intervals of rest. The worse the state of the

abdominal wall the less he feels the inconvenience of the abnormal position in the relief it affords. In a total intestinal fistula the bowels present no problem. In a partial intestinal fistula the patient is turned when he wishes to open his bowels. The prone position with divided mattress lends itself without difficulty to the passage of urine in the male (it so happened

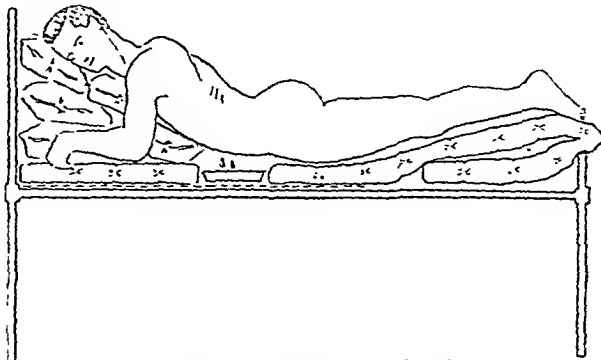


Diagram showing arrangement of bed and mattresses.

that all our patients have been males), and it should not be difficult to make suitable nursing arrangements in the female. Meals can readily be taken prone if the food is first cut up and the pillows are adjusted, the patient supporting himself on one arm and using a spoon with the other hand. Reading can be managed with a book-rest. It is best to turn the head end of the bed to the centre of the ward so that the patient sees the activities of the ward and not merely the wall.

A CASE OF CEREBRAL MALARIA IN GREAT BRITAIN

BY

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Cerebral malaria as a cause of coma is rare in Great Britain. A search of the literature has revealed only two cases in recent years (Minett and Bernfield, 1937; Sneddon, 1943), in spite of the fact that one would have expected to encounter further cases in Service personnel returning from malarious areas, especially in those repatriated by air. The following case is reported in order to emphasize two important aspects of the condition: first, that it may have to be considered as a cause of coma in this country, and, secondly, because early treatment is so essential.

Case Report

A steward in the Merchant Navy aged 26 was admitted in coma to the South Shields General Hospital at 1.30 p.m. on Sept. 8, 1946. The history, elicited from his wife, was as follows: Four days previously he had arrived in port from West Africa, having been ten days at sea. On reaching home the same day he had complained of headache and of feeling hot and shivery. He had a frequent unproductive cough and vomited after food. During the three succeeding days he had several brief severe shivering attacks and the vomiting persisted. His doctor at first treated him for influenza, but when he suddenly became unconscious, at noon on the fourth day, straightaway sent him into hospital with a provisional diagnosis of malaria. A previous history of an attack of malaria three years before, with no subsequent relapses, was also obtained from his wife, and later confirmed by the patient himself.

On examination he was seen to be a man of average physique. He was in a restless, lightly comatose state, but responded to simple shouted orders and reacted to painful stimuli. He was unable to speak and was incontinent of urine. The temperature was 101.2° F. (38.4° C.), pulse 100, and respirations 28. His skin was dry and hot; no abnormality was found in the cardiovascular system and lungs. The abdomen exhibited moderate muscular resistance in the left hypochondrium, but neither liver nor spleen was palpable. Examination of the C.N.S. showed regular and equal pupils with a sluggish reaction to light; no abnormality in the fundi; normal muscle tone, no paralysis; general absence of tendon reflexes, with

a bilateral extensor plantar response; no evidence of meningeal irritation. Urine, N.A.D.

In view of the fact that he had recently been in an endemic centre of malignant tertian malaria the diagnosis of cerebral malaria was entertained. Blood films were examined and revealed a heavy infection with *Plasmodium falciparum*, numerous ring-stage parasites being present. This finding was later confirmed by Dr. Houston of the Pathology Department, Sunderland Royal Infirmary.

Treatment.—Quinine sulphate 10 gr. (0.65 g.) was given orally at 2 p.m., and the patient was able to take sips of water by mouth. Acid quinine hydrochloride 10 gr. in 10 ml. of sterile distilled water was administered half an hour later by slow intravenous injection. Rectal glucose-salines were ordered four-hourly. At 11.30 p.m. the coma was somewhat deeper and the patient was still restless and incontinent of urine. Temperature 99.8° F. (37.7° C.), pulse 108, respirations 24. He was now unable to take anything by mouth. The intravenous quinine was repeated. On the morning of Sept. 9 his condition was unchanged: Temperature 99.8° F., pulse 104, respirations 24. Neck rigidity had now appeared. Lumbar puncture was performed under local analgesia and 10 ml. of clear fluid under slightly increased pressure withdrawn. As the patient was not now retaining fluids per rectum a glucose-saline intravenous drip was started. He was still incontinent and could take no fluids by mouth. On the morning of the 10th his condition was greatly improved; he was conscious and rational, and taking copious fluids by mouth. Temperature 101.4° F. (38.55° C.), pulse 92, respirations 28. His further convalescence was uneventful, and a standard quinine-mepacrine course was instituted. On the 12th a blood film revealed no parasites; his temperature was 97.4° F. (36.3° C.), pulse 72, and respirations 20, and he was discharged home.

Discussion

In arriving at a diagnosis in this case the following points were of importance: (a) A recent visit to a malarious area; (b) history of headache, vomiting, and rigors; (c) sudden descent into coma. The suspicion of cerebral malaria thus aroused, coupled with absence of the clinical picture of any of the more common causes of coma in this country, led to the examination of blood films with resulting confirmation of the diagnosis.

As the clear-cut history in this instance may not be paralleled in other cases of cerebral malaria occurring in Britain, several other conditions must be considered in the differential diagnosis. The most important of these are:

1. *Meningitis* (in particular the hyperacute and fulminating forms).—The frequent occurrence of signs of meningeal irritation in cerebral malaria may confuse the diagnosis, and a lumbar puncture may be essential to differentiate.

2. *Alcoholic Coma*.—It is stated that cerebral malaria often closely simulates alcoholism. This has resulted in fatalities from misdiagnosis, and emphasizes the importance of examining blood films in doubtful cases of coma.

3. *Cerebral Vascular Accident*.—(a) Subarachnoid haemorrhage: In this condition severe headache followed by rapid onset of stupor or coma is characteristic, and meningeal irritation is usually well marked. Lumbar puncture, however, readily establishes the diagnosis. (b) Cerebral haemorrhage, thrombosis, or embolism: The production of embolism by malaria parasites may lead to various cerebral manifestations, among which hemiplegia, monoplegia, and aphasia have been described.

4. *Uræmia*.—The most likely causes of this condition in young adults are malignant hypertension and the alkali treatment of peptic ulcer associated with renal insufficiency. The onset of coma may be rapid, and prodromata equivocal. Examination of the urine, blood urea, and alkali reserve will differentiate the condition from cerebral malaria.

The present case occurred in a man who returned from an endemic area within the accepted incubation period of the disease, and illustrates the importance of considering a diagnosis of cerebral malaria in cases of coma of uncertain origin, particularly in Service personnel returning from overseas. This is especially important, as early diagnosis and adequate treatment are so essential in a disease which carries a 40% mortality in treated cases (Sanford, Crawford, and Warr, 1940). Endemic cases are unlikely to occur, as tropical strains of the malignant tertian parasite fail to survive in the mosquito at temperatures below 75° F. (24° C.) (Shute, 1945).

The dosage of quinine used in this case was somewhat higher than that advocated by Manson-Bahr (1942)—i.e., 5 to 7 gr. (0.32 to 0.45 g.)—but no untoward reactions were encountered. Intramuscular mepacrine is now being used in preference to intravenous quinine in these cases, as the likelihood of toxic

reactions is even less with the former drug, but it was immediately available for use in this instance.

Summary

A case of cerebral malaria, with recovery, occurring in Great Britain is described.

The differential diagnosis is discussed.

The importance of early diagnosis and prompt adequate treatment is emphasized.

Our thanks are due to Dr. W. Campbell Lyons, M.O.H., St. Shields, for permission to publish this case; to Dr. Houston of the Pathology Department, Sunderland Royal Infirmary, for his report on the blood films; to Dr. N. Strang, deputy medical superintendent who allowed us to treat the case in his ward; and to Dr. Downing, South Shields, who referred the case to us.

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KALA-AZAR WITH ONSET OF SYMPTOMS IN GREAT BRITAIN.

BY

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In view of the return to Britain of many of our soldiers from the shores of the Mediterranean, where kala-azar is endemic, the following case may be of interest. It serves to illustrate the fact that symptoms of kala-azar may not appear for the first time until the patient reaches this country, when the disease may simulate a primary attack of malaria.

Case History

The patient, a man aged 29, served as a soldier in North Africa and Italy for 3½ years. During that time he had no symptoms of illness. He returned to England and was apparently well for four months. On April 18, 1946, he noticed small lumps in both groins, and the next day an attack of shivering and sweating began. He continued having one of these attacks each day, but in spite of them felt quite well. Apart from slight initial nausea his appetite remained good and there were no other symptoms. On April 27 he was sent into hospital as a case of primary malaria.

On admission his general condition was fair. He had a sallow complexion (this became dusky later in the disease), and his tongue was brown and furred. A soft swelling was palpable in the left hypochondrium, extending for three or four fingerbreadths below the costal margin. It was of an indefinite outline, and was first noted as " ? kidney; ? spleen." The liver edge was not palpable at this stage. The inguinal glands were felt to be slightly enlarged. The heart, lungs, and C.N.S. were normal clinically. Temperature, 101.2° F. (38.4° C.); pulse, 104; respirations, 22. During the first week after admission to hospital the patient had an intermittent high pyrexia reaching 102°–103.8° F. (38.9°–39.9° C.), with daily rigors and sweating. Occasionally there were two spikes of temperature during the 24 hours. He continued to "feel fine." By April 30 the mass in the left hypochondrium had increased in size and was obviously the spleen. The liver edge was also palpable for two fingerbreadths below the right costal margin. Skiagrams of the chest showed some congestion at the right costo-phrenic angle (presumably due to the enlargement of the liver); otherwise the chest was clear. A blood count showed: white cells, 2,140 per c.mm. (polymorphs 68%, lymphocytes 29%, monocytes 2.5%, eosinophils 0.5%); red cells 3,650,000 per c.mm.; Hb, 70%; C.I., 0.95. Repeated blood smears were negative for the malaria parasite. The urine showed no abnormality and the diazo reaction was negative.

As a diagnostic measure, starting on May 1, a course of two days' quinine 10 gr. (0.65 g.) t.d.s., followed by three days' mepacrine 0.1 g. t.d.s., was given, with no effect on the temperature. This was followed by penicillin injections (15,000 units three-hourly for 8 days), which proved equally ineffective. On May 2 agglutination tests on the serum were negative for typhoid, paratyphoid, dysentery, and *Brucella abortus* and *melitensis* organisms. Many dilutions were used with the *Br. abortus* to exclude the possibility of a zone reaction. A blood Wassermann reaction was also negative. On May 14 a formol-gel test was strongly positive. The next day a sternal puncture was performed and a few Leishman-Donovan bodies were found in the smear. An inguinal gland puncture, however, did not reveal any parasites in the stained film.

A course of 21 injections of "antihomaline" (a 6% lithium antimony thiomalate solution containing 16% of antimony) was given

from May 18 onwards, starting with 2 ml. I.M. on alternate days, the dose later being increased to 4 ml. Iron was given for the anaemia. The temperature swing gradually diminished in height, and became normal and remained so after the nineteenth injection (June 22). Clinically there was marked improvement, with cessation of sweats and diminution in the size of the spleen, and the white blood cells showed a steady increase. Blood counts were as follows. June 3: white cells, 1,460 per c.mm. (polymorphs 44%, lymphocytes 48%, monocytes 8%). June 13: white cells, 2,180 per c.mm. (polymorphs 29%, lymphocytes 62%, monocytes 9%). July 2: white cells, 4,660 per c.mm. (polymorphs 45%, lymphocytes 52%, monocytes 3%); red cells, 3,750,000 per c.mm.; Hb, 78%; C.I., 1.04.

Discussion

The diagnosis was that of a febrile disease with splenomegaly and leucopenia occurring in a patient returning from the Mediterranean area. Malaria was excluded by blood smears and the therapeutic test of quinine and mepacrine administration, enteric and undulant fever by the agglutination tests, and pulmonary tuberculosis by the chest skiagrams. Kala-azar was suggested strongly by the formol-gel test of Napier and confirmed by finding Leishman-Donovan bodies on sternal puncture. This was preferred to splenic puncture, which entails a risk of haemorrhage.

The long incubation period should be noted. It is stated variously to be from 1 to 6 months, but cases may occur 1½ years after exposure. As modern treatment with antimony has altered the mortality from 80% to a much lower figure the importance of early diagnosis is obvious. In 1944 the *Bulletin of War Medicine* remarked that a few proved cases of kala-azar had already been seen in this country among returning soldiers, and Thompson (1944) quoted a case occurring in an English seaman. Armstrong (1945) also described two examples of asymptomatic kala-azar in soldiers.

I am indebted to Dr. E. James, medical superintendent, for permission to publish this note, and to Mr. D. Butler for help with the laboratory investigations.

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Medical Memoranda

"Purpura Provocata" in Pellagra

During the time we acted as medical officers in prisoner-of-war camps in the Netherlands East Indies a great number of cases of pellagra in all its variations were observed. The purpose of this article is to draw attention to the occurrence of purpura as a specific symptom in these cases.

One of the best-known symptoms of pellagra is erythema, which shows a predilection for parts of the body exposed to the sun. The erythema may be pronounced, but usually does not lead to purpura. On the contrary, purpura may precede it, and has been known to occur on the site of subsequent erythema. What we wish to emphasize is that the purpura should not be considered a severe form of erythema.

Purpura is a specific symptom *sui generis*. It occurred not only along the whole course of the alimentary tract but also in the skin. Only in a minority of cases was hyperaemia with dilated capillaries of the lip mucosae and gums observed. It should be mentioned that bleeding of the gums hardly ever occurred, and in these rare cases it was often doubtful if it was due to vitamin C deficiency or to pyorrhoea, etc. Purpura, often responding to administration of vitamin C, was particularly common in the early days of imprisonment. To attribute the whole illness to vitamin C deficiency because of the coincident occurrence of purpura is obviously incorrect. In our opinion the purpura we observed belongs to the pellagra group of symptoms; but this will be discussed later.

The first case occurred in an officer, thin, pale, without internal symptoms, suffering from petechiae of the lower legs. He had been "punished" the previous day by the Japanese and had to stand to attention for seven hours. We made a diagnosis of "orthostatic thrombocytopenic purpura," fully aware that this was an unsatisfactory designation. Very soon it became clear that the petechiae, particularly on the lower legs and lower arms, should be regarded as one of the initial symptoms of pellagra. The linear distribution was striking. Haemorrhagic stripes even to a length of 10 in. (25 cm.) occurred, particularly if the patient was exposed to the sun,

the linear form being due to scratching because of lice or scabies. Indeed, in all cases purpura could be produced artificially by scratching the skin with the finger or a pencil, similar to Nikolsky's bullous phenomenon in pemphigus or Köbner's phenomenon in psoriasis and lichen ruber; purpura followed, however, the same day. Exposure to the sun accelerated the phenomenon.

It should be pointed out that purpura provocata in pellagra is not identical with Rumpel-Leede's phenomenon, in which haemorrhages occur *distal* to the tourniquet. In fact, both phenomena indicate the permeability of the blood vessels and the "haemorrhagic constitution." They may even be combined—e.g., in those cases of Rumpel-Leede's phenomenon in which haemorrhages also occur *under* the tourniquet. We regard this symptom as a severe form of Rumpel-Leede's phenomenon. If doubt is expressed with regard to the diagnosis of pellagrous purpura, that of vitamin-C-deficiency purpura being preferred, we would emphasize that all patients were proved to be suffering from pellagra or (as we prefer to call it) a polydeficiency. We agree with those who consider that the use of the term "pellagra" has been too restricted in the past, and that in its widest concept it embraces a poly- (or even an omni-) deficiency, in which lack of sometimes one and sometimes another vitamin dominates the syndrome.

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R. D. G. PH. SIMONS, M.D.

Adenoma of Islets of Langerhans

The following case seems to be interesting enough to merit publication.

CASE REPORT

The patient, a woman aged 59, was admitted to hospital late in the afternoon of Feb. 2, 1946. The only history was that she had sat down on the floor in the middle of a shop and refused to move.

On examination she was found to be conscious, but to all questions her only reply was: "I feel damn rotten." In the ward she was somewhat difficult to control. She was very obese, and her blood pressure was 245/140. No other abnormal signs were present. Morphine was given. By the early hours of the next morning she had quite recovered, but she could recall nothing save that she had gone out shopping that afternoon. She had had many similar attacks before and had found that they could be prevented by a cup of tea and some white bread. The attacks began in July, 1943. At that time they occurred at intervals of many months. Just before and after admission they averaged three or four a week.

During an attack her skin became cold and clammy. Her pupils were slightly dilated. Often the first warning was that she began to wink at everyone. Normally a very talkative person, she would become very quiet. Occasionally she became restless, and on one occasion threw bread crusts at some visitors. During one of these attacks her blood pressure was taken and it was found to be lower than her normal. The attacks were controlled in the early stages by giving 25-50 g. of glucose by mouth. This resulted in her recovery within five to twenty minutes. The patient was always unaware of what had happened.

Examination of the blood showed: red cells, 5,850,000; white cells, 4,200; Hb (Sahli), 105%; urea, 32 mg. per 100 ml.; Wassermann reaction, negative; B.S.R. and blood slide, N.A.D.; x-ray examination of skull, N.A.D.; urine, N.A.D.

Blood Sugar Estimations.—Feb. 7. 175 mg./100 ml. (four hours after a meal). Urine was negative, as it was throughout the glucose-tolerance curves. Feb. 12. Fasting level, 36 mg./100 ml. Feb. 13. Sugar-tolerance curve: fasting level, 32 mg./100 ml. 50 g. of glucose given; blood sugar after 1½ hours, 96 mg./100 ml.; 1 hour, 117; 1½ hours, 108; 2 hours, 32; 2½ hours, 24. During an attack the reading was 19 mg./100 ml. Feb. 15. Fasting level, 75 mg./100 ml. Feb. 28. Sugar-tolerance curve: fasting level, 31 mg./100 ml. 50 g. of glucose given; blood sugar after 1½ hours, 56 mg./100 ml.; 1 hour, 127; 1½ hours, 125; 2 hours, 80; 2½ hours, 44. The patient was quite unaware of the first blood being taken, but the 50 g. of glucose soon pulled her round.

A diagnosis of adenoma of the islets of Langerhans was made and a laparotomy was decided upon. This was done by Mr. W. J. Liddle, assisted by Dr. G. H. Moore, on March 23. A small round tumour was removed from the head of the pancreas. It was situated partly behind the duodenum, and it shelled out quite easily. A careful search was made for a possible second or third tumour but none was found. A continuous intravenous glucose-saline drip was begun before the operation. Blood was given in the theatre. An hour after her return to the ward the blood sugar was 219 mg./100 ml. The urine contained sugar the next day. The patient died on the evening of March 29. It may be added that she was conscious until shortly before death, but her breath smelt of acetone.

The tumour was 5/8 in. (1.6 cm.) in diameter; it was almost round, and firm in consistency. Section showed the presence of an adenoma of the islets of Langerhans.

I am indebted to Dr. J. R. Turner and Dr. Ison for permission to publish this report.

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Reviews

THE PERIPHERAL CIRCULATION

The Peripheral Circulation in Health and Disease. A Study in Clinical Science. By Robert L. Richards, M.D. With a foreword by J. R. Learmonth, Ch.M., F.R.C.S.Ed. (Pp. 153; illustrated. 21s., plus 7d. postage.) Edinburgh: E. and S. Livingstone. 1946.

The disciples of the late Sir Thomas Lewis will recognize in this book a monograph which deserves a place with those of the master himself in the library of clinical science. Its foundations in physiology, its substance of controlled observation, and its framework of well-informed argument combine to build a structure which is both a worthy memorial to good work and a guide to those who wish to follow the scientific method in clinical investigation and practice.

A special centre for injuries of the peripheral nerves and for diseases and injuries of the peripheral blood vessels offers abundant material for clinical research. It is clear that in order to fit himself to make the best use of his opportunities the author made a close study of the literature, and one of the chief features of the book is his critical survey of the work and opinions of his predecessors and contemporaries in the field. From the pen of many a writer such a review makes tedious reading, but Dr. Richards's care in the arrangement of his references, and his attractive literary style, have given his readers enjoyment with instruction, and the book is of special value as a comprehensive account of the literature of the peripheral blood vascular system brought up to date.

A criticism of the work might be that scant attention is paid to the various methods of studying the circulation to a limb in addition to the skin temperature—the method by which nearly all the observations recorded in this book have been made. On the other hand it is plain that skin temperature records, if properly controlled and interpreted, offer the most generally useful and the most readily available method of obtaining information about the peripheral circulation. Clearly illustrated and well-documented accounts are given of the disorders of the circulation observed in obliterative arteritis and in Raynaud's disease; and a chapter of very great interest is devoted to the vascular phenomena which accompany peripheral nerve injuries. The distinction between the early warm phase and the later cold phase in a denervated area is well drawn, and many features which have been rather obscure heretofore are explained. The book ends with a masterly description of immersion foot, and the appropriate treatment for the various stages of this distressing condition is described in some detail.

Physicians and surgeons, stimulated by the researches carried out by Lewis's school, are now taking an increasing interest in the disorders of the peripheral blood vessels. While the author does not claim this book to be an extensive treatise it will prove to be most useful to the clinician in his daily practice, as well as providing him with valuable advice about where to look for further information.

ACIDOSIS

Acidosis. Clinical Aspects and Treatment with Isotonic Sodium Bicarbonate Solution. By Esben Kirk, M.D. (Pp. 222; Dan. cr. 18.) Copenhagen: Einar Munksgaard; London: William Heinemann Medical Books.

This book is a plea for the more extended use of sodium bicarbonate in isotonic solution (1.3%) in conditions of acidosis. Acidosis is defined as a condition in which plasma bicarbonate is reduced below the normal range of 22–30 milliequivalents per litre. The symptoms vary from the fatigue of mild acidosis through the dry tongue of moderate acidosis to the dyspnoea of severe acidosis, when the plasma bicarbonate is down to half.

The author refers to the introduction of intravenous injections of sodium chloride and sodium carbonate by Dr. Thomas Latta in 1831 for the treatment of cholera. Again, in 1910, the American Sellards showed the beneficial effect of intravenous sodium bicarbonate in cholera when uraemia and anuria were present. Rogers, using Sellard's treatment, reduced the mortality due to acidotic uraemia from 11.1 to 3.2%. The author's most earnest plea is for the use of isotonic sodium bicarbonate in the treatment of diabetic coma, and his evidence

that its intravenous administration leads to a rapid return of consciousness is convincing. His account would, however, be more complete if he explained why Joslin gave up the oral administration of sodium bicarbonate in precomatose diabetic cases in the year 1917. Nevertheless, the argument that combination of insulin and isotonic bicarbonate is more effective than insulin alone, and that it should always be given if the patient is moribund or if he reacts slowly to insulin alone, is strong. Most clinicians do in fact recognize the need of administering isotonic saline or glucose-saline to relieve the dehydration and to restore carbohydrate, but it is likely that sodium bicarbonate will relieve the symptoms more quickly than sodium chloride.

FROM CHILDHOOD TO MATURITY

The Psychology of Childhood to Maturity. By J. Guilfoyle Williams, B.Sc. (Pp. 324. 8s. 6d.) London: William Heinemann Medical Books. 1946.

The author has produced in reasonable compass an excellent book on normal psychology. He has not got the intimate knowledge of how things go wrong which belongs to the experienced psychiatrist, but he has read carefully and intelligently from the writings of these and so may be particularly well qualified to deal with the normal. His general approach is based on the analytic schools, but he does not slavishly adhere to any one of them and preserves a common-sense balance throughout his subject matter, which concerns psychological reactions from infancy to old age, dealing practically with child psychology, education, adolescence, sex difficulties, marriage, religion, disease, and death. He stresses the need for allowing the child to grow up in an atmosphere of wise guidance without any attempt being made to force him into mould. He rightly remarks, "The most cruel treatment of child is wanton and unjust forms of discouragement. . . . Ridicule should never be used with children and rarely with adults; it is a cruel and deeply wounding weapon." He shows his broad humanity in stressing that all sin is not sex: "Great and evil sinners are the men who destroy in others the faith they have in truth, justice, and goodness; the men who shatter some persons' irrational ideas and guides in life just to show their own powers or intelligence, but who do not replace these ideals or guides with better ones; the men who by cunning, trickery, or falsehood prey upon their fellow men by their activities in industry, commerce, the professions, or politics." The author presents an interesting theory which leaves open the possibility of survival after death, and may explain many of the well-established phenomena of clairvoyance, mysticism, and ultramaterial experiences. Altogether this is a book which will repay close study by every intelligent citizen.

PSYCHOLOGY FOR NURSES

Psychology Applied to Nursing. By Lawrence Augustus Averill, Ph.D., and Florence C. Kempf, B.S., A.M. Third edition. (\$2.50 or 12s. 6d.) London and Philadelphia: W. B. Saunders Company. 1946.

The American nurse must be a person of much greater leisure or of much greater capacity for mental work than her British sister if she can regard a textbook of psychology of 484 pages without consternation. In it, moreover, she will find at the end of each of the twenty chapters what are called "thought problems for the student," which are long examination papers, each question calling for quite long essays and probably extensive reading not only of this book but of much of the "suggested reading" to be found after the "thought problems." That so extensive a task does not, however, appal the American nurse is indicated by the fact that a third edition of this textbook has now reached us. There is no doubt whatever that this is a thoroughly sound book for its purpose, if only there was not so much of it. The authors have covered the essentials of general educational and much of social psychology in simple language which the nurse or teacher should easily understand. Quite properly there is little about the complicated material of abnormal psychology or of the theories of psychopathology. There is an admirable insistence that the nurse should teach health to her patients and to do this it is held that: (1) The nurse should have related accurate information at her immediate command. (2) She should recognize and take advantage of "teachable" moments as they occur. (3) She should have the imagination and ability to use the right approach to each

patient. (4) She should be specific in her teaching and check her patient's interpretations. (5) She should recognize her patient's limitations, mental and physical, and teach carefully in the light of these. (6) The nurse should be generous with encouragement and commendation of the effort and progress shown by each patient. (7) She should know reliable sources of reference which are expressed in the language of the lay person. (8) The nurse should herself personify positive health. Would that all our nurses could carry out these requirements. Certainly the book should find a place on the shelves of all nurses' libraries.

Notes on Books

The Circulation in the Foetus (a synopsis for students), by K. J. FRANKLIN, D.M., F.R.C.P., A. E. BARCLAY, D.M., F.R.C.P., and M. M. L. PRICHARD, M.A., is published at Oxford by Blackwell Scientific Publications, Ltd. (Price 2s. 6d.) This is a digest of the authors' large work on the same subject published in 1944. A concise account of the course of the blood flow in the mature foetal sheep, as determined by cineradiography combined with intravascular injections of radio-opaque fluids, is followed by the description of the changes which occur after birth, the functional closures of the umbilical vessels, of the ductus venosus, of the foramen ovale and of the ductus arteriosus. Some very clear photographs and six explanatory diagrams increase the value of this excellent synopsis.

Elementary Bacteriology, by JOSEPH E. and ETHELYN O. GREAVES of the Utah State Agricultural College, of which we have received the fifth edition (W. B. Saunders Company; 20s.), is not a suitable textbook for medical students; the chapters on medical bacteriology, which occupy less than half the book, are inadequate for his needs. Those on bacterial metabolism, and on the industrial aspects of the subject, may be found useful to anyone unfamiliar with these branches. The style tends towards the sensationalism usually found only in popular works on microbiology, and the text is not free from errors, mainly in spelling. Koch, were he still alive, would be astonished to hear that his pupil, Walther Hesse, who first used agar in culture media, was an American.

In *Penicillin in General Practice* Dr. J. L. HAMILTON-PATERSON has written a useful guide to penicillin therapeutics in a handy form. He outlines its principles, describes methods both of preparation and administration, and deals then with the treatment of individual conditions. The instructions given, though brief and necessarily dogmatic, are adequate and orthodox. It is doubtful whether the more prolonged and technically difficult forms of treatment described should be undertaken outside a hospital, but their inclusion makes for completeness. It has been recognized (perhaps since this book was written) that certain bacteria here described as insensitive to penicillin are not wholly so, and some of the infections caused by them can be successfully treated. The advocacy of infrequent large doses for the treatment of syphilis should perhaps be more cautious until the effect on this disease has been studied further. The book is published by Staples Press, Ltd., at 5s.

Dr. EDWARD GRIFFITH's book *Modern Marriage*, originally written in 1935, now appears in a 19th edition (Methuen and Co.; 7s. 6d.). The author has taken the opportunity of bringing his material up to date so that it may be even more useful than it has been in the past. Now that contraception is so generally accepted, and the term "birth control" is recognized as a misnomer, Dr. Griffith has omitted that term from the title of the book. He has added several new chapters and revised the old ones; in particular, the chapter on contraceptive methods has been entirely rewritten and simplified. The new material includes a chapter on mind and the emotions, and two on the subject of sterility.

The June, 1946, number in the series *Surgical Clinics of North America* (6 numbers yearly, 55s. annual subscription: W. B. Saunders Co., Ltd., Philadelphia and London) is dedicated to the Lahey Clinic, and a number of the staff discuss the clinic's work to advance colonic and rectal surgery. A masterly description of the two-stage abdomino-perineal resection of Lahey (1935) is essential reading for the many with whom it finds increasing favour in this country. The monograph—beautifully presented and illustrated—gives a comprehensive study of the techniques and results achieved by leaders in this field, and reflects credit on the surgeons and publishers of its country of origin.

The Film Committee of the Association of Scientific Workers has recently issued a pamphlet entitled *Notes on the Formation of Scientific Film Societies*. Copies can be obtained on application to the head office of the A.Sc.W. at 15, Half Moon Street, Piccadilly, W.1. The Film Committee was set up in 1938 to further the interests of the scientific documentary film, encourage the making of more such films, and sponsor the exhibition of scientific films.

Preparations and Appliances

NEEDLE FOR INTRAMUSCULAR INJECTIONS AT REGULAR INTERVALS

Dr. I. BIERER writes from Bethnal Green L.C.C. Hospital:

Since the introduction of the 3-hourly penicillin injections we have been attempting to find a method for giving injections at stated intervals without the necessity for inserting a needle on each occasion. The reason for our desire to find such a method was that in our experience it has repeatedly happened that excitable or mentally deficient patients, or a patient weakened by a prolonged or serious illness, refused further injections. Many dreaded the experience of being awakened at night and, in expectation of the next injection, did not dare to fall asleep again. After a number of experiments we are now using the needle described below, of which an illustration is given.

A needle (a) is fixed to two wings (b) and to a female record mount (c) which lies between them. Into this mount fits a male record fitting (d) which is fixed to a third wing (e). A bayonet catch (f) fixes the male fitting firmly to the female mount. The needle is perforated at the distal end, thus ensuring a better distribution of the fluid.

The whole instrument is made of stainless steel and the needle can be sharpened or replaced when desired by the firm who have made the instrument.

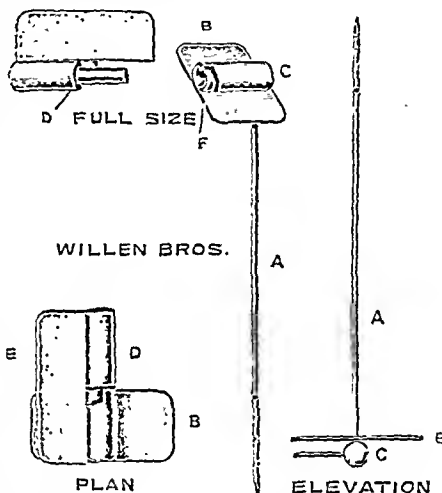
To insert, the needle is gripped by the three wings and inserted with a quick movement vertically into the muscle. As a result of this vertical insertion the wings can lie parallel, flush with the patient's skin, when they are easily held by two narrow strips of "elastoplast." When this has been done, in order to administer the penicillin or other drug you grip the male record fitting by the wing and withdraw it, make your injection, and replace the fitting, turning it by about 90° while doing so, so that it is caught by the bayonet catch and the wing lies parallel with the other two wings. Another small piece of elastoplast over the third wing might be necessary. According to the place of injection and the respective age and thickness of the muscles concerned, one of the following four needles can be used:

- | | |
|----------------------------|-----------------------------|
| (1) 1 inch 21 S.W.G. | (3) 1½ inch 19 S.W.G. |
| (2) 1½ 20 .. | (4) 2½ 19 .. |

It is our general practice to leave the needle unchanged and in the same position for two days, but it has been left for up to seven days without any local reaction. After its removal it should be immediately syringed through with cold water. We have found this needle convenient to use, easy to sterilize, and quite painless for the patient, who is able to lie upon it without discomfort. A non-touch technique has been used by us in its insertion, and infection has always been avoided.

The use of such a needle appears to us to be very advantageous, especially in the case of nervous patients and those seriously ill. It should be of great benefit not only in hospital but particularly in general practice where doctors are unable to attend the patient every three hours. Once the needle is in position it is not difficult for a nurse or someone else to continue the injections according to the instructions given by the doctor. It should also prove of value in the treatment of cases of eclampsia and, apart from penicillin, in the administration of other drugs.

I am much indebted to the Medical Officer of Health, Sir Allen Daley, and to Mr. W. P. Greenwood, medical superintendent of the Bethnal Green Hospital, for the facilities put at my disposal and to the nursing staff for their help. My thanks are particularly due to Mr. Regan, of Willen Brothers & Co., 44, New Cavendish St., London, W.1, who have made the needle.



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THE CONTROL OF AIR-BORNE INFECTION

"The supply of safe clean air intra-murally," as it was described by R. Cruickshank at the meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine reported on page 831, is a good deal more difficult than corresponding reforms in the supply of water and other necessities which may act as vehicles of infection. It is indeed the greatest problem in hygiene still awaiting solution, at least in countries such as this. The encouraging trends in mortality statistics, as Cruickshank pointed out, give a false impression: morbidity figures, if we had them, would tell a different tale. Studies of the incidence of "A.R.D.," the abbreviation for acute respiratory disease which is now current in the U.S.A., have been more numerous in that country than in our own: we know that the average American has three colds a year. But common experience as well as the results of the few deliberate studies which have been made in Great Britain assure us that colds, influenza, sinusitis, and bronchitis bulk very large among diseases causing temporary incapacity for work; these together with pneumonia and specific infectious diseases involving the respiratory tract are all involved in any attempt to improve atmospheric hygiene. So much has been done and written on this subject in the past few years that an impression may have been given of great advances either already in progress or shortly to be expected. The general impression conveyed by speakers at this meeting was that a vast amount of essential information is still lacking and that any practical attempt at air disinfection must still be regarded as an experiment. Cruickshank defined two fundamental questions to which an answer is needed. First, what are the principal foci of infection: are they to be found in public transport vehicles, schools, offices, factories, or places of entertainment? There are two ways of finding an answer to this: the study of atmospheric flora by means of the slit sampler, possibly regarding *Str. viridans* as an indicator of pollution from the mouth and throat, just as *Bact. coli* is used as an indicator of faecal pollution in water; and, in the second place, study by inquiry in different community groups. The second question, equally vital in relation to any practical attempt at reform, is: How precisely are most of these infections conveyed—by droplets (direct), droplet nuclei, or dust? Two very suggestive observations in this connexion were mentioned. "Double bunking"—i.e., placing beds one above another in dormitories—has reduced the incidence of A.R.D. by 50%, which distinctly suggests that direct droplet spread is an important factor. The oiling of floors, under similar conditions, had no effect—an observation which seems to relegate dust

to a position of little importance. As another pointed out, it does not seem quite certain that all such infection is air-borne at all: infection by contact is a possibility which must not be forgotten. How many people suffering from a cold, their hands perhaps actually wet with secretion from a handkerchief will on that account refuse for their friends' and acquaintances' sake to shake hands with them?

The discussion of practical means of preventing the aerial spread of infection was focused on two problems in this connexion—that of the hospital ward where specific infection exists, and that of the meeting-place of the community at large. These are two different questions and call for different measures. So far as the hospital ward is concerned the most fully investigated proceeding and the best supported by careful quantitative studies of its effects is the oiling of fabrics to prevent the formation and diffusion of infected dust particles. A representative of the British Launderers' Research Association told the meeting that the process of oiling has been improved and cheapened: it now need cost little more than 1d. per blanket, and the new emulsifier for the oil is something we have heard of before—cetyltrimethyl ammonium bromide. Such blankets are indistinguishable from those not so treated and have an equally long, indeed not a longer, life. But opinion about the efficacy of oiling and the necessity for it, at least as a routine proceeding, was far from unanimous. Joyce Wright confessed that a repetition of her ward trials of 1943, made in another hospital in 1945, had failed to confirm the previous results. The total bacterial count in the air of the oiled ward fell as before, but the incidence of cross infection with haemolytic streptococci in children with measles, which in the previous trial had fallen from 1 to 18.6%, was unaffected. The streptococci of the 1945 study were fewer and more miscellaneous and produced no cases of otorrhoea; but whether the difference lay in them or in some other factor was unknown. Various other opinions expressed on the usefulness of oiling gave the general impression that it should be resorted to for definite indications, but perhaps not adopted as a regular procedure.

The larger problem of disinfecting air in institutions and public places generally seems to have made little practical progress. The striking success of ultra-violet light in classrooms at the Swarthmore School, Philadelphia, in preventing the spread of measles does not seem to have been repeated elsewhere. The account by R. Hare, recently returned from America, of the sceptical atmosphere at a recent conference at Detroit at which this subject was discussed was not encouraging: it appears that neither ultra-violet light nor triethylene glycol vapour has proved its worth in large-scale practical trials. A positive contribution to this study, if scarcely beyond the stage of laboratory experiment, came from O. H. Lidwell, who cautiously both prefaced and terminated his remarks by pointing out that findings with bacteria are not necessarily applicable to viruses. Pursuing their studies of air disinfection, he and R. B. Bourdillon have shown that a quite remarkable bactericidal effect is exerted in air by lactic acid. Perhaps even better is α -hydroxy α -methyl butyric

id: this has the advantage of being readily volatilized heat, or even, from a large area, in the cold, whereas stic acid has to be sprayed. These substances are rapidly ctericidal in air in very low concentration, but in order act well on bacteria in dried particles they require a gh humidity. They have been actually tested in the mass the National Institute for Medical Research, where frement slit sampler counts of atmospheric bacteria were ade during the lunch hour. Both acids reduced the rise uring this period of activity by about half, whereas the stallation of ultra-violet lamps had a comparatively slight ough appreciable effect. As Lidwell said, any such tempt to achieve practical air disinfection is still only 1 experiment. We can give no confident answer to quirers who seek some means, apart from improved ntilation or lessened overcrowding, of improving the mospere of their premises in winter.

STARVATION IN GERMANY

he undoubted gravity of the food shortage in the British one of Germany has recently been underlined in comment in both Press and Parliament. From official and unofficial accounts there emerges the picture of a people suffering from under-nourishment, apathy, and moral exhaustion—the picture of a defeated nation now reaping the tares of Nazism. The state of health in the British one is something which must be the concern of the medical profession in this country, not only because of the humane basis of the work of the doctor but also because of the risk that a physically and morally depleted Germany may be the focus of epidemics which will spread beyond its frontiers. The voice of the propagandist is usually set in an emotional key, and in the discussions of the past few weeks it has been difficult to get a clear idea of what is happening, because there seems to be as great a shortage of facts as there is of food. As Prof. Major Greenwood points out in this week's correspondence columns: "We have no statistical information, not one death rate." We therefore publish elsewhere in this issue some figures obtained from official sources which, incomplete though they are, do at least help to bring the scene into some sort of focus.

The population of the British Zone was approximately 1,500,000 in February of this year, and it is estimated now to be about 22,750,000. The matter is complicated by the entry of illegal immigrants. The population of Hamburg is approximately 1,411,000, and on November 20 there were in Hamburg hospitals 1,197 persons diagnosed as suffering from hunger oedema; in the four weeks preceding November 20, 706 cases of hunger oedema were admitted. In a survey made on July 31, of 2,200 employees in a Hamburg gasworks 90 were found to suffer from hunger oedema. What is unknown is the incidence of hunger oedema among those not admitted to hospital, and in any assessment of its incidence we should bear in mind the observation by Dr. A. P. Meiklejohn and his colleagues in a letter to the *Times* that German doctors may naturally tend to exaggerate the incidence of hunger oedema among their compatriots in the British Zone.

Weight is one index of nutrition, and in a survey of 1,200 factory workers at Mulheim in October it was found that 82.9% of the workers weighed less than 67 kg. (10 st. 8 lb. approximately), which was taken as a standard body weight. But we should note here that the average weight of British Army recruits aged 20 during the war was about 61 kg. (9 st. 10 lb.). Tuberculosis is always regarded as a pointer to the state of nutrition in a community, and the available figures do not bear out alarmist reports of the incidence of this disease in the British Zone. Deaths from tuberculosis amounted to 1,275 in June, which was the worst month for the period June–September. This may be compared with an average four-week figure for England and Wales in 1937 of 2,135, it being borne in mind that the population in this country was then approximately twice the size of the present population in the British Zone. The morbidity rate of pulmonary tuberculosis in the British Zone for the first six months of 1946 was less than it was in the German Reich in 1941 and 1942, when the state of nutrition in Germany was supposed to have been high. From January to June of this year there was in the British Zone a progressive rise in the birth rate and a progressive fall in the infant mortality rate. In January, for example, the birth rate per thousand was 9.8 and the infant mortality 136; but corresponding figures for June were 18.2 and 72. We may recall that in 1942 the infant mortality rate for Glasgow was 91, for Dublin 98, and for Belfast 92.

It is, of course, not possible to make exact comparisons between the conditions in Germany now and conditions in England and Wales at other times; nevertheless the information that is available suggests that the picture is not so black as some have painted it. But though it is grey enough to cause apprehension there is a note of optimism in the most recent reports. According to the *Times* of November 25, the ration of 1,550 calories a day for the normal consumer in the British and American Zones of Germany will be continued during the next rationing period. It is stated that the "food position in the British Zone is regarded with more hope than at any time for the past three weeks." There is the loan of 50,000 tons of wheat and flour from the American Zone; grain and potatoes are coming in from the Russian Zone as a result of the trade agreement of September 20; and the harvest in the British Zone has this year been good, threshing now being 40% ahead of last year. But the margin is narrow enough, and no one in this country will be able to feel at ease until the Germans in the British Zone are getting enough to eat and until famine oedema has disappeared.

OTITIS AND THE MASTOID

The association of chronic otitis with a compact type of mastoid bone has long been recognized, and it was rather naturally supposed that the latter was the result of the chronic inflammatory process which caused a gradual obliteration of the air cells. Schwartz was a prominent exponent of this view and stated that eburnation or sclerosis of the mastoid bone was a frequent consequence of chronic

inflammation of the middle ear, especially when suppurative. It was, however, known that this sclerotic condition of the mastoid bone existed also with a normal state of the middle ear, and this had to be explained by an inflammatory process which had long passed away in the middle ear but continued to develop in the mastoid bone. Wittmaack later wrote much on this subject and concluded that the normal condition of the mastoid bone is cellular, the system of air cells developing rapidly at an early period of growth and producing a complete pneumatization in early childhood, though a fresh formation of cells continues throughout life. Under pathological conditions—that is, otitis in infants and in children up to two years of age—according to Wittmaack, the growth of the system of air cells is either inhibited altogether or much limited. There would thus occur both in children and in adults great variations on each side of the same person from complete absence of air cells to extensive pneumatization.

Although Wittmaack's hypothesis has received a general measure of qualified assent it has never carried conviction, and the view that the system of cells continues to develop in later life has not been fully accepted. Arthur Cheate in particular, who devoted much of his life to studying the anatomy of the temporal bone, rejected the views of Wittmaack and held that the ivory, diploetic, and fully cellular formations are anatomical variations, of which the solid varieties predispose to chronic otitis. If this is so the problem of the association remains unsolved. Marcus Diamant¹ has made investigations of a clinical nature which support Cheate but still do not fully answer the question which constantly presents itself in otology. The size of the system of air cells in the mastoid bone can be estimated fairly accurately in x-ray films in the lateral projection. A close study of this question by Diamant showed that the frontal projection had a close correspondence with the lateral, so that the volume of the cellular system could be estimated quite accurately by measurement of the lateral film with a planimeter. The clinical material was drawn from patients in a fever hospital and in private practice and included 320 normal persons, 123 cases of scarlatinal otitis, 144 cases of acute otitis media, and 275 cases of chronic otitis media, the last including both central and marginal perforations of the tympanic membrane with discharge. The original number of cases was larger, as only those subjected to re-examination could be included in the final assessment. The repeated examinations showed that in early childhood the cellular system of the mastoid is on the average small and grows rapidly, so that it is essentially fully developed in females by the age of 10 years and in males by the age of 15. It does not grow any further subsequently and appears to regress after the age of 30, contrary to the opinion of Wittmaack. In acute otitis it was found that the average size of the cellular system is only three-quarters of the size of the normal and is about three times as large as that in chronic otitis. The ear with the smaller cellular system is the one more commonly attacked (69%, as against the 50% that might be expected). In chronic otitis almost all the ears have cell systems much below the normal, the average being about a quarter of the

normal size. In marginal perforations the size is less than in central perforations. If the tympanic membrane shows scar formation the cellular system is less than normal, but the system is larger than in cases which show a persistent perforation. There is thus a close correlation between the size of the cellular system and chronic otitis, and to a less extent acute otitis. On the other hand many persons with small cellular systems never contract otitis.

This elaborate work by Marcus Diamant, which has been closely checked statistically, is therefore a striking clinical confirmation of the views expressed many years ago by Arthur Cheate, but it gives no explanation of the phenomenon.

PRE-OPERATIVE DIETS

Within recent years surgeons have become increasingly aware that the nutritional state of their patients plays an important part in their ability to withstand severe operative procedures. Since it is the protein-rich tissues or body fluids which are damaged or lost, attention has naturally been focused on the protein component of the diet. Cutbertson was probably the first to point out the magnitude of the catabolic destruction of body protein which follows injury, and he has recently reviewed the principles involved and the problems of convalescence.¹ Pre-operative dietary problems have been dealt with in considerable detail by Varco.² The pre-operative ingestion of protein in adequate amount is as, or more, effective than corresponding increments made available in the post-traumatic phase. Cutbertson and Howard and their associates³ have shown in fracture cases that despite abundant food and substantial increases in the intake of protein a negative nitrogen balance exists at the height of the catabolic period, which reaches its maximum usually within the first ten days following injury or operation. Peters⁴ has reported a similar situation in acute infections. A condition of nutritional imbalance may also be present in a patient for a considerable time before operation. The operative procedure may then accentuate the degree of negative balance, as the amino acids required for the process of repair may necessitate a further breakdown of reserve protein. According to Munro^{5, 6} this latter response is conditioned by the nutritive state, and liver dysfunction may develop, particularly when the diet has been scanty.

A satisfactory nutritional preparation will extend the benefits of surgery to the type of patient who in the past has often been regarded as too poor a risk. The pre-operative steps should include not only restoration of the water and electrolyte equilibrium but so far as possible a high-protein, high-carbohydrate diet. Skim-milk powder has been shown to have many advantages as a source of protein in pre-operative diets. Diet 1 described by Varco consisted of 160 g. protein, 407 g. carbohydrate, and 18 g. fat (calorie value 2,426 with 1.6 calories per ml. of fluid diet). Diet 2 consisted of 120 g. protein, 409 g. carbohydrate, and 37 g. fat (2,446 calories and 1.6 calories per ml.). This was a less tasty diet, rendered suitable for feeding by a nasal tube. The basis of Diet 1 was strained oatmeal, skimmed milk, lactose, orange purée, pea purée, egg, and grape juice; that of Diet 2 egg, skimmed milk, skim-milk powder, and lactose. These diets were frequently given in the order Diet 1 by day and Diet 2 by night. Diet 1 is

¹ *Brit. med. Bull.*, 1945, 3, 96.

² *Surgery*, 1946, 19, 303.

³ *Johns Hopk. Hosp. Bull.*, 1944, 75, 156, 209.

⁴ *Fed. Proc.*, 1944, 3, 197.

⁵ *Biochem. J. (Proc.)*, 1943, 37, xii.

⁶ *Brit. J. exp. Path.*, 1945, 26, 396.

id to be palatable and is given in multiple servings. Diet 2 is designed for tubal feeding and although less palatable is taken readily by mouth. Varco has given 5,000-6,000 calories to patients with ulcerative or neoplastic lesions of stomach and duodenum but little or no pyloric obstruction. Patients with partial obstruction were given limited quantities of Diet 1 by day and Diet 2 by night. From midnight to 8 a.m. during the initial days no feeding is allowed; the stomach was then evacuated by nasal tube and the quantity measured. Patients having aspirations of less than 500 ml. were continued on this regime, which should permit or even exceed 3,500 calories daily. For patients with high-grade but not complete obstruction continuous stomach drip was set up and Diet 2 given. In cases with complete pyloric obstruction the bulk of the daily calorie intake was provided by hypertonic glucose (10% in distilled water) dripped intravenously at the rate of 100 to 125 ml. per hour through a fine needle, so that 500 ml. (1,200 calories) would be infused in ten to twelve hours. Hourly rates in excess of this caused glycosuria. The calorie requirement was further met by 1,000 ml. of 10% glucose in distilled water or saline solution, as determined by electrolyte need. Protein was supplied daily in plasma. Experience has shown that it is more comfortable if a forearm vein is used. This allows a freer range of movement than does insertion into an antecubital vein. Protein digests do not as yet appear to offer a satisfactory solution to this problem owing to the large volumes required. Further, in the non-obstructive cases there is presumably adequate enzymic activity without recourse to redigestion. Diets 1 and 2 of Varco can be applied to the treatment of cases with neoplasms of the colon, sigmoid and rectum, and to burned patients. Varco has suggested that when the percentage loss in body weight is 5-10% three to five days of proper treatment are sufficient. When the loss approaches 20% ten to twelve days are necessary, and three weeks are needed when the loss approximates 5-30%.

This recent work is very suggestive, although it does not yet provide proof that such measures of nutritional readjustment can yield a margin of safety for these poor-risk patients. The clinical evidence in support of Varco's thesis is certainly worthy of consideration and confirmatory trial.

A NEW ANTIBACTERIAL COMPOUND

Recently the discovery has been announced¹ of a new synthetic compound called furacin (5-nitro 2-furaldehyde

semicarbazone) $O_2N-\text{C}_4H_2O-\text{CH}=\text{N}-\text{NHCONH}_2$ which

is actively bacteriostatic or bactericidal, and is said to be effective clinically by local application to infected wounds. It is a yellow solid only slightly soluble in water and is not unduly toxic. In a concentration of 1:20,000 to 1:200,000 it inhibits the growth of many varieties of Gram-positive and Gram-negative organisms *in vitro*. This is not a very high degree of activity, however, and it does not act *in vitro* on *Ps. pyocaneae* or on *Str. viridans*, but does have a fairly strong action on *M. tuberculosis*.

When a single oral dose is given to mice the LD50 is about 590 mg./kg., and the chief toxic symptom is hyperirritability, which may go on to convulsions. Mice were infected with 10,000 lethal doses of various bacteria, and the effect of treatment by daily oral doses of the compound was studied. In the optimum dose (150 mg./kg. daily for 3 days) furacin was fairly active against *Staph. aureus*, *Str. haemolyticus*, and two *Salmonella* organisms, but it

was ineffective against *Str. pneumoniae*. It is fairly active against *Trypanosoma equiperdum* in mice and *Treponema pallidum* in rabbits, but it has no action on *Spirochaeta recurrentis duttoni* in mice. Even the optimum dose protects only 67-70% of the mice treated for the above infections, and the explanation of this phenomenon is obscure. Larger doses increase the death rate, although 150 mg./kg. daily is considerably below the ordinary lethal dose.

The production of every new antibacterial compound is to be welcomed, and the results of clinical trials, which will soon begin, are awaited with interest. If furacin had been described 13 years ago it would have been greeted as a great discovery, but the figures suggest only a relatively low activity *in vitro* and *in vivo*. In an era of sulphonamides and penicillin a new antibiotic requires very high therapeutic efficiency or some other advantage for it to become established in clinical practice.

WOMEN IN INDUSTRY

The report of the Royal Commission on equal pay, which was published on Nov. 6, brings into prominence the opinion that female labour is less productive than male, a view widely held by employers but dissented from by three of the four women members of the Commission. This supposed inferiority of female labour is difficult if not impossible to assess accurately; it is usually attributed in part to a greater liability to ill-health in women. The B.M.A., whose policy has always been equal pay for equal work, gave evidence before the Commission stating that the contention was not valid for medical women.

The importance of investigating the health of women in industry is emphasized by a statement made by Dr. Anna Baetjer¹ to the effect that in the U.S.A. no fewer than 16 million women are expected to be gainfully employed by 1950. Their employment presents many health and personnel problems which differ from those encountered in the employment of men, partly because of the physiological differences between men and women and partly because of differences in their social backgrounds. If women are to be utilized by industry with the maximum of health and efficiency these problems must be much more fully understood than at present. To this end, Dr. Baetjer has collected a considerable mass of such information as is available, and has presented it in a very readable form with numerous references to published work. She has by no means confined her sources to American literature, but has done full justice to the investigations made in this country. She lays stress on the considerable gaps in our knowledge which her data indicate, and the monograph should prove most useful and suggestive to future investigators.

In her long section on sickness-absenteeism, Dr. Baetjer discusses the various reasons given to account for the greater sickness of women than of men. It may be due partly to women taking their aches and pains more seriously than men do, to their having more home responsibilities and duties, and to their greater indifference to adequate nutrition, but perhaps the most important factor of all relates to the proper placement of women in relation to their physical and mental capacities, and to the attitude of their supervisors. The extent of occupational diseases among women is not known, but there is some reason to believe that toxic dusts, gases, and fumes do not affect their health more than that of men. Information regarding the number of women exposed to harmful chemical substances and the extent of their exposure is very limited,

¹ Dodd, M. C., *J. Pharmacol.*, 1946, 86, 311.

¹ *Women in Industry. Their Health and Efficiency.* By Anna M. Baetjer, Sc.D. W. B. Saunders Company. 20s.

but so far as we know it is probable that occupational dermatoses are neither more nor less common among women than men, and there is no reason why normal women should be restricted any more than men from working at jobs which involve the use of toxic substances, with one exception. This relates to pregnant women, who appear to be more adversely affected than normal women. Substances such as lead have been shown to exert a specific influence leading to abortion. Also pregnancy places a limit on the ability of women to do physical work, but there is no reason why the women should not be allowed to continue on certain types of work, especially if provision is made for changes of posture during the work period. Continual sitting is no more desirable than continual standing.

An appendix to Dr. Baetjer's book records several thousand occupations known to be performed regularly by women or apparently suitable for them, with information about the normal training period required.

"ELECTRONIC BRAIN"

A good deal of very natural misunderstanding appears to have been caused by Lord Mountbatten's reference to the possibility of an "electronic brain." There are indeed few limits to the feats of discrimination and subsequent action which radio circuits can now be made to perform. But thought, in the strict sense of the word, cannot be included among their capabilities.

The distinction is illustrated by a device of another kind which is stated to be already in use by one electrical firm for the transmission of dial readings down a telephone line. To changes of less than a certain amount this machine will "pay no attention" unless they are sustained for more than a prescribed interval of time. Greater changes, on the other hand, which may be of immediate importance, will be transmitted at once and without giving time for the needle to settle down. This is judgment, if you like; but it is judgment exercised in accordance with a set of rules which have been laid down in advance by designer or operator, and which the machine itself does no more than obey. Alternatively, one may say that the machine is displaying a reflex action, the form of which has been externally determined—or shall we say conditioned?

The manner in which such instructions are given to the machine is of considerable practical importance. In the original Eniac machine, which was built for the U.S. War Department at the University of Pennsylvania, the instructions as to the arithmetical procedures to be followed are given by making a series of plug and socket, and switch, connexions by hand. In the A.C.E. (Automatic Computing Engine) which is being built by the Mathematics Division of the National Physical Laboratory punched cards will be used to give the machine all the preliminary guidance it requires. Standard sets of cards, covering different types of calculation, will be stored in a special library; and the instructions for any particular problem will be assembled from these prefabricated units, linked together possibly by any further special instructions which may be needed. Only about two minutes of the machine's time will be occupied. The second requirement, naturally, is that of speed. The A.C.E. is being designed to multiply two ten-figure numbers in two thousandths of a second. This is about half as fast again as Eniac; but when speed of working is in any case so high any improvement in this direction will be of comparatively minor importance. Thirdly, such a machine is required to "remember," and to reproduce at a given moment, any intermediate stages of the calculation which may be required of it. This is

of obvious value in very many types of computation, and it is here that A.C.E. will have its second big advantage. The "internal memory" capacity of the A.C.E. will be 75,000 decimal digits, as compared with only 200 in the Eniac machine.

As one illustration of the heavy work which A.C.E. will be able to undertake, it may be mentioned that, whereas most mathematicians would abandon as too laborious the solving of a set of simultaneous equations with even twelve unknowns, the A.C.E. will be capable of tackling fifty or even a hundred unknowns, with merely a few extra seconds in which to do the work. On account of the high speed at which it will operate, and the short time required to give it "instructions," it is thought that this one machine will be able to handle the whole of the problems which the country's research workers and mathematicians may wish to give it.

A RADIOLOGICAL PIONEER

Older radiologists will recall the attractive personality of Major C. E. S. Phillips, who died last year after serving the Royal Institution for sixteen years as secretary. The addresses given at a commemoration meeting at the Royal Institution have just been published. They were given by those who were associated with Phillips in his various activities, which included music and sketching as well as physics, and they reveal a man (in the words of Sir Hen Dale) "whom a fortunate inheritance had placed beyond the need for working for a livelihood, but who gave eagerly of his time and substance in the field of science, art, and scholarship"—the type of the true amateur which and the rapidly changing conditions of the modern world make one fears, become rarer. Phillips was a pioneer in the application of x rays to the living body. He began work on x rays in his father's laboratory early in 1896, a few months after the announcement of Röntgen's discovery and an x-ray photograph of his belonging to that period is in existence—a skiagram of the hand, taken with a Lenard tube with 35 minutes' exposure. Later he did some notable work in formulating a quantitative basis for the therapeutic use of the radiations. Dr. W. V. Mayneord recalled how Phillips during the first world war acted as physicist to the X-ray Committee of the War Office. At about the same time he became honorary physicist to the Cancer Hospital in the Fulham Road. He was thus one of the earliest of hospital physicists. In those days collaboration between clinicians and physicists was unusual, and those who have since taken up the calling of hospital physicist are fortunate to have had as almost the first of their number a man with the knowledge, insight, and charm of Phillips. One of his strong beliefs was in the unity of purpose between the doctor and the scientist in the advancement of medical radiology. In 1909-10 he was president of the Röntgen Society, and in 1930-1 he was president of its successor—the British Institute of Radiology. The latter body possesses among its treasures a set of three small radium standards which Phillips prepared in 1909. They were made in the form of three glass tubes containing in all about 0.5 mg. of radium bromide. These three standards were compared with a weighed amount of radium bromide in Rutherford's laboratory and presented by Phillips to the old Röntgen Society.

The Croonian Lectures will be given before the Royal College of Physicians of London by Dr. H. L. Marriott on Dec. 3 and 5 at 5 p.m. Subject: "Some Quantitative Considerations Regarding Depletion of Tissue Fluid and Blood Constituents."

SOME AMERICAN IDEAS ON VENEREAL DISEASE CONTROL

BY

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The main pillars of any venereal disease control programme are: (1) the seeking and controlling of nests of infection; (2) prophylaxis; (3) getting patients and their contacts under observation and treatment; and (4) ensuring that those patients remain under treatment until they are at any rate non-infectious to others. If 100% success could be obtained on all of these four points, then venereal disease as a public menace would be conquered. In order that all concerned may co-operate to this end, the aims and the methods of arriving at them must be made public, and hence education and propaganda to a greater or lesser degree are also essential.

Let us consider briefly how far we have progressed along the road in this country. So far as seeking out-nests of infection is concerned prostitution is theoretically illegal, but anyone who walks in the West End of London can see that it is far from suppressed. Furthermore, girls known to be in the "profession" are not subject by law to medical examination. Candidates for marriage are not compelled to have a premarital blood test, though most hospital clinics do one as a routine measure in the case of pregnant women. To ensure that potentially infected people receive treatment we rely on voluntary methods of persuasion, and our attempts at legislation on this are confined to Regulation 33B, which is a step in the right direction, though from the aspect of V.D. control it is but a short distance along the path. To ensure that patients remain under treatment, arrangements via almoners and other V.D. clinic workers are as good as can be devised; on the other hand, for the tracing of infected contacts we have to rely on the public spirit and social conscience of the infected patient and the perseverance of the clinic doctor.

When viewed dispassionately, we obviously have not got very far, and, as things stand at present, probably can get little farther. Unfortunately the traditional British ideas of liberty and freedom also have to include the freedom to have venereal disease and to transmit it to others. This has obstructed any attempts to obtain broader legislation. As a result the efforts of education and propaganda suffer from the same inherited traditions, and tend to be colourless and inhibited as compared with places where legislation has been enforced. From the point of view of effect, one would have thought that countries possessing the legislation would actually require less propaganda to attain the ends required than those where voluntary effort has to be relied on. In any case, the U.S.A., which has the advantages of much legislation, finds it needs quite a considerable amount of propaganda to reinforce it, and by comparison our efforts here are puny.

Legislation

The laws enforced in the U.S.A. differ from State to State. In New York, however, the Sanitary Code, the Domestic Relations Laws, and the Public Health Laws require that a licence for marriage be refused unless the application is accompanied by a certificate stating that an examination and a blood test have been done by a competent physician within the last month. The patient also has to sign a declaration that to the best of his belief he is free from venereal disease. In addition, all physicians attending pregnant women are by law required to do a blood test for syphilis; while under Article 17b of the State Public Health Law the Department of Health is empowered to compel all individuals suffering from communicable venereal disease to seek proper and sufficient treatment, and doctors are instructed to issue circulars of information to all patients with syphilis or gonorrhoea. What is more, these diseases are compulsorily notifiable to the City Health Department. Finally, all women arrested on a charge of prostitution have a compulsory medical examination, and treatment if infected. Other cities, such as Chicago, have similar laws, and most if not all of them have a Venereal Disease Control Section at the City Health Department. In these places a central registry is kept and contacts are traced and followed by letter,

registered letter, telegram, or social visit, according to local custom and expediency, and persistent defaulters are thus found when the almoners working locally at the clinics have otherwise failed.

The following is a description of the practical application of the four major items of V.D. control in New York and Chicago.

Seeking and Controlling Sources of Infection

In my visits to Washington, Baltimore, Philadelphia, New York, and Chicago, and often walking alone on the streets at night, I was never once accosted by a woman, and prostitution as such is definitely concealed. It can, however, well be argued that it is not banished, for 5,000 women are arrested on a charge of prostitution in New York State each year, but those arrested are compulsorily examined. In Chicago bar-keepers are invited to participate actively in V.D. control, and in August, 1945, over 4,000 tavern owners attended a meeting convened by the Medical Officer of Health, Dr. Bundeson. Certificates stating that hotels and bars are co-operating are issued and displayed. This co-operation really consists in ensuring that the saloon is not used as a place of assignment, and also that information is given to social workers as to the location of any of the bar-habitues if they have been notified as contacts or potential sources of infection. If a particular bar is found to be a frequent place where patients meet the source of their infection, then the hotelier is visited by a representative of the Health Department and asked to mend his ways. If he refuses he runs the risk of having his premises shut and notices like "SYPHILIS—BEWARE!" and "VENEREAL DISEASE—KEEP OUT" plastered outside the building. Co-operation is usually forthcoming.

Prophylaxis

Methods of prophylaxis have never been so actively imposed upon civilians as on military personnel. In Chicago, Service men on furlough are given a printed list of eighteen "pro" stations that have been set up in the city for their use.

Getting Patients under Treatment

This consists in bringing in all those who are reasonably expected to be infected and the tracing of contacts. Compulsory notification is an essential to this end. In Chicago this was conducted by the epidemiological section of the Chicago V.D. control programme. The very name gives the clue to the approach to the problem, and venereal disease is being tackled realistically from the epidemiological standpoint.

All patients are interviewed at the outset and, in addition to being educated concerning their condition, are persuaded to identify all possible contacts. About 2½ contacts, on an average, are found for each case of early syphilis. Rosenthal in New York quoted 36 remembered telephone numbers out of 49 exposures from one of these "victory girls" or "patriotutes." Some 4,000 reports of contacts or diagnosed cases of V.D. are dealt with in Chicago each month, so a priority list consisting of contacts of early syphilis and recent gonorrhoea is necessary. Registered letters are used in the first instance to induce notified contacts to report to the Health Department. If these fail, then a field worker is put on the job. The field workers each have their own territory and there is a special "tavern squad." In six months (January to June, 1945) some 11,500 epidemiological reports reached the epidemiological section in Chicago. Of the patients concerned 2,614, or 22.8%, were placed under treatment, while 11.5% were already receiving it; 12.8% were examined and found not infected. Just over 30% went unlocated.

All this work cannot be done without a considerable staff. The epidemiological section has its quota of the 602 workers employed on the Chicago V.D. project. The file cards are made out in quadruplicate, the carbons being attached in advance at the printers. The phonetic system of name filing is employed, the Smiths, Smythes, and Psmiths all being grouped together. Recently they have had the advantage of electric typewriters, of which the stenographers spoke very highly. The whole project here is under the V.D. Control Officer (Dr. Theodore Bauer), who in his turn is under the Medical Officer of Health, who takes a very active part in putting over the programme.

Ensuring that Patients Remain under Treatment

In the year ending June 30, 1945, some 1,094 cases of primary and secondary syphilis had been diagnosed in the Health Department V.D. clinics in Chicago. All but 23 (97.9%) received intensive treatment in the 200-bedded Chicago Intensive Treatment Centre, a hospital used solely for this purpose. This centre has been a forerunner of rapid syphilis therapy with intensive arsenic, with fever, and latterly with penicillin, by themselves or in combination. The average stay in hospital is ten days and all treatment is free. Attractive meals are served cafeteria style, and no visitors or incoming telephone calls are permitted. The wards, however, carry public telephone booths for outgoing calls, so that the patient is isolated only so far as he or she wishes to be. This innovation is a real boon for patients and could with advantage be copied in Britain, as, apart from the benefit to patients, it is time-saving for the nursing staff, who otherwise often undertake such small jobs. The hospital was opened in 1942, and early in the New Year of 1945 it treated its ten-thousandth patient.

While they are in hospital patients are supplied with magazines, games, and puzzles. Recreation hours are organized in the hall, equipped with a piano, a juke box, library, and canteen. Handicraft classes are offered as diversional therapy, and films are shown four nights weekly—two for men and two for women. It cannot be denied that in Chicago the vast majority of syphilis cases diagnosed are getting full and adequate treatment.

The gonorrhoea cases attend the clinics as out-patients. The Chicago Municipal V.D. Clinic takes the bulk of these, and may well be the most-used V.D. clinic in the world, some 1,300 passing through its doors each day. Over twenty persons of both sexes can be dealt with simultaneously. This clinic is in a converted school, and the actual buildings are not anything marvellous. Its clientele are black and white of all grades of society. The main waiting-room is like a station on a bank holiday, while in the treatment room a small corps of doctors are dealing with patients as fast as they can go in the twelve centrally operated cubicles. In 1944 some 23,500 cases of venereal disease were treated in this clinic alone. In its first year of operation—1918—only 870 were treated. All cases of syphilis are referred for treatment at the Intensive Treatment Centre, as also are patients with penile sore and lymphogranuloma inguinale, for diagnosis. The gonorrhoea cases are treated on the spot, using the one injection technique of penicillin in oil-beeswax. As with syphilis, all diagnosed cases of gonorrhoea are receiving their full treatment.

For the tracing of cases for follow-up, social workers are used by the individual clinics. From the epidemiological standpoint the majority of patients with syphilis or gonorrhoea have actually already received the full amount of treatment necessary to cure them before leaving the hospital or clinic. However, a careful follow-up, especially of the syphilis patients, is necessary so that reliable data on the success of the various treatment schedules used may be obtained. As a result of letters, telephone calls, telegrams, and field visits, some 70% of the first 3,000 early syphilis cases treated in the intensive treatment centre at Chicago are still under observation.

From the foregoing it is obvious that everything possible is being done to ensure that infected persons are brought under observation, and a very high standard of success is obtained in seeing that cases, once found, do receive the necessary treatment, thus rendering them non-infectious.

Propaganda

Propaganda regarding venereal diseases is used to reinforce the main points already mentioned. However, before any propaganda can be used the actual diseases have to be "mentionable." The same influence is noticeable in this country, and the initials V.D. usually feature largely on any propaganda placards. I do not think we have yet succeeded in making V.D. a topic that can be discussed freely everywhere without embarrassment. Certainly the mild efforts on the radio, while admitted at the time, have not reached the level of a weekly feature. America has not yet completely succeeded either, but the words are being forced into the vocabularies of the inhabitants whether they like it or not. They have argued that "T.B." and "B.O.," as terms, are socially acceptable, and

as the latter has so become solely by frequent advertising, by the same process, V.D. can too. Hence at present much propaganda still has to be wasted in bringing the real subject on the agenda for discussion, and the motives, such as advising treatment centres, urging blood tests, or discouraging promiscuity, are bound up with the general advertising of the subject. Furthermore, there is no shortage of paper in the U.S.A.

In Chicago the trams and buses are an obvious medium for the display of propaganda posters. The first one used was "Do you know, THOUSANDS have V.D. and don't know if you are one of them?" At the foot, in smaller print, was the address of the Chicago Health Department: "Ring Ran 80 Ext. V.D." This has now been changed to "Don't be Ostrich—Face the Facts—V.D."—a slogan which was also found on leaflets in New York. Window cards for barbershops, hotel-keepers, and "co-operators" are also available and doubtless were used during the first flood of enthusiasm though I do not remember seeing them being used anywhere during my visit. Matches, too, are employed. The Harlem Social Hygiene Council distribute in New York book match coloured black with "V.D." in large red letters on the cover (the initial selling motif again). In Chicago, where perhaps they consider that the initials are now accepted, a more modest book match is used with a yellow cover bearing the words "FIND OUT . . ." and an arrow pointing inside to a list of addresses of the municipal clinics. Matches are given away free, by tobacconists in the United States, and in Chicago many were done to induce drug stores and other establishments to buy propaganda varieties. Over a million have already been issued, and a further million are on order.

A strong Chicago placard contained a black-and-white picture of a lady of the streets and was inscribed, "Easy to get—V.D." Another leaflet available in a New York health centre, showing a very photogenic six-months-old baby, was inscribed, "Our children need never know the sorrow of SYPHILIS." A further leaflet in the same centre, headed, "What you don't know CAN hurt you," contained the following story:

"Arguing Al was scared of syphilis. Al would face any man in an argument or fight, but he could not face going to his doctor and finding out what ailed him. You know how some people feel . . . 'What I don't know won't hurt me.' That was Al. The sore that was worrying him went away he said: 'Aw, I wasn't syphilis,' and he put the whole thing out of his mind. Fifteen years later syphilis put him in a wheel-chair for the rest of his life. From then on his wife and kids had to shift for themselves and for him, too. The pay-off was this: Al had lost out to syphilis. The doctor could have cured him, if Al had seen him when the first came. . . ."

This more direct approach obviates any repetition of the story of the lady Chicagoan who thought V.D. meant vital deficiency.

Over 600 workers are employed to carry out Chicago's programme, and everything is done to make them understand the whole picture. Originally issued bi-monthly, but now published quarterly, is a small periodical entitled *V.D. Topics*, written solely round the work. It carries, too, a "scandal-sheet closure" with information about weddings and other social activities of the workers and even the doctors themselves. At least one occasion the entire staff has been allowed time to attend a short course given by other members on their particular aspects. This even included the staging of a series of skits showing, among other things, imaginary conversations with difficult wives, and the tavern squad at work.

A new type of advertising has been tried recently with movie juke box which alternates entertainment reels with V.D. control messages. The complete show lasts ten minutes, can be operated free by pressing a button. It was first used at the large municipal clinic to educate and relieve the tide of waiting out-patients, and, in order not to interrupt the show, a blackboard was improvised to call the patients when treatment was due. Latterly it has been fulfilling a number of two-week engagements in the various billiards saloons in the city. Medical Officer of Health gives luncheon addresses, which are carried by newspapers, and the radio is used for talks. On a broader basis, the American Social Hygiene Council as part of its widespread activity holds conventions on Feb. 7, which is National Social Hygiene Day.

To the British mind the first reaction to some of these ideas is one of surprise mingled with amusement. On consideration, however, it is readily perceived that it is all the logical pursuance of an accepted line of thought. Venereal disease must be reduced and stamped out. To do this, legislation is introduced, and to make it watertight the fullest publicity is given. It is both logical and realistic; but its results are disappointing. The number of gonorrhoea patients in Chicago V.D. clinics climbed from 892 in August, 1944, to 1,685 in August, 1945. This was partly attributed to the popularity of penicillin. However, the numbers of new cases of venereal disease are still rising. In New York, too, they are on the increase. It is said, though, that the rate of increase is less when compared with that during and after the war of 1914-18, and also that much of the increase is apparent owing to the greater and ever-increasing efficiency in tracing contacts and getting infected persons under treatment. When the peak is reached it will be interesting to see to what level the final figures attain as a result of the realistic programmes that are afoot. Meanwhile we must never lose sight of the trenchant observation of Stokes, as quoted by Rosenthal:

"Venereal disease dissemination takes place in the period between infection and the institution of treatment control. It is not the patient under treatment who spreads disease, but the promiscuous individual before and after treatment. In other words, we must move against promiscuity rather than, or in addition to, disease."

[Note.—The views expressed in this paper are my own personal opinions and not necessarily those of any official body with which I may be associated.]

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LEAGUE OF RED CROSS SOCIETIES

At the 19th meeting of the board of governors of the League of Red Cross Societies, held at Oxford, recommendations of the advisory health committee of the League were presented by its chairman, Dr. Fred Routley. The part which the national Red Cross Societies might play in rehabilitation and also in the blood transfusion service was discussed. It was agreed that the rehabilitation and resettlement of the disabled is a form of humanitarian service in which Red Cross Societies in every country ought to take part in every way possible. It was recognized that rehabilitation is a continuous process, beginning in hospital and extending throughout convalescence, that it is an individual process, requiring adaptation to the need of each patient, and that it is a vocational process, related to the patient's future means of employment. It was agreed that members of Red Cross Societies should be prepared to take an active part in the work of rehabilitation by assisting the trained staff in hospitals and rehabilitation centres and by helping disabled persons in their own homes. Special reference was made to the rehabilitation of the tuberculous.

On the question of blood transfusion it was considered desirable that a Red Cross Society should not pay for any blood supplied to it by a donor, but that it should, by continuous publicity, point out to all citizens the great value of transfusion and their obligation in safeguarding the lives of others by ensuring an adequate supply of blood. Other recommendations were that in countries in which an adequate blood transfusion service does not exist Red Cross Societies should investigate the possibilities of establishing such a service under their own direction, and that there should be uniformity in the colours of the cards used to denote blood donor groups so as to facilitate international working; thus green might be chosen for universal donors (O), red for the AB group, and yellow and white for the A and B groups respectively. It was also recommended that in view of the part played by some Red Cross Societies in the control of epidemic and endemic disease an international meeting of experts in infectious diseases should be convened.

BRITISH ZONE IN GERMANY
NUTRITION AND DISEASE

While public comment on the health of Germans has been voluminous in the last few weeks, a dearth of published vital statistics has rendered much of it a matter of speculation. We therefore reproduce below three Tables (I-III) from the journal sponsored by the British Control Commission, the *British Zone Review* (Oct. 12, 1946, 1, 28). The figures are those officially accepted by the Public Health Department of the Control Commission.

TABLE I.—Vital Statistics for German Reich

Year	Birth Rate per 1,000 per annum	Death Rate per 1,000 per annum	Infant Mortality per 1,000 Live Births per annum
1938	19.6	11.6	60
1939	20.4	12.3	61
1940	20	12.7	Not available
1941	18.6	12.0	" "
1942	14.9	12.1	" "
1943	16	12.2	" "
1944	Complete figures not available		
1945			

TABLE II.—Vital Statistics for British Zone

1946	Birth Rate per 1,000 per annum	Death Rate per 1,000 per annum	Infant Mortality per 1,000 Live Births per annum
Jan.	9.8	15.4	136
Feb.	11.7	14.3	109
March	13.7	16.1	109
April	16.1	15.1	89
May	17.9	14.1	82
June	18.2	10.9	72

TABLE III.—Morbidity from Infectious Diseases: Incidence per 1,000 Population per Annum

	German Reich				British Zone	
	1938	1939	1941	1942	Last 6 Months 1945	First 6 Months 1946
Diphtheria ..	2.2	2.2	2.28	3.12	2.7	2.19
Scarlet fever ..	1.68	1.93	3.1	4.46	0.49	0.3
Pulmonary T.B. ..	0.89	0.91	1.31	1.41	0.73	1.01
Other T.B. ..	—	0.082	0.17	0.19	0.9	0.16
Cerebrospinal fever ..	0.027	0.078	0.053	0.031	0.01	0.01
Polio-myelitis ..	0.085	0.053	0.059	0.044	0.02	0.002
Typhoid ..	0.043	0.05	0.036	0.18	0.78	0.42
Paratyphoid ..	0.047	0.048	0.054	0.068	0.17	0.03
Dysentery ..	0.078	0.079	0.11	0.17	0.25	0.07

The difficulties in arriving at accurate figures are acknowledged by the Control Commission, not the least of them being the assessment of the population at risk. At the end of February of this year the population of the British Zone was approximately 21,500,000; on Aug. 31 it was 22,691,463; and at present it is about 22,750,000. About 5,000 illegal immigrants are entering the British Zone every week from the east, most of them in "very bad condition." In addition a small number of refugees are legally admitted.

It will be seen from Table II that the infant mortality rate is higher than it should be. Nevertheless, the figures for April, May, and June, 1946, compare favourably with those in many towns in the United Kingdom. In 1942 the infant mortality rate in South Shields, for example, was 83, in Sunderland 81, and in Merthyr Tydfil 82; and one need go no farther back than 1910 to find rates throughout the United Kingdom as high as the highest German figures.

Nutrition Surveys

Sample weighings of persons from all classes of the German population in the British Zone are carried out fortnightly, and the opinion held by the Control Commission is that there has recently been a slight, continuous, overall improvement in nutrition throughout the British Zone, except in Hamburg and Kiel, where the situation has got worse.

A survey of 1,200 factory workers was made at Mulheim in October, 1946. A standard body weight of 67 kg. (10 st. 9 lb. approx.) was taken, and it was found that 17.1% of workers weighed more than this, 82.9% less.

Communicable Diseases

Figures compiled by the Control Commission in Germany are shown in Table IV. They are for four-week periods in the months indicated, and record the number of cases notified in those periods. The dashes mean either that there were no cases in that period or that the figure is not available.

TABLE IV.—Communicable Diseases Return: 4-week Periods

	June		July		August		September	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Anthrax	—	—	—	—	—	—	—	—
Diphtheria ..	6,344	169	5,502	195	5,998	187	7,815	224
Dysentery ..	313	22	318	18	542	28	277	23
Encephalitis ..	4	2	7	5	10	6	15	6
Gonorrhoea ..	9,307	—	9,106	—	8,786	—	8,553	—
Hepatitis, infective ..	—	—	—	—	58	—	437	4
Malaria ..	263	2	307	—	220	—	181	—
Meningitis (meningococcal) ..	36	13	34	21	26	12	31	7
Paratyphoid fever ..	390	10	427	7	567	9	502	9
Poliomyelitis, acute ..	15	—	24	4	77	10	103	8
Scarlet fever ..	1,083	33	1,039	11	1,084	9	1,260	7
Smallpox	—	—	—	—	—	—	—	—
Trachoma	15	—	14	—	34	—	6	—
Trichinosis ..	—	—	5	—	—	—	1	—
Tuberculosis, lung and larynx ..	4,256	1,113	3,843	842	3,964	792	3,981	843
Tuberculosis, other ..	684	162	717	125	768	130	815	112
Typhoid fever ..	934	59	936	59	1,411	74	1,591	118
Typhus (louse-borne) ..	1	—	—	—	—	—	—	—
Undulant fever ..	8	—	6	—	3	—	8	—
V.D., other ..	—	—	24	—	11	—	20	—
Whooping-cough ..	—	—	—	—	3,281	16	4,302	22

The figures for diphtheria are high—about twice those obtaining in England before the war. The incidence of dysentery, on the other hand, compares favourably with that of wartime England. Scarlet fever is less prevalent than in England during the autumns of 1943 and 1944.

Deaths from all forms of tuberculosis are not as excessive as individual reports in the daily press would suggest. The population of England and Wales is approximately twice that of the British Zone in Germany. In England and Wales there were 27,754 deaths from all forms of tuberculosis in 1937 and 25,143 in 1942. One-thirteenth of these figures will provide a comparison between deaths from tuberculosis in the British Zone now with those in England and Wales in 1937 and 1942. The highest German figure—1,275, for June—can be compared with the average 4-week figure for England and Wales in 1937 and 1942—namely, 2,135 and 1,934 respectively for a population of approximately twice the size. Though for many reasons the comparison cannot be an exact one, the figures nevertheless indicate that tuberculosis in the British Zone now is neither more nor less serious than it was in England and Wales so short a time ago as 1942.

An instruction was issued to Regions in August of this year that in future all *active* as opposed to *open* cases of pulmonary tuberculosis were to be notified. A point to be noted, too, is that proved tuberculous cases receive extra food rations. It is admitted that the figures in Table IV are not as accurate as, for example, those obtainable from the British population; but there is no reason to suppose that they are widely inaccurate.

Hunger Oedema

The incidence of hunger (or famine) oedema is exceedingly difficult to determine. A survey on July 31, 1946, of 2,200 employees at a Hamburg gasworks revealed 90 cases of hunger oedema. A report on hospital admissions as received in London on Nov. 20 is shown in Table V.

TABLE V.—Hunger Oedema: Report of Nov. 20, 1946

Town	Approximate Population	In Hospital	Number Admitted in last 4 weeks
Berlin (British Sector)	609,688	177	111
Hanover	300,000	62	26
Münster	70,000	3	9
Düsseldorf ..	300,000	118	18
Hamburg	1,411,000	1,197	706

Hospital Accommodation

Finally we append some details of hospital beds available and occupied by the German population in the British Zone as on Oct. 1, 1946.

Beds occupied ..	218,332	Beds for tuberculosis cases ..	23
Beds available ..	258,710	Per 1,000 population ..	1
Per 1,000 population ..	11.2		

REGIONAL HOSPITAL BOARDS
PROPOSED AREAS

The Ministry of Health sent the letter which is printed below to a number of organizations, inviting their observations on the areas provisionally defined for the Regional Hospital Boards to be set up under the National Health Service Act.

Ministry of Health,
Whitehall, S.W.1.
Nov. 15, 1946

National Health Service Act

SIR.—I am directed by the Minister of Health to refer Section 11 of the National Health Service Act which requires him by order to determine the areas for which Regional Hospital Boards shall administer hospital and specialist services under the Act on his behalf. By virtue of subsection (1) of that Section, the areas must so far as practicable be such that hospital and specialist services of the area can conveniently be associated with a university having a medical school; and subsection (2) requires the Minister in determining the areas to consult the bodies and organizations which appear to him to be concerned.

Accordingly I enclose for the benefit of any observations statement setting out the provisional view of the Minister as to the areas appropriate for the purpose, having regard to the considerations stated in Section 11 of the Act and to the needs of the hospital and specialist services. In drawing up that statement, the Minister has also had in mind the following additional considerations to which your attention is drawn:

(1) The size and extent of the areas must be determined primarily by reference to their purpose, which is to provide an area adapted rather for the planning, co-ordination, and provision of hospital and specialist services than for the control and management of hospitals. The latter task will, as stated in Section 12(2) of the Act, be the function of the Hospital Management Committees. It follows that the areas can and should be comparatively large in population, and such that each has a natural university medical centre as its focal point. In considering this aspect of the problem the Minister has had regard to the recommendations contained in the Hospital Survey Reports published during the past 10 years.

(2) In certain Regional Board areas geographical or other circumstances appear to render it necessary that for part of the area there should be set up a Regional Committee of Board with delegated powers and its own offices. The Minister has in mind such areas as Devon and Cornwall, Hampshire, Dorset, and Isle of Wight; North Lancashire and South Westmorland; and Cumberland and North Westmorland.

(3) The boundaries of Regional Board areas need not and will not prevent the free passage of patients from one area to another. Indeed in some instances at the outset Regional Boards will become responsible for hospitals, etc., in the area which have belonged to and served communities in other areas, and which must continue to do so.

(4) It appears to the Minister that wherever possible the boundaries of the Regional Board areas should coincide with those of local health authorities, in order to secure the maximum of administrative efficiency. Except where other considerations must in his view clearly prevail, the proposed boundaries accordingly follow those of counties and county boroughs.

(5) In some instances it appears that other important factors (e.g., association of the services with the appropriate

medical schools, grouping of related hospitals under the same Regional Board) make it essential to cross local health authority boundaries in defining the boundaries of Regional Board areas. Here again the Minister has sought wherever possible to ensure that the proposed boundaries shall coincide with those of boroughs or county districts.

In view of the clear necessity for allowing Regional Hospital Boards as much time as possible to perform the many preliminary duties which must be completed before Part II of the Act takes effect, it is a matter of some urgency to lay before Parliament the orders defining their areas, so that the Boards themselves may be constituted in the very near future. I am therefore to request that the Minister may receive any observations on the proposed boundaries at the earliest possible date, and in any case not later than Dec. 15.

A similar letter has been addressed to each university with a medical school, and each separate university medical school, the three Royal Medical Colleges and the British Medical Association; the British Hospitals Association and its Area Committees in England and Wales; the King Edward's Hospital Fund for London; the Nuffield Provincial Hospitals Trust; the Association of Voluntary Teaching Hospitals; the County Councils Association; the Association of Municipal Corporations; the Mental Hospitals Association; every local health authority; the Federation of British Industries; and the Trades Union Congress. A further letter with regard to the constitution of Regional Boards will be sent in due course to the bodies concerned.—I am, Sir,

Your obedient Servant.

J. E. PATER

The following are the areas to be included in the proposed areas of Regional Hospital Boards, listed according to the appropriate University Centre.

Newcastle

Counties of Cumberland, Northumberland, and Durham.
County Boroughs of Carlisle; Newcastle-upon-Tyne and Tynemouth; Darlington, Gateshead, South Shields, Sunderland, and West Hartlepool.

County of Westmorland (Appleby B. and North Westmorland R.D.).

County of York, N. Riding (Middlesbrough C.B.; Boroughs of Redcar, Richmond, and Thornaby-on-Tees; U.Ds. of Eston, Guisborough, Loftus, Northallerton, Saltburn and Marske, and Skelton and Brotton; and R.Ds. of Croft, Northallerton, Reeth, Richmond, Startforth, and Stokesley).

Leeds

County of York, E. Riding.
County of York, N. Riding (except area in Newcastle Region).
County of York, W. Riding (except area in Sheffield Region).
County Boroughs of Kingston-upon-Hull; York; Bradford, Dewsbury, Halifax, Huddersfield, Leeds, and Wakefield.

Sheffield

Counties of Derby (except area in Manchester Region), Leicester (except Hinckley U.D.), Lincoln (Parts of Holland, Parts of Kesteven, except area in Cambridge Region), and Parts of Lindsey, Nottingham, and Rutland (except Ketton R.D.).

County Boroughs of Derby; Leicester; Grimsby and Lincoln; Nottingham.

County of York, W. Riding (C.Bs. of Barnsley, Doncaster, Rotherham, and Sheffield; Borough of Goole; U.Ds. of Adwick-le-Street, Beniley with Arksey, Conisborough, Cudworth, Darfield, Darton, Dearne, Dodworth, Hoyland Nether, Maltby, Mexborough, Penistone, Rawmarsh, Royston, Stocksbridge, Swinton, Tickhill, Wath-upon-Deane, Wombwell, and Worsborough; R.Ds. of Doncaster, Goole, Kiveton Park, Penistone, Rotherham, Thorne, and Wortley).

County of Stafford (Burton-on-Trent C.B. and Tutbury R.D.).

Cambridge

Counties of Bedford (except area in N.W. London Region), Cambridge, Huntingdon, Isle of Ely, Norfolk, Soke of Peterborough, Suffolk East, and Suffolk West.

County Boroughs of Great Yarmouth and Norwich; Ipswich.

County of Essex (Saffron Walden B. and R.D.).

County of Herts (Royston U.D.).

County of Lincoln (Parts of Kesteven) (Stamford B., Bourne U.D., South Kesteven R.D.).

County of Rutland (Ketton R.D.).

London

(i) *North-West*.—Counties of Bedford (Luton B. and R.D., Dunstable B., Leighton Buzzard U.D.), Bucks (Boroughs of Chepping Wycombe and Slough; U.Ds. of Beaconsfield, Chesham, Eton, and Marlow; R.D. of Amersham, Eton, and Wycombe).

Berks (Boroughs of Maidenhead and New Windsor; R.Ds. of Cookham, Easthampstead, and Windsor).

Herts (except areas in Cambridge and N.E. London Regions).

Middlesex (except area in N.E. London Region).

London (Hammersmith (north of Goldhawk Road and Stamford Brook Road), Hampstead, Holborn, Islington, Kensington (north of Holland Park Avenue, Notting Hill Gate, and Bayswater Road), Paddington (north of Bayswater Road), St. Marylebone, St. Pancras, Westminster (north-east of Park Lane, north of Constitution Hill, Birdcage Walk, Great George Street, and Bridge Street)).

(ii) *North-East*.—Counties of Essex (except area in Cambridge Region); Herts (Hertford B., U.Ds. of Bishop's Stortford, Cheshunt, Hoddesdon, Sawbridgeworth, Ware; R.Ds. of Braughing, Hertford, and Ware); Middlesex (Edmonton B., Tottenham B., Enfield U.D.); London (Bethnal Green, City, Finsbury, Hackney, Poplar, Shoreditch, Stepney, Stoke Newington).

County Boroughs of East Ham, Southend-on-Sea, and West Ham.

(iii) *South-East*.—Counties of Kent and East Sussex; London (Bermondsey, Camberwell, Deptford, Greenwich, Lambeth (east of Kennington Park Road, Brixton Road, and Brixton Hill), Lewisham, Southwark, Woolwich).

County Boroughs of Brighton, Canterbury, Eastbourne, and Hastings.

(iv) *South-West*.—Counties of Surrey and West Sussex; Hampshire, Isle of Wight, Dorset (except area in Bristol Region), Wilts (Boroughs of Salisbury and Wilton; R.Ds. of Amesbury, Mere and Tisbury, and Salisbury and Wilton); London (Battersea, Chelsea, Fulham, Hammersmith (south of Goldhawk Road and Stamford Brook Road), Kensington (south of Holland Park Avenue, Notting Hill Gate, and Bayswater Road), Lambeth (west of Kennington Park Road, Brixton Road, and Brixton Hill), Paddington (south of Bayswater Road), Wandsworth, Westminster (south-west of Park Lane, south of Constitution Hill, Birdcage Walk, Great George Street, and Bridge Street)).

County Boroughs of Bournemouth, Croydon, Portsmouth, and Southampton.

Oxford

Counties of Berkshire (except area in N.W. London Region), Buckingham (except area in N.W. London Region), Northampton, and Oxford.

County Boroughs of Northampton, Oxford, and Reading.

Bristol

Counties of Cornwall, Devon, Gloucester, Somerset, and Wilts (except area in S.W. London Region).

County of Dorset (Boroughs of Bridport and Lyme Regis; Sherborne U.D.; R.Ds. of Bournemouth, Bridport, and Sherborne); Isles of Scilly.

County Boroughs of Bath, Bristol, Exeter, Gloucester, and Plymouth.

Cardiff

The whole of Wales and Monmouth.

Birmingham

Counties of Hereford, Leicester (Hinckley U.D.), Salop, Stafford (except Burton-on-Trent C.B. and Tutbury R.D.), Warwick, and Worcester.

County Boroughs of Birmingham, Coventry, Dudley, Smethwick, Stoke-on-Trent, Walsall, West Bromwich, Wolverhampton, and Worcester.

Manchester

Counties of Cheshire (except area in Liverpool Region), Lancashire (except area in Liverpool Region), and Westmorland (except area in Newcastle Region).

County of Derby (Boroughs of Buxton and Glossop, U.D.s. of New Mills and Whaley Bridge, and R.D. of Chapel-en-le-Frith).

County Boroughs of Barrow-in-Furness, Blackburn, Blackpool, Bolton, Burnley, Bury, Manchester, Oldham, Preston, Rochdale, Salford, and Stockport.

Liverpool

County of Cheshire (C.B.s. of Birkenhead, Chester, and Wallasey; Boroughs of Bebington, Congleton, and Crewe; U.D.s. of Alsager, Ellesmere Port, Hoyle, Hooton, Knutsford, Lymm, Middlewich, Nantwich, Neston, Northwich, Runcorn, Sandbach, Winsford, and Wirral; R.D.s. of Bucklow, Chester, Congleton, Nantwich, Northwich, Runcorn, and Tarvin).

County of Lancashire (C.B.s. of Bootle, Liverpool, St. Helens, Southport, Warrington, and Wigan; Boroughs of Crosby and Widnes; U.D.s. of Abram, Ashton-in-Makerfield, Aspull, Billinge and Winstanley, Formby, Golbourne, Haydock, Hindley, Huyton with Roby, Ince-in-Makerfield, Litherland, Newton-le-Willows, Ormskirk, Orrell, Prescott, Rainford, Skelmersdale, Standish with Langtree, and Upholland; R.D.s. of Warrington, West Lancashire, Whiston, and Wigan).

ROYAL VICTORIA HOSPITAL, BELFAST

The growing concern felt by the Board of Management over the financial position of this large voluntary hospital was the subject recently of editorials and articles in the press of Northern Ireland. Though in the preceding three years the hospital's income had exceeded expenditure there remained at the end of 1945 an accumulative adverse balance on revenue account of approximately £25,000. In the first six months of 1946 expenditure has exceeded income by £17,800 and the net of gifts, endowments, bequests, etc., received during this period has amounted only to £9,000. Over the same period of year the amount received was £15,000. At recent meetings of the Board of Management the causes of this increased expenditure and decline of the hospital's income were discussed and it was pointed out that increased expenditure was inevitable in view of the rise in nurses' salaries and in wages generally and because of the increased price of commodities. Against this there had been a decline in the working people's contribution attributable to the fact that more people were employed last year mainly on war work. These reasons only partly explained the situation, however. More important still was the misunderstanding that had arisen in the minds of the general public over the increase in National Health contributions from 1s. 1d. to 2s. Many people apparently had the impression that the extra money was being levied with the object of benefiting the hospitals. It was unfortunately only too true also that the prospect of the Government taking over all assets of the hospital had affected donations and bequests so that the number of these has shown a tendency to fall off. A serious financial crisis was, therefore, likely to arise until the policy of the Government in respect of the inauguration of the National Health Service was made clear. In the past the hospital had relied for over 50% of its income on the activities of the Working Men's Committee and their supporters, whose admirable efforts in the past had been largely responsible for the sound financial situation of the hospital to date. At a recent meeting a resolution was unanimously adopted that the working people's contributions should be increased by 1d., and a drive is being instituted to effect this through the co-operation of the city's large industrial concerns and the employees in them.

The annual report of the hospital for the year 1945 showed that there were 9,616 admissions to the wards distributed thus: 3,120 to the medical wards, 4,918 to the surgical wards, 1,642

to the gynaecological wards, and 536 to the eye, ear, nose, and throat department. The average daily number of beds occupied was 498 and the average stay of each patient in hospital was 18.8 days. There were 545 deaths during the year, and of these patients 172 died within 48 hours of admission. Excluding those who were moribund at the time of admission the death rate works out at under 4%. In the out-patient department the number of new patients was 57,066—a high figure and one which reflected the important part played by the hospital in the health services of not only the City of Belfast, but the province as a whole. The hospital had been one of the centres taking part in the clinical trials of penicillin on behalf of the Medical Research Council of Great Britain, and special interest was attached to the results achieved in subacute bacterial endocarditis, the results of which have been incorporated in a report made to the M.R.C.

THE NURSING PROBLEM

Sir ERNEST ROCK CARLING gave an address at the nurses' prize giving and annual reunion at the Southend Municipal Hospital, Rochford, Essex, on Oct. 19. He suggested that with impending changes in the health service of the country, when the basis of the whole hospital and sickness services was being examined it was necessary to look once again with fresh eyes at the nursing service, without which the rest could not function. The whole nursing problem should be reconsidered in the light of changed conceptions regarding hospitals themselves. The present generation realized that hospitals were only one link in the chain of agencies dealing with a social problem; that it was not enough to bring acute illness to an end; that recovery of full health and efficiency until return to occupation was in a sense more important, because without it the results of curative measures were dissipated or thrown away. Sir Ernest suggested that the nursing problem likewise was one which covered the home, the clinic, the school, the factory, the whole environment of the healthy; that all these departments of service were equally honourable and that they could not thrive in isolation.

The Need for Interchange

The nurse in a mental hospital must not be left there for ever; the district nurse must not be so cut off from hospital that her professional knowledge rusted. There must be interchange, seconding, pooling of experience; and that would not come about so long as hospitals jealously limited their own trained nurses to their own institutions. The parochialism about hospitals, at any rate about some voluntary hospitals, in regard to their nurses, though commendable in the 18th and 19th centuries, was deplorable in the 20th. In a few months' time regional boards would be appointed and would proceed to set up local management committees for groups of hospitals. They would have hospitals of every kind under their care—general, special, mental, infectious disease, tuberculosis, and long-stay hospitals, cottage hospitals, and so on. Could it be imagined that the nursing service any more than the accident service or the maternity service, or the mental service, would remain isolated in single institutions? Could the full education of the nurse exist without transference to hospitals of many types? Medical students would certainly broaden the basis of their education, and so would nurses.

Broadening the Field of Recruitment

The enormous demands for nursing upon the total woman-power of the country could not be met from the yearly quota of girls getting the School Certificate; there were not enough of them. That meant a broadening of the field of recruits, whether one liked it or not, and in his opinion examination standards were a false guide to the women wanted. Sir Ernest Rock Carling outlined a scheme to meet the future situation. This would rest on a basic training in the art and craft of nursing of two years' duration, which everyone must take, and at the end there should be entitlement to the name "nurse," not "assistant nurse." This should be open to all girls without any difficult educational test. There should then be a further term of 1½ to 2½ years for all whose educational attainments were adequate. In it some degree of specialization might begin early, so that in the end they might attain the title of nursing sister (surgical), (children), (obstetric), (tuberculosis), (mental), (school), and so on. From the very best of this class should be chosen those who were to graduate from a staff college. In every region or group of regions there should be a staff college for the supply of sisters-in-charge of units or teams, for sister-tutors, for wardens, and for matrons. It should be allied to the university.

MEDICAL INSURANCE AGENCY

At the Trocadero Restaurant, on Nov. 22, the Medical Insurance Agency gave a dinner to some sixty representatives of the medical and insurance worlds. The toast of the "Medical Insurance Agency" was proposed by Mr. E. A. J. Heath, manager and actuary of the Medical Sickness, Annuity, and Life Assurance Society. In replying, Sir Francis Fraser described the many links between insurance and medical practice. The toast of "Our Guests" was proposed by Mr. A. N. Dixon, the manager of the M.I.A., who has recently returned from service with the R.A.F. Mr. Dixon welcomed each of the many guests. His toast was responded to by Mr. W. W. Williamson, general manager and actuary of the Norwich Union Life Insurance Society. Mr. Williamson picked up a remark made by Sir Francis Fraser to the effect that medicine had done much to increase the average age of the population, and suggested that in the experience of his Society this increase seemed to affect particularly its annuitants.

In the course of the dinner it was announced that in the first ten months of this year the M.I.A. had secured proposals amounting to well over £2,000,000. Since the foundation of the Agency in 1907 doctors themselves have benefited to the extent of £175,000, and just over £75,000 has been handed over to medical charities and particularly to Epsom College and the Royal Medical Benevolent Fund.

APPOINTMENTS IN IRAQ

The following staff is urgently required by the Government of Iraq: Professors of obstetrics and gynaecology, diseases of the ear, nose, and throat, ophthalmology, bacteriology, pathology, chemical pathology, physics; and director of the parasitological laboratory. The appointments will be for three years in the first instance, but a contract for a shorter period may be considered. The salary is at the rate of Iraq dinars 150 a month, and there is in addition a cost-of-living allowance, at present I.D.24 a month (I.D.1=£1). Free first-class passages are provided. Application should be made to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

Reports of Societies

CONTROL OF AIR-BORNE INFECTIONS

A meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine was held on Nov. 22, with Dr. H. J. PARISH in the chair, for a discussion on modern methods in the control of air-borne infections.

Dr. ROBERT CRUICKSHANK, in some introductory remarks, defined air-borne infection as infection by inhalation. There were only two strictly air-borne means of spread—dust, and what Wells had called "droplet nuclei." He believed that these two might prove more important in the spread of infection than the direct droplet. One way of assessing their relative importance would be to eliminate one of the variables and observe the effect. The task was to supply clean, safe air intra-murally without danger or discomfort to the community, a task which was more difficult and complex than the supply of clean, safe milk or water.

It was true that the mortality rate for air-distributed infections had markedly declined, but there was no appreciable decline in morbidity except in the few diseases, such as small-pox and diphtheria, which could be controlled by prophylactic vaccination. Respiratory infections such as colds, catarrhs, influenza, sinusitis, and bronchitis still seemed to be as prevalent as they were a century or more ago. In the U.S.A. it had been shown that individuals in different cross-sections of the community averaged three colds a year. In this country few data were available, though certain local surveys had been made. He referred, among others, to Smith's observations in Glasgow in a poor-class community which showed that two-thirds of all the cases reporting sick within a year were cases of acute respiratory disease, and more than half the working time lost was due to this cause. In boarding schools 40-50% of sickness absenteeism was due to nasopharyngeal infections and influenza. A recent analysis made by the Wartime Social

Survey, taking random samples of households, had shown an incidence of over 40% of all illness as due to acute respiratory infections. In order to find out which were the important "community foci" of infection—e.g., railway carriages and other public transport, schools including nursery schools and nurseries, badly ventilated offices, overcrowded factories, cinemas and other places of entertainment, modern methods for bacterial sampling of the air could be utilized. Standards for clean air should be established, using either the total bacterial content or an indicator organism like *Str. viridans*. New "portable" methods for measuring ventilation were also being devised.

We were still largely ignorant of the relative importance of droplets, dust, and droplet nuclei in the spread of different respiratory infections. One method of assessment was to eliminate one of the variables and note the effect. He mentioned the classical work of Alison Glover on the effect of bed spacing in the control of cerebrospinal meningitis and a recent American study on the value of "double-bunking" in reducing the epidemic spread of acute respiratory disease. Dust-control measures were apparently effective in controlling streptococcal throat infections but not virus infections of the upper respiratory tract. Ultra-violet light in schools seemed to prevent the spread of such specific fevers as measles, mumps, and chickenpox but not the common cold.

Streptococcal Cross-infections

Dr. JOYCE WRIGHT gave a description of the control of streptococcal cross-infection in the measles ward at the North-Western Hospital, London, and later at the Eastern Hospital. The object of the investigation was to discover whether the control of dust would reduce the number of haemolytic streptococci in the ordinary air. The method employed was to apply dust-laying oils to the bedclothes and to other contents of the ward. In the first results there was a 91% reduction in the total bacteria and a 98% reduction in haemolytic streptococci in the air of the oiled ward as compared with the controlled unoled ward. The incidence of cross-infection also declined steeply. The results encouraged the belief that dust was an important vehicle for streptococci in wards, and that oiling was successful in its control. When the investigation was repeated the difference, for some reason, was less marked, perhaps because it was made at a different time of year; but she thought it quite possible that in a future measles epidemic oiling would prove satisfactory in the reduction of streptococcal cross-infection.

Mr. F. COURTNEY HARWOOD (Director of Research, British Launderers' Research Association) gave an account of suitable emulsifiers for the oiling of hospital bedclothes, a procedure which he and others had described in detail in the *British Medical Journal* for May 6, 1944. The emulsifiers used were the kation-active "fisanol C" and the anion-active "teepol," but the use of other commercial emulsifiers was possible. It was necessary, along with the oiling, to maintain good laundry practice. He mentioned one well-known hospital which, after oiling its bedclothes for two years, complained that the oiled blankets were not lasting as long as the unoled, and were unpleasant in various ways, but on investigation it was found that the blankets had never been washed since the oiling began; they had been oiled at intervals and given two rinsings in plain water after each oiling. The addition of oil to fabrics in no way impoverished them if proper precautions were taken. No signs of dermatitis had been noticed among patients or nursing staff after the oiling of the blankets. Cross-infection since the adoption of the oiling technique had been much diminished. The cost of the materials used in the preparation had been 3½d. per blanket, but the cost was being brought down to the level of about 1½d.

Use of Chemical Agents

Dr. O. H. LIDWELL, a collaborator with Dr. R. B. Bourdillon at the National Institute for Medical Research, spoke of the use of chemical agents for the purpose of reducing the content of infective material in the air. He said that all the methods were still in the experimental stage, and none of them could be said to be entirely efficient or without difficulty in application. There were at present no practicable methods of assess-

ing the degree of contamination of the air by virus infections; all the work had had to be done on bacterial infections, yet from the point of view of cross-infections those caused by viruses were more important and widespread. He described the experiments with hydrochloric, lactic, and other acids. Lactic acid had been investigated in more detail than any other agent. It became very much less effective at the lower relative humidities, and at below 40% humidity it was almost if not quite ineffective. Its practical drawbacks were that it was not very easy to distribute in the air of a room, and at concentrations only a little above the working level it became irritant. Glycol seemed to show promise, but as yet there was not much experience of it. The phenolic substances were disappointing in this field. Resorcinol was effective in certain situations, but difficult to maintain in concentration in the air. Ultra-violet light had been mainly up to the present an American experiment, but its suitability for schools was being tried out in this country. Its effect upon the total dust-borne organisms was small but definite.

Dr. M. MITMAN described some experiments in aerial disinfection at Joyce Green Hospital by means of a germicidal mist, resorcinol. The results were not as promising as was hoped. No untoward effect on patients was noted, but discoloration of walls and ceilings took place. The simplicity of the method, however, justified its further investigation.

Major CUNLIFFE illustrated some experiments in the dust control of surgical wards by the oiling of bedclothes. The number of streptococci was reduced, and there was a significant fall in the incidence of streptococcal infections. Dr. J. L. BURN, who also showed illustrations of some experiments, pointed out the importance of disinfection of the floor. Under modern educational methods it was on the floor that many young children carried out their work and play.

General Discussion

Dr. O. C. STALLYBRASS said that two of the greatest recent advances in epidemiology had been the work on viruses and the work on air-borne infection. Droplets were the major medium of infection in temperate climates, and second only to insect bites in hot climates. During a measles epidemic the oiling of blankets was undertaken at his hospital at Liverpool, with complete satisfaction to the matron and nurses. Dr. STANLEY BANKS said that during the last six months, since his return from war service, he had been impressed by the almost complete absence of cross-infection in the scarlet-fever wards of his hospital. He hoped that in the zeal for these new methods the older methods would not be forgotten—ventilation, bed-spacing, chemoprophylaxis, and chemotherapy.

Dr. ALLAN MCFARLAN pleaded for a distinction between merely bacteriological cross-infection and clinical cross-infection in which there was definite illness. He hoped there would be no wholesale oiling of bedclothes. With present commercial methods there would always be a temptation to market these preparations and put them forward as essential to all hospitals. It was worth while seeing whether the law of diminishing returns did not apply here.

Dr. J. M. ALSTON said that entirely air-borne infection within a ward, when all the secondary cases could be shown to be the result of such infection, was a comparatively limited thing. From a practical point of view there could be no doubt that contact had a good deal to do with certain infections. He thought there was a case for a more adequate toilet of the nose, and suggested the impregnation of handkerchiefs. Dr. WILLIAM GUNN spoke appreciatively of Dr. Joyce Wright's work at the North-Western Hospital. He was not in favour of the oiling of blankets as a matter of invariable routine. He thought it was a valuable method to be kept in reserve for use when necessity arose.

American Experience

Prof. RONALD HARE said that in May last he attended a meeting of the Society of American Bacteriologists at Detroit. Very extensive ultra-violet light installations were demonstrated, but the results did not appear to be commensurate with the trouble and expense. Those who favoured triethylene glycol had an almost equally large installation, but here again the results did not seem to justify the outlay. Striking results were

obtained when oil was used on the bedding, but he could remember what the infection rate was. Much work had to be done in different centres before one ward could be compared with another or one hospital with another. It might be possible to prevent bacterial infections with various methods of ventilation and house-cleaning in sleeping quarters, but it would be practically impossible to prevent virus infections. This was brought vividly before him when he was in Canada. The Mackenzie River in the North-west was frozen in winter, and in the spring a steamer made its way along the newly thawed river to the Arctic. One year the boat, when it left the Great Slave Lake, carried an influenza infection, and from that point onwards all down the river, according to the reports from Mounted Police posts, the whole population—natives, white and half-breeds—were infected with influenza. That could hardly be said to be due to blankets or anything like that. What was possible in the case of bacterial infections would almost certainly not be possible for virus ones.

Dr. CRUICKSHANK, in reply, reminded the meeting that the old antidotes still maintained their importance—good ventilation which would overcome the effect of crowding; daylight, which had a bactericidal value (whether fluorescent lighting would help also in that respect was not yet established, but he thought it might); and humidity, which did help to destroy both bacteria and viruses.

THORACIC SURGERY

At a meeting held at the Royal Devon and Exeter Hospital on Oct. 17 of the Devon and Exeter Medico-Chirurgical Society Prof. MILNES WALKER paid tribute to the work of Mr. HARKEN, of the U.S.A.M.C., on the surgery of war wounds of the heart, and described a case in which a bullet had slipped through the tricuspid valve on attempts at removal before a third operation was finally successful. He discussed the surgery of intrathoracic goitre and thymectomy for myasthenia gravis, with special reference to thyrotoxic myopathy and suggested that some of the cases benefiting from thymectomy might have done so because of the partial thyroidectomy performed at the same time. He then described the surgery of the oesophageal pouch, achalasia of the cardia, and carcinoma of the oesophagus, stressing the value of early diagnosis of carcinoma by means of the oesophagoscope and x rays, and the necessity for team work between surgeon, physicist, radiologist, and pathologist.

X-ray Therapy Disappointing

Mr. BELSEY said that in his experience the results of x-ray treatment of carcinoma of the oesophagus as studied by the oesophagoscope were not impressive. Some combined attempts by the surgeon and the radiotherapist on the primary growth might hold out better prospects. Dr. WROTH agreed that encouraging early results obtained by x-ray therapy had proved disappointing. Dr. FULLER mentioned that a barium swallow did not reveal an early case and that a suspicious case of dysphagia might need following up before the diagnosis could be confirmed. He described the unfortunate sequelae of cancer he had seen—e.g., heavy burning of the skin from x rays, death from mediastinitis, or early metastasis after operation. Dr. Wroth agreed that a barium swallow could not exclude a carcinoma of the oesophagus in its early stages.

Strictures of Oesophagus

Mr. ETHERINGTON WILSON asked if aspiration of an intrathoracic goitre was not a great technical aid in operation and whether suture of the fascia surrounding an oesophageal pouch to the stump after excision was not an added safeguard. Mr. HOOD mentioned the common occurrence of oesophageal strictures in Russia due to children drinking sulphuric acid used to dry the air between double windows. Mr. Belsey mentioned the occurrence of multiple oesophageal strictures and the difficulty of outlining a lower unsuspected one by barium swallow. He thought that the oesophagoscope had great advantages in that respect.

Prof. Milnes Walker in reply agreed that the oesophagoscope was of more value than a barium swallow. He preferred

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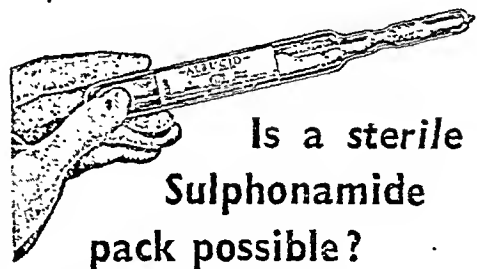
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gave a drain down to the stump of an oesophageal pouch rather than suture the fascia, because a fistula, usually transient, sometimes formed. Aspirating a retrosternal goitre sometimes helped, but an intratracheal anaesthetic, as Sauerbruch advocated, was even more important as a means of avoiding splitting the sternum. He had seen a case of two separate carcinomata of the oesophagus separated by one and a half inches of healthy oesophagus.

DIFFICULT LABOUR IN MULTIGRAVIDAE

At a meeting of the North of England Obstetrical and Gynaecological Society held at Liverpool on Oct. 4, papers were read by Drs. BRYAN WILLIAMS, A. A. GEMMELL, and C. P. BRENTNALL.

Dr. WILLIAMS, discussing "some factors causing difficult labour in multigravidae," took as his criterion an individual who had had at least eight previous children born normally, and did not include, as an abnormality, a low forceps delivery with her previous child, an unaccountable stillbirth, antepartum haemorrhage, or any other complication not directly associated with the actual birth of the child. After eliminating such conditions he was left with twenty-three cases in which difficulty was experienced in a subsequent labour. On the whole he found that the cause of the difficult labour was either an unusually large child, some degree of contraction of the pelvis, or both. He proved that there was a marked tendency for the children of later pregnancies to be larger than their older siblings, and described how in many cases the mother's pelvis became definitely contracted. This pelvic contraction, probably due to minor osteo-malacic changes in the bones, was acquired after the birth of her first or second child. This was confirmed by the experience of observers in countries such as China where similar changes in the bones were well marked and very prevalent, and no doubt the cause was hypovitaminosis.

Micturition after Vaginal Plastic Operations

Dr. A. A. GEMMELL recommended the instillation of 1 fl. oz. (28 ml.) of 0.5% "mercurochrome" into the bladder directly after operations such as those for prolapse, and described his results in sixty-three cases treated by this method and compared them with fifty cases treated without the instillation. Of the first group 9.5% needed catheterization compared with 72% in the other group. He was strongly of the opinion that this was an excellent method of dealing with this post-operative complication, and he felt that it was due to the irritant action of the solution.

Techniques for Colporrhaphy

Dr. C. P. BRENTNALL summarized the history of the colporrhaphy operation in Manchester, pointed out the different techniques of Fothergill and of Donald, and gave his reasons for advocating the former. This paper was regarded as of the utmost importance in settling the controversy which has raged around the names of these two great men.

USE AND ABUSE OF SULPHONAMIDES

The meeting of the Liverpool Medical Institution, held on Oct. 24, was in the form of a symposium under the chairmanship of Dr. G. F. RAWDON-SMITH.

Several viewpoints on the importance of sulphonamides in prophylaxis; their indiscriminate use in infections, particularly whether diagnosis before treatment aiming at precision or treatment before diagnosis aiming at expediency should be the rule; the use of subclinical doses in undiagnosed cases; the rarity of toxic effects if adequate nursing, fluid intake, and rest in bed were insisted upon; and early fall of temperature as insufficient evidence of recovery from the pneumonic process—were advanced by the principal speakers. Drs. DOUGLAS RIDING, C. A. CLARKE, and A. O. ROSS, followed by Drs. R. W. BROOKFIELD, F. GLYN-HUGHES, LENNOX JOHNSTON, G. WILLIAMSON, and G. Y. YARDUMIAN. The sudden arrest of a cerebrospinal meningitis epidemic by prophylactic treatment of the 75,000 inhabitants of a Mexican town, and the very reduced incidence of sensitization-dermatitis in England in contrast with the Tropics, were among the interesting points made.

Correspondence

Vital Statistics in Western Europe

SIR,—Down to 1939 any private citizen interested in the vital statistics of Western Europe had no difficulty in satisfying his curiosity. It is true newspapers hardly ever printed any information because foreign vital statistics had no, and our own very little, news value; but official publications were available in many libraries. Since 1939 there has been no information.

It is now more than a year since part of Germany passed under British control, and I recall official intimations in your advertisement columns that the services of persons familiar with, among other things, vital statistics were needed. No doubt these were obtained, and it would be a poor compliment to the staff of the occupying power to doubt whether gross death rates and index figures of mortality at ages under one year are being prepared. But, so far as I know, no vital statistical information has been published.

I shall not ask your space for a dissertation on the value of death rates as sanitary indicators, and I have no doubt our colleagues in the Military Government of Germany use them. What I do plead is that these data should be made available to private citizens. As things are, we (by "we" I mean the large number of medical men and of students of social phenomena who have an elementary knowledge of vital statistics) cannot judge the significance of passing events. At irregular intervals we read that the food position in Germany is more, or less, grave; that expert A takes a serious view of the position or that expert B finds matters not too bad. Then a "crisis" develops; Mr. Victor Gollancz and the Bishop of Chichester take the field in the *Times*; more sensational papers talk about riots, military precautions, and so forth. But we have no statistical information, not one death rate.

If regularly, say once a month or even once a quarter, the medical press were able to publish a summary of current vital statistics in the British zone, we should be able to form some judgment. I do not need to be told that in a devastated country ruled by foreigners vital statistics of the standard set by our own General Register Office cannot be had; the best should not be made the enemy of the good or even tolerable. What I do fear is that official reticence, a dread of giving information which might be misused, is responsible for the complete public ignorance which prevails.—I am, etc.,

Loughon.

MAJOR GREENWOOD.

The Plebiscite

SIR,—Having completed my plebiscite form in the negative with a reservation, after careful and prolonged consideration, I am wondering if my own difficulty in deciding which way to vote is peculiar to myself or has been experienced by others. While I am in agreement with the objections of the Council of the B.M.A. on one point I find myself agreeing with the Minister on all the remainder. As I understand it, the purpose of refusing to negotiate with the Minister is to show him that the present Act is unacceptable to us. The one point which is unacceptable to me—i.e., the basic salary—is so vital to my mind that it compels me to insert "No" on my ballot paper.

This referendum will give the Negotiating Committee a clear-cut decision; but it may also give them quite the wrong impression as to what there is in the Act which makes the majority of the voters feel that it would not produce an efficient service for the patient if put into operation as it now stands. They will also be unable to enlighten the Minister on this point. A further referendum by means of which we could indicate which of the official B.M.A. objections are actually our own would serve to show the strength of feeling on the various principles involved. I, for one, cannot see my way to give any undertaking not to enter the service by giving a negative vote on my ballot paper, while the referendum gives me no opportunity to indicate which of the principles I am prepared to treat as vital. The dust of political battle seems to

me to obscure the real issue. Surely what we really want is a health service so framed as to enable us to do our best for our patients and to get the best in the way of investigation, advice, and treatment for them when we cannot give it ourselves. An efficient service from the patients' view-point will be bound to be a satisfactory service from the doctors' angle.

I submit that, though the present referendum may "bring the Minister to heel" and give rise to "victory celebrations" of varying kinds, a more detailed ballot such as I have indicated would make it far more constructive and might assist the Minister and our legislators to provide for our patients what the bulk of them would appear to need badly—namely, an efficient insurance service in which we as their doctors can give them of our best.—I am, etc.,

Bournemouth.

ROBERT RISK.

SIR,—Dr. Dain, at the end of his Exeter address, referring to the plebiscite, says: "Here we have an opportunity of saying that we will not take part in a service that does not concede our principles. . . . We should be infinitely stronger in talking about terms and conditions if we had first by our own efforts secured the acceptance of our principles." Yet we are being asked to vote on whether we shall negotiate on "terms and conditions" *before* we vote on acceptance of "principles." This is certainly putting the cart before the horse, and I am afraid some doctors may think that by saying "Yes" to the plebiscite they are in fact voting for negotiating with the Minister on "principles." Whereas, of course, the fact is that the Minister flatly refuses to negotiate on our "principles" and even the House of Lords has been unable to secure the acceptance of our fundamental "principles." The Bill is now on the Statute Book in opposition to the overwhelming vote of the representative body of the profession.

We should have been asked whether we are willing or not to work the National Health Service Act as it now stands on the Statute Book. If the answer is "No," then the question of terms and conditions does not arise. If the answer is "Yes," then the negotiating of terms and conditions will logically follow. However, it is too late to change the question, but I think the next issue of the *Journal* should contain prominent emphasis on the points above mentioned, for it is most important that there should be as few "Yes" answers as possible. Ruin stares us in the face.—I am, etc.,

Ilford.

N. BEATTIE.

SIR,—Reflection on the plebiscite question fills me with grave foreboding, for without a strongly negative lead I consider it a blunder of the first magnitude. The question which seems to invite the answer "Yes" surely assumes that the Minister is prepared to enter into discussion with our Negotiating Committee. Is this not a dangerous assumption to make when time and time again we have been informed by our representatives that the Minister has continually refused to negotiate and has remained consistently uncompromising? In the absence of any indication that the leopard has changed its spots I submit that the question is misleading.

Accepting the question as it stands, how is the reply to be interpreted? I can well imagine that a resounding affirmative vote would bring joy to the Minister's heart and that he would regard it as a signal to proceed on his dictatorial way. On the other hand, can anyone doubt but that a strongly preponderating negative reply would cause an intense shock to his nervous system and alter his outlook? This brings me to the paradoxical conclusion that anyone who desires the Negotiating Committee to enter into discussions with the Minister on the Regulations authorized by the National Health Service Act must answer "No."—I am, etc.,

Birmingham.

ALASDAIR MCI. SMITH.

SIR,—I have been in general practice now for just on twenty years, and since 1930 have been in a working-class practice in Southampton. In 1939 I found myself in command of a Territorial hygiene company, and as such was graded as a specialist in military hygiene, and spent the next six years in preventive medicine and had much to do with advising on

accommodation, food supplies, and how to make full use of the ration in order to ensure that each individual absorbed the full calorie value of the food. One of my greatest difficulties was trying to make the theories of the experts work in practice, and as far as food was concerned I regret to say that largely failed.

On my release from the Army I returned to general practice in October, 1945, imbued with the spirit of preventive medicine and realizing that in the past I and other G.P.s gave too little thought and action to this branch of medicine, for on the G.P. can do any real work in this sphere. What do I find? I find my waiting-room full of patients with minor ailments, all preventable—coughs and colds; dermatitis or furunculosis, lumbago and sciatica, and neurosis. On visiting my patients I found overcrowding such as I have never experienced before (eight-nine adults living in a council house, with a few children thrown in), food a little better than starvation level, with the supply of dairy produce below the safety line.

Meantime, statisticians publish figures to show that the health of the nation is excellent (there have been no major epidemics), industry calls for greater effort and condemns absenteeism. The conditions cited above never reach the statistician, but there can be no reduction of absenteeism until they are eliminated and this can only be done by a virile housing programme and a considerable, urgent increase in the supply of dairy produce—milk, cream, butter, and eggs.

Being convinced of this from *practical* experience, I am doing what I can in the treatment of my patients to supply the deficiency, to get them fit in the minimum time and back to industry; in this I am greatly handicapped by the fact that the number of priorities is strictly limited to an inadequate number of diseases. At this stage the Minister of Food "cracks the whip," making irresponsible accusations of "lax" certification, and the tragedy of the position is that doctors rush in print to *excuse* themselves. Dr. A. K. Young (Nov. 16, p. 75) alone has the courage to be forthright and tell the Minister that his patients' interest comes first.

If the general practitioner to-day is afraid to face the fact which only he can see in the homes of the people, and is told by a Minister, surrounded by his experts and theorists when he shall issue milk certificates, what will the position be when the new State medical service is in being? We have asked this week-end to consider the future of medicine; although I have long been an advocate of State medicine, there is much in the present Act which is detrimental to medical practice. But, if only for the reason stated above, I must answer "No" to the plebiscite.—I am, etc.,

Southampton.

JAMES G. McDOWELL.

SIR,—I sincerely hope that every member of the medical profession will read or has read Dr. Alfred Cox's letter in your *Journal* (Nov. 9, p. 707). I know of several doctors who were going to answer "Yes" to the plebiscite because of the statement in the plebiscite, "A decision to enter upon discussions does not involve a decision to enter the Service." This is obviously true. On the other hand, the answer "Yes" is in fact condoning the Act and is a victory for Mr. Aneurin Bevan. When this was explained in detail they changed their answer to "No."

Let there be no confusion at this time when we are fighting for the life or death of the profession. Unless we wish to become full-time Civil Servants we must answer "No" to the plebiscite.—I am, etc.,

Mansfield.

HUGH TATE.

SIR,—Dr. Dain's admirable address at Exeter has clearly stated the problem of the National Health Service Act. All the good points in it and more can be part of a new Bill really serving Health. The present Act is unmasked as a tremendous political attempt to enslave us all—profession, hospitals, and people alike—under State control. The time for negotiations is past; they have failed. Our duty is clear. Let us all in the name of justice and liberty answer the plebiscite at once, and answer "No."—I am, etc.,

Winchester.

SYBIL TREMELLEN.

SIR,—I should welcome the opportunity to add my appreciation of the most admirable communication from Dr. Alfred Cox (Nov. 9, p. 707) emphasizing the need for retaining the freedom of disposal of practice goodwill plus the necessity for remuneration to be placed on a capitation basis. This commendable letter needs to be read in conjunction with your leading article in the same issue, wherein it is clearly shown that the postulation of a basic salary emanates from the urgency of obtaining satisfactory certification. May I be permitted to comment that no perplexity need now exist in completing the form of plebiscite and in offering an immediate rejection to legislation which promotes financial instability and then shoves the onus of its own responsibilities in the matter.—I am, etc.,

Tipton.

L. H. EUNSON.

SIR,—Can Mr. Bevan's Act, even after negotiations, be altered to agree with our principles? The answer is "No." The answer to the plebiscite question is, therefore, "No."—I am, etc.,

Glasgow.

A. L. COWAN.

SIR,—I hope it is not too late to appeal to every member of the medical profession—be he or she on the staff of a teaching or a non-teaching hospital, a medical officer of health, or a general practitioner—in replying to the question submitted by the British Medical Association on the subject of the National Health Service Act, to consider the interests of the profession as a whole, and sectional interests only in that framework. Whatever decision we make, we should aim as far as possible at unity.—I am, etc.,

London, W.S.

HAROLD H. SANGUINETTI.

SIR,—If we say "Yes," we are still free to say "No." If we say "No," we are no longer free to say "Yes." Carry on, Freedom.—I am, etc.,

Leeds.

W. S. MACDONALD.

SIR,—In the issue of the *Journal* for Nov. 9 there are two contributions which I would urge every member of my profession to study and ponder and study again. The first is the letter on the plebiscite by my old friend and companion-in-arms, Alfred Cox. Like him I suppose I must consider myself an old soldier, but like him I scent the battle from afar. Perhaps those who are, or may soon be, in the thick of the fray may not be unwilling to consider the views of those who, in their time, fought and won many a pitched battle on behalf of their profession. I have italicized "and won" because this brings me to the other contribution—namely, the address by Field-Marshal Viscount Montgomery on "Morale in Battle."

Dr. Cox mentioned the waverers who plead that it (the enslavement of the medical profession) is "inevitable." I believe that if anything can bring failure in the coming struggle it will be this attitude of defeat. Lord Montgomery gives his recipe for morale, and as one of the contributory factors he mentions success. Now in my talks with members of my profession, both personal and at Divisional meetings, one thing has surprised me more than any other—namely, that the younger members are unaware of, and the older members seem to have forgotten, the outstanding success which attended our fight against the Government on the capitation fee in 1923. On that occasion, as secretary of a Division, I obtained the resignations of all but two of the local panel practitioners; and this was the general experience throughout the country. The result was the immediate collapse of the Government department and the granting of our reasonable demands. Exactly the same thing has just now taken place, again over the capitation fee. Success is ours if we will but have the courage to stand together (Montgomery's "discipline and comradeship").

But let there be no mistake on the issues of this plebiscite. A policy of appeasement is fatal. If once we begin to negotiate on the regulations we are doomed. Dr. Cox places the issues squarely before his readers. Everything is at stake. No matter how gilded the cage, a cage it will be if we barter our means of livelihood—the goodwill of our practices—however attractive the price which is offered to us (or will it be to our heirs, executors, and trustees?). As Englishmen whose forebears

fought for liberty let us strike a blow at all this regulating of our lives by the State, a blow which will resound throughout the Empire; and let us roundly refuse even to discuss regulations aimed at shackling us to the chariots of the politicians.—I am, etc.,

Barnes.

J. C. LYTH.

SIR,—My own part in the controversy over the National Health Service Bill has perforce been that of spectator, but having followed it carefully I have formed certain views from which the following emerge.

1. A democratically elected House of Commons with a full mandate, and having heard the views of all concerned, has decided that the Minister of Health has correctly assessed the public desire and in consequence has passed his Bill into law.

2. Many feel that this Act contravenes strongly held views among the medical profession. Now while it is our *right* as citizens to safeguard our own interests and our *duty* to express our opinions on the public welfare, we must be prepared to see our *advice* flouted, but we need not and must not allow our *interests* to be jeopardized without a struggle. Now that the Bill has been enacted we must make the best we can by negotiation to safeguard our own affairs, but we are no longer required to fight for the public aspects of the case because the public, through Parliament, has decided that our view of its welfare does not coincide with its own. Our duty to the public has been done to the best of our ability, and we can retire, I trust gracefully, from the stage.

3. As regards our own interests—do we advance these best by agreeing or by refusing to discuss with the Minister the details of the service which have yet to be defined before we can individually decide whether or no to enter it? The Minister, with his Bill passed, will be a very different person to deal with.

4. The advice showered upon us regarding the answer we shall give in the plebiscite has not, I feel, been devoid of much special pleading, a good deal of resentment at the Minister's methods in the pre-enactment stage, and a failure to set the issue against the proper background of economic facts and world trends in political and social affairs. To say "No" to entering a defined service is one thing, to say "No" to negotiating with a Minister of the Crown in the exercise of his statutory duty is something entirely different.

5. Dr. Dain talks of *insisting* "on our principles being established, by an amending Act or whatever it may be . . ." (italics mine). Now what House of Commons is going to bow to a demand of that sort? Especially one with a mandate as powerful as this House has. What, moreover, do the italicized words mean? Nothing; because an Act can only be amended by an Act, as of course Dr. Dain well knows. There is of course no semblance of an analogy with the N.H.I. controversy over the Spens Report.

6. In 1937 the Factories Act was passed. What should we have said, as trustees of much of the health of the country, if the employers or the unions had refused to discuss with the Secretary of State details of the countless statutory rules and orders which that Act entailed, simply because their personal views had been flouted or overridden by Parliament? What should we say to-day if employers or unions held up the work of the country because as a body they did not like the various Acts now affecting or about to affect coal, transport, and electricity?

I submit, Sir, that much bad advice is being given, and I fear it may result in effects far different to those envisaged and possibly very harmful to our profession and our prestige. I do beg our profession to lift its eyes from all that has been written of late about our "principles," from impressive voting figures at the Representative Meeting, and from its day-to-day preoccupations and anxieties, and to gaze for a moment at the far horizon. It stretches from Hiroshima to Lake Success, and the panorama is not such as to cause anyone to take a light-hearted view of the new world. Streams of lava are flowing from the political volcanos of the entire globe, and medicine has its great part to play in helping to direct the flow. Do we help best by accepting a democratically determined verdict we may not like or by putting ourselves out of step with the new life in our social and political structure?—I am, etc.,

Carbis Bay, Cornwall.

L. P. LOCKHART.

Mr. Bevan and Ourselves

SIR,—Mr. Bevan has intimated to all who may be interested that he thinks that most doctors are honest. How much of this may be merely damning with faint praise is left to our imaginations. One has, however, always the impression that Mr. Bevan has a poor opinion of the general practitioner, and that when he himself has a cold and his self-prescribed remedies have failed he calls in some "deep-browed Homer" of consultant rank—nothing less. The amazing thing surely is that most doctors are honest considering the scurvy treatment which so many of them have had at the hands of successive Ministers of Health for so many years.

And what of the honesty of politicians? What of the shifts, subterfuges, and evasions, particularly of those of ministerial rank when they are asked a straightforward question? When the Minister of Labour was asked in the House the other day by a Socialist member whether the Government was in favour of a 40-hour week, it took ten lines in the *Daily Telegraph* to express what should have been a simple yes or no; and having read it no intelligent person could tell whether this circumlocutory effort was synonymous with yea or nay. This is a cynical form of verbal cleverness, of course, and the rafters must fairly ring when politicians fight their battles o'er again in those places where they for-gather after "knocking off."

The doctor who practises "polypharmacy" (as is alleged) to win additional patients must really think of something more subtle, or the extent of his labours will probably not require even 40 hours a week for their execution.—I am, etc.,

Hove.

G. L. DAVIES.

The Basic Salary

SIR,—On the matter of part-payment by basic salary, there is one point on which the public and the profession might properly require very explicit information before the National Health Service comes into being. The question is: "What is the precise nature of the new obligations which doctors are intended to undertake by accepting a salary in addition to full capitation fees?"

As I understand the N.H.I. capitation fee, it is meant to recompense a doctor completely for all his normal services to each panel patient. By accepting a patient's panel card and signing it, and by later receiving a capitation fee from the State, a doctor undertakes certain well-defined obligations towards each patient, which he discharges by the full and proper performance of his medical and other duties, including the issue of prescribed certificates. Similar and even greater obligations appear to be contemplated in the new scheme. If payment were to be by capitation fee alone for each patient on whose behalf such obligations were to be undertaken matters would remain much as at present under the N.H.I. All medical attention and other services to one's patients would be covered, including the issue of a variety of certificates, some of which are really prescriptions for money from the Treasury rather than medicines from the chemist, and some expressions of opinion.

When, however, part-payment by salary in addition to full capitation fees is proposed, one must consider what further obligations could be covered by the salary and to whom these would be due, since the capitation fee already covers all one's services to one's patients. If the capitation fee under the new scheme does not in fact cover every such service as before, then the public and the profession should insist on knowing in detail which services are covered by capitation fee and which by salary. It may be intended that the basic salary should be in addition to a full capitation fee for each patient. Then one would want to know on whose behalf the State was paying this extra money, for the State, as employer, seldom pays money for nothing.

In default of an answer we may be guided by the Lord Chancellor (*Journal*, Nov. 9, p. 714), where he is reported as having said that the success of the scheme depended in large measure on getting satisfactory certification [to stop abuses]; giving something in the way of salary would have been a very valuable thing. In other words "satisfactory certification" is so crucial to the Treasury that they are prepared to pay double for it—once by a full capitation fee which, at least under the

N.H.I., covers the issue of all prescribed certificates, and second time by a basic salary which is presumably meant to ensure that such certificates will be "satisfactory."

It will remain for each doctor before joining such a scheme to decide for himself whether he wishes to undertake any such new obligations, especially while they remain undefined. For by accepting a salary, however basic, in addition to a full capitation fee, such a doctor would in fact become an under-paid minor official of the Treasury, who undertakes to issue "satisfactory" certificates (i.e., to express "satisfactory" opinions), to remain a contented, uncritical member of the bureaucracy, to accept government by regulation without appeal to the law, to accept direction, grading, and the sack, and even—who knows?—a uniform white coat to wear in the health centre. Mr. Bevan is right enough to emphasize that such a doctor would not be a civil servant. No civil servant would even consider accepting such conditions of work for the amount of a basic salary.

I propose that if the plebiscite should show a majority of the profession to be in favour of entering into negotiations with a Minister who doesn't negotiate, then two points should be insisted upon: first, that these new obligations be precisely defined; secondly, that it should be optional for any doctor joining the scheme to decline the basic salary, and with it these new obligations to the Treasury which have not been needed under the N.H.I. scheme—I am, etc.,

Shere.

G. I. WATSON.

The Negotiators

SIR,—While I am in favour of a negotiating committee entering into discussions with the Minister on the Regulations authorized by the National Health Service Act, I am extremely doubtful whether the present members of that committee are the right persons to negotiate.

I would suggest that, should the results of the present referendum show that a majority of the Association are in favour of continued negotiation, new members of the Council and of the Negotiating Committee should be elected. For the documents forwarded with the voting form make it clear that our present representatives hold views which are so inflexible as to make any form of negotiation impossible.

Should the majority of the Association vote against negotiation, it would seem reasonable to allow those members who are interested in maintaining a more co-operative attitude (despite any differences of opinion there may be between the Minister and themselves) to elect their own representatives. Those members of the B.M.A. who may wish to serve in the new National Health Service will naturally wish to negotiate but it is senseless for them to be represented by a majority who have no intention of working in the new Service—I am, etc.,

London, N.W.3.

B. DELISLE BURNS.

Pay of Pathologists and Bacteriologists

SIR,—For some years I have been puzzled by what seems to me one of the mysteries of our profession. I refer to the salaries paid to the junior pathologists and bacteriologists working in laboratories throughout the country.

In the first place, the word "junior" is a misnomer, since most of these men and women are doctors of experience in their specialty, and many hold higher degrees in their subject. Their salaries, however, have been at the lowest level for a very long time, and the young doctor who wishes to specialize in laboratory work finds himself forced to live somewhat precariously for many years. He is expected to do highly specialized work and to give advice to his far-better-paid brothers in practice; his daily routine is of necessity meticulous and painstaking, demanding a concentration and attention to detail second to none; the amount of study he has to do is enormous compared to, say, the general practitioner: for this he may be offered a salary of from £350 to £500 per annum.

It is only the few who eventually take charge of a laboratory who receive a financial return even remotely comparable to the earnings of the other branches of medicine. Yet the pathologist-bacteriologist is reckoned by most as a specialist; why then is he not paid as one? His work is recognized as essential in every community. Now, Sir, when a man's work becomes important he usually expects to be paid accordingly; it there-

seems odd that laboratory work constitutes the poorest branch of medicine.

I am a "laboratory doctor" because I find the work as interesting as the clinician finds his patient, but I object strenuously to a system which demands of me the highest efficiency in specialized work on the one hand, and on the other gives the practising clinician a comparatively comfortable life while forcing me literally to watch every penny. Such luxuries as a home of his own or a car are as a rule unknown to the laboratory doctor, while the activities of his wife and family are restricted in a way not usually associated with a specialist in our profession.

I should like to ask a question: Could the clinician and laboratory doctor change places? Well, in emergencies I have seen many laboratory doctors carry on medical practices and conduct them to the satisfaction of all concerned. I regret I have not witnessed the spectacle of a clinician or general practitioner faced with the histological diagnosis of a tumour, or the performance of a routine Wassermann test. In other words, is the laboratory doctor a specialist in the real sense of the word? If the answer is "Yes" then we have the strange position of a specialist receiving a salary about one quarter that earned by the non-specialist.

I regret, Sir, that for obvious reasons I must sign myself
LABORATORY DOCTOR.

Tetra-ethyl Lead Poisoning

SIR,—The article (Nov. 9, p. 681) entitled "Tetra-ethyl Lead Poisoning" by Dr. D. A. K. Cassells and Prof. E. C. Dodds leaves no doubt that organic lead had been inspired by all the cases. But in view of the known hazard I should like to know whether they underwent a preliminary physical examination; and more details about their personal protection would have been interesting—e.g., were they instructed to wash their hands after eating during the working shift, and were they forbidden to chew tobacco while engaged at their task?

While alcoholic poisoning is included in the differential diagnosis, the authors do not state whether the gas-free condition of the atmosphere in the petrol tanks was confirmed by tests. The wide range of urinary lead analysis—0.10 to 0.48 mg. per litre—can leave no doubt in the mind that the cases had been exposed to a particularly heavy lead exposure. But the leptomeningitis found at necropsy in Case 1, together with the very early onset of subjective symptoms in Case 4, are suggestive at least of industrial solvent poisoning. The absence of a basophilic response is to be expected, as the absorption of massive doses of the toxin over a short period of time would not allow an adequate haemopoietic stimulation.—I am, etc.,

D. G. ROBINSON.

Barnsley.

Abacterial Pyuria

SIR,—I have followed with interest the recent correspondence in the *Journal* on abacterial pyuria. In particular, I was interested in the theories as to its causation. In one of the early articles a spirochaete was suggested as a possible causal agent. This was supported by the fact that neosarsphenamine, which has a dramatic curative effect in this disease, is also effective against many spirochaetes. One wonders whether penicillin, which is very effective in spirochaetal diseases, would have any influence on this condition. Should it do so, it would be further evidence in favour of this theory, as penicillin does not affect viruses or *Trichomonas vaginalis*, which have been suggested as alternative causes. So far as I know, there has been no mention of penicillin treatment in any of the published articles. I have not, as yet, had the good fortune to encounter this condition in general practice and so have had no chance to test this idea.—I am, etc.,

Croxley Green.

D. P. WHEATLEY.

Abacterial Pyuria presenting as Urethritis

SIR,—With reference to Dr. R. T. Burkitt's letter (Oct. 26, p. 625) concerning my article on abacterial pyuria (Oct. 5, p. 493), I beg to submit the following reply. (1) The possibility of acid-fast infection was considered in all cases. The cases were discussed from this angle with a genito-urinary surgeon and a specialist physician who were both interested

in this condition and had treated successfully with neosarsphenamine similar cases. Does pyuria, caused by an acid-fast infection, clear up dramatically and remain clear after N.A.B. injections? I would refer Dr. Burkitt to Mr. H. Donovan's article in the *British Medical Journal*, 1945, 2, 12. (2) In the course of my tour of West Africa during the war I have found gonococcal cystitis *per se* a very rare condition indeed. The only cases of cystitis I have seen have been a basal type associated with acute prostatitis; but in the cases described in the article there was no evidence, on rectal examination, of prostatic involvement.

Perhaps I did not make it clear in the article, but the cases presented had no urethoscopic evidence of anterior urethritis. Cystitis of *Bact. coli* origin, for example, may present as a false urethritis—illustrated by the fact that a special treatment orderly of mine came to see me one morning, looking very puzzled, complaining of a urethral discharge associated with pyuria and frequency. He certainly had a purulent urethral discharge (pus cells + + +), but his correct diagnosis, confirmed by culture and cystoscopy, was *Bact. coli* cystitis.

Since arriving in Italy I have seen a further case very suggestive of abacterial pyuria, of which the following is the history:

The patient, a private soldier aged 28, with eight years' service, was admitted on Feb. 8, 1946, with what appeared to be a simple uncomplicated gonococcal urethritis. The urethral smear was positive for G.C. A routine course of 150,000 units of penicillin (5 × 30,000, two-hourly) was given. As the urine remained hazy a course of 30 g. of sulphathiazole was given over a period of six days. The anterior urethritis was cured, but the pyuria persisted. On Feb. 18 a further 150,000 units of penicillin was given, and, following a normal white cell count, a further course of sulphathiazole. On Feb. 25, as there was still no improvement in the condition of the urine (a mid-stream specimen on Feb. 20 revealed albumin +, pus cells + + +, R.B.C. + + +, epithelial cells +, casts nil, culture sterile), a pyrexial reaction was induced by intravenous T.A.B., but even this had no effect.

The case was first seen by me at this stage on March 1. On account of the persistent pyuria in spite of the above treatment, the marked frequency, the absence of prostatic involvement and of a true urethritis, and a negative Kahn, I treated the case with four injections of 0.3 g. N.A.B. on March 1, 3, 5, and 12. There was an immediate cessation of the almost intolerable frequency and a rapid clearing of the urine. On March 12 the urine was perfectly clear and the patient had no complaints. On a final examination at the end of March, prior to his release, he was in the best of health.—I am, etc.,

A. B. FIELDSEND,
Capt., R.A.M.C.

Breast Cancer Treated with Stilboestrol

SIR,—In May, 1946, I was asked to see a Mrs. X., aged 91 years, and found that she had a swelling in her left breast about the size of a large egg. It was hard, irregular, and caused puckering of the skin in front, but did not appear to be adherent behind. There was no doubt that it was a carcinoma. She refused to leave home to have any hospital treatment at her age, and so I started her on 3 mg. stilboestrol daily. Within a few weeks the breast commenced to soften and the swelling gradually diminished in size. When seen on Oct. 15 no swelling was visible on inspection, and only a small thickened area of breast tissue could be felt on palpation—about the size of a cob nut.

Apart from some deafness she is extremely well and active for her age.—I am, etc.,

Meopham.

W. D. HASLER.

Double Gastric Ulcer

SIR,—To Mr. M. Kaye's article on "Double Gastric Ulcer with Perforation and Haemorrhage" (Nov. 9, p. 695) we would add our observations on 5 established cases of double chronic peptic ulceration.

ABRIDGED CASE REPORTS

(1) A newspaperman aged 63 was sent in as a case of subacute intestinal obstruction. His presenting symptom was vomiting. Examination revealed epigastric rigidity. Past history strongly suggested chronic gastric ulcer. He was put on graduated ulcer-

diet. A large haematemesis of 2 pints (1.1 litre) occurred 7 days later. A blood transfusion was given on usual indications and improvement followed only to be punctuated by another haematemesis. Investigations included test meal, which indicated high total acid. Radiography demonstrated an ulcer on lesser curve and a duodenal ulcer. Progress uneventful.

(2) A housewife aged 58 admitted on history of 7 days' weakness, melaena, and recent haematemesis. Past history pointed to symptoms of gastric ulcer dating from 1933. She had small repeated haematemeses, and response to transfusion was good. Radiography revealed two gastric ulcers. She was discharged in due course.

(3) A woman aged 70 was admitted as an "acute abdomen." Past history yielded vague dyspeptic symptoms culminating in an attack of upper abdominal pain associated with vomiting of two days' duration. Abdominal section showed blood-stained fluid and early peritonitis. On inspection of stomach a large prepyloric perforation below lesser curve was noted. Induration was a feature. On opening lesser sac a gastric mass posteriorly was attached to pancreas without obvious signs of malignancy. On separation, a larger ulcer presented. Ulcers were closed. Histological examination demonstrated chronic ulceration and ruled out neoplastic change. Condition on discharge was satisfactory.

(4) A middle-aged Chinese man was admitted with a diagnosis of pulmonary tuberculosis and died from this malady. At necropsy two chronic ulcers were found on lesser curve about 1 in. (2.5 cm.) apart.

(5) A man aged 69 was admitted with vague abdominal pain occurring mainly after meals, of several years' duration. Radiography one year previously had yielded negative results. Three days later he vomited three-quarters of a pint (430 ml.) of "coffee grounds" fluid. In spite of blood transfusion and other supporting measures he deteriorated rapidly and died. Necropsy findings—(a) Oesophagus: dilatation of lower end, with ulcer 3 cm. by 2 cm. immediately above ridge separating oesophagus from stomach. Base indurated and adherent to left lung. Floor of ulcer presented several small oozing points. (b) Stomach: ulcer 2.5 cm. by 2 cm. immediately distal to gastro-oesophageal ridge. Floor smooth and fibrotic.

This group of five cases is drawn from an ulcer case list numbering 100 per year approximately. The lesions were demonstrated radiographically (two), post mortem (two), and one at operation.—We are, etc.,

A. E. SHAW.

A. I. SUCHECKI.

St. Charles' Hospital, London.

Amoebiasis

SIR,—Correspondence on amoebiasis must come to you with a considerable time-lag, as those who contribute are usually remotely situated. Dr. M. L. Mason's letter (Aug. 31, p. 308) is eminently practical, and stresses aspects which are too often left unstressed and which are so important that I hope colleagues at home, unused to many peculiarities which the condition is apt to exhibit, will take his letter as a timely warning. The infective stage of the amoeba being the cyst adapted to withstand adverse conditions such as drought, gastric juice, etc., cyst-passers reaching the U.K. are liable to start the disease in its most active form over wide areas. Where rural sanitation still exists, this may be more than a possibility; where water sanitation obtains, there is no use expecting cysts to perish due to the anaerobic action of septic tanks and sewage systems; and there is always the house-fly. There is also the carrier who can infect food; I have often examined matter removed from under finger-nails and found cysts present. In view of the fact that the efficacy of treatment of amoebiasis still leaves much to be desired, even treated cases will have to be considered as potential carriers.

To comment on Dr. Mason's typing of symptomatology, I would say that diarrhoea is far from common, and may often be so slight that it is not remembered when, long afterwards, the patient shows symptoms suggesting chronic appendicitis or peptic ulcer. This type is very common, but I do feel that type 4, i.e., the malaise and irritability type, is by far the most frequent. Unfortunately, even if numerous specimens are examined, the stools are usually negative. This is probably because the amoeba is a commensal for quite lengthy periods, and has no need to encyst and find a new host. These negative results may mislead the inexperienced; also the repetition of tests takes up much time, whereas early diagnosis would enable the practitioner to notify his M.O.H. at least a week earlier, even supposing he were lucky enough to find one stool positive

by ordinary straight examination. A practice of mine for the last eighteen years has been to give such cases one injection of 1/2 to 1 gr. (32 to 65 mg.) emetine, and examine the stools next morning. I have rarely failed to find cysts when this has been done. They are usually with only one or two nuclei, in other words, finding a new host in a hurry. The reason, of course, is elementary zoology—when conditions become unfavourable (for instance, due to emetine) cysts are formed and pass out to seek a more accommodating host. This provocative test is particularly useful in the chronic patient, whose stools will otherwise always be negative.—I am, etc.,

Arua, Uganda.

A. FORBES BROWN.

"Analgesic" or "Anaesthetic"?

SIR,—Dr. J. N. Fell (Nov. 9, p. 711) objects to the use of the "ugly term analgesic," and while it is obvious that a distinction exists it is only one of degree. The term "analgesic" implies the loss of pain sensations only and "anaesthetic" the loss of all sensations. But I have found that there is an important difference. If chloroform is dropped continually on a mask over the mouth and nose of the patient, sensation of pain is very quickly lost, long before loss of consciousness, and it is well known that hearing may remain quite acute for a considerable time and the anaesthetist has to be careful not to discuss the patient's symptoms until anaesthesia is complete. While analgesia is rapidly produced, the auditory sense is the last to go. The object of the surgeon should be not only curative, but also the complete abolition of any pain. For instance, the removal of a gauze packing in an abdominal wound will cause very acute though temporary pain, which could be completely avoided by producing analgesia by dropping chloroform on a mask continually for one minute only. It was my custom to tell the patient that he or she would be quite aware of the withdrawal of the gauze packing but it would be quite painless, and it became my custom to go round the ward with a mask and a bottle of chloroform. The patient had absolutely no pain and no other symptoms of any kind. In one case a friend of mine whom I visited in the hospital had double pneumonia and was very seriously ill. He told me he had a raging toothache but was refused any anaesthetic owing to his condition. I gave him chloroform for one minute and then extracted the tooth quite painlessly.—I am, etc.,

Worthing.

HERBERT H. BROWN.

Definition of Health

SIR,—I should like to endorse Dr. W. F. Felton's pertinent remarks (Oct. 19, p. 591) concerning the definition of health adopted by the World Health Organization. I have long believed that much confusion of thought and inadequacy of practice, especially in the realm of "social medicine," can be traced to the vagueness of our conception of health. I have pointed out elsewhere (*Medical Officer*, 1946, Mar. 30, p. 118) that in common speech we use "health" indiscriminately, both to refer to a specific ascertainable condition (e.g., he recovered his health) and also as though it were practically synonymous with "condition" itself. If the first is used it is by no means illogical to oppose health and disease, and to define each as the absence of the other. I therefore suggested that we should accustom ourselves to the wider use. This demands a qualifying adjective before it can be applied to particular cases (as good health, better health, indifferent health), and so the true antithesis of "good health" and "bad health" emerges. Disease is relegated to its proper place, which is that of one factor, a very variable one, in particular cases of poor health. Thus a mere grammatical exploration of the term does seem to me notably to clarify our thinking. May I add my own definition of health, which is, in its simplest form, "the total condition of the personality." This provides for the dynamic quality which Dr. Felton so rightly wishes to emphasize. Our aim would be that each individual might continually approach his "best possible" total condition. In this way, goal can move constantly ahead of achievement, and a real constructive "positive" outlook is assured.—I am, etc.,

Gravesend.

HERBERT S. DAVIES.

Obituary

J. L. BROWNLIE, M.D., D.P.H., F.R.S.Ed.

James L. Brownlie, who died on Nov. 12 in Edinburgh, succeeded the late Dr. John Parlange Kinloch as chief medical officer of the Department of Health for Scotland in 1932 but resigned that post at the end of 1936 after being on sick leave some time.

James Law Brownlie was a student of Glasgow University and graduated M.B., Ch.B., and five years later received high commendation for his M.D. thesis on the problem of the diphtheria carrier. He also took the Cambridge D.P.H., and during his tenure of office in Edinburgh received the diploma of R.C.P.Ed., and was elected F.R.S.Ed. He had been for four years resident medical officer at the Glasgow Corporation fever hospitals and for six years assistant bacteriologist in the Glasgow Corporation laboratory. During this part of his career he contributed papers to medical journals and became known as an investigator of food-borne infections. His next post was that of bacteriologist and pathologist for the County of Lanark. In 1930 he moved to Edinburgh to take up duty as a medical officer of the Department of Health for Scotland, and one of his main tasks was concerned with the co-ordination of the hospital services of Scotland; he also represented his Department on various scientific bodies and committees. Brownlie is honorary secretary of the Section of Micro-Biology (including Bacteriology) at the Annual Meeting of the B.M.A. held in Glasgow in 1922, and vice-president of the Section of Public Health when the Association met in Dublin in 1933.

Dr. JOHN WILLIAM LINDSAY, who died at his home in Ealing on Nov. 9, was a practitioner of the "covered-wagon" days in the cattle country of South America. He was born in Aberdeen, where he graduated M.A., M.B., Ch.B., gaining the medals in surgery and in obstetrics, and then joined the South American Missionary Society beginning pioneer medical work in the Paraguayan Gran Chaco in 1900. In 1902 he set up in private practice at Belén in eastern Paraguay, where, except for service to the R.A.M.C. on the western front during the 1914-18 war, he worked until his retirement to England in 1934. He quickly acquired a very great professional reputation, and it was not uncommon for patients to travel six weeks by bullock-cart to see him. In addition to frequent revolutions his locality provided all the excitements of "wild-west" frontier life and, though he was beloved by all, he narrowly escaped many a bullet. A deeply religious man with a strong evangelical leaning he built a local mission-hall, and among other attainments Mr. Lindsay had a knowledge of a dozen dialects and was particularly attracted to Guarani, the language of an extinct race, in which, though it had not been reduced to writing, he published a translation of the New Testament which he had made from the original Greek. During the Gran Chaco war of 1932-4, he equipped and managed a military hospital for Paraguayan troops, did much to arouse interest in the work of the British Empire Leprosy Relief Association, and in the recent war worked with the Ministry of Economic Warfare as Spanish expert until his health broke down. He is survived by his wife and three children (one of them in the I.M.S.) who shared his South American adventures.

Dr. ALEXANDER MACINTYRE, of Airdrie, Lanarkshire, who died some weeks ago at the age of 67, was a native of the parish of Gairloch, Wester Ross. He studied medicine at the University of Glasgow, graduating M.B., Ch.B. in 1902, and started work at Airdrie on the first day of 1903 as assistant to the late Dr. Gemmell, whom he succeeded. Apart from two and a half years of service as a medical officer with the Forces in the war of 1914-18 Dr. Macintyre spent all his medical career in that neighbourhood, where his skill and devotion won the regard of all his patients. He was particularly well versed in Gaelic tradition and lore, and a fluent speaker of the language; he helped to edit several Gaelic books. He was a member of the Glasgow and Inverness Gaelic Society, and an address he gave in January, 1945, was so excellent in manner that the Society had it printed and published in booklet form under the title *Home Culture*. He will be greatly missed not only by his own community but by a wide circle of friends and admirers of his scholarly mind. He had been a member of the B.M.A. since 1917.

Universities and Colleges

THE PLEBISCITE

Statement by Sir Alfred Webb-Johnson

The following statement was made by the President of the Royal College of Surgeons of England, Sir Alfred Webb-Johnson, at a meeting of plastic surgeons held at the College on Nov. 20.

"Every medical practitioner is being asked to give an answer to the following question: Do you wish the Negotiating Committee to enter into discussions with the Minister of Health on the regulations which he is authorized to make by the National Health Services Act? I hope that all practitioners will give this question most serious consideration. I trust that they will not lightly make it difficult for the responsible leaders of the profession to enter into negotiations in which the Minister is now at liberty to take part. It must be borne in mind that a vote in favour of discussions with the Minister does not register approval of the Act in every detail. A vote in favour of discussions does not commit any practitioner to accepting service under the Act. There are parts of the Act which, in the judgment of the majority of the profession, will not give the public the best service. But the Act probably pleases no one entirely. There are obvious dangers to be guarded against. Discussions will, however, provide opportunities for negotiation on many points which still need clarification, in spite of the debates in Parliament. They will also provide opportunities for helping to plan most of the machinery of the Service, and to mould much of the policy which remains to be settled by regulations."

UNIVERSITY OF LONDON

John McMichael, M.D., has been appointed to the University Chair of Medicine tenable at the British Postgraduate Medical School, from Oct. 1.

Stuart Dunsmore Elliott, M.D., has been appointed to the University Readership in Bacteriology tenable at the London Hospital Medical College, from Oct. 1.

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—15P. J. Blaxland, 15P. Patricia Chippindale, 15A. T. Cook, 15B. A. Davis (University Medal), 15F. V. Flynn, 15Kathleen A. M. Friih, 15P. W. S. Gordon, 15A. J. Harrold, J. M. Alderton, Elizabeth J. Allday, R. H. Anthony, J. J. Ashken, M. Atkinson, D. A. Bailey, D. W. Bain, D. N. Balsekar, A. D. Bingham, P. J. Banks, G. F. Barnes, P. J. H. Barron, A. C. Barthels, D. Bartlett, H. N. Baylis, R. W. Bell, A. Benjamin, A. J. Berrill, M. A. Birnstingl, R. W. A. Bottoms, Daphne V. Bousfield, L. W. Bowen, A. C. Boyle, H. G. Broder, M. H. Brook, L. Broumache, E. K. Brownrigg, Brenda M. Buck, D. E. Burgess, G. L. Burgess, J. Candy, J. R. Carter, Rosemary Cartledge, C. L. Casimir, F. E. de W. Cayley, F. C. Chesterman, C. J. Christmas, Betty L. Coles, R. B. Coles, H. P. F. Corbin, Anne N. M. Crane, D. W. J. Cullingford, M. J. Cutler, D. G. L. Davies, P. R. Davis, A. J. A. Dawes, P. E. A. de Caestecker, J. F. de la Frenay, K. R. Dempster, H. S. de Silva, C. F. Donovan, D. M. D. Evans, M. E. Fearnley, B. R. Finlay, F. J. Fish, M. L. H. Flindt, A. F. Forbat, R. H. Fox, C. J. G. de L. Franklin, F. E. Fraser, J. G. Gant, Mary P. Gibson, C. E. J. Glaisher, H. H. Glatston, S. G. Gordon, Rosemary D. Graham, Helen C. Grant, G. R. Green, C. J. Griffin, G. L. Gryspeerd, A. W. Hagger, G. J. L. Hamilton, N. Hamlin, J. Hankinson, R. P. Harwood, P. J. D. Heaf, I. T. T. Higgins, A. B. Hill, R. D. Hoare, R. K. Hollows, R. J. Howat, A. Hughes, R. W. Hughes, J. R. Ivey, I. Jaffa, G. V. Jaffé, J. James, J. G. Jamieson, C. W. L. Jones, D. W. W. Jones, K. C. D. Jones, T. G. Jones, P. Jordan, A. R. Kagan, I. A. Kellock, R. E. Kelly, Marjorie A. C. Kuck, M. Kugler, O. G. Lane, J. L. Lawrence, Wendy E. Lewington, Elaine Lister, G. H. Luffingham, J. Lustigman, K. A. McCluskey, I. J. MacDonald, H. W. Macintyre, I. Mackenzie, Freda S. Maclover, R. G. C. MacLareo, R. Macpherson, J. D. Manning, E. A. W. Marien, S. Mattingly, W. R. May, E. V. M. Medill, J. N. Mickerson, R. Moolan-Feroze, I. A. H. Munro, C. P. Newcombe, K. H. Nickol, C. Pearce, R. A. O'G. Pearson, J. H. Pendered, Thelma M. Phelps, B. H. Pickard, Eva Pickford, C. M. C. Potter, Prudence M. Proudlove, J. I. Pugh, J. H. Raphael, Jean M. Raybould, D. D. Rees, M. F. Rémy, D. I. Roberts, J. E. Russell, M. McC. Russell, A. J. Ruzicka, R. C. O. Saunders, Enid Scholfield, Valerie Scotland, A. G. Seaman, R. P. Shields, Patricia D. Shurly, N. R. W. Simpson, I. P. D. W. Skempton, P. A. J. Smith, R. J. H. Smith, J. L. Souster, M. J. Squires, R. J. Stanley, Dorothy M. Stanton, J. E. T. Strickland, M. Strobe, Gwendolyn M. Sutton, G. F. Swann, C. K. M. Thacker, D. M. E. Thomas, I. J. Thomas, H. N. Waller, J. H. Wallis, R. G. Watson, B. G. Wells, J. Whitwell, W. B. Whowell, A. P. H. Wilkinson, J. R. B. Williams, Lorna E. Williams, T. B. Williamson, J. T. Woodall, Joan D. Wrigley, Angela R. Young, C. J. Zerny.

¹With honours. ²Distinction in pathology. ³Distinction in hygiene and forensic medicine. ⁴Distinction in medicine. ⁵Distinction in surgery. ⁶Distinction in obstetrics and gynaecology.

UNIVERSITY OF LEEDS

Digby Chamberlain, Ch.M., F.R.C.S., has been appointed Professor of Surgery in the University, from Oct. 1.

The title of Emeritus Professor has been conferred on William MacAdam, M.D., F.R.C.P. (professor of medicine), Peter Lindsay Sutherland, D.Sc., M.B. (professor of forensic medicine), and Charles Wilfred Vining, M.D., F.R.C.P. (professor of children's diseases).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Meeting of Fellows and Members

At the annual meeting of Fellows and Members on Nov. 13 the President, Sir Alfred Webb-Johnson, Bt., presented the report of the Council. It was desired to create, under a new Charter, Faculties within the College, to elect to the Fellowship, each year, not more than four Members who had been practising dental surgery over a long period, and to grant a Fellowship in Dental Surgery. They were to be congratulated on securing the services of Prof. F. Wood Jones and two new curators for the anatomy department. The John Hunter medal and prize had been awarded to Dr. Joan Margaret Ross for her outstanding work in pathological anatomy. Two prizes of £1,000 each, the gift of Mr. Charles L. Mayer, of New York, had been awarded to Mr. Terence Millin in recognition of his contribution to the advancement of the surgical treatment of the prostate, and to Prof. E. C. Dodds for his researches in the field of the synthetic hormones.

The College and the National Health Service Act

The President added some remarks on the National Health Service Act. There was, he said, much good in the Act, and important concessions had been made by the Minister as a result of their representations. Nevertheless, a good deal of anxiety still prevailed. In fighting for the freedom of the profession they were not fighting for any vested interests, but for an essential freedom of the people. The Lord Chancellor had given the President assurance that specialists who did not join the service would have freedom in an honorary capacity to treat their private patients in hospital, and had accepted an amendment with that in view. He hoped that the Negotiating Committee would continue to enjoy the confidence of the profession.

Mr. C. E. Beare moved:

That this meeting of Fellows and Members of the Royal College of Surgeons urges the Council to do its utmost to prevent the penalization of private practice by the restriction of the medical staffs of hospitals to those who take part in the State Medical Service.

He expressed the gratitude of the Fellows and Members to the President and other members of Council who had served on the Negotiating Committee, but considered it not quite clear from the Lord Chancellor's assurance whether the reference was to specialists on the staffs of hospitals in an honorary capacity or to those who were in the Service. The President pointed out that the amendment accepted by the Government inserted the words "whether in an honorary or paid capacity," but Mr. Beare was still doubtful about the interpretation of this amendment. It was possible that those at present on the staffs of hospitals would not be re-elected unless they undertook State service, and he feared they might be debarred from attending private patients in these hospitals. Mr. Dickson Wright seconded the motion.

Dr. H. Guy Dain considered that the accepted amendment made very little difference, for the Minister had stated categorically that he would not allow any private practitioner who was not in the Service to practise in the State hospitals, and this referred not only to the public but to the private wards. If and when the State owned all the hospitals it would be the end of private specialist practice. It would be necessary to establish nursing homes outside the Service, and even then there was no guarantee that they would not be taken over. The President said that the Lord Chancellor's assurance, which had been confirmed by the Minister, must go some way to relieving anxiety, but he fully appreciated Mr. Beare's point, especially as it related not to those already in practice but to those coming into practice in the future and who did not comply. The Negotiating Committee should clear up the point.

On Mr. Beare's motion being put to the vote, twenty-six stood in favour of it, but this number was short of the quorum required under the rules of the College, and a special meeting of Fellows was called for Nov. 29.

At an ordinary meeting of the Council of the College, held on Nov. 14, with Sir Alfred Webb-Johnson, Bt., President, in the chair, the Honorary Gold Medal of the College was awarded to Sir Alexander Fleming, F.R.S., F.R.C.S., in appreciation of his distinguished work and particularly in recognition of his discovery of penicillin.

Prof. Ian Aird, F.R.C.S.Ed., professor of surgery at the British Postgraduate Medical School, was elected *ad eundem* to the Fellowship of the Royal College of Surgeons of England.

It was reported that the trustees of the Sir Halley Stewart Trust had made a grant to the College for a research fellowship, and Mr. H. Fletcher Lunn, anatomical curator, was appointed as the first Sir Halley Stewart Fellow. Mr. Alan C. Perry (London), Sir Hemeage Ogilvie (Guy's), and Mr. R. M. Handfield-Jones (St. Mary's) were elected members of the Court of Examiners. Mr. R. J. Last, M.B., anatomical curator, was elected as the first Bland-Sutton Research Scholar. It was reported that the special trustees had elected Mr. F. H. Masina, F.R.C.S., as a Profit Research Student

for the investigation of the pathology and treatment of carcinoma of the bladder. The Hallett Prize was awarded to Mr. Robert Po Melville, of the University of Sydney. Hugh Kelson Ford (Epsom College and the London Hospital) was nominated as the fifty-fourth Jenks Scholar.

Diplomas of membership were granted to the 114 successful candidates whose names appeared in the report of the meeting of the Royal College of Physicians of London as recipients of the Licentiate of that College (Nov. 23, p. 799).

Diplomas in Child Health, in Medical Radiotherapy, and Medical Radio-Diagnosis were granted, jointly with the Royal College of Physicians of London, to the successful candidates whose names were included in the report of the meeting of that College.

The following lectures will be delivered at the College (Lincoln Inn Fields, W.C.) at 5 p.m.: Dec. 5, Imperial Cancer Research Fund Lecture, by Dr. B. D. Pullinger, "Cystic Disease of the Breast Human and Experimental." Dec. 12, Robert Jones Memorial Lecture, by Mr. W. Rowley Bristow, "Injuries of the Peripheral Nerves in two World Wars." Dec. 17, Erasmus Wilson Demonstrations, by Mr. R. W. Raven, "Melanoma and Related Tumours." Dec. 19, Thomas Vicary Lecture, by Dr. E. Ashworth Underwood "Naval Medicine in the Ages of Elizabeth and John."

Medical Notes in Parliament

Welfare of the Deaf

Mr. KEY replied on Nov. 20 to a discussion on the welfare of the deaf. He said the Government recognized that, important as were hearing aids, the treatment of infectious diseases in childhood and prompt attention to the prevention of deafness were more important. The Ministry of Health was preparing comprehensive measures for prevention, diagnosis, and treatment of deafness as part of the National Health Service, and was armed with authoritative recommendations from those committees which the Medical Research Council had set up in 1944 at the request of the Departments concerned in this problem. There was not likely to be difficulty in persuading the Medical Research Council to undertake further research. By Section 16 of the National Health Service Act, the Minister himself had power to conduct or to assist by grants research into any matters relating to the causation, prevention, diagnosis, or treatment of illness. Deafness would be included in the provision, and the Department would use these new powers fully to see that such investigation was made. He did not suggest it would be possible to build up the complex organization for the care of the deaf and to have it operating everywhere by the date when the National Health Service Act would come into operation. But deafness clinics, under trained specialists, would be developed as part of the hospital and specialist services as quickly as available resources allowed. Up-to-date and effective means of testing deafness and of fitting the patient with the kind of aid which would benefit him would not be overlooked. An advisory committee on the welfare of the deaf would be set up when the time seemed ripe for it.

Mr. BEVAN stated on Nov. 21 that free issue of deaf aids could not begin before the National Health Service came into operation.

Streptomycin.—Mr. HERBERT MORRISON, on Nov. 18, said that the Medical Research Council had arranged for controlled clinical trials of streptomycin, as soon as supplies were available, to determine its value in tuberculosis and other conditions and the best methods for its use. Funds were being allocated for the cost of this work, including purchase of the necessary quantities of the product.

Dermatitis in Coal-miners.—Mr. DAVID GRIFFITHS asked on Nov. 19 for the numbers of cases certified by the certifying surgeons of coal-miners suffering from dermatitis from January, 1938, yearly up to and including December, 1945. Mr. JAMES GRIFFITHS explained that separate figures for coal-miners were not available, but the number of cases among miners generally, the majority of whom had been coal-miners, were as follows:

1938	..	254	1942	..	884
1939	..	305	1943	..	1,207
1940	..	402	1944	..	1,506
1941	..	573	1945	..	1,867

Staffing of Mental Hospitals.—Mr. BEVAN stated on Nov. 21 that during the past twelve months the accommodation in England and Wales for mental defectives had increased by 177 beds. On Jan. 1, 1946, mental hospitals were overcrowded to the extent of 13,176 patients, or 11.5% of the total accommodation. The number of nursing staff employed in mental hospitals and mental deficiency institutions had increased by 620 during the twelve months ended June 30, 1946, bringing the total to 25,840, just over half of whom were fully trained.

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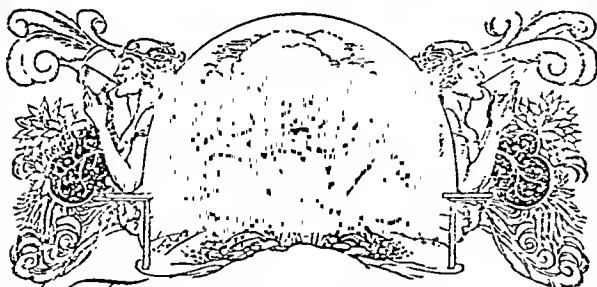
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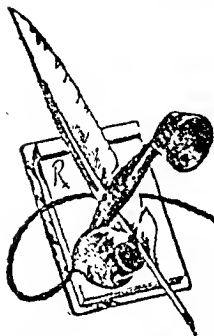
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No. 45

EPIDEMIOLOGICAL NOTES

INFECTIOUS DISEASES AND VITAL STATISTICS

For the print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 9.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) the 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	46	—	25	2	3	37	3	25	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	314	20	88	30	6	573	39	157	77	24
Deaths	2	—	1	—	—	—	1	3	—	—
Dysentery	65	13	48	1	—	212	34	74	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	1	1	—	—	—	—	1	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	47	4	5	—	—	47	7	4
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	59	—	—	—	53	3
Deaths	57	5	7	—	4	30	3	6	13	—
Measles*	3,987	157	231	65	23	445	23	89	112	3
Deaths	—	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	57	7	24	1	—	54	4	6	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	30	21	(B)	1(A)	—	5	—	4(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	601	29	11	2	11	463	34	9	4	2
Deaths (from influenza)† ..	16	2	4	—	—	15	3	1	1	—
Pneumonia, primary	—	—	276	15	7	—	24	199	23	4
Deaths	—	49	—	—	—	—	—	9	—	—
Poliio-encephalitis, acute	1	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	21	—	—	17	1	33	8	2	3	—
Deaths	—	1	—	—	—	—	—	—	—	—
Puerperal fever	—	—	1	18	—	—	9	17	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	125	10	13	—	—	136	7	11	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,323	110	319	31	41	1,621	113	309	32	36
Deaths	2	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	5	—	—	1	9	2	—	—	2	1
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	3	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,590	74	166	32	40	1,118	82	71	52	5
Deaths	8	—	2	—	3	7	2	1	1	—
Deaths (0-1 year)	382	43	78	—	21	276	30	49	45	16
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,729	742	643	—	135	4,053	639	535	192	101
Annual death rate (per 1,000 persons living) ..	—	—	14.2	—	—	—	—	12.1	12.4	—
Live births	9,118	1,425	1,120	—	260	6,636	930	764	364	256
Annual rate per 1,000 persons living ..	—	—	22.5	—	—	—	—	15.3	23.5	—
Stillbirths	262	26	45	—	—	190	24	29	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	39	—	—	—	—	37	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ending Oct. 26, Nov. 2, and Nov. 9.

Discussion of Table

In England and Wales infectious diseases were more prevalent during the week, and increases were recorded for cases of measles 613, scarlet fever 136, acute pneumonia 116, whooping-cough 41, and diphtheria 40. The only exception to the general trend was a fall in the incidence of paratyphoid 36.

The largest increases in the notifications of measles were Kent 160, Lancashire 102, and Northumberland 89; the largest decreases were Durham 74 and Middlesex 43. Cases of scarlet fever increased in number in most areas of the country, and notably in Middlesex 36 and Yorkshire West Riding 27. The only large variation in the trend of whooping-cough was a decrease in incidence in Lancashire 52. Notifications of diphtheria increased in Lancashire 34 and Northumberland 11 but fell in London 14. The 35 cases of diphtheria notified in Liverpool C.B. were a ninth of the total for the whole country. A new outbreak of dysentery, involving 11 persons, was reported from Southampton, Hartley Wintney R.D. The fall in the notifications of paratyphoid was due to the waning of the outbreak in Yorkshire West Riding; 16 further cases were reported in Sheffield C.B. during the week.

In Scotland the chief features of the returns were increases in the incidence of acute primary pneumonia 69, cerebrospinal fever 12, and dysentery 12. An increase in cases of pneumonia was reported from most areas of the country.

In Eire diphtheria notifications decreased by 17, while a rise was recorded for diarrhoea and enteritis 16, measles 11, and poliomyelitis 11. The 17 cases of poliomyelitis notified during the week involved twelve administrative areas in eight counties. The chief centre of infection is in County Cork, where in recent weeks 17 cases, with 3 deaths, have been reported. The rise in diarrhoea and enteritis was due to the experience of Dublin C.B., where the reported cases rose from 33 to 52.

In Northern Ireland the incidence of measles in the outbreak in Belfast C.B. declined by 9.

Week Ending November 16

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,293, whooping-cough 1,696, diphtheria 330, measles 4,382, acute pneumonia 625, cerebrospinal fever 30, dysentery 70, acute poliomyelitis 15, paratyphoid 26, typhoid 7.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery, Obstetrics and Gynaecology will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, British Medical Journal, B.M.A. House, Tavistock Square, London, W.C.1.

A joint meeting of the Society of Public Analysts and other Analytical Chemists and the Food Group of the Society of Chemical Industry will be held at the Chemical Society's rooms, Burlington House, Piccadilly, W., on Wednesday, Dec. 4, at 6.30 p.m., when there will be a discussion on "The Application of Statistical Methods to Food Problems."

Dr. H. L. Marriott will deliver the Croonian Lectures on Tuesday, Dec. 3, and Thursday, Dec. 5, at 5 p.m., at the Royal College of Physicians of London, Pall Mall East, S.W.1. Subject: Some Quantitative Considerations Regarding Depletion of Tissue Fluid and Blood Constituents.

At a clinical meeting of the Medical Society of the L.C.C. Service at 3 p.m. on Thursday, Dec. 5, at the North Eastern Hospital, St. Ann's Road, South Tottenham, cases will be demonstrated in the wards, and Dr. E. H. Harries will give an address on "The Modern Fever Hospital."

The 254th meeting of the Biochemical Society will be held at the National Institute for Medical Research, Hampstead, N.W., on Friday, Dec. 6, at 1.30 p.m., when papers will be read.

Dr. Denis Williams will deliver a lecture on "The Clinical Use of the Electro-encephalogram" before the Whipps Cross Hospital Medical Society at the hospital on Friday, Dec. 6, at 8.30 p.m.

A Doctors' Messages Bureau has recently been set up in Liverpool. When a subscribing doctor is out it takes messages from his patients, and either relays them to an address given by the doctor or retains them until he telephones to notify his return home. Members of the staff are on duty day and night, and have had previous training as signal operators or receptionists.

A special open meeting, arranged by the Royal Anthropological Institute, will be held at the Royal Society's Rooms (Burlington House, Piccadilly, W.) on Tuesday, Dec. 3, at 5.30 p.m., when Prof. R. A. Fisher, F.R.S., will discuss "The Present Position of the Rhesus Blood Group Factor."

At a meeting of the London Association of the Medical Women's Federation in the Hastings Hall of B.M.A. House on Friday, Dec. 6, at 8.30 p.m., Dr. W. Ritchie Russell will speak on rehabilitation after head injuries. Coffee at 8.15 p.m. in the Common Room. Men and women guests invited. On Tuesday, Jan. 7, Dr. Innes Pearse will speak on the Peckham Health Centre.

The Benjamin Ward Richardson Lecture will be delivered at the Royal Sanitary Institute (90, Buckingham Palace Road, S.W.) by Prof. Harold Burrow on Wednesday, Dec. 11, at 2.30 p.m. His subject is "Future Control of Abattoirs and Knacker Yards."

On Nov. 18 a deputation representing all sections of the medical profession in Scotland submitted their views on the National Health Service (Scotland) Bill to the Secretary of State for Scotland, Mr. Joseph Westwood, M.P., at a conference held in St. Andrew's House, Edinburgh. Dr. Wilkie Millar, former chairman of the Scottish Committee of the British Medical Association, led the deputation, and Mr. Westwood promised to consider the points raised. Some time ago he agreed to meet representatives as soon as the Bill was published. Later, the Secretary of State met representatives of the British Hospitals Association, and on hearing their views he gave a similar undertaking.

The Canada Club last week held a dinner in honour of Mr. Norman Robertson, High Commissioner for Canada, Lord Greenwood being in the Chair. Among those present were the following members of the medical profession: The Rt. Hon. The Viscount Addison, Sir Wilson Jameson, Dr. P. L. Backus, Mr. J. Lyle Cameron, Dr. Hugh Clegg, Dr. J. R. M. Collic, Dr. H. Neil Collier, Dr. T. F. Cotton, Dr. T. M. Creighton, Dr. H. A. C. Gregory, Dr. A. Livingstone Johnson, Dr. P. A. H. King, Dr. I. D. MacDonald, Dr. R. S. MacLachy, Mr. Rodney Maingot, Dr. F. H. Mather, Dr. Donald Paterson, Dr. Clarence Routley, Dr. Clive Shields, Dr. Leo Zealand.

The Minister of Labour and National Service, on Nov. 13, inspected one of the mobile exhibition vans which is to be used in the forthcoming recruitment campaign for nurses. The vans will visit villages and smaller towns and will be staffed by technical nursing officers of the Ministry who will co-operate with local hospitals in the areas visited. During the next month a tour will be made of the Southern and South-western Regions in the neighbourhood of Reading and Salisbury.

At a special general meeting of members and honorary members of the Victor Chetwynd Tuberculosis Fund for Allied Ex-Service Men on Oct. 23 it was reluctantly decided to close down the Fund. Applications had been made to various Ministries for official recognition but without avail, consequently the financial support necessary for the Fund's operations had not been forthcoming. The tragic death of the Foundress, Lady (V.B.) Chetwynd, in the air disaster at Le Bourget on Sept. 4 had a serious repercussion on the Fund to which she had devoted so much time and energy.

The Department of Scientific and Industrial Research is sending a team to the Antarctic, under the leadership of Dr. R. A. M. Case, to study the possibilities of using lean whale meat for human food. The proteins of whale meat are believed to be of exceptional value for growth in comparison with the meat proteins of land mammals. Problems of selection, transport, and storage of the meat will be investigated. The expedition, which has been made possible by the collaboration of United Whalers, set sail a month ago in the new factory ship "Balæna."

It has been agreed by the Court of Governors of St. Peter's Hospital for Stone, Henrietta Street, W.C., that the title assistant surgeon to this hospital be abolished and in future all the honorary surgical staff be entitled honorary surgeons.

The Anaesthetics Committee, jointly appointed by the Medical Research Council and the Royal Society of Medicine, has been reconstituted with the following membership: Dr. C. F. Hadfield (Chairman), Prof. F. H. Bentley, Dr. C. Langton Hewer, Mr. R. Vaughan Hudson, Dr. H. King, Prof. R. R. Macintosh, Dr. F. C. MacIntosh, Dr. M. D. Nosworthy, and Dr. G. S. W. Organe (Secretary).

The Department of Ophthalmology of the George Washington University School of Medicine, Washington, D.C., U.S.A., announces that the tenth annual postgraduate course in ocular surgery, pathology, and orthoptics will be given from Jan. 27 to Feb. 1, 1947, and that the William Thornwall Davis intensive postgraduate course in ophthalmology will be resumed during the week Feb. 3 to 8, 1947, when subjects of clinical interest to the practising physician doing eye work will be presented. Further details of the two courses may be had on application to the secretary, Suite 34, 1801, K. Street, N.W. Washington 6, D.C., U.S.A.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Antilog Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Massive Doses of Penicillin

Q.—A recent brochure states that 500,000 units of penicillin given intramuscularly to the ambulant case maintains an "effective blood level" for eight to ten hours, and suggests that this dose might be injected every twenty-four hours, or a dose of 200,000 units every twelve hours. This would appear to be in conflict with the findings of Fleming, Young, Suchet, and Rowe (see "Pharmacology of Penicillin" by L. P. Garrod). To quote Garrod: "It is clear that dose and duration of effect are not directly proportioned . . . the greater the magnitude of the dose the less is the prolongation achieved by any given addition to it . . ." Which of these views is correct?

A.—This is an exceedingly important question at the present time, since the "massive dose" system is being increasingly resorted to in order to facilitate the treatment of ambulant patients, both in general practice and in the out-patient departments of hospitals. The facts are as stated in the *Pharmacology of Penicillin*. A blood penicillin level sufficient to inhibit the growth of the standard staphylococcus was found by McAdan *et al.* (*Lancet*, 1944, 2, 336) to last for between one and two hours after doses of 10,000 and 15,000 units; for between two and three hours after 25,000 or 50,000 units; and for rather over three hours after 100,000 units. We know of no comparative published data for larger doses than this, but in a recent personal observation a dose of 250,000 units produced a bacteriostatic blood level up to the fourth hour but not the fifth. It is quite clear that doubling this dose would not be expected to double the duration of effect.

Whatever precise figures be accepted, it is common ground between the advocates of massive infrequent doses and anyone who may oppose this policy that the patient so treated has insufficient penicillin in his blood for a substantial period before the next dose is due—actually for well over half the interval between doses if the doses mentioned are given. The system is also unquestionably extravagant. Against this is to be set the advantage of the exceedingly high concentration attained in the blood shortly after the massive dose is injected. This is said to promote diffusion from the blood into the infected area. I will certainly do so if active exudation is going on. Florey, M. E., Turton, E. C., and Duthie, E. S. (*Lancet*, 1946, 2, 40) have found that after an intramuscular dose of 100,000 units penicillin can be detected in the exudate of a wound for eight and sometimes for twelve, hours. Whether the same result would follow in a closed lesion into which exudation is less profuse is doubtful. The respective advantages of the wide fluctuations in blood level produced by injections given even at three-hourly intervals and the low but constantly adequate level resulting from continuous infusion are still unsettled. Whether doses given only twice or even only once a day are effective is a question which could be studied by animal experiment, but before such a policy is finally accepted it should also be submitted to the most careful clinical study. Such studies so far as we are aware, have not yet been reported.

Car Sickness in Children

Q.—What is the best prophylactic treatment for travel sickness in a child aged 6 during a journey by car?

A.—In the long run, getting used to the mode of travel seems the only satisfactory remedy. Many children are very

ck when they first begin to make car journeys and then appear to get over the trouble. If it is at all persistent, careful examination of the eyes should be made and refractive errors corrected. There does seem to be a visual factor in some instances, and the child is better sitting high up to get an unrestricted field of vision. Some children are helped by sugar. Before the war a well-known brand of glucose (and sodium bicarbonate) tablet was found useful by many parents, but it is unobtainable now. Personal points permitting, plain boiled sweets might be prescribed instead and sucked throughout the journey.

Dental Anaesthesia after Coronary Disease

Q.—A man of 47 recently recovered from an attack of coronary thrombosis. He must now have all his teeth extracted, and the condition of his gums precludes the use of a local analgesic. What general anaesthetic should I advise?

A.—As the man has recovered, the anaesthetic risk is scarcely greater than normal. Nasal nitrous oxide-air or nitrous oxide-oxygen would be suitable. If anginal symptoms are present it would be wise to ensure a smooth anaesthesia by injecting just sufficient thiopentone to abolish consciousness. The patient should be sitting in the dental chair with the mouth prop already in place, and the anaesthetic should then be continued with nasal nitrous oxide-oxygen in the usual way. In this particular case the patient should also rest for half an hour to an hour before going home.

Intestinal Parasites in Dogs and Children

Q.—A seemingly healthy dog, in spite of treatment, continues to pass from time to time scattered, living, single segments of tapeworm. Is there any risk to children living in the same house?

A.—The tapeworm segments are probably those of *Dipylidium caninum*, a common intestinal parasite of dogs and cats. The infection is acquired only through the ingestion of adult fleas or dog lice (*Trichodectes canis*) containing the larval form of the tapeworm. Because of this method of transmission, human infections are relatively rare and mainly occur in children. In the event of such infection the proglottids will first appear in the child's faeces some three to five weeks after the ingestion of the infected insect.

Pantothenic Acid

Q.—Pantothenic acid is said to be a cure for "burning feet" and "jittery legs." What is the dose and in what form is it prescribed?

A.—"Burning feet" and "jittery legs" are stated to be symptoms of vitamin B deficiency, but it is not certain which component of the vitamin B complex is responsible, although riboflavin, nicotinic acid, and pantothenic acid have been suggested. Pantothenic acid can be administered in the form of a powder in doses of 20 to 100 mg. a day. It may also be administered parenterally in doses of 100 mg. So far as is known it is not harmful in these doses. Dogs and monkeys will tolerate a dose of 1 g. per kg. of body weight over a long period.

Treatment of Tetanus

Q.—Would you discuss the value of curare, spinal analgesia, injections of magnesium sulphate, the sulphonamides, and penicillin in the treatment of tetanus?

A.—During the last eighty years curare was used from time to time in treating cases of tetanus, but it was always difficult to assess the right dose. Some preparations were liable to give rise to respiratory spasm, which is extremely dangerous in tetanus. Now that standardized preparations of curarine are available they can be used with caution for controlling the spasm, but this treatment is still in the experimental stage. It should be remembered that treatment with curarine is only symptomatic, and does not affect the course of the disease except in so far as it prevents exhaustion. Even if the spasms could be completely controlled throughout the disease the patient would still die if a lethal dose of toxin had reached the nervous system. The problem of the use of curare and

curarine in tetanus might be well worth considering in an academic discussion.

A spinal analgesic is better avoided in tetanus because of the difficulties of lumbar puncture and its liability to excite reflex spasms. General muscular spasms and convulsions are better controlled by basal anaesthesia, intramuscular paraldehyde, or paraldehyde or avertin given rectally.

Injections into the muscles of concentrated solutions of magnesium sulphate for the prevention of spasms have been abandoned because spasm is better controlled by modern sedatives. Sulphonamide and penicillin therapy are of value in preventing tetanus in so far as they prevent infection in wounds and therefore limit the production of tetanus-toxin. There is no trustworthy evidence that the sulphonamides or penicillin have any effect on the actual toxin once it is producing its effect on the nervous system, or that the course of the disease in carefully controlled cases is modified. Sulphonamides and penicillin have a use in preventing coincident infections, such as pneumonia, developing during the course of tetanus. As this is a real danger in severe cases both may be worth a trial.

Effect of Pus on Sulphonamide Activity

Q.—Is it correct to say that no sulphonamide has any action in the presence of pus, or are there exceptions to this generalization?

A.—The bacteriostatic activity of most sulphonamides is much interfered with by the tissue breakdown products in pus. It is not entirely abolished, but it is so diminished that only highly sensitive organisms are affected. Thus it has been found that under otherwise favourable conditions—notably in accessible superficial infections, as in the case of infected burns—treatment with sulphonamide powder will usually suppress haemolytic streptococci, which are the most sulphonamide-sensitive bacteria concerned in sepsis, but other species are little affected. The only exception to this statement is "marfanil" (*p*-sulphonamidobenzylamine), the activity of which is unimpaired by pus. The efficacy of local treatment with this compound has not yet been adequately studied.

Pseudo-hypertrophic Muscular Paralysis

Q.—What treatment do you advise for a child of 2 years with pseudo-hypertrophic muscular paralysis?

A.—The only treatment which has been shown to have any effect in muscular dystrophies is glycine, of which 10 g. daily would be a suitable dose for a child of this age. On this treatment there is temporary improvement in 50% of cases and occasionally prolonged arrest of the condition. Sometimes, however, when glycine has been given its discontinuance is followed by a deterioration which is more rapid than was the course of the disease before treatment. Glycine appears to be more effective in females than in males. Vitamin E is of no value.

Amphetamine Sulphate in Narcolepsy

Q.—How is amphetamine sulphate used in a case of narcolepsy with cataplexy?

A.—Amphetamine sulphate is given in doses of 5 to 10 mg. several times a day, as may be necessary, to control the sleepiness and cataplectic attacks. The last dose should not be given later than tea-time in order to avoid interfering with nocturnal sleep.

Oestrogens at the Menopause

Q.—Has stilboestrol in a dosage of 1 mg. three times a day always the effect of making a menopausal patient sick?

A.—Stilboestrol often causes nausea and vomiting, but provided it is given in reasonable dosage it more often does not. The occurrence of such toxic symptoms during oestrogen therapy depends on several factors: (1) Individual idiosyncrasies. (2) The sex of the recipient, men being much less susceptible than women. (3) The age and physiological condition of the woman receiving treatment. Young girls generally tolerate it well whereas women of menopausal age are especially sensitive. During pregnancy, and usually during the puerperium as well, oestrogens never cause vomiting even if administered in large doses. (4) The type of preparation used and its dose. There is some evidence that in non-pregnant women at any rate

the more potent the preparation the more likely it is to cause vomiting. The synthetic oestrogens, and especially stilboestrol, are very prone to produce toxic effects. Natural oestrogens, such as oestradiol and oestrone, practically never give rise to untoward symptoms. If synthetic oestrogens are to be used, substitutes for stilboestrol are hexoestrol and dienoestrol, both of which are less liable to produce vomiting. If these are not satisfactory then natural oestrogens should be employed.

For the treatment of menopausal symptoms, however, 1 mg. of stilboestrol three times a day is far too big a dose, and apart from causing vomiting it will have other undesirable effects, such as the production of endometrial hyperplasia and heavy uterine haemorrhage, etc. Given preferably in divided doses of 0.25 mg. or 0.5 mg. a day should be quite adequate—indeed there is much to be said for using small amounts of natural oestrogens rather than synthetic products. In either case the dose has to be carefully controlled and varied, and for the details reference should be made to replies to questions in the *Journal* (1944, 1, 171; 1945, 2, 35; 1945, 2, 307) or to *Gynaecological Endocrinology for the Practitioner* by P. M. F. Bishop (1946, E. & S. Livingstone, Ltd., Edinburgh).

INCOME TAX

Retirement on Falling Income

"CONSULTANT" points out that if he retires by gradually reducing his work the fact that his earnings will be assessable on the basis of the previous year means that he will during such a period be assessed each year on a greater amount of income than he is actually making. He asks whether there is any possibility of getting his "assessment based on the actual income of the year in which the tax is payable."

* Tax on such earnings is payable half in the January of the year of assessment and the balance in the following July; we assume that "Consultant's" inquiry is directed to reconciling these two payments with the profits of the year of assessment. There are two possibilities which should be considered. (a) If the actual earned income is not more than four-fifths of the earned income on which tax is payable a claim can be made for such an adjustment as will result in tax being payable on the actual earned income. But there is an important condition attached to this concession—i.e., that the fall in the income must be due directly or indirectly to the war. Possibly the contention that gradual retirement had been hastened by war strain might suffice. Also the relief has been given for the recent and present year but may not apply to future years. (b) On complete cessation of work "Consultant" will be entitled to have the tax payable for the financial year in which he retires adjusted to the tax on his actual profits of that year—e.g., if he gives up practising as from Dec. 31, 1947, the assessment for the months April–December, 1947, could be reduced to nine-fifths of his earnings for the year to Dec. 31, 1947.

Cost of Typewriter

C. D. is serving with the R.A.M.C. He has bought a second-hand typewriter and expects to sell it and buy a new model next spring, by which time he will be demobilized. Similar transactions will be effected as regards provision of a car. What can he claim?

* In the first place it is most unlikely that the income tax assessing authorities could be persuaded that either the typewriter or the car is "necessary" in the performance of C. D.'s duties in the R.A.M.C., and no allowance will accordingly be made against his Army pay. When he resumes civil practice he will be entitled to depreciation allowance in respect of the car (an initial allowance if the car is bought after resumption) but not in respect of the typewriter—typewriters being regarded as "implements, utensils, or articles employed for the purposes of the profession" rather than "machinery or plant."

Deduction for Use of Premises

A. B. occupies large premises which were formerly used as a nursing home. Several of the rooms are not even in occasional use. The inspector of taxes claims to reduce the proportion of the rent or annual value regarded as applicable to the professional use of the premises from one-half to one-third.

* Prima facie A. B. seems to be justified in pressing for allowance of one-half. The basic question is not what floor-space is available for the two respective purposes but what is a fair division of the rental, having regard to the relative advantages of the premises residentially and for professional use. Further representations might be made to the inspector of taxes coupled with an intimation that if the old ratio is disturbed the point will be taken to appeal before the District Commissioners.

LETTERS, NOTES, ETC.

International Association of Hospital Librarians

The International Guild of Hospital Librarians held its fifth conference in Paris in 1936, its second and last in Berne in 1939. A third conference was planned for London in 1940 but never took place. It will be remembered that in 1936 there was no definite organization of the International Guild, which consisted mainly of individual subscribers and of two national sections—the British and the French. The Order of St. John in Jerusalem and the British Red Cross Society have now formed a joint committee to administer certain funds which remain as a result of collections made during the war. This joint committee has taken over the Hospital Library Department of the Red Cross at St. John and it also publishes a bulletin. Meanwhile, the Guild of Hospital Librarians, whose membership is now purely British, continues its work and publishes the *Book Trolley*. From letters and personal contacts it is clear that an exchange of information and suggestions would be widely welcomed. There still seems to be a need for a forum open to all concerned. Mrs. M. E. Robert, hon. sec. of the former I.G.H.L., is anxious to get in touch with hospital librarians, doctors, and others who are interested, either by personal contact in London or by correspondence, which should be addressed to the International Association of Hospital Librarians, British Medical Association House, Tavistock Square, London W.C.1.

Blanching and Blushing Baby

Dr. MYLES SHELLY (Waterford) sends the following query: delivered a female child eight weeks ago. It was an easy low force delivery with no pressure marks of any sort on baby. The day after delivery the nurse in charge drew my attention to the following facts: (1) When the child was on its back it appeared quite normal. (2) On turning the child on either side, within a few seconds the uppermost half of its body from its scalp to a point just below the xiphisternum became quite blanched, while the side on which the child was lying became engorged and scarlet in colour, the middle of the upper half of the body being the definite line of demarcation. No respiratory or cardiac distress was noticed in whichever position the child was laid. (3) When the child was laid on its back the colour became normal again within a few seconds. The child's heart and lungs were investigated by four other doctors as well as chest x-ray, but nothing abnormal could be found. The child now being eight weeks old, these phenomena have completely disappeared. I would be very glad of an opinion as to the possible cause.

Antimalarial Drugs

Dr. RYAN MACMAHON (Chobham) writes: The answer to I. C. S. P. Hamilton's query (Oct. 26, p. 638) may be discovered in the fact that numerous drugs and substances are not up to sample—e.g., an airtight tin of pyrethrum powder, used for experimental purposes, gave me such excellent results that it was found possible to dispense with mosquito nets; elsewhere pyrethrum powder was denounced as worthless. The explanation in this case was that the latter powder had been stored in open drums or sacks, and had thereby lost its efficacy. Similarly, certain antimalarial drugs have fallen into disfavour because their wartime substitutes have been inferior imitations. Dr. Hamilton's remark that antimalarial "results differ so much in different countries, and even zones" goes far towards answering his own question.

Varicose Veins

Dr. SARA FIELD-RICHARDS (Freshford) writes: I am delighted to see that at last attention has been drawn to the immense importance of varicosities to the community. Mr. Rowden Foote (Nov. 10, p. 680) calls attention to the fact that 10% of the hospital admissions throughout the war were due to this prevalent disease. It was not war injuries and the common ailments of mankind with which our hospitals had mostly to contend, but with this much neglected condition of varix. Anyone who, like myself, has been in general practice for many years and has realized that 10% of my patients suffered from a varicose condition, either minor or major, must appreciate how totally inadequate hospital arrangements are for the specialized treatment. I hope Mr. Foote's letter will do some good to the community in calling the attention of hospital administrators to the crying need for specialized clinics.

Correction

Dr. D. E. SANOS writes: I regret to state that owing to a typing error the word "psychotic" has been wrongly inserted instead of "psychiatric" in line 12 of my letter in the *Journal* of Nov. 23 (p. 793). Since such a word makes no kind of sense with the preceding lines I shall be very grateful if you are able to publish a correction.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 30 1946

HEARD AT HEADQUARTERS

Financial Hardship Committee

The first problem before the Financial Hardship Committee concerns the liabilities likely to be incurred by practitioners, especially when the practitioner has taken a loan which carries an obligation not to relinquish his practice work. It is not easy to ascertain to what extent practitioners are presently indebted to financial organizations. In 1944, when ways and means of assisting practitioners to purchase practices were under consideration, it was estimated that about three and a half millions was on loan to practitioners through insurance companies. Loans arranged through the Medical Insurance Agency since the beginning of the year under the scheme sponsored by the British Medical Association amount in the aggregate to nearly £600,000.

Complete Returns Wanted

A few panel committees—very few in relation to the total number—failed to send in return for the meetings held to consider the Insurance Acts Committee's recommendation on the resignation issue. Although over half of the practitioners whose votes were recorded at meetings of otherwise pledged wholehearted support of the recommendation, the returns were frustrated by the failure of these few committees. It is likely, of course, that the same body of support was forthcoming from those areas as from the others for statistical purposes this cannot be assumed. The committees which failed to send in returns were principally committees in rural areas, and nearly half of them, as it happens, in Scotland. The committees have now received a letter from the chairman of the Insurance Acts Committee pointing out that although for the time being the resignation issue has been shelved, the Committee is still anxious to know, for its guidance in any future action, the full extent of the support it would have received for its recommendation.

Civil Servants

A recent note in this column which implied, on the basis of a definition given in Murray, that the term "Civil Servants" included teachers in State schools is challenged in an amusing private letter to the Secretary from a local government officer who points out that the Civil Service and the local government service are quite different things, that teachers are not even indirectly employed by the central government, which has either the power to appoint them nor to sack them, and whose control is limited to the approval of their basic qualifications and to paying grant on their salaries. It is true, as he adds, that many members of the medical profession would regard becoming local government servants as one degree worse than becoming Civil Servants, but it is better to keep the two things separate.

An Empire Committee

With the growth of the Association overseas (in spite of the fact that the South African Branches have recently detached themselves and formed an affiliated Association of their own) has been felt in some quarters that the Dominions Committee should be enlarged and given new functions. This has been one of the smaller committees of the Association, consisting of members who for the most part have seen service in the Dominions or Colonies or dependencies, but it has done some

extraordinarily useful work and has been of great service to Overseas Branches, especially in matters affecting terms and conditions of service of practitioners employed overseas. One proposal is for an extension of its functions into an Advisory Empire Committee on which each Dominion and India would be represented. It is suggested that it should set up a central bureau in London and, in conjunction with the offices of the High Commissioners, give advice, information, instruction, and hospitality, as well as facilitating educational work—especially postgraduate—the interchange of teachers, the organization of lecture tours, and so forth. There are more than fifty Overseas Branches of the Association, and the Canadian Medical Association and the Medical Association of South Africa are affiliated.

A National Formulary

The B.M.A. and the Pharmaceutical Society have a joint committee which has been discussing the desirability of a National Formulary for the purpose of a National Health Service. The necessity for a Formulary is not agreed as between the two sides of the table, but it is generally assumed that there will be a continuation of the National Formulary in some shape or other, and, that being so, one standard Formulary of national application and suitable to all branches of medicine is agreed to be desirable. Both the organizations concerned are recommended by the joint committee to give consideration to the need for a standard Formulary based on the formulary section of the *British Pharmaceutical Codex* and compiled by a joint committee of members of the medical and pharmaceutical professions.

Liaison with Industrial Medical Officers

The Association of Industrial Medical Officers has assented to the terms of an agreement recently approved by the B.M.A. Council whereby proposals concerning medico-political policy will be communicated before action is taken, and if the proposals are agreed by both bodies the necessary action will be taken by the B.M.A. There is a provision for mutual representation at meetings.

Pathologists at Mental Hospitals

The London County Council is experiencing difficulty in obtaining candidates with appropriate qualifications and experience for appointments as assistant pathologists in the laboratories of its mental hospital service. It is therefore proposing to establish a scheme for the appointment of junior assistant pathologists—similar to that already established in the general hospital laboratory service—who will be interchangeable with assistant pathologists within the limits of the fixed staff, and when duly qualified by not less than four years' experience, both clinical and pathological, will be eligible for promotion to the higher positions. The basic salary for the new grade of junior assistant pathologist will be £650, rising by increments of £25 to £725 a year, and the basic salary of the assistant pathologist is £900, rising by increments of £50 to £1,100.

The Ministry says "No"

The Insurance Acts Committee a month or two ago made a request to the Ministry of Health that doctors should be given priority in the supply of refrigerators for the economic preservation of penicillin and other drugs. The Minister, however, feels that no strong case for this has been made out. Storage in a cool, dry place is sufficient for dry penicillin and

its non-aqueous preparations, while as to the aqueous preparations, these will not keep for more than a day or two even in a refrigerator. Apart from that, there is the serious shortage in the supply of refrigerators for houses. Another representation to the Ministry, which has also been refused, was for the inclusion in the schedule of appliances of a preparation of sterile petroleum jelly gauze. The Ministry feels that this is not an opportune moment for extending the schedule except in matters of definite urgency.

Domestic Help for Doctors

It is difficult to say how far the domestic help situation has improved by the cessation of war work for women. In some localities matters appear to be rather worse than they were during the war, when the Ministry of Labour and National Service had comprehensive control of female labour through the National Service Acts, and there was some priority for doctors' service in the matter of direction. In other places relief has been vouchsafed to overworked doctors' wives by women who find service in a doctor's household a pleasant relief after employment in factories and canteens. The officials of the Ministry now have only persuasive powers.

One source of relief may be afforded by Irish maids. In this connexion it is worth noting that the travel control arrangements between Eire and Great Britain have been substantially modified, and employers are now free, so far as the Ministry is concerned, to make their own arrangements for the employment of such women. As for Continental labour, if a practitioner knows of any individual foreign national (other than German) who is willing to take domestic employment in his household he should apply to the Ministry of Labour, International Labour Branch, Norfolk House, St. James's Square, for advice. He would be required to accept responsibility for the travelling expenses incurred both in bringing the woman to this country and in her return should she wish to go back.

Correspondence

National Health Service

SIR,—The profession is to be congratulated upon having induced Mr. Bevan to recant his early folly of refusing to apply the Spens Report to remuneration under the National Health Insurance Service. Doubtless he would have preferred to reserve some of our financial rights to garnish his new service, but it is right not only that a Minister should honour his pledges, but also that both the old and the projected services should be judged and administered on their own merits. In the same way it is important that we should on all future occasions insist that the Spens Report or some such independent standard be applied to maintain an adequate level of remuneration. I have previously pointed out the dangers attached to a fixed capitation rate, and in my opinion no rate should be accepted in future unless it is fixed by the constant or periodical application of some standard that compensates for such factors as monetary depreciation, falling population, and increasing numbers of medical men. Failure to secure any such machinery accounts mainly for the injustices so long endured and unanimously condemned by insurance practitioners.

There are other lessons to be learnt from our recent experience. First, that it is ridiculous to assert that the medical profession can never stand together. Possibly Mr. Bevan misjudged us there. In fact we always have been united over the subject of N.H.I. remuneration and have given no one reason to suppose we could not act in a concerted fashion. However, some people are talking as if the profession had just achieved a new cohesive force that could be turned against the Health Service measure to redress at the eleventh hour the outcome of past divided counsels. The truth is not that the profession lacks the ability to follow or back its convictions, but that, like all free men, it refuses to be regimented into a semblance of unity in relation to a mass of highly controversial matter in order to dictate the views of one section of opinion.

All along our leadership has made the great mistake of attempting to secure unanimity and support for a sort of blun-

derbuss or comprehensive opposition to health legislation, even when this was proposed by a comparatively mild Government. A fair amount of support and more lip service has been forthcoming, but I doubt whether there is any decisive body of conviction such as was rallied to support our N.H.I. claims. To one unbiased effort to ascertain the views of the profession was ignored, yet in those questionnaires somewhere under the dust still lie the ungerminated seeds of real unity. A sincere and responsible body of conviction could have been developed from this with subsequent adjustment and further secret balloting—worth more in the end than all the veiled regimentation into official policy that has gone on at many meetings. We should all have had to be content with much less than an extremists might desire, but I venture to suggest that we should soon have achieved a really inspired and effective unity in some important respects. While we were contemplating attack upon an impossibly wide front, Government circles were profiting by a perusal of the questionnaire: the very reconnaissance of our own situation upon which we should have built up our policy.

Let us hope that we can still secure a few important advantages by a last-minute recognition that these might accrue in a general spirit of co-operation. I believe that a majority of the profession is not convinced that it would be either good policy or good sense to refuse to negotiate with H.M. Government at this stage. No harm can come of it, while, as I have suggested some good might still ensue. Moreover, a pigheaded refusal even to enter into non-committal discussion would further forfeit public sympathy.—I am, etc.,

Eye, Suffolk.

J. SHACKLETON BAILEY.

SIR,—The Health Service Bill, Clause 34(1), provides that every medical practitioner, other than a paid assistant, who wishes to provide general medical service shall be entitled, on making an application at any time before the appointed date in the prescribed manner, to be included in the lists of medical practitioners.

There must be many others like myself, recently demobilized from the Forces, who have families and who for one reason or another have not practices of their own and are now acting as assistants. Are we, under the new scheme, to continue to be employed as assistants? If so, how are we eventually to achieve the status of "principal" in the Service?—I am, etc.

EX-SERVICE ASSISTANT.

SIR,—A point in connexion with the provisions of the National Health Service Act dealing with sale of goodwill seems to me to need elucidation. If a practitioner has both private and insured patients it should be quite clear that the penalties in connexion with sale should apply to the latter. Further, if his house and surgery are used for both private and insurance practice, how do the provisions about sale of the same affect him or his widow? Why make those vexatious regulations about the sale of house property anyhow?—I am, etc.,

London, S.E.5.

F. JOYCE.

Demobilized Medical Officers

SIR,—A friend of mine was recently appointed house physician to an important and well-known provincial voluntary hospital of approximately 350 beds. He informs me that he was selected out of about 70 applicants for the post. The resident staff of the hospital consists of 13 officers and includes only 3 ex-Servicemen (including himself). Of the remaining ten no less than seven are women, including one Central European refugee.

I am all in favour of the competition of women on an equal basis with men, but as these posts are on a six-monthly basis such a state of affairs in 1946 does savour strongly of discrimination against ex-Servicemen. Is this attitude common among hospital committees? This subject might form an interesting and instructive line of research to anyone with the time and inclination to collect data from hospitals throughout the country.—I am, etc.,

Bourne End, Bucks.

A. G. S. BAILEY.

At the annual meeting of the St. Helens (National Health Insurance Committee) Dr. D. Campbell, M.R.C.P., was appointed chairman for the twelfth consecutive year.

B.M.A. LIBRARY

The following books were added to the Library during July and August, 1946:

- exander, F., and French, T. M.: *Psychoanalytic Therapy. Principles and Application.* 1946.
- Sh, J. E., and Spitz, S.: *Pathology of Tropical Diseases: Atlas.* 1945.
- iley, H.: *Demonstrations of Physical Signs in Clinical Surgery* Tenth edition. 1946.
- arlow, K. E.: *A Home of Their Own.* 1946.
- arlow, K. E.: *The Static of Public Knowledge.* 1946.
- oenheim, C.: *Introduction to Present Day Psychology.* 1946.
- owley, A. H.: *The Problems of Family Life: An Environmental Study.* 1946.
- radford, F. K., and Spurling, R. G.: *The Intervertebral Disk.* Second edition. 1945.
- urch, G., and Winsor, T.: *A Primer of Electrocardiography.* 1946.
- urnet, F. MacF.: *Virus as Organism.* 1945.
- ampbell, J. D.: *Everyday Psychiatry: Concise, Clinical, Practical* 1945.
- onant, N. F., et al.: *Manual of Clinical Mycology. (National Research Council: Military Medical Manual.)* 1945.
- raig, C. F., and Faust, E. C.: *Clinical Parasitology.* Fourth edition. 1945.
- raig, W. S.: *Child and Adolescent Life in Health and Disease: A Study in Social Paediatrics.* 1946.
- richton-Miller, H.: *Psycho-Analysis and its Derivatives.* Second edition. 1945.
- uohar, F.: *Emotions and Bodily Changes: A Survey of Literature on Psychosomatic Interrelationships. 1910-45.* Third edition. 1946.
- ast, T.: *Cardiovascular Disease in General Practice.* Second edition. 1946.
- leming, Sir Alexander (Editor): *Penicillin; its Practical Application.* 1946.
- amlin, R.: *Modern School Hygiene.* Eighth edition. 1946.
- eschickler, C. F.: *Diseases of the Breast: Diagnosis, Pathology, Treatment.* Second edition. 1945.
- Jesell, A.: *How a Baby Grows: A Story in Pictures.* 1946.
- Henry, S. A.: *Cancer of the Scrotum in Relation to Occupation.* 1946.
- Jodges, F. J.: *The Gastro-Intestinal Tract: Handbook of Roentgen Diagnosis.* 1945.
- Jolmes, G.: *Introduction to Clinical Neurology.* 1946.
- Jomans, J.: *A Textbook of Surgery: Compiled from Lectures and Other Writings of Members of the Surgical Dept., Harvard Medical School.* Sixth edition. 1945.
- Jotchkiss, R. S.: *Fertility in Men.* 1944.
- Jowell's Textbook of Physiology. Edited by J. F. Fulton. Fifteenth edition. 1946.
- Jueper, W. C.: *Occupational Tumors and Allied Diseases.* 1942.
- aplan, O. J. (Editor): *Mental Disorders in Later Life.* 1945.
- Kerr, H. D., and Gillies, C. L.: *The Urinary Tract: A Handbook of Roentgen Diagnosis.* 1944.
- Kovacs, R.: *Electrotherapy and Light Therapy.* Fifth edition. 1945.
- Le Quesne, R. M., and Granville, M.: *Hydrotherapy.* Second edition. 1946.
- Lomholt, S.: *Venereal Disease in General Practice.* 1946.
- Moseley, H. F.: *Shoulder Lesions.* 1945.
- Öhnell, R. F.: *Pre-Excitation—Cardiac Abnormality.* 1944.
- Petit-Dutaillis, D., and De Seze, S.: *Sciatiques et Lombalgies par Hernie postérieure des Disques Intervertebraux.* 1945.
- Pillsbury, D. M., Sulzberger, M. B., and Livingwood, C. S.: *Manual of Dermatology.* Reprint. 1946.
- Piney, A., and Hamilton-Paterson, J. L.: *Sternal Puncture: A Method of Cytological Investigation.* 1946.
- Psychoanalytic Study of the Child. Vol. 1—1945. 1945.
- Semon, H. C. G.: *An Atlas of the Commoner Skin Diseases: Photography under the Direction of Moritz (Arnold).* Third edition. 1946.
- Siegler, S. L.: *Fertility in Women: Causes, Diagnosis, and Treatment of Impaired Fertility.* 1945.
- Siegrist, H. E.: *Civilization and Disease.* 1945.
- Smith, C. A.: *The Physiology of the New-born Infant.* 1945.
- Spurling, R. G.: *Practical Neurological Diagnosis.* Third edition. 1945.
- Stead, G.: *Elementary Physics.* Sixth edition. 1946.
- Swift, S.: *Sanitary Administration.* Second edition. 1944.
- Tanner, W. E.: *Sir W. Arbuthnot Lane, Bart., C.B., M.S., F.R.C.S.: His Life and Work.* 1946.
- Taylor, F. S.: *Science, Past and Present.* 1945.
- Walzer, R.: *Galen on Medical Experience. First edition of the Arabic version, with English translation and notes by R. Walzer.* Reprint. 1946.
- West, T. F., and Campbell, G. A.: *D.D.T., the Synthetic Insecticide.* 1946.
- Whitby, Sir Lionel E. H., and Britton, C. J. C.: *Disorders of the Blood.* Fifth edition. 1946.
- Whitwell, J. R.: *Analecra Psychiatrica.* 1946.

Dangerous Drugs Act: Withdrawal of Authority

The Home Office announces that Dr. William George Burns (London, W.8) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

MEDICAL WAR RELIEF FUND

SEVENTY-SEVENTH LIST

Individual Contributions

- £10.—Mr. W. Stirk Adams, Birmingham.
- £5 Ss.—Dr. S. J. Brennan, Nottingham.
- £736.—Practitioners in Bristol B.M.A. Division—per Dr. C. Dav (amount already sent £59 13s.).
- £583 8s. 6d.—Cheshire Insurance Practitioners—per Cheshire L.M. and P. Committee: Anonymus £10 10s.; Anonymous £5 Ss.; Anonymous 1; Dr. J. B. Benoett £10 10s.; Dr. Florence Cavanagh £10 10s.; Dr. W. H. Dickinson £10 10s.; Dr. J. M. Drummond £10 10s.; Dr. J. Kerr £10 10s.; Dr. H. D. Wallace £10 10s.; Dr. H. English £10 (2nd donation); Dr. E. R. Lovell £10; Dr. R. Okell £10; Dr. J. Alexander £5 Ss.; Dr. F. G. Allen £5 Ss.; Mr. G. E. Archer £5 Ss.; Dr. F. S. Bedale £5 Ss.; Dr. O. H. Blacklay £5 Ss.; Dr. N. A. Boswell £5 Ss.; Dr. H. Bowring £5 Ss.; Dr. H. D. Brice £5 Ss.; Dr. H. J. M. Browne £5 Ss.; Dr. Cairne and partners £5 Ss.; Drs. P. V. and E. M. Cant £5 Ss.; Dr. J. W. Chadwick £5 Ss.; Dr. J. D. Chisholm £5 Ss.; Dr. C. L. Copeland £5 Ss.; Dr. Margaret Cruickshank £5 Ss.; Dr. R. B. Davidson £5 Ss.; Dr. Dwyer £5 Ss.; Dr. L. Earlam £5 Ss.; Dr. H. F. Ellis £5 Ss.; Dr. G. S. Erwin £5 Ss.; Dr. S. H. Faulkner £5 Ss. (2nd donation); Drs. Fielding and Campbell £5 Ss.; Dr. A. E. Finney £5 Ss.; Dr. J. B. Fulton £5 Ss.; Dr. W. Geraghty £5 Ss.; Dr. A. C. Gillics £5 Ss.; Dr. C. N. Gordon £5 Ss.; Dr. A. Henderson £5 Ss. (2nd donation); Dr. H. Jaffe £5 Ss.; Dr. J. H. Kerr £5 Ss.; Mr. V. F. Lamert £5 Ss.; Dr. W. N. Leak £5 Ss. (2nd donation); Dr. E. M. Liddle £5 Ss. (2nd donation); Drs. F. E. and M. D. Lomas £5 Ss.; Dr. W. S. Lynd £5 Ss.; Dr. W. G. McAfee £5 Ss.; Dr. R. J. Mackessach £5 Ss.; Dr. Ruth Massey £5 Ss.; Dr. H. G. Milne £5 Ss.; Drs. Moss and Dickson £5 Ss.; Dr. J. Murphy £5 Ss.; Dr. W. G. Murray £5 Ss. (2nd donation); Dr. R. A. Niell £5 Ss.; Dr. C. S. O'Neill £5 Ss.; Dr. M. W. Paterson £5 Ss.; Dr. A. D. Picton £5 Ss.; Dr. L. J. Picton £5 Ss. (2nd donation); Dr. J. N. Platt £5 Ss.; Dr. L. T. Pollard £5 Ss.; Mr. F. G. Ralph £5 Ss.; Dr. L. Savatard £5 Ss. (2nd donation); Dr. E. Stevenson £5 Ss.; Dr. E. Talbot £5 Ss.; Dr. G. H. Tarras £5 Ss.; Dr. L. S. B. Tasker £5 Ss.; Dr. H. Terry £5 Ss.; Dr. W. E. C. Thomas £5 Ss.; Dr. R. Thorn £5 Ss.; Dr. G. C. Thornton £5 Ss. (2nd donation); Mr. J. W. Walker £5 Ss.; Dr. J. F. Ward £5 Ss.; Dr. H. Heathcote £5 Ss.; Dr. H. B. Blaker £4 4s.; Dr. J. Howard £4 4s.; Dr. W. A. Jackson £4 4s.; Dr. K. D. Bean £3 3s.; Dr. G. Binns £3 3s.; Dr. C. H. Burgess £3 3s.; Dr. M. N. Clifton £3 3s.; Dr. J. Cullen £3 3s.; Dr. G. A. Dickson £3 3s.; Dr. E. S. Evans £3 3s. (2nd donation); Dr. E. A. H. Fox £3 3s.; Dr. R. F. Gerrard £3 3s.; Dr. G. J. Greenhalgh-Lowe £3 3s.; Dr. E. V. Greaves £3 3s.; Dr. W. L. Hunter £3 3s.; Dr. F. J. Jack £3 3s.; Dr. H. H. Jones £3 3s.; Dr. Miles Parkes £3 3s. (2nd donation); Dr. M. Robinson £3 3s. (2nd donation); Dr. J. E. Robson £3 3s.; Dr. J. A. C. Roy £3 3s.; Dr. H. Selborne £3 3s.; Dr. W. G. Shaw £3 3s.; Dr. J. R. Turner £3 3s.; Dr. E. C. Wynne-Edwards £3 3s.; Dr. Cedric Holmes £3 3s.; Dr. M. M. F. Arthur £2 2s. (2nd donation); Dr. R. V. Berrington £2 2s.; Dr. O. G. Bank £2 2s.; Dr. J. A. Cooke £2 2s.; Dr. G. S. Crosthwaite £2 2s.; Dr. J. P. Fitzpatrick £2 2s.; Dr. H. S. Gerrard £2 2s.; Dr. Dorothy Griffiths £2 2s.; Dr. J. R. Griffiths £2 2s.; Dr. R. W. Harte £2 2s.; Dr. S. G. M. C. Homan £2 2s.; Dr. K. C. Kershaw £2 2s.; Dr. K. Knowles £2 2s. (2nd donation); Dr. G. T. Lipscomb £2 2s.; Dr. Ian Mackay £2 2s.; Major W. K. S. Moore £2 2s.; Dr. Marion Stocks £2 2s.; Dr. D. G. Anderson £1 1s.; Dr. Gretel Beigheimer £1 1s.; Dr. Binnie £1 1s.; Dr. R. A. Burnett £1 1s.; Dr. B. Carruthers £1 1s.; Dr. T. Clifford £1 1s.; Dr. J. F. Cotton £1 1s.; Dr. A. M. Dawson £1 1s.; Dr. R. S. C. Edleston £1 1s.; Dr. R. Edmondson £1 1s.; Dr. R. W. Fairbrother £1 1s.; Dr. I. Harris £1 1s.; Dr. E. W. Hope £1 1s.; Dr. T. W. Kelly £1 1s.; Dr. Phyllis Marsh £1 1s.; Dr. J. McIlraith £1 1s.; Dr. R. O. Payne £1 1s.; Dr. F. V. G. Penman £1 1s.; Dr. P. B. Pinkerton £1 1s.; Capt. P. K. Renshaw £1 1s.; Dr. M. I. H. Roberts £1 1s.; Dr. J. W. Seymour £1 1s.; Dr. J. Wajnerowicz £1 1s.; Dr. C. H. W. Bennett £1 (2nd donation); Dr. R. M. Forrester £1: Balance of Presentation Fund—per Dr. Kerr 13s. 6d.; Dr. E. A. Grau 10s.
- £484 12s. 2d.—Medical Practitioners in Leicester—per Leicester Public Medical Service (amount already sent £594 4s. 3d.).
- £477 4s. 6d.—Staffordshire Insurance Practitioners—per Staffordshire Panel Committee (amount already sent £411 7s. 11d.): Dr. W. Anderson and Dr. W. Tweddell £5 Ss.; Drs. C. Arthur and H. J. Browne £8 8s. (2nd donation); Drs. Barford and Thompson £10 10s. (2nd donation); Dr. E. G. Baird £5 (2nd donation); Dr. R. M. M. Barrow £2 2s. (4th donation); Drs. Bekenn and Cunningham £20 (2nd donation); Drs. Bradford and Paterson £10 (2nd donation); Dr. A. V. Campbell £10 (2nd donation); Dr. M. A. Chamberlain £1; Dr. F. W. Cheese £2 2s.; Dr. R. Clayton £1 1s.; Dr. A. G. Coullie £10 (2nd donation); Dr. J. D. Crerar £2 12s. 6d. (2nd donation); Dr. J. A. Davenport £5 Ss. (2nd donation); Dr. G. J. G. Davidson £3 3s. (3rd donation); Dr. W. G. P. Dyson £3 3s.; Dr. H. Duncan £3 12s. 6d. (2nd donation); Dr. J. R. Eden £10 10s. (2nd donation); Dr. P. W. Edwards £1 1s. (2nd donation); Dr. H. L. Ellis £2 2s.; Drs. Eunson and Coultis £10 10s. (2nd donation); Dr. D. Ezekial £2 2s. (2nd donation); Dr. K. A. Farrell £6 6s.; Dr. A. Fazary £3 3s. (2nd donation); Dr. H. K. Fozdar £3 3s.; Dr. A. Fuoss and Dr. W. L. Reid £12 10s.; Dr. H. J. Gillen £3 3s.; Dr. S. E. Godwin £2 2s. (2nd donation); Dr. F. M. Gore £3 10s.; Dr. A. G. Hall £2 2s.; Dr. A. C. Hallows £3 3s. (2nd donation); Dr. N. Harhur £2 2s.; Dr. F. W. Harrowell £4 4s.; Dr. T. S. F. Hudson £15 15s. (2nd donation); Dr. G. P. W. James £5 Ss. (2nd donation); Dr. P. G. Johnson £5 Ss. (2nd donation); Dr. E. R. Jones £25 (2nd donation); Dr. M. L. Kendall £1 1s.; Dr. J. M.

Kirkwood £3 3s. (2nd donation); Dr. P. Lambah £3 3s.; Dr. A. Lawson £5 5s. (2nd donation); Mr. D. J. M. Legge £3 3s. (3rd donation); Drs. D. G. Lloyd and E. Mitton £15 15s.; Dr. J. F. Lyne £2 2s.; Mr. H. A. Lyth £5 (2nd donation); Dr. Q. Madge £1 1s. (4th donation); Drs. F. W. Marshall and A. W. Vaisey £3 3s.; Dr. R. S. V. Marshall £1 1s.; Dr. R. F. Middleton £2 2s. (2nd donation); Dr. V. E. Milne £3 3s. (2nd donation); Dr. J. G. Mitchell £5 5s. (2nd donation); Dr. A. P. Montgomery £3 3s. (3rd donation); Anonymous £5; Drs. F. J. Morris and J. W. Pooley £10; Dr. C. Myatt £5 5s.; Dr. D. T. McAinsh £5 5s. (2nd donation); Dr. J. L. McBean £10 10s. (2nd donation); Dr. W. A. McDonald £2 2s. (2nd donation); Dr. J. A. McGeough £5 5s. (2nd donation); Dr. J. D. S. McGeoch £2 2s.; Dr. W. J. McIntosh £2 2s.; Dr. J. N. McTurk £3 3s.; Drs. A. D. McQueen and J. Ribchester £6 6s. (2nd donation); Dr. J. J. Newman £3 3s. (2nd donation); Dr. P. J. O'Brien £5 5s. (2nd donation); Drs. J. R. Oddie and C. J. Coventry £10 10s.; Drs. C. G. Owen and E. Starling £5 5s.; Dr. R. S. Pepperdine £1 1s.; Dr. H. Proctor £5 5s. (2nd donation); Dr. R. W. Rae £5 (2nd donation); Dr. S. H. Reeves £5 5s. (2nd donation); Drs. J. W. Richmond (Snr.) and J. W. Richmond (Jnr.) £4 4s. (2nd donation); Dr. L. D. Roberts £6 (2nd donation); Dr. A. V. Russell £3 3s. (3rd donation); Dr. J. Sexton £5 5s.; Dr. H. M. Shenkin £5 5s. (4th donation); Dr. E. G. Sherwood £5 (3rd donation); Dr. J. H. Simpkins £1 1s. (2nd donation); Dr. C. L. Spackman £3 3s. (3rd donation); Anonymous £10 10s.; Dr. A. W. Tibbetts and J. N. McCarthy £2 2s.; Dr. O. W. R. Tomkinson £5 5s. (2nd donation); Dr. G. M. Torrance £6 6s. (2nd donation); Dr. C. H. Waddell £6 (3rd donation); Dr. R. P. Walker £2 2s. (2nd donation); Drs. H. K. Watson and J. H. Watson £10 (2nd donation); Dr. J. A. R. Wells £1 1s. (2nd donation); Dr. A. B. Wilson £4 4s. (2nd donation); Dr. G. I. Wilson £10 (2nd donation); Dr. C. M. Xavier £10s. 6d.; Dr. R. B. M. Yates £2 2s. (2nd donation); Dr. C. H. Young £3 3s.

£325.—Practitioners in Harrow B.M.A. Division—per Dr. M. Park (amount already sent £229 10s. 5d.).

£244 8s.—Practitioners in Gloucestershire B.M.A. Branch—per Dr. D. C. Reavell (amount already sent £431 17s.): Dr. H. J. Eastes £21 (3rd donation); Dr. A. F. M. Christie £20 (2nd donation); Dr. J. F. Colquhoun £20 (2nd donation); Dr. D. R. Acheson £10 10s. (2nd donation); Drs. Hills and Mould £10 10s. (3rd donation); Dr. J. G. Hosken £10 10s. (2nd donation); Dr. S. L. Mucklow £10 10s.; Dr. W. G. Murray-Browne £10 10s. (2nd donation); Dr. R. E. Sedgwick £10 10s.; Dr. Dorothy M. Wilkinson £10 10s. (5th donation); Dr. H. G. Dowler £5 5s. (3rd donation); Drs. Greene and Barnes £5 5s. (2nd donation); Dr. W. G. B. Ialliden £5 5s.; Dr. S. F. Marwood £5 5s.; Mr. W. Niccol £5 5s. (2nd donation); Mr. W. H. Tandy £5 5s. (2nd donation); Dr. Alice S. Clow £5 (3rd donation); Dr. C. V. Knight £5 (2nd donation); Mr. O. E. J. McOustra £5 (2nd donation); Dr. J. C. Muir £5 (3rd donation); Dr. J. B. Scott £5; Drs. Gray and Westwood £4 4s.; Dr. D. E. Corsham £3 3s.; Dr. H. M. Jackson £3 3s. (2nd donation); Dr. W. M. Muir £3 3s.; Dr. A. J. Martin £3 3s.; Dr. T. C. Smith £3 3s. (2nd donation); Dr. J. J. Foster £3 (5th donation); Dr. A. V. Dill £2 2s. (3rd donation); Dr. J. E. Jamieson £2 2s.; Dr. J. E. St. G. Johnstone £2 2s.; Dr. F. W. Lawson £2 2s. (2nd donation); Dr. J. E. Newton £2 2s. (2nd donation); Dr. H. J. Selby £2 2s. (2nd donation); Dr. H. Thorp £2 2s.; Dr. F. E. Dunscombe £10s.; Dr. A. F. Darlington £5 5s.; Dr. J. Morris £5 (2nd donation); Dr. E. R. Willis £5 (2nd donation).

£199 14s.—Practitioners in Exeter B.M.A. Division—per Dr. Fortescue-Foulkes (amount already sent £235 17s. 6d.): Drs. Traill, Sidebotham and Micklethorp £15 15s. (2nd donation); Mr. A. L. Candler £10 10s. (4th donation); Mr. N. L. Capener £10 10s. (2nd donation); Dr. A. C. Goodwin £10 10s. (4th donation); Dr. J. H. Iles £10 10s.; Drs. L. N. and Margaret Jackson £10 10s.; Drs. C. W. and Helen Marshall £10 10s. (2nd donation); Dr. E. Joyce Partridge £10 10s. (2nd donation); Dr. F. A. Roper £10 10s. (3rd donation); Drs. J. C. and W. A. Heal £6 6s. (2nd donation); Dr. H. Andrew £5 5s. (3rd donation); Mr. D. Bower £5 5s. (2nd donation); Dr. J. M. Courtney £5 5s.; Dr. J. E. Finlay £5 5s. (2nd donation); Dr. D. T. Mackie £5 5s. (3rd donation); Dr. Robert Scott £5 5s. (2nd donation); Dr. C. Seward £5 5s.; Drs. C. and N. Sims £5 5s. (2nd donation); Major-Gen. J. Jackson £5; Lieut.-Col. A. Kennedy £5; Dr. Vera Taylor £5; Drs. Evans, Vincent Smith and Gavin £3 3s.; Dr. R. K. Fortescue-Foulkes £3 3s. (3rd donation); Dr. Margaret Foxwell £3 3s.; Dr. H. S. Gaussen £3 3s.; Dr. R. Gray £3 3s. (2nd donation); Dr. E. Pollock £3 3s.; Dr. W. J. Walter £3 3s.; Dr. H. A. Browning £2 2s. (2nd donation); Dr. S. Gray £2 2s. (2nd donation); Dr. S. Hadfield £2 2s.; Lieut.-Col. G. Holroyd £2 2s.; Lieut.-Col. T. G. N. Stokes £2 2s. (4th donation); Dr. W. F. Mitchell £2; Dr. G. B. Page £1 1s. (2nd donation); Dr. R. V. Solly £1 1s.

£149 9s. 6d.—Practitioners in Lanarkshire B.M.A. Division—per Dr. E. G. Y. Thom (amount already sent £86 1s. 3d.): Dr. G. MacFeat £25; Dr. A. M. Goldie £10 10s.; Dr. I. B. Cummines £10 (3rd donation); Dr. C. M. Fleming £10 (2nd donation); Dr. A. Bancewicz £5 5s.; Dr. A. S. Findlay £5 5s.; Dr. J. Lowdon Kydd £5 5s. (2nd donation); Dr. J. Watson Little £5 5s. (2nd donation); Dr. Dale Logan £5 5s. (2nd donation); Dr. A. MacIntyre £5 5s.; Dr. R. McLean £5 5s.; Dr. Anne Mitchell £5 5s. (2nd donation); Dr. J. A. Murray £5 5s.; Dr. R. A. Peacock £5 5s.; Dr. J. Petrie £5 5s.; Dr. J. H. Shearer £5 5s.; Dr. Olive M. Somerville £5 5s.; Dr. E. G. Y. Thom £5 5s. (2nd donation); Dr. Jean Laurie £3 3s.; Dr. R. J. Lumsden £3 3s. (2nd donation); Dr. M. A. M. Urquhart £3 3s.; Dr. J. Scobbie £2 12s. 6d.; Dr. A. L. Cowan £2 2s. (2nd donation); Dr. J. B. Cunningham £2 2s.; Dr. J. S. Kerr £2 2s. (2nd donation); Dr. Katrine Wright £2 2s.

£129 16s.—Practitioners in Lancaster B.M.A. Division—per Dr. W. George (amount already sent £498 7s.): Drs. Bury and Magaura £30; Dr. H. N. Daniel £21 (2nd donation); Dr. A. J. Stout £2 (3rd donation); Drs. McFadzean, Cliff and Hodge £20; Mr. I. Abernethy £10 10s. (3rd donation); Drs. Geddes and Kitehin £10 10 (3rd donation); Dr. A. Lucas £5 5s.; Dr. P. J. Daly £5 5s.; Dr. P. J. Murphy £5 5s. (3rd donation); Dr. W. G. Howson £1 1s. (3rd donation).

£119.—Hon. Medical and Surgical Staff of Leicester Royal Infirmary (amount already sent £289 2s.).

£116 19s.—Members of the Cardiganshire Medical Association—per Dr. D. I. Evans; Dr. D. Ellis £21; Mr. E. Owen Lloyd £21; Dr. E. L. L. Davis £20; Dr. T. J. Jones £10 10s.; Dr. T. Kenyon Davies £10; Dr. D. I. Evans £10; Dr. D. Lloyd Davies £5 5s.; Dr. Trevor G. Davies £5; Dr. T. Evans Jones £5; Mr. D. C. Williams £5; Dr. H. L. James £2 2s.; Dr. M. V. Suds £2 2s.

£100.—Medical Staff, Harrow Hospital—per Dr. M. Park (amount already sent £210).

£95 3s.—Practitioners in Hereford B.M.A. Division—per Dr. S. L. Corry (amount already sent £138 8s.): Dr. W. Moir Brown £1 (2nd donation); Dr. H. Ward-Smith £10 10s. (2nd donation); Drs. Bell and Beach £5 5s.; Drs. Carey and Strange £5 5s.; Dr. O. J. C. Cotton £5 5s. (3rd donation); Dr. A. M. Humphrey £5 5s.; Dr. R. G. F. Thompson £5 5s. (2nd donation); Dr. G. D. E. Tullis £5 5s.; Dr. G. W. Dryland £5 (2nd donation); Dr. Jean Edwards £5 (2nd donation); Dr. T. V. R. Philip £4 (2nd donation); Dr. A. L. B. Green £3 3s.; Dr. E. Haigh £3 3s.; Dr. H. C. D. Miller £3 3s. (2nd donation); Drs. Steadman, Goldie and Airey £3 3s.; Dr. H. G. Langdale-Smith £2 2s. (2nd donation); Dr. M. B. McGinn £2 2s.; Dr. E. W. Malcomson £2 2s. (2nd donation); Mr. B. G. Scholefield £2 2s.; Dr. B. Stallard £2 2s.; Dr. A. H. S. Richardson £1 1s. (2nd donation).

£74 11s.—Practitioners in Willesden B.M.A. Division—per Dr. W. Paterson (amount already sent £207 12s.): Dr. Isobel M. Finlayson £10 10s.; Dr. A. N. Mathias £10 10s.; Dr. J. O. Musson £10 10s.; Dr. C. F. T. Scott £10 10s.; Dr. F. R. Sturridge £10 10s. (2nd donation); Dr. T. Avery Jones £5 5s.; Dr. B. Pollard £4 4s.; Dr. H. B. Beasley £3 3s.; Dr. E. Lasserson £3 3s.; Dr. Philip Smith £3 3s.; Dr. W. W. Walker £3 3s.

£60 8s. 6d.—Practitioners in Darlington B.M.A. Division—per Dr. F. C. Pridham (amount already sent £88 11s.): Dr. D. M. Todd £10; Dr. W. G. Annan £5 5s. (2nd donation); Dr. W. E. Orchard £5 5s.; Dr. F. C. Pridham £5 5s. (2nd donation); Mr. A. Dalrymple Smith £5 5s. (2nd donation); Dr. R. N. Woodsend £5 5s.; Dr. W. A. Jaques £3 14s. (2nd donation); Dr. M. A. Archdale £3 3s. (2nd donation); Dr. A. Ingham £2 12s. 6d. (2nd donation); Dr. B. Freshwater £2 2s. (2nd donation); Dr. W. J. Hickey £2 2s.; Dr. A. Morrison £2 2s. (2nd donation); Dr. H. C. Pearson £2 2s. (2nd donation); Dr. Phyllis E. Ridley £2 2s.; Dr. C. D. Wilson £2 2s. (2nd donation); Dr. R. Adamson £1 1s. (2nd donation); Dr. G. Cockcroft £1 1s.

£52 12s.—Medical Committee of Royal Bucks Hospital—per Dr. R. W. McConnell (amount already sent £50).

£52 4s.—Practitioners in Rochdale B.M.A. Division—per Dr. A. M. McMaster (amount already sent £99 14s.): Dr. L. Kilroe £5 5s. (3rd donation); Dr. A. Lomas £5 5s. (2nd donation); Dr. A. M. McMaster £5 5s. (2nd donation); Dr. J. Reid £5 5s.; Dr. E. Vining £5 5s.; Drs. A. H. and N. Heyworth £5; Mr. J. C. Jefferson £5 (3rd donation); Drs. D. G., J. R. T. and R. MacGill £5 (2nd donation); Dr. J. M. Valentine £3 3s. (2nd donation); Dr. J. L. Armour £2 2s. (2nd donation); Dr. H. N. Crossley £2 2s. (2nd donation); Dr. M. Macleod £2 2s.; Dr. H. E. Barlow £1; Dr. C. R. White £10s.

£50 8s.—Practitioners in Norwich B.M.A. Division—per Dr. G. Day; Dr. H. J. Starling £7 7s. (2nd donation); Dr. A. W. Taylor £5 5s.; Dr. A. C. Hepburn £5 5s.; Dr. R. Aitken £5 5s.; Dr. G. A. Day £5 5s. (2nd donation); Dr. H. E. Williams £3 3s.; Dr. W. A. L. Marriott £2 2s.; Dr. T. T. Hutchinson £2 2s.; Dr. V. F. Southill £2 2s.; Dr. D. Souper £2 2s.; Dr. A. Grene £2 2s.; Dr. B. E. Jerwood £2 2s.; Dr. Mary Thackwell £2 2s.; Dr. G. L. Leggat £2 2s.; Dr. K. Froome £1 1s.; Dr. I. Hinde £1 1s.

£50.—Bolton Medical Ball Committee—per Dr. T. Dearden.

£34 8s.—Middlesex Insurance Practitioners—per Middlesex Panel Committee; Dr. C. W. W. Baxter £10 10s. (2nd donation); Dr. Margaret I. Yeatman £10 10s.; Dr. F. Malone-Barrett £5 5s.; Dr. A. W. M. Rooke £5; Dr. J. A. A. P. Scott £3 3s. (2nd donation).

£18 18s.—Practitioners in Sheffield B.M.A. Division—per Dr. T. Lodge (amount already sent £415 17s. 1d.): Dr. J. Nunan £10 10s. (3rd donation); Dr. W. E. Dorman £3 3s.; Dr. J. M. Pringle £5 5s.

£10 10s.—Practitioners in Bolton B.M.A. Division—per Dr. D. P. Simpson (amount already sent £108 15s.): Dr. J. Scott £5 5s. (2nd donation); Dr. H. W. Bowyer £3 3s.; Dr. W. H. Simmons £2 2s.

£9 16s. 6d.—Practitioners in Tower Hamlets B.M.A. Division—per Dr. D. Haydon Jones; Dr. E. P. Moore £3 3s.; Dr. Dorothy S. Russell £3 3s.; Prof. H. M. Turnbull £3; Dr. S. R. O'Shield £10s.

£5 5s.—Practitioners in Bromley B.M.A. Division—per Dr. M. F. Proust (amount already sent £86 12s. 6d.).

£6 5s.—Practitioners in Stirling B.M.A. Branch—per Dr. W. Leslie Cuthbert (amount already sent £135 7s.): Dr. G. Erskine £3 3s.; Dr. J. D. Walker £2 2s.; Dr. T. R. Murray £1.

£2 2s.—Practitioners in Westmorland B.M.A. Division—per Dr. E. M. Kemp (amount already sent £66 1s.): Dr. Colin Buckley (2nd donation).

£2.—Practitioners in Buckinghamshire Division—per Dr. R. M. McConnel (amount already sent £638 2s. 6d.). Practitioners in Nottinghamshire Division—per Dr. A. D. Frazer.

Local Medical and Panel Committees

£100.—Cheshire (2nd donation).

£69 10s. 10d.—Yorkshire (West Riding).

£30.—Somerset.

	£	s.	d.
Total of above contributions	4,406	18	6
Total received since issue of second appeal	20,980	12	4
Total since inauguration of Fund	79,724	1	9
Sums for books for prisoners of war	216	14	6

Cheques, payable to the Medical War Relief Fund, should be sent to the Hon. Treasurer of the Fund, British Medical Association House, Tavistock Square, London, W.C.1.

H.M. Forces Appointments

ROYAL AIR FORCE

Air Cdre. (Temp. Air Vice-Marshal) A. E. Panter, C.B., has retired, retaining the rank of Air Vice-Marshal.

Group Capt. (Temp. Air Cdre.) T. C. St. C. Mortoo, O.B.E., K.H.P., and Group Capt. E. A. Lumley, M.C., to be Air Cdres.

Group Capt. W. E. Hodgins and D. G. Boddie have retired on account of medical unfitness for Air Force service, retaining the rank of Air Cdre.

Wing Cmdr. (Temp. Group Capt.) C. P. Barber has reverted to the retired list, retaining the rank of Group Capt.

Wing Cmdrs. (Temp. Group Capt.) L. C. Palmer-Jones, J. Parry-Evans, B. W. Cross, F. L. White, C. G. J. Nicolls, A. F. Cook, O.B.E., and C. J. S. O'Nalley, C.B.E., to be Group Capt.

Wing Cmdr. H. Penman to be Group Capt.

Wing Cmdr. A. A. Townsend has retired, retaining the rank of Group Capt.

Wing Cmdr. J. T. T. Forbes has reverted to the retired list.

Wing Cmdr. T. Montgomery has reverted to the retired list, resuming the rank of Group Capt.

Squad-Ldr. (Temp. Wing Cmdr.) G. B. MacGibbon and Squad-Ldr. (War Subs. Temp. Wing Cmdr.) F. L. Whitehead have retired at their own request, retaining the rank of Wing Cmdr.

Squad-Ldrs. (Temp. or War Subs. Wing Cmdrs.) L. M. Corbet, C.B.E., T. D. L. Bolan, W. P. Stamm, H. Bannerman, G. Gilchrist, J. C. Blair, A. W. Smith, J. W. Patrick, J. S. Wilson, L. E. A. Dearberg, P. A. Cooper, S. R. C. Nelson, R. S. Peill, H. E. Bellringer, R. L. Soper, R. S. B. McClean, L. M. Crooks, J. B. Wallace, O.B.E., and R. F. Wynroe to be Wing Cmdrs.

P. J. MacNamara to be Squad-Ldr.

Fl.-Lieut. (Temp. Squad-Ldr.) T. H. Harding has retired, retaining the rank of Squad-Ldr.

To be Fl.-Lieuts. (Permanent): T. N. N. Brenoan, H. C. Thomas, D. C. Light, and P. J. O'Connor, O.B.E.

To be Fl.-Lieuts.: G. R. Bedford, T. Gray, and J. M. Urquhart.

RESERVE OF AIR FORCE OFFICERS

Squad-Ldr. J. F. McKenna, A.F.C., has resigned his commission, retaining the rank of Wing Cmdr.

ROYAL AIR FORCE VOLUNTEER RESERVE

Squad-Ldr. R. E. McKenzie has relinquished his commission on account of medical unfitness for Air Force service, retaining his rank.

To be Squad-Ldrs. (Emergency): R. H. Dale, R. A. Fleming, E. G. Hall, W. Tennent, O. Janus, J. Rubin, W. C. Good, D. C. Devitt, J. E. G. Pearson, and J. S. F. Sutton.

Squad-Ldr. (Temp.) D. G. Ferriman to be War Subs. Squad-Ldr.

Fl.-Lieut. T. Primrose has resigned his commission, retaining the rank of Squad-Ldr.

Fl.-Lieuts. S. T. Winter, M.B.E., and R. B. Wyld have resigned their commissions, retaining their rank.

Fl.-Lieuts. R. H. H. Williams and W. G. Smeaton have relinquished their commissions on account of medical unfitness for Air Force service, retaining the rank of Squad-Ldr.

Fl.-Lieuts. P. R. Green, N. Sher, F. R. Philips, and S. E. Greenhill have relinquished their commissions on account of medical unfitness for Air Force service, retaining their rank.

J. S. Lawrence to be Squad-Ldr. (Emergency).

To be Fl.-Lieuts. (Emergency): H. J. C. Swan, A. J. Evans, R. J. P. Pugh, D. D. C. Howat, A. C. Akehurst, M. Hamilton, R. B. Sloane, S. J. Sutton, J. R. Preston, J. E. Stephens, D. W. Thomas, T. Bell, H. N. Burwell, H. J. Fisher, H. P. Speed, R. W. Thomson, and W. G. Thomson.

Flying Officers F. M. Lanigan-O'Keefe, T. T. Fultoo, W. H. McDaniel, M. Hutchinson, C. C. Dawson, H. Harris, N. A. G. Covell, J. P. Haile, T. McSweeney, and D. Shorten to be War Subs. Fl.-Lieuts.

To be Flying Officers (Emergency): C. K. Allan, K. Baker, A. D. Charnley, K. S. Clarkson, A. C. Dresser, S. Edelman, D. Fox, K. L. G. Goldsmith, W. H. Graham, R. Harrison, G. L. Hindson, C. Hougie, C. A. Houlder, J. A. Jamieson, P. R. B. Jones, A. C. Kenedy, J. D. Lacon, W. R. Macbrossan, E. W. F. Mack, J. G.

Millers, H. H. Smith, G. K. Thomas, E. Bindman, A. D. Caird, J. D. C. Campbell, W. A. Crawford, J. S. Creighton, P. W. Dagger, A. Douglas, E. C. K. Douglas, D. McI. Ferguson, J. M. Fleming, S. Hillman, R. R. Houston, W. McR. Laverie, W. A. S. Llewellyn, K. Lowe, A. E. Malone, J. L. J. Phillips, J. G. Piccaver, G. D. Powell, F. L. Robertshaw, W. E. Robinson, G. E. Schofield, R. E. Sidebotham, A. J. Underwood-Whitney, G. A. Walker, C. G. White, J. R. E. Wilson, R. E. Woolley, R. A. Armstrong, N. L. Bailey, J. Buchanan, W. K. Christopher, J. G. R. Ellis, R. E. Glenn, H. B. W. Greig, W. A. Jackson, W. R. Johnson, L. F. Levy, D. O. Lewis, J. W. Little, G. H. Lloyd, R. J. McWilliam, J. A. W. Maguire, T. C. Nicol, W. D. Paterson, R. W. Rapinet, D. F. Robertson, R. H. Sage, J. A. Sindell, W. F. Toomey, H. Wainstead, D. C. Adamson, N. Coulshed, A. C. Edwards, D. A. W. Edwards, A. W. Gilks, E. J. Innes, R. F. McN. Jones, W. L. M. Perry, K. W. Robinson, H. A. K. Rowland, A. D. Verniquet, I. G. Waugh, J. A. Waycott, R. H. Whitworth, C. P. Williamson, G. R. Wotton, R. Youngman, W. E. Arnold, C. E. Bagg, R. W. Baxter, J. H. Burt, F. E. V. Cant, R. B. Carr, S. Davis, E. Dillstone, J. C. Ham, A. C. Hill, R. A. Houston, W. McI. S. Ironside, D. W. James, C. Johnson, S. J. Krister, S. Lewis, D. W. J. O'Neill, C. Ounsted, J. H. Ridgwick, R. C. Robb, G. F. Roberts, R. A. K. Ross, C. S. Shaw, J. L. G. Thomson, and D. A. Watkins.

The notification in a *Supplement to the London Gazette* dated Sept. 10, concerning J. R. G. MacKessack should have read J. R. G. MacKessack.

Association Notices

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows: an Ernest Hart Memorial Scholarship, of the value of £200, a Walter Dixon Scholarship of the value of £200 and four Research Scholarships, each of the value of £150. These Scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State Medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession. Each Scholarship is tenable for nine months, commencing on Feb. 1, 1947. A Scholar may be re-appointed for not more than two additional terms. A Scholar is not necessarily required to devote the whole of his or her time to the work of the research, but may hold a junior appointment at a university, medical school, or hospital, provided the duties of such appointments do not interfere with his or her work as a Scholar.

Conditions of Award, Applications

Applications for Scholarships must be made not later than Saturday, Dec. 28, 1946, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants are required to furnish the names of three referees who are competent to speak as to their capacity for the research contemplated.

The Katherine Bishop Harman Prize

The Council of the B.M.A. is prepared to consider an award of the Katherine Bishop Harman Prize of the value of £75 in 1947. The purpose of the prize, which was founded in 1926, is to encourage study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best essay submitted in open competition, competitors being left free to select the work they wish to present, provided this falls within the scope of the prize. Any medical practitioner registered in the British Empire is eligible to compete.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1947, but will be offered again in the year next following this decision, and in this event the money value of the prize on the occasion in question will be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be final.

Each essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address. Essays must be forwarded so as to reach the Secretary, to whom all inquiries should be addressed, at B.M.A. House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946.

GROUP OF DERMATOLOGY

A meeting of the Group of Dermatology, to which all members of the Group are invited, will be held at B.M.A. House on Wednesday, Dec. 18, at 2 p.m.

Members of the Group are invited to forward to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, suggestions or recommendations for consideration by the meeting.

(Sgd.) C. HILL,
Secretary.

Diary of Central Meetings

DECEMBER

5. Thurs. Publishing Subcommittee, 11 a.m.
11. Wed. Council, 12 noon.

Branch and Division Meetings to be Held

LEIGH DIVISION.—At Boar's Head Hotel, Leigh, Tuesday, Dec. 3, 8.15 p.m. Meeting. Agenda includes show of Sound Films. Main feature: Intravenous Anaesthesia.

NUNEATON AND TAMWORTH DIVISION.—At Red Lion Hotel, Atherstone, Tuesday, Dec. 3, 8.30 p.m. Mr. A. J. Moffett: Sinusitis.

SWANSEA DIVISION.—At Mackworth Hotel, Friday, Dec. 6, Dinner Dance, 8 p.m.

Meetings of Branches and Divisions

PLYMOUTH DIVISION

A dance was given at the Moorland Links Hotel, Yelverton, on Nov. 13. This was the first social event on a large scale held by the Division since the 1938 A.R. Meeting in Plymouth.

PRESTON DIVISION

The B.M.A. Lecture was delivered at the Preston Royal Infirmary on Nov. 12 at 8.30 p.m. by Prof. D. W. Dunlop, of Edinburgh. Dr. A. R. Wood, chairman of the Division, occupied the chair. Prof. Dunlop's subject was "Medical Emergencies"; and for an hour he expounded to an audience of about seventy members new and improved methods of dealing with the emergency treatment of diabetic coma, haematemesis, haemoptysis, bronchial asthma, coronary thrombosis, and a number of other conditions, debunking by the way some traditional methods and drugs. A discussion followed in which many members took part.

A vote of thanks to the lecturer was proposed by Dr. A. E. Rayner, O.B.E., and seconded by Dr. D. M. Anderson. A collection was taken for the Royal Medical Benevolent Christmas Gift Fund, and it realized the sum of £15 10s.

SOUTH-EASTERN COUNTIES DIVISION

A meeting of the Division was held at Galashiels on Oct. 13, 1946. Dr. L. G. Campbell took the chair. He welcomed the Minister's acceptance of the Spens Committee's recommendation under which he had agreed to pay a capitation rate of 15s. as from Jan. 1, 1946.

The secretary pointed out that the Roxburgh Panel Committee had sent a resolution drawing attention to the necessity for an increase in the mileage payment to be in line with the increased capitation fee. He reported that the panel committees of Peeblesshire, Selkirkshire, and Roxburghshire had all received 100% acceptance replies from insurance practitioners in their areas agreeing to the action of the Insurance Acts Committee, while Dr. Campbell reported that three doctors in Berwickshire were not in favour of it but the others were. Dr. McCracken wanted the Insurance Acts Committee to formulate a guarantee that no doctor not accepting would take patients from those who were supporting the Committee. It was left to the representatives to the Panel Conference to take up this matter should it be felt necessary.

Hospital Survey.—The secretary drew attention to the report of the Committee, which had now been published. Dr. McLay suggested that those who had made the report had not spent sufficient time in the various hospitals to give a full opinion of the state of affairs. Drs. Haddon and Glover both spoke of the plans already made for a central hospital at St. Boswells.

Medical Treatment of Evacuees.—Payment had now been made to the secretary for 1945 a few weeks ago. The position was difficult in that many of the evacuees for whom payment had been received were supposed to come from the London and southern areas, and, as the secretary had no idea where in the various counties these evacuees were situated, it was difficult to allocate the money. The Central Medical War Committee was taking the matter up with the local committee, and in a short time it was hoped that they would be able to disburse the money.

The Rural Practitioners Sub-committee had asked each area to give their ideas on: (1) Health Centres. In discussion it was generally agreed that better diagnostic facilities should be provided, and that cottage hospitals in the Borders provided the most suitable location for these. Dr. Pollock spoke of the necessity for ultra-violet rays, radiant heat, bacteriological and other diagnosis, which could be undertaken at these small centres. Dr. Smith criticized cottage hospitals in general and felt that the cases at present dealt with there should be transferred to the larger hospitals. Dr. Allan mentioned that he had four clinics in Berwickshire to try to help

the position. Drs. Balfour, Haddon, and Campbell thought additional facilities at cottage hospitals would be sufficient. (2) Remuneration. The secretary suggested that a 50% increase in mileage payment would about meet the case. Dr. Haddon supported this and it was left to the representatives to the Panel Conference to further this suggestion.

Attention was drawn to the Royal Medical Benevolent Fund.

Scottish Scheme for Protection of Practises.—The secretary had been asked by the Central Committee for a report on the questions involved. This report was read to the meeting.

Dr. Dow spoke on the position at Peel Hospital. They were carrying on there under difficulties with a reduced staff. No payment was being asked for patients and they could be admitted directly by application to him without previous arrangements with the Royal Infirmary. Until some of the chronic cases were discharged there was not a tremendous number of beds available; he hoped that by Christmas it would be much more satisfactory.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—*Tues.*, and *Thurs.*, 5 p.m., Croonian Lectures by Dr. H. L. Marriott: Some Quantitative Considerations Regarding Depletion of Tissue Fluid and Blood Constituents.

ROYAL SOCIETY OF MEDICINE

Section of Orthopaedics.—*Tues.*, 5.30 p.m. (Cases at 4.30 p.m.)

Section of History of Medicine.—*Wed.*, 2.30 p.m. Paper by Dr. H. P. Bayon: The transition between scholastic and clinical Medicine in Europe during the 16th and 17th centuries. (Illustrated by lantern slides.)

Section of Comparative Medicine.—*Wed.*, 5 p.m. Short Papers by Dr. H. H. Holman: Studies on the haematology of the horse, ox, and sheep. Mr. J. B. Brooksby: The serum proteins of the domestic animals. Dr. C. L. Oakley: The normal constituents of human blood. Dr. H. Grüneberg: Inherited disorders of the blood in rodents.

Section of Surgery.—*Wed.*, 8 p.m. A Pathological meeting will be held.

Section of Otolaryngology.—*Fri.*, 10.30 a.m. (Cases at 10 a.m.) Paper by Mr. Terence Cawthorne: Review of surgery of otosclerosis. Coloured film by Mr. Garnett Passe: Fenestration operation. Cases will be shown.

Section of Laryngology.—*Fri.*, 2.30 p.m. (Cases at 2 p.m.) Discussion: Epistaxis. Opener: Miss D. J. Collier. Short paper by Mr. R. G. Macbeth: Ligation of anterior ethmoid artery for epistaxis. Cases will be shown.

Section of Anaesthetics.—*Fri.*, 5.30 p.m. Discussion: Shock, with special reference to anaesthesia. Openers: Prof. H. N. Green and Dr. R. P. Harbord.

FACULTY OF HOMOEOPATHY.—At London Homoeopathic Hospital, *Thurs.*, 5 p.m. Dr. Karl König (Vienna): Work Among Problem Children.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—*Thurs.*, 8 p.m. Mr. Miller: The Uses and Abuses of Penicillin in Surgical Practice.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—*Tues.*, 5 p.m. Dr. G. B. Dowling: The Erythrodermas. *Thurs.*, 5 p.m. Dr. L. Forman: Cutaneous Manifestations of Malignant Disease.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 16 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BLOOM.—On Nov. 13, 1946, at Ferncroft Nursing Home, N.W.3, to Edna Bloom (née Satin), wife of Ross Bloom, F.R.C.S., 15, Hocroft Road, N.W.2, a son.—Allan Neil.

COLE.—On Nov. 22, 1946, at The Chase, Roughley, Sutton Coldfield, to Peggy (née Bryant), M.B., M.R.C.S., wife of J. G. L. Cole, M.B., M.R.C.S., a son.—Timothy James.

COONEY.—On Nov. 19, 1946, at the County General Hospital, Otley, Yorks, to Gwyneth, wife of J. A. Cooney, M.B., Ch.B. (R.A.F., Iraq), a daughter.

HARTLEY.—On Nov. 22, 1946, to Bee, wife of B. P. R. Hartley, M.B.E., M.B., Westwood House, Brocco Bank, Sheffield, 11, a son.

MACNAUGHTAN.—On Nov. 17, 1946, at Edinburgh, to Jean (née Wiseman), wife of Dr. I. P. J. MacNaughtan, a daughter.

ENGAGEMENT

TOWNSEND-SPARKS.—The engagement is announced between Eric, younger son of Mr. and the late Mrs. Arthur Townsend, of Skipproo-in-Craven, Yorkshire, and Elizabeth, eldest daughter of the late Dr. and Mrs. John Peel Sparks, of Cullercoats, Northumberland.

MARRIAGE

STONE—MULROY.—On Nov. 9, 1946, at Halifax, Capt. M. C. Stone, R.A.M.C., to Mary Philippa Mulroy, S.R.N.

DEATH

MCGILLIVRAY.—On the night of November 19/20, while working for the Control Commission in Germany, the result of a motor accident, Isabel Margaret (Abelle), M.R.C.P.Ed.

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TREATMENT OF BREAST ABSCESSSES WITH PENICILLIN

BY

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Research Clinical Assistant

IN COLLABORATION WITH

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Obstetric Surgeon

Assistant Obstetric Surgeon

Central Middlesex County Hospital

The following account deals with various methods of treating breast abscesses with penicillin. The justification of those methods depended on their results as compared with those obtained from the methods at present employed. For this reason a series of controls was treated contemporaneously with

Several cases examined during the puerperium, with flushed and tender breasts, some pyrexia, but ill-defined induration, were excluded as not giving sufficient evidence of infection. These did in fact clear up without chemotherapy, by the usual methods of elevation of the breast and the application of ice-bags. The distinction, however, was not always easy to make, and one case in which induration was not well defined was included in the controls.

Table Comparing Results in Breast Abscesses

	No. of Cases	Duration in Days after First Treatment of					
		Pyrexia		Suppuration		Healing Time	
		Mean \pm S.E.	S.D.	Mean \pm S.E.	S.D.	Mean \pm S.E.	S.D.
Controls	16*	7.5 \pm 1.97	\pm 7.86	13.8 \pm 3.0	\pm 12.0	26.5 \pm 2.45	\pm 10.17
Treated	18	3.9 \pm 0.91	\pm 3.73	6.3 \pm 0.82	\pm 3.5	13.5 \pm 1.50	\pm 6.37
Difference		3.6 \pm 2.17		7.5 \pm 3.11		13.0 \pm 2.87	

S.E. = Standard error of mean. S.D. = Standard deviation.

* Two control cases excluded, because in Case 1 the follow-up was not conclusive, and in Case 2 the duration of pyrexia was 63 days, suppuration > 88 days, and healing > 119 days.

† Mean of 17 cases only; no record of 18th case.

‡ Mean of healing time of abscesses in 17 breasts.

the penicillin series and the two were compared not only as to the average duration of pyrexia, suppuration, and healing time, summarized in the accompanying Table, but also with regard to a number of other points which were considered important. The apparent advantages obtained by the use of penicillin would seem to justify a detailed description of the methods of administration found most satisfactory.

The survey comprised all cases which came under treatment at the Central Middlesex County Hospital between Nov. 19, 1943, and May 18, 1944. They were nursed in the obstetric or surgical wards according to whether their symptoms arose during the puerperium or later. Both series were cared for by the same nursing staff and the same surgeons. The cases numbered 36, and, in order to eliminate any bias on the part of the investigators, they were chosen for the control or penicillin series in strictly alternate chronological order. There were 22 abscesses in the 18 control cases and 24 in the 18 penicillin-treated cases. Factors which might have favoured one series more than the other were also noted. The time of onset in relation to parturition was within the first fortnight in 6 control and 7 penicillin-treated abscesses, and a further 9 and 7 respectively arose within five weeks of the same date. The incidence in primiparae was half the total in each series. The age incidence was somewhat lower and the onset more often rapid in the penicillin cases, and pyrexia from other causes during the puerperium was present in 4 of the latter. Extraneous factors therefore could not be said to have favoured the penicillin group.

No case was accepted for investigation unless a well-defined, tender, and indurated mass was palpable in the breast tissue.

Methods of Treatment

Controls, with two exceptions, received at least one course of sulphathiazole or sulphamezathine of between 20 and 30 g. This was begun pre-operatively when abscesses were not well localized, incision being carried out later at the surgeon's discretion. When fluctuation could be detected on admission, incisions were made immediately—single for small abscesses and with a counter-incision for larger ones. Drainage was maintained by a corrugated rubber drain or a vaselined-gauze wick for 48 hours. Subsequently the wounds were dressed or irrigated with eusol, and when they became superficial flavine and paraffin or lotio rubra were generally used. A course of stilboestrol varying from 30 to 65 mg. in 3 to 5 days was given to patients who were lactating.

The penicillin cases were treated according to the type of case and, as the investigation progressed, also to the lessons learnt from earlier mistakes. No sulphonamides were given, and stilboestrol was administered to only 3 cases, all in the early stages of the inquiry. The methods are described in detail below.

Items of Comparison

1. *Bacteriological Findings.*—*Staph. aureus* was the only organism found at operation in the abscesses with no external communication. One which had arisen from the residual sinus of an earlier abscess was, however, infected with a haemolytic streptococcus alone. Milk from six infected breasts was examined and found to contain *Staph. aureus* in each instance. The pus from one case in the control series was sterile on culture at operation and revealed no organism but *Bact. coli* in subsequent cultures. It is as well to mention that a phenomenon noticed in other acute infections was also noted here on several occasions—namely, that some swabs taken from pus at the time of the first incision were sterile on culture and yet cultures made later from swabs of the wound walls produced an abundant growth of *Staph. aureus*. Subsequent swabbings were made at weekly intervals in the controls and as soon as pus had disappeared in the penicillin-treated cases—i.e., from the second to the thirteenth day after the first local treatment. In the controls *Staph. aureus* persisted in 18 of 21 abscesses followed up till healing was nearly complete, and disappeared in 18 out of 20 "treated" abscesses before treatment was discontinued. The time of disappearance was anything from the second to the fifteenth day of treatment.

* With a grant from the Medical Research Council

The disappearance of pus from the exudate coincided closely with the disappearance of *Staph. aureus* from cultures. In fact, it was soon realized that in these staphylococcal infections the taking of a swab for culture was simply a way of confirming the clinical finding that the replacement of pus by a sero-sanguineous exudate signified that the abscess walls were no longer infected.

Secondary infection with *Str. haemolyticus* occurred in 3 control cases, the healing times of two of these being prolonged much beyond the average. No penicillin-treated cases became so infected. The remaining secondary invaders—*Staph. albus*, *Micrococcus tetragenus*, *Bact. cali*, and *Proteus*—appeared in 7 control and 5 penicillin-treated series, the Gram-negatives occurring in the same number—2—of each series. No clinical significance could be attached to the presence of these organisms, as they appeared only when wounds were superficial and healing.

2. *Suppuration* seemed to have been prevented by sulphonamide administration in one control case for several weeks, but after discharge from hospital this patient reported again with a painful lump in her breast. Unfortunately she was lost sight of after this. In some instances it appeared that pus formation was prevented or at least reduced by the use of sulphonamides. No frank pus was found in 3 cases. A fourth had a virulent infection in several loculi of one breast which spread later to the other. She received intensive courses of sulphamezathine and sulphathiazole, and pus was found in quantity only at the first incision, subsequent incisions into large swellings revealing only small amounts of sero-pus. In spite of this, however, once pus had formed in an abscess it continued till healing was well advanced. No case treated with penicillin at the stage already defined avoided the formation of pus. In fact, suppuration seemed to be speeded up and, while it localized readily, the pus became much thicker than in any of the control cases. It disappeared quickly, however, so that its average duration was less than half that of the controls.

3. *Twenty-two operations* were performed on 17 of the 18 controls, 5 cases requiring later incisions owing to extension of the infection. In all, 32 incisions were made. There were 4 operations in the penicillin-treated series and 4 incisions.

4. *Pyrexia* at the beginning of treatment varied very much from case to case, being little more than 99° F. (37.2° C.) where abscesses were already well localized, but reaching 103° F. (39.4° C.) in those whose infection arose in the puerperium. There were 5 cases in each series whose initial temperature rose above 101° F. (38.3° C.), the remainder all having milder degrees of pyrexia. The average duration after penicillin treatment, however, was reduced to half that of the controls. This was not because the penicillin-treated cases necessarily reached normal ranges before the controls, but because, once normal, their temperature did not rise again, as happened in several of the latter.

5. *Complications* in controls consisted of secondary abscesses in the same or the opposite breast or in axillary glands in 6 instances, and septic dermatitis in 3; while the infection in one long-standing case spread to the lids and the patient suffered from a persistent blepharitis. In the "treated" series two secondary abscesses developed, both in cases receiving local treatment only. A milk sinus persisted in a third case, prolonging the healing time to that of the average for the controls.

6. *Healing time* was estimated from the beginning of treatment, chemotherapeutic or surgical, till no further dressing or other local treatment was needed. In the case of open wounds or sinuses the end-point was the day on which the wound became quite dry; in abscesses that were aspirated it was the day after the last aspiration on which any fluid could be withdrawn, no further treatment then being required. Where several abscesses were present in one breast the healing time covered the period from first treatment till the last abscess was healed. But if abscesses were present in both breasts their healing times were assessed separately (see Table).

Two patients had to be excluded from the control series—one because, though the induration and pyrexia appeared to subside under sulphonamide therapy, she later reported to the out-patient department with a painful lump in her breast; but thereafter she could not be traced. The second patient had so severe and prolonged a convalescence that her healing time

would have upset any reasonable comparison of the two series. There were no exclusions in the penicillin-treated series. After their abscesses had healed all these cases were followed up for from one to six weeks, according to the severity of the initial lesion. The healing times were therefore considered genuine, and they showed that not only was their average reduced to one-half that of the controls but that only one of all the penicillin-treated cases exceeded the average time for the controls.

7. *Breast feeding* had to be stopped in the majority of controls who were lactating. In the penicillin-treated cases, once confidence in the method of treatment had been gained, the avoidance of stilboestrol gave the mothers every opportunity to continue feeding their babies on the normal breast throughout treatment and to resume with the other after it had healed. In one case suckling was difficult because of retraction of the nipple following a persistent milk sinus, but in others the lack of scarring and retraction was in marked contrast to that of some of the controls. Induration in penicillin-treated cases, especially around those abscesses which were only aspirated, persisted for up to five weeks after treatment was begun; but it eventually resolved, and after this time it was difficult to detect any indication that an abscess had existed.

8. *Days in Hospital*.—A final assessment was made of the days spent in hospital by the two series and also of the period of time during which they had to attend the out-patient department for treatment. These were as follows:

	Control	Treated
Total number of days spent in hospital	348	191
Total period of out-patient treatment	313	41
Total	661	232

Only 4 penicillin-treated cases had any out-patient treatment, though undoubtedly a good part of the treatment all received as in-patients could have been carried out effectively by daily attendance at the hospital. The need for accurate and frequent observation when a new method of treatment was being used, however, impelled their retention until it was possible to claim with assurance that these methods, when systematically used, were not only devoid of serious consequences but gave reliable results.

Methods of Treatment with Penicillin

These depended on the condition of the breast when the patient was first seen. The choice of dose—for systemic or local effect—depended on whether or not the infection was still in the acute spreading stage with attendant constitutional disturbance. The method of treatment depended on whether an abscess had formed and on the amount of pus present.

Intramuscular Injections of 15,000 Units Three-hourly (13 Cases).—These were used for the acute phase before fluctuation could be detected, also when there was much pyrexia and a generalized flush over the breast, and for all infections arising in the puerperium. (Two cases with puerperal abscesses, not so treated initially, demonstrated the necessity for systemic treatment in acutely spreading lesions.) Injections were continued for a minimum of 12 hours, but no case required them for more than 3½ days. An injection was given pre-operatively immediately before any incision or exploration was carried out. The intramuscular treatment was stopped as soon as the pain had diminished, the flush began to fade, the oedema to lessen, and the pyrexia to subside.

Aspiration and Injection of Penicillin under Local Analgesia once in 24 hours (10 Abscesses).—This method was employed as soon as any fluctuation could be detected, and was even attempted without definite signs in deep and small abscesses which appeared to have localized. No spread of inflammation occurred after these explorations, but the patient always had penicillin circulating in her blood stream from an intramuscular injection given immediately before they were carried out. The aspiration was done with a wide-bore needle—a West Middlesex transfusion type containing a stylet was found satisfactory, as the needle could not become blocked before it had penetrated the abscess cavity. The area of maximum redness and swelling was avoided and the needle inserted obliquely from

where the skin was firm. A syringe having been attached to the needle after withdrawal of the stylet, all possible pus was aspirated. A second syringe containing the penicillin solution then replaced that used for aspiration, and an amount was injected equal to two-thirds the volume of the pus aspirated. If no pus was found a small amount of penicillin was injected into the tissues and along the needle track as the needle was withdrawn.

These aspirations and injections did not overlap the intramuscular treatment in any case by more than 24 hours, the assumption being that once pus was localized there was no need for further intramuscular treatment. When any doubt about complete localization existed, and when it was possible to inject a full 24-hour dose without leakage, 120,000 units, made up at the bedside in the required quantity of saline, were injected into the abscess cavity. Such a dose ensured a circulating concentration of penicillin for at least 12 hours (Florey and Heatley, 1945). By this method of systemic treatment three abscesses in one breast received treatment by injections into one only, until all had localized and could be treated individually. Where the abscess was well localized a concentration of 500 units per ml. was quite sufficient to sterilize the infected tissues. If no sinus formed this process was repeated every 24 hours till the pus, which became thicker and more slimy during the first two or three days of treatment, disappeared and was replaced by slimy blood-stained and then sero-sanguineous fluid. On the appearance of a sero-sanguineous exudate a film and a culture were made from the fluid, and if *Staph. aureus* was not present in either no further treatment was carried out. The breast was palpated carefully each day for at least a week and signs of recrudescence were looked for in temperature, flush, tenderness, or increasing induration. There was no recurrence in any of the cases so treated, but it should be remembered that treatment was never considered completed without confirmation of a sterile culture. Abscesses so treated contained no more than 10 ml. of pus and required daily injections for 4 to 7 days, irrespective of whether or not preliminary intramuscular treatment was necessary.

Instillations of Penicillin after Expression of Pus (5 Abscesses).—These instillations were most frequently made through a sinus which formed where the abscess pointed. This occurred very rapidly under the influence of penicillin therapy, and on the 24-hourly-aspiration-and-injection schedule it was often impossible to prevent sinuses developing. They were, however, of considerable value in treating the case, because the abscess cavity could now be emptied twice a day by gentle pressure and instillation carried out as often. In the interval, the mouth of the sinus was covered with cotton-wool soaked in collodion to prevent the egress of solution. Instillations were made by means of a fine rubber tube, nasal or ureteric catheter size, or by means of a West Middlesex needle, the important point being that the tube should completely occlude the mouth of the sinus to prevent escape of the solution during the injection.

A combination of the two methods of local treatment was used in 5 abscesses, instillations being made once a sinus had developed along the track of the aspirating needle. After

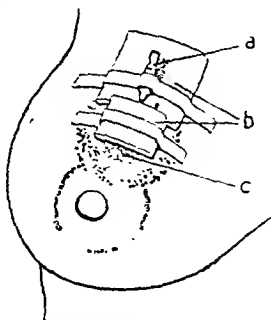


FIG. 1.—Treatment by indwelling cannula. Small breast abscess tending to point at c. a: West Middlesex needle inserted obliquely into abscess cavity so as to avoid the area where pointing would occur. b: Layers of gauze dressings held by strapping to secure the position of the needle. Needle and dressings are covered with another sterile gauze dressing in between treatments.

aspiration a West Middlesex needle was left in the abscess cavity and fixed in place under a sterile dressing so that a second evacuation and instillation could be performed by the nursing staff in the absence of the medical attendant (Fig. 1). A sinus developed along this track in a day or two. At each subsequent treatment discharge was first expressed through the sinus, and the needle could then be inserted without local analgesia and by unskilled hands. The disadvantage of sinus formation over aspiration alone was the fact that it added a week to the healing time, but this was offset by the greater comfort of the treatment and the fact that it could be repeated more often, thus getting rid of purulent exudate quickly and so hastening the subsidence of infection.

Instillations Following Incision and Suture (Fig. 2) were used for 4 abscesses, all with large cavities containing 100 to 150 ml. of

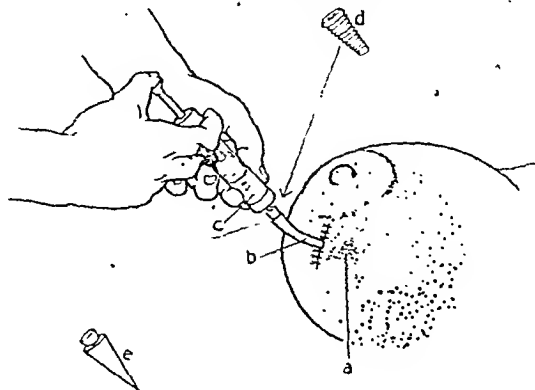


FIG. 2.—Treatment by incision and insertion of drainage-tube. Large abscess tending to point at a. b: Rubber tubing inserted through incision line, which has been sutured after evacuation of abscess. c: Syringe containing penicillin solution—the amount being two-thirds of the pus evacuated or not more than 10 ml. d: Adapter for inserting in rubber drainage-tube so as to enable a Record syringe to be used. e: Spigot for closing mouth of tube after injection.

pus. Complete evacuation of the cavity required a good opening—away from the area where the abscess was pointing—but this was then sutured round a rubber tube with an internal diameter of about a quarter of an inch (5 mm.). Providing penicillin was instilled, once pus was fully evacuated from a well-localized abscess it did not form in quantity again, and the emptying of the discharge through the tube could then be achieved by gentle pressure. This modified method of drainage was a great deal more satisfactory than aspiration if an abscess contained more than 10 ml. The patients preferred instillations to intramuscular injections or aspirations and injections, for they were almost painless. There was the added advantage that they could be carried out by the nursing staff at more regular intervals than are generally possible with the medical attendant. These abscesses required treatment twice daily for from 4 to 8 days when well localized. Though this method alone cleared up a virulent spreading infection in 15 days, subsequent cases treated with preliminary intramuscular injections till localization had occurred improved more quickly. The choice of local (500 units per ml.) or systemic dose (120,000 units in 24 hours) was governed by the same considerations as have been discussed already, but as administration was twice daily the systemic dose was divided in two, 60,000 units being given at each injection.

The methods used can thus be summed up:

For the acutely inflamed stage, intramuscular injections of 15,000 units 3-hourly till localization occurs (120,000 units in 24 hours).

When fluctuation is detected, aspiration every 24 hours of all pus, and injection of penicillin solution up to two-thirds of the volume of the pus aspirated, providing this does not exceed 10 ml.

When localization is not complete and full retention of the injection can be ensured, intramuscular injections may be replaced by the injection of the full 24-hour dose of 120,000 units into the abscess cavity. When localization is complete, systemic treatment may be discontinued and, for reasons of economy, a solution whose concentration is 500 units per ml. can be used for injections.

When the abscesses contain more than 10 ml. of pus, incision, evacuation, suture, and twice-daily instillations of penicillin solutions following complete expression of pus. The choice of dose is

governed by the same considerations as apply to aspiration, but the systemic dose, as it is given twice daily, can be reduced to 60,000 units.

Where sinuses exist or are made, twice-daily expression and instillation by means of a rubber tube or wide-bore blunt-ended needle, the mouth of the sinus being occluded by a collodion dressing in the interval.

Finally, it should be emphasized that complete emptying of the cavity before each instillation is as essential a part of the treatment as it is in the more usual methods of open drainage.

Discussion

Little work on breast abscesses treated with penicillin has been reported up to date. Complaints in which the risk to life is small have naturally not attracted much attention in the last three years unless directly connected with the prosecution of the war. Yet the social consequences of this malady are considerable, and not least in this category must be placed the inability of mothers to continue suckling their babies when a virulent infection has arisen in the puerperium. Consequently a treatment which can obviate the routine use of stilboestrol has considerable advantages. Fraser (1944) described some not very satisfactory results from local treatment only, and O'Hanlon and MacClancy (1944) seem to have come to no definite conclusions as to the value of the local methods they employed. Hodgkinson and Nelson (1945) reported 24 cases of puerperal mastitis in which three-hourly intramuscular injections for five days appeared to have prevented the formation of breast abscesses in 24 cases, but they considered the use of stilboestrol necessary. Unfortunately no controls were observed simultaneously with this series, and the virulence of infection is known to vary from year to year. This seems to be borne out by our second survey (1945-6), in which no breast abscesses developed in either control or penicillin-treated series when treated early enough by chemotherapy, and the average healing time of the control abscesses was half that in the first survey.

The treatments described in the present paper are by no means unprecedented. One or other, or a combination, have been used in a variety of conditions such as acute suppurative mastoiditis (Florey and Florey, 1943; Macbeth, 1945; Johnson *et al.*, 1945), the suturing of wounds in battle casualties (War Office Report, 1943), acute pyogenic meningitis (Cairns *et al.*, 1944), empyema (Tillet *et al.*, 1944; Fatti *et al.*, 1946), pericarditis (Norman and Ainsworth, 1945), sinusitis (Hauser and Work, 1945), various abscess cavities (Florey and Williams, 1944; Barron and Mansfield, 1944; Noth and Hirschfeld, 1944), osteomyelitis of the mandible (Mowlem, 1944), and in chronic sinuses from osteomyelitis (Florey and Florey, 1943; Robertson, 1944). But the special problem attached to infection in the lactating breast is that of the facility with which multiple loculation occurs, so that the surgeon has been faced with the choice of doing the minimum of damage by incisions which may not drain all loculi completely, or of running the risk of spreading infection by breaking down dividing walls when exploring the extent of the suppuration. Unfortunately, as the controls show, sulphonamide therapy did not give complete protection against this spread, so it is satisfactory to find that it did not occur in any of the cases treated by systemic penicillin.

Now that economy in dosage is not a major consideration there is no reason to suppose that long-continued intramuscular penicillin combined with incision might not eliminate sepsis as satisfactorily as did the method used here of switching over to local administration as soon as it was practicable. The use of vehicles delaying absorption may also rob the intramuscular method of much of its discomfort by reducing injections to once or twice a day. The two great advantages of local treatment, however, are the ability to introduce such relatively enormous concentrations at the focus of infection that there is no need to regulate the dose according to the resistance of any particular staphylococcus and, possibly more important still, both local methods ensure drainage and irrigation of infected surfaces with the minimum of damage to tissues and, in consequence, a much increased rate of healing. In this connexion it must be recognized that the improved rate of healing is by no means due simply to the ability of penicillin to eliminate sepsis. It is, in the average case at least, equally due to

the fact that a technique can be adopted that enables healing to take place without the delay caused by the processes of granulation, contraction, and epithelization which the healing of an open wound necessitates.

The technique of finding and of fully aspirating small and sometimes deeply placed abscesses is a matter of skill which requires practice, and is not so easily acquired as that of incision, where anaesthesia enables the surgeon to conduct his exploration with greater ease. The danger in advocating this method of treatment appears to be that less importance is usually attributed to methods of treatment which do not need the panoply of an operating theatre for their execution. The inexperienced houseman or student is left to carry out aspirations without any preliminary instruction in technique or aseptic precautions (which should be as rigid at the bedside as in the theatre) the method of treatment will undoubtedly cause much suffering and unnecessary damage to surrounding breast tissue. Also, though the continued use of penicillin up to the last time a dressing was required undoubtedly reduced the risks of secondary infection (cf. infection of three controls with haemolytic streptococci), yet the clinical significance of an abscess cavity infected with organisms not susceptible to penicillin is not yet known. For this reason as much care as sepsis should be observed as should have been the rule before this chemotherapeutic agent was available.

Summary

In 1943-4 two simultaneous series of 18 patients suffering from breast abscesses were treated with present accepted methods and with a combination of intramuscular and local penicillin.

The average healing time in penicillin-treated cases was reduced to half that in controls.

Suppuration was hastened rather than retarded, but ceased more rapidly.

The use of stilboestrol was not necessary, and the mothers were able to continue suckling throughout treatment.

The number of operations was reduced from 22 to 4.

The total number of days during which treatment at the hospital was required was reduced from 661 to 232.

The methods of treatment with penicillin are described in text, and depend on the preliminary use of intramuscular injections followed by local administration.

ADDENDUM

A further controlled survey was carried out by two of us (M. A. M. B. and J. S. M.) in the winter and spring of 1945-6. The time penicillin or sulphathiazole was given systematically as a prophylactic measure to all inflamed breasts in the puerperium. Abscesses when they developed, were treated with similar methods to those described in this paper, but reliance was placed on incision and instillation in 50% of penicillin cases. These results will be published later, but they indicated that early prophylactic use of chemotherapy should reduce considerably the incidence of breast abscesses in the puerperium, and also that the less virulent the prevailing infection the less obvious the benefit accruing from the use of penicillin as compared with sulphathiazole.

These cases were observed and treated entirely at the Central Middlesex County Hospital at the suggestion of the Director, Dr. J. H. J. Jules, and owing to the kindness of Mr. T. G. I. James and Mr. J. D. Fergusson, in whose surgical wards some of the cases were nursed and whose responsibility they were. Mr. A. J. Wilson and Mr. H. Hashemian are thanked for their willing help on the surgical side; Dr. J. H. Humphrey and his staff for all the bacteriological examinations; the nursing staff for their enthusiasm and vigilance and Miss D. M. Barbour for the drawings.

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CHEMOTHERAPY OF TUBERCULOSIS

RESEARCH DURING THE PAST 100 YEARS*

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1935-1946

PART II

The Sulphonamides and Sulphones

In 1932 Wells and Long suggested that the stimulus of some new success with other bacterial infections would be needed before the occurrence of any striking advance in the chemotherapy of tuberculosis. And in 1935, after 30 years of progress in the fields of protozoal and spirochaetal infection, but without the chemical mastery of any important general bacterial infection in humans, a substantial part of the bacterial front was broken. This, of course, was achieved by the successful use, in experimental streptococcal infection in mice, of azo-dyes containing a sulphonamide ($-SO_2NH_2$) group (Domagk). These were followed, first, by the dye-free sulphanilamide (*p*-aminobenzenesulphonamide, known since 1908), and then by numerous derivatives of the latter, known as the sulphonamides, and by various of the related sulphone ($-SO_2-$) compounds; and many of these synthetic drugs were introduced into medicine (Colebrook and others).

Encouraged by their reasonably high therapeutic index and their efficacy in acute infections, by their diffusibility, and by the presumption that their point of attack in the body was the parasites themselves, investigators tried a number of these sulpha drugs against tubercle bacilli in the test-tube and against experimental infection in animals, and a few of them in patients.

The first drug to be tested was the simplest—i.e., sulphanilamide (Rich and Follis, 1938; Follis and Rich, 1939); the net result of this and other inquiries was that in large and frequent doses some degree of inhibition of the disease in guinea-pigs could be obtained; but neither this compound, nor its derivatives sulphapyridine and sulphathiazole, nor others of the sulphonamide series, offered much hope of usefulness in the clinical sphere. A more promising field was opened up by the introduction, from 1939 onwards, of sulphone compounds into anti-tuberculosis chemotherapeutic experiments; the published data on these agents up to the end of 1944 have been admirably reviewed in detail by Tytler (1944-5), and only the

salient aspects of the present position will be mentioned here. The structure of the more important sulphone compounds and, for comparison, that of sulphanilamide is shown in Fig. 2 (modified from Tytler), and it will be seen that three have two phenyl rings linked by the sulphone (SO_2) group, while the fourth compound is somewhat different, having a phenyl and a thiazole group linked by the sulphone group.

The starting-point of the series, diaminodiphenylsulphone, showed some inhibitory effect in infected rabbits and guinea-pigs, but its low water-solubility and high toxicity were bars to its clinical application. The more complex "promin" (promanide) was easily soluble and had a low enough toxicity to warrant extended trials in experimental tuberculosis, which were given by Feldman and his colleagues at the Mayo Clinic and by other groups (see Tytler). The results showed this substance to be a striking inhibitor of the progress of the disease in guinea-pigs (the few observations made in mice—e.g., by Glover in 1945—were much less favourable). But when promin was tested in human pulmonary tuberculosis, although limited benefit was reported by some, the tolerance was found to be considerably lower than in the guinea-pig when the drug was given orally, unpleasant reactions—e.g., a (reversible) anaemia—occurring with some frequency; and while the toxic symptoms were much less evident after parenteral administration, so also was the clinical benefit (Zucker, Pinner, and Hyman, 1942; Heaf *et al.*, 1943; Hinshaw, Pfuetze, and Feldman, 1944; Dancey, Schmidt, and Wilkie, 1944). Experience with "diazone" in experimental tuberculosis in guinea-pigs resembled that with promin (see Tytler), but trials in human pulmonary disease produced conflicting reports, the majority of them unfavourable (Petter and Prenzlau, 1944; Benson and Goodman, 1945; Olson *et al.*, 1945; Pfuetze, 1945; Tice, Sweany, and Davison, 1946; Robitzek *et al.*, 1946). "Promizole" also gave encouraging results in experimental animals in the hands of Feldman, Hinshaw, and Mann (1944), who found it better tolerated by human beings than were the previously mentioned sulphone compounds. However, preliminary clinical trials of this compound in pulmonary tuberculosis have not indicated any marked superiority over promin (Hinshaw, Feldman, and Pfuetze, 1945); it is understood that a fully controlled clinical study is still in progress.

A fair summary of present experience with the sulphone compounds, as judged by those who have worked with them, is as follows. They exercise a deterrent effect on experimental tuberculosis, at least in some animal species, more than any previously tried chemotherapeutic agent; but, while early established lesions may regress and even be resolved, eradication of the virulent infection—a necessary criterion of cure in the acute or subacute disease of the hypersusceptible guinea-pig—is not attained. In man the small numbers and absence of simultaneous matched controls in most trials hitherto reported make assessment difficult, but the results appear nothing like as favourable as those in the guinea-pig; this is because a lower tolerance and risk of objectionable symptoms make adequate dosage difficult to achieve, or because the type of the disease is different, or possibly because the drugs may be altered in the body and become ineffective. At the best, some benefit in recent "exudative" lesions is attributable to these drugs, but there is not a consistent or unequivocal regression of the disease to quiescence or cure. Clinical use of those sulphones at present available seems likely to be limited to external or topical application,* to combination with other agents (e.g., streptomycin†), and to use in other mycobacterial infections (e.g., leprosy). "No definite place has been found for these drugs in treatment of the usual types of tuberculosis" (Hinshaw and Feldman, 1945a).‡

Other Organic Compounds

Besides the sulpha drugs, a large number of organic chemical compounds have during the past decade been reported to be inhibitory to growth of tubercle bacilli *in vitro*, and a few of

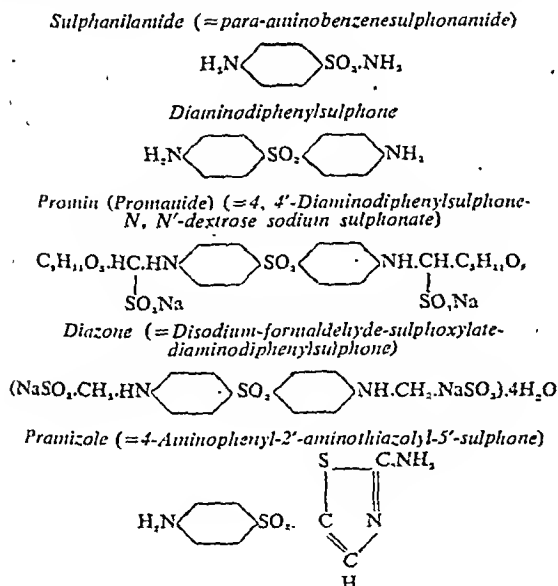


FIG. 2.—Structural formulae of certain sulphones.

* Conclusion of the Mitchell Lecture delivered before the Royal College of Physicians, London, on July 9, 1946. The first part appeared last week at page 805.

† Tytler and Lapp (1942); Lurie and Stokes (1943); Jarman and Morris (1945); Robin (1945); Grenville-Mathers *et al.* (1946).

‡ Smith and McClosky (1945a); Smith, McClosky, and Emmart (1946).

§ For a recent evaluation of the efficacy of the sulphone compounds in experimental and clinical tuberculosis, see Feldman's (1946) Harben Lectures, which are quoted also in the leading article at page 862.

these to be active *in vivo*; a much larger number of *in vitro* positive results remain unpublished. A selected list of reported compounds is given in Table II, grouped according to chemical

TABLE II.—Organic Chemical Compounds Active against *M. tuberculosis* in vitro, or against Tuberculous Infection in vivo, grouped according to Chemical Similarities (Recent Publications)

Agent (and Reference)	In vitro*	Experimental Animals†	Man‡
(a) Sulpha Drugs			
Sulphanilamide ¹	+	+	—
Sulphapyridine ²	+	±	0
Sulphathiazole ³	+	±	0
Sulphadiazine ⁴	+	+	0
Further sulphonamides ^{5, 6}	+	— or 0	0
Diaminodiphenylsulphone ⁷	+	+	0
Promin ⁸	+	+	±
Diazone ⁹	?	+	±
Promizole ¹⁰	?	+	7
Further sulphone-compounds ^{11, 12}	+	+	0
(b) Fatty Acids and Derivatives			
Chaulmoogra derivatives ^{13, 14, 15}	+	±	?
Synthetic alicyclic acids ¹⁶	+	?	0
Branched-chain fatty acids and derivatives ¹⁷	+	?	0
Dialkyl succinic acid derivatives ¹⁸	+	0	0
Unsaturated long-chain fatty acids ^{19, 20}	+	0	0
Saturated long-chain fatty acids and esters ^{21, 22}	+	+	?
Fatty acid-dye compounds ²³	?	±	0
(c) Aromatic Compounds			
Benzophenone and allied compounds ²⁴	+	—	0
Naphthoquinone derivatives ^{25, 26}	+	0	0
Naphthalene derivatives; amino- and nitro-compounds and aldehydes ²⁷	+	0	0
Iodobenzoic and iodoalicylic acids and other aromatic compounds ^{28, 29}	+	+	0
<i>p</i> -aminosalicylic acid ³⁰	+	?	?
Halogenated phenyl ethers ³¹	+	0	?
Thymol ³²	?	+	?
4- <i>n</i> -alkylresorcinols ³³	+	+	?
Diethylstilboestrol ³⁴	+	0	0
(d) Dyes			
Acridine derivatives ^{35, 36}	+	— or 0	0
Indulin ³⁷	+	0	0
Various dyes ^{38, 39}	+	—	0
(e) Miscellaneous			
Synthetic detergents ⁴⁰	+	0	0
Amido-compounds of α -arancarbonic acid ⁴¹	+	+	0
5-nitro-2-furaldehyde semicarbazone ⁴²	+	0	0
Urea ⁴³	+	0	0
Nicotinamide ⁴⁴	+	0	0
Calciferol ⁴⁵	0	0	+
Vitamin D and other hydrophobic anthrene compounds ⁴⁶	+	+	0
8-hydroxyquinoline sulphate ⁴⁷	+	0	0

* Growth-inhibitory or bactericidal effect. † Systemic administration.

+ = Results with the listed substance (or with one or more of the substances in the listed group) reported positive. ± = Results slightly positive, inconclusive or conflicting. — = Results negative. ? = Results not known. 0 = Not tested.

References.—¹ See Tytler (1944-5) and text. ² Smith and Oechsli (1945). ³ Sweeney, Sher, and Kline (1946). ⁴ Lehr and Bloch (1945); Smith and McClosky (1945b); Callonion and Ralvis (1946). ⁵ Emmart (1946). ⁶ Kdster and Wagner-Jauregg (1944). ⁷ Prigge (1940, 1941); Buu-Hoi and Ratsimamanga (1942); Wagner-Jauregg (1943). ⁸ Robinson (1940); Wagner-Jauregg (1942); Buu-Hoi and Ratsimamanga (1944); Buu-Hoi (1945). ⁹ Barry and McNally (1945). ¹⁰ Bergström, Theorell, and Davide (1946). ¹¹ Drea (1944). ¹² Negre, Berthelot, Bietey, and Feihke (1945). ¹³ Bergmann *et al.* (1941). ¹⁴ Freedlander (1942, 1944). ¹⁵ Feldman, Hinshaw, and Moses (1943). ¹⁶ Lloyd and Middlebrook (1944). ¹⁷ Saz *et al.* (1941, 1943). ¹⁸ Lehmann (1946). ¹⁹ McBurney, Cason, and Searcy (1945); Brooks (1946). ²⁰ Drea (1946). ²¹ Faulkner (1944). ²² Cutting *et al.* (1945). ²³ Avery and Ward (1945). ²⁴ Kuljvatsev (1941). ²⁵ Chpanir and Chertkova (1944). ²⁶ Dodd (1946). ²⁷ Cummins (1942, 1945); but see Frisk (1946); ²⁸ Chorine (1945); but see Paraf *et al.* (1945). ²⁹ Charpy (1943-6); Dowling and Thomas (1945, 1946); Dowling (1946). ³⁰ Raab (1946). ³¹ Courmont *et al.* (1936). ³² Willstaedt (1944). ³³ Joulin and Buu-Hoi (1946). ³⁴ Frisk (1946). ³⁵ Burger *et al.* (1945). ³⁶ Dubois (1942).

similarities. Some of them are purely synthetic artificially produced substances with no known counterpart in Nature; others are synthetic compounds related to some natural substance which has served as starting-point of the series; others are themselves of biological origin (these last are placed here rather than in Table III because they fall into convenient chemical groupings, whereas in Table III a provisional grouping by species of origin is adopted).

After the sulpha drugs, the most actively investigated compounds have been the chaulmoogra acids and structurally similar synthetic compounds, including synthetic cyclic and branched-chain, many-carboned fatty acids and their derivatives. Renewed interest in this group in tuberculosis springs partly from the historical favourable association of the chaulmoogra acids in the treatment of leprosy, and the earlier consequent research on tuberculosis with these and kindred synthetic

products. But work in this field has received new encouragement from the chemical analyses by Anderson and co-workers, extending over the past 20 years, of the lipids of the mycobacteria (see Anderson, 1943). These analyses stimulated the synthesis, by other workers, of lipid-soluble or lipophilic substances that might be expected to penetrate the supposed waxy or fatty "envelope" of the bacillus, or to injure it—e.g., through a surface tension effect. Furthermore, since Anderson's researches revealed the presence in the tubercle bacillus of a series of new branched-chain saturated fatty acids, one of which—phthioic acid—produced tubercle-like local lesions in the guinea-pig, the experiments with various synthetic branched-chain fatty acids made some years before (see above) took on new significance; and the synthesis of fatty acids of similar type to phthioic acid, and so chemically related to a natural bacillary constituent, seemed to offer reasonable promise of blocking some essential biosynthesis (Küster and Wagner-Jauregg, 1944; see also Polgar and Robinson, 1945). Thus there are at least two ideas on the mechanism of growth inhibition—one physico-chemical (fat lysis or penetration) and the other chemical (synthesis-blocking)—guiding current work on the tuberculostatic action of fatty acids and their derivatives. Unfortunately, tests against tuberculosis *in vivo* with selected *in vitro* active substances of this group have so far been little less disappointing than was the earlier work. Moreover, the hypothesis that antibacterial properties can be related to structural similarities with essential metabolites has still to be proved applicable to *M. tuberculosis* (see later). Finally, the results obtained with water-soluble sulphone compounds and with streptomycin, and the fact that the mycobacteria, despite their fatty structure, are more susceptible to water-soluble antiseptics than to fat-soluble compounds, emphasizes that the "lipophilic" approach to the chemotherapy of tuberculosis is not the only one, nor may it be the most fruitful (see discussions by Lehr and Bloch, 1945; Dubos, 1945, pp. 293-4).

The reasons for investigating the aromatic group of compounds, shown in Table II, are diverse. Benzophenone and allied compounds were tested because of their relationship to the sulphones. Naphthoquinone derivatives represent an attempt to interfere with the bacterial metabolism through a structural similarity to a hypothetical growth factor or growth stimulant of the vitamin K type. The use of iodobenzoic, iodoalicylic, and *p*-aminosalicylic acids arose from a search for growth inhibitors whose starting-point was the studies of Bernheim (1940, 1941) and others on the increase in oxygen uptake by washed suspensions of tubercle bacilli produced by benzoic and salicylic acids and certain other aromatic compounds; such studies suggested that these or chemically similar substances might play a part in the normal oxidations of the bacilli, and that substituted benzoates and salicylates might interfere with these oxidations and so inhibit growth. The recent renewed interest in dyes has its origin in the promise of the earlier work on tuberculosis by Lewis and others (see above); additional reasons for testing the acridine compounds (including aetbrin) are their clinical value in protozoal and bacterial infections, while indulin was used because it was wax-soluble.

In none of this list of compounds has there as yet been strong evidence of efficacy combined with safety in human pulmonary tuberculosis, though with some of them the clinical trials are not completed.* In one non-pulmonary condition, however, a substance has given highly encouraging results in the clinic. The substance is calciferol, whose benefit in lupus vulgaris, when used in high dosage, has been reported by Charpy in France and by Dowling and Thomas in this country, working independently. The results would seem striking and consistent enough to convince without simultaneous controls, and they appear to exceed those obtained in this disease with any previous internally administered remedy. It is to be hoped that further work will confirm and extend these observations, and provide an explanation, e.g., as to whether the calciferol is supplying a deficiency or is acting as a chemotherapeutic agent in the stricter sense. Moreover, while serious toxic reactions have

* A recent Swiss report (Junod, 1946) summarizes work in Japan with the alkaloid cepheranthine (from *Stephania cepherantha* of the family of Menispermaceae). It is active *in vitro* against tubercle bacilli, has low toxicity and is stated to produce arrest, reversal, and often resolution of the lesions of experimental tuberculosis. Improvement is claimed with minute doses in many types of clinical tuberculosis.

not so far been reported as accompanying this treatment, the possibility of calcium deposition in tissues will have to be watched.

An Antibiotic Age?

Soon after the impetus given to the search for chemotherapeutic agents in tuberculosis by the introduction of sulphonamide drugs in 1935, the bacterial front was further weakened and broken by the successful exploitation of antibiotic substances, none of which had hitherto found an undisputed place in medicine. In 1939 Dubos reported the extraction, from culture filtrates of a spore-forming soil bacillus, of the crude material tyrothricin, from which the crystalline polypeptides gramicidin and tyrocidin were derived; gramicidin was particularly interesting as being active *in vitro* and *in vivo* against certain Gram-positive bacterial species, but its toxicity restricted clinical use to topical application. In 1940—the almost-ideal chemotherapeutic properties of penicillin—extremely high efficacy in systemic infections by susceptible micro-organisms, little antagonistic action by body constituents, and virtual lack of toxicity—were demonstrated experimentally at the Oxford

School of Pathology. These two events stimulated widespread reactivation of this branch of microbiology, and antimicrobial agents were looked for in a multitude of living sources. In this search tuberculosis has figured prominently, particularly as penicillin was found not to inhibit the growth of tubercle bacilli in the test-tube or to retard significantly the development of the disease in experimental animals (Abraham *et al.*, 1941; Smith and Emmart, 1944).

In Table III are listed the majority of biological products recently reported as having tuberculostatic or tuberculocidal properties *in vitro*, under the headings of their microbial or other sources. It is already a formidable and rapidly growing collection; perhaps we are entering an antibiotic age in the chemotherapeutic investigation of tuberculosis. A notable feature of the list is the great preponderance of soil micro-organisms, showing the extent to which, in the past few years, soil and medical microbiology have become interconnected in a new way. It is evident also that there is particular concentration of interest around the genera *Aspergillus* and *Streptomyces*, and around the aerobic spore-bearing bacteria of the *B. subtilis* group. The range of activity of the antimicrobial substances produced by the various species listed extends in every instance beyond *M. tuberculosis*, though it is limited and selective; on the other hand, as with other antibiotics, the production tends to be species-specific or even strain-specific (as with streptomycin). In the great majority of the reports listed the *in vitro* evidence rests upon tests with culture fluids or crude concentrated extracts; in relatively few instances has a high degree of purification of the active substance yet been achieved. Names have, however, been conveniently created, even at an early stage of purification, to designate the active agent or agents. Some names—e.g., clotyocytine, streptomycin, subtilin, and licheniformin—indicate the genus or species of origin; others are based partly or wholly on the action of the antibiotic—e.g., mycoidin.

In only a few instances among these biological products is there information upon a full trial of efficacy in experimental tuberculous infection, either because investigations have not yet reached this stage, or because the active substance has proved too toxic or is inactivated *in vivo*, or for other reasons. Up to date I am aware of complete reports of such experiments for only two substances—streptothricin and streptomycin.* Since the former showed undesirable toxic effects in laboratory animals and failed, in the dosage practicable, to control experimental tuberculosis in the guinea-pig (Feldman and Hinshaw, 1945a), it has dropped into the background.

Streptomycin

Streptomycin was discovered in 1944 by Waksman, one of the world's leading authorities on the actinomycetes family, and his colleagues (Schatz, Bugie, and Waksman, 1944; for a review see Waksman and Schatz, 1945). This was the result of a purposeful search among soil micro-organisms for antibiotic agents active against the Gram-negative bacteria and the (Gram-positive) mycobacteria, and suitable for clinical application. The name streptomycin is "derived from the generic designation given to the sporulating and aerial-mycelium-producing group of actinomycetes—namely, *Streptomyces*" (Waksman and Schatz, 1945). The antibiotic was originally found in one particular strain of *Streptomyces griseus*, and, indeed, production has been noted in only a few of the other strains of this species since examined. Streptomycin has been obtained apparently pure. The low toxicity of the purified product for experimental animals (e.g., Molitor *et al.*, 1946; Molitor, 1946), its high power of inhibiting growth *in vitro* of *M. tuberculosis* (Schatz and Waksman, 1944; Emmart, 1945; Youmans, 1945; Youmans and Feldman, 1946), and its survival when introduced into the body, led to extensive tests in experimental tuberculous infection in guinea-pigs (Feldman and Hinshaw, 1944; Feldman, Hinshaw, and Mann, 1945; Smith and McClosky, 1945a) and in mice (Youmans and McCarter, 1945). In guinea-pigs the results of treatment begun simultaneously with, or some weeks after, infection were strikingly better than those with any previous chemotherapeutic agent, and the

TABLE III.—Substances from Natural Sources Inhibitory *in vitro* to Growth of *M. tuberculosis*, grouped according to Species of Origin (Recent Publications)

Species	Name of Agent	References
(a) Fungi:		
<i>A. fumigatus</i> ..	Fumigacin*	Waksman, Horning, and Spencer (1942); Schatz and Waksman (1944)
<i>A. fumigatus</i> ..	Helvolic acid*	Chain <i>et al.</i> (1943); Jennings (1945)
<i>A. fumigatus</i> ..	Aspergillin	Soltys (1944, 1946)
<i>A. fumigatus</i> ..	(Unnamed)	Asbeskov and Strelitz (1945)
<i>A. flavus</i> ..	Aspergilline acid	Goth (1945)
<i>A. flavus</i> ..	(Unnamed) ₂	Bush <i>et al.</i> (1945)
<i>A. clavatus</i> ..	Clavacin†	Waksman, Horning, and Spencer (1942); Schatz and Waksman (1944)
<i>A. ustus</i> ..	Ustin	Kurine (1945); Hoserboom and Craig (1946); Doering <i>et al.</i> (1946)
<i>A. albus</i> , <i>niger</i> , etc. ..	(Unnamed)	Zorzi (1940)
<i>A. (unnamed)</i> ..	Mycoidin	Gerber and Gross (1945, 1946)
<i>A. (unnamed)</i> ..	(Unnamed)	Kallos (1945)
<i>P. (unnamed)</i> ..	(Unnamed)	Miller and Reckate (1944)
<i>F. javanicum</i> ..	Javanicin	Arinstein, Cook, and Lacey (1946)
<i>Ch. cochlioides</i> ..	Chaetomin	Schatz and Waksman (1944); Waksman and Bugie (1944); Geiger, Conn, and Waksman (1944)
(b) Actinomycetes:		
<i>S. griseus</i> ..	Streptomycin	Schatz and Waksman (1944); Schatz, Bugie, and Waksman (1944)
<i>S. lavandulae</i> ..	Streptothricin	Schatz and Waksman (1944); Waksman and Woodruff (1942); Woodruff and Foster (1944)
<i>S. antibioticus</i> ..	Actinomycin	Schatz and Waksman (1944); Waksman and Woodruff (1944); Waksman and Tishler (1942)
<i>Pr. gardneri</i> ..	Proactinomycin	Floney, Jennings, and Sanders (1945)
<i>Pr. cyaneus</i> ..	Litmocidin	Gause (1946); Brazhnikova (1946)
(c) Aerobic spore-forming bacteria:		
<i>B. subtilis</i> ..	Subtilina	Fontes Magarao <i>et al.</i> (1944)
<i>B. subtilis</i> ..	Subtilin	Jansen and Hirschmann (1944); Salle and Jann (1945)
<i>B. subtilis</i> ..	Bacillin	Foster and Woodruff (1946)
<i>B. subtilis</i> ..	Eumycin	Johnson and Burdon (1946)
<i>B. licheniformis</i> ..	Licheniformin	Callow and Hart (1946)
(d) Non-sporing bacteria:		
<i>B. larvae</i> ..	(Unnamed)	Holst (1945)
Milk streptococcus ..	(Unnamed)	Mattick and Hirsch (1944, 1945); Mattick (1946); cf. Oxford (1944)
(e) Higher plants:		
<i>Allium sativum</i> (garlic)	(Unnamed)	Courmont <i>et al.</i> (1937) Rao <i>et al.</i> (1946)
Onion and garlic ..	Phytonicides	See Tokin (1945)
<i>Clitocybe gigantea</i> ..	Clitocybine	Hollande (1945)
(fairly-ring mushroom)		
<i>Plumbago europea</i> ..	Plumbagol	Saint Rat, Olivier, and Chouteau (1946)
Chlorophyll derivatives and related compounds	(Unnamed)	Daly, Heller, and Schneider (1939)
<i>Buellia canescens</i> (lichen)	Diploicin	Barry (1946)

* Helvolic acid is related to, or identical with, fumigacin.

† Clavacin is identical with clavatin from the same species, claviformin from *P. claviforme*, and patulin from *P. patulinum*.

A. = *Aspergillus*. P. = *Penicillium*. F. = *Fusarium*. Ch. = *Chaetomium*. S. = *Streptomyces*. Pr. = *Proactinomycetes*. B. = *Bacillus*.

* A recent note by Salle and Jann (1946) states that subtilin produces "a definite suppressive effect on the course of experimental tuberculosis in guinea-pigs."

substance was well tolerated. Not only was the development of the disease noticeably inhibited, but arrest and even eradication of established lesions were noted. In mice the effect was not quite so striking, possibly because of a different balance between the doses of drug and infection; definite suppression of the disease process was, however, evident. Owing to shortage of supplies, systematic clinical trials of streptomycin in tuberculosis have so far been mainly confined to its country of origin—the United States—under the supervision of the National Research Council (see Keefer, 1946), and the few published reports are of a preliminary nature (Hinshaw and Feldman, 1945b, 1946—54 miscellaneous cases with limited improvement in some; Cooke *et al.*, 1946—case of tuberculous meningitis with apparent recovery; Figi, Hinshaw, and Feldman, 1946—case of laryngeal tuberculosis with striking improvement; Cook *et al.*, 1946—12 cases of genito-urinary tuberculosis with improvement in some; Baggenstoss, Feldman, and Hinshaw, 1946—histopathology of regressing human lesions).

As seen from this side of the Atlantic, one might summarize the present status of streptomycin in tuberculosis as follows. This antibiotic seems more promising than any previous chemotherapeutic agent. In animals its toxicity is less than, and its effect on experimental infection better than, the best of the sulphone compounds. In man prolonged administration appears to have been free of serious and uncontrollable toxic reactions, though, as in animals, histamine-like responses, evidence of (reversible) renal "irritation," eighth-nerve symptoms, neuritis, and dermatitis have been reported; it seems possible that some of these reactions are due to impurities in certain of the preparations used. The effect on human tuberculosis justifies cautious optimism for certain forms of the disease, but, subject to any very recent information, Waksman's own words of November, 1945, still hold: "Prolonged treatment and studies of many cases are absolute prerequisites for any serious consideration of the efficacy of streptomycin in the treatment of tuberculosis. To date sufficient information has not yet been accumulated" (Waksman and Schatz, 1945). The need for caution has been learned from bitter experience of the past failures with gold, copper, and tuberculin, and from the false promise given by animal experiments with the sulphones. Should streptomycin occupy no more than a temporary place in tuberculosis therapy, the resulting increase in biological and chemical knowledge will nevertheless be very considerable and will assist in further advances.* †

Streptomycin has certain apparently unsatisfactory properties. Like penicillin, it is poorly absorbed from the alimentary canal, so that administration has to be parenteral. Unlike penicillin, it is a base and its activity *in vitro* is reduced by a lowered pH, which it might encounter in pus; how far this objection is of practical importance is not decided. A much greater possible disadvantage is that drug resistance is rather easily acquired by the tubercle bacillus and other susceptible micro-organisms, both *in vitro* and *in vivo* (Youmans and Feldman, 1946; Youmans *et al.*, 1946), and this is particularly liable to occur during a prolonged course of treatment. This is one reason why other chemotherapeutic agents would be desirable for use in tuberculosis, even should streptomycin justify present hopes.

Outlook for the Future

The purpose of this historical review would not be served unless it helped in the assessment of the present position and future prospects. It is therefore relevant to consider some of the difficulties in the path of those who are searching for chemotherapeutic agents in tuberculosis.

In common with all chemical attack on systemic infective disease, the prime consideration is that the chemotherapeutic

index of an agent must be reasonably high—i.e., that its effective dose must be substantially lower than the dose toxic to the host. This is where the great majority of prospective agents that are tuberculostatic in the test-tube fall down when tested in the infected body. Other general reasons are failure to disseminate so as to reach the infection site, inactivation by antagonistic substances in the blood or other body constituents, and excessive speed of destruction or excretion; while acquired resistance to the agent by the bacterial parasite is particularly liable to occur when, as in tuberculosis, prolonged administration is required. One general chemotherapeutic aim, however, may have to be modified in the case of human tuberculosis—namely, complete internal disinfection; in fact, when we consider the benign and possibly protective infection which so many of us harbour, the latter may not be necessarily even an essential objective.

There are also difficulties more peculiar to tuberculosis. To be directly inhibitory or lethal to this micro-organism an agent must penetrate the relatively avascular tubercle, enter the possibly vulnerable phagocyte that may enclose the bacillus, and penetrate the "hardy wax-armoured bacillus" itself (Wells and Long, 1932, p. 391); dense fibrotic encapsulation may also constitute a barrier. These difficulties led some workers to see more hope in the indirect attack—by chemical stimulation of the tissue cells around the tubercles, or of the host's defensive mechanisms generally, without contact with the bacilli, as is believed to be the mode of action of heavy metals, certain dyes, etc. Some of these obstacles have, however, probably been overrated. Thus Rich (1945) states: "The tubercle, in spite of its compact, solid appearance, must be permeable to substances in solution, else neither the cells nor the enclosed bacilli could receive the nutritive material necessary for their survival." Actually many diffusible foreign substances will pass from the blood stream into the centres of tubercles and caseous areas—e.g., various vital dyes, iodides, and iron—and some become concentrated therein: penetration of colloidal substances is, of course, much less likely, unless the molecules be small. Rich concludes that many chemotherapeutic substances can reach bacilli in epithelioid cells or in caseous lesions, but that when enclosed in living mononuclear phagocytes the agent must be capable of surviving the internal environment of such cells. If the agent reaches the bacillus, even the reputed waxy or fatty barrier, often supposed to be responsible for the remarkably low susceptibility of mycobacteria to many ordinary chemical antiseptics, seems doubtful in the light of the growth-inhibitory effect, both *in vivo* and *in vitro*, of water-soluble substances such as certain sulphones and streptomycin. Moreover, whether the abundance and variety of the lipids does or does not confer resistance, there is at present no proof that these lipids are organized as a cell capsule or envelope (see Dubos, 1945).

Special difficulties of a technical character also slow the rate of advance. On the biological side, *in vitro* tests are more time-consuming with *M. tuberculosis* than with many bacteria, since the organism grows slowly and uniform inocula and other conditions are not easily attained; recent improvements in media, in the use of submerged culture, etc., may assist (e.g., see Dubos and Davis, 1946). Animal tests also are prolonged, and they need larger amounts of the test substance than do tests in many other infections. The lesions produced in the commonly used experimental animals tend to be acute or subacute, and may differ in other respects from the chronic fibrocaceous lesions of reinfection comprising a large part of adult tuberculosis in man; and, although reinfection can be readily produced in animals, the difficulties of providing a uniform series for chemotherapeutic trials are increased. As to species of animal, the guinea-pig has been the animal of choice for most workers (Feldman and Hinshaw, 1945b), but owing to its lack of natural resistance and comparatively large drug requirements some have turned to the mouse, in spite of its rather atypical non-neurotic lesions (e.g., Glover, 1945; Youmans and McCarter, 1945; Martin, 1946). The chorio-allantoic membrane of the chick embryo is also used, but the tests are not yet on a very firm foundation and some of the techniques are open to criticism. Feldman and Hinshaw (1945b) have made excellent suggestions for standard procedures for chemotherapeutic tests in experimental tuberculosis, with special reference to guinea-pigs. Their criteria for a successful agent are

* For a recent evaluation of the efficacy of streptomycin in experimental tuberculosis, see Feldman (1946).

† A report of 1,000 patients with various infections, treated by streptomycin in the United States, has just appeared (National Research Council, 1946); 87 cases of tuberculosis of the more advanced types are included. Guidance on dosage and administration is given (see also Hinshaw and Herrell, 1946) and toxic manifestations detailed. It is concluded tentatively that streptomycin has a suppressive, though not usually eradivative, action in military, laryngeal, meningitic, skin, and renal tuberculosis, and in exudative pulmonary tuberculosis: there is still doubt as to the sequel after discontinuance of treatment. The side-reactions appear more common and somewhat more significant than earlier reports suggest, and certain of them are noted even with apparently pure preparations.

(abbreviated): (1) satisfactory tolerance and absence of serious or irreversible physiological derangements; (2) reversal of established progressive disease to non-progressiveness, resolution, fibrosis, or calcification; (3) eradication of virulent infection; (4) results to be achieved in a reasonable period. In such tests it would be desirable to use "strains of tubercle bacilli whose origin, type, and virulence are known and can, within limits, be guaranteed" (National Tuberculosis Association, 1946).

The preparation of synthetic substances and antibiotic material for *in vivo* trials against experimental tuberculosis requires much initial labour, making *in vitro* "screening" almost a necessity—even though the great majority of agents thus selected as worthy of further attention must be expected to prove ineffective therapeutically. Possibly some more significant screening tests than those that measure growth inhibition will be devised; present alternatives, such as observations on the effect of drugs on oxygen uptake of the bacilli in the resting state (e.g., Bernheim, 1941; Franke and Schillinger, 1944), are of doubtful value in this connexion. Prognostication of the effect in human beings from behaviour of chemotherapeutic agents in experimental tuberculosis provides further misleading possibilities. A good example of lack of correlation between results in test-tube, experimental animal, and man is given by the individual sulphonamides, the best of which are not highly active *in vitro* but give very encouraging results in guinea-pigs, yet have been disappointing clinically. However, few would oppose the principle that new agents of significant toxicity should be administered in human tuberculosis only after promising animal trials. This, of course, does not mean that efficacious agents may not still be first discovered at the clinic or the bedside—such success is shown strikingly in the recent treatment of lupus vulgaris with vitamin D.

The difficulties of evaluating chemotherapeutic trials in man are far greater than in experimental animals. Selection of cases provides a dilemma, for while improvement is most to be expected in early "exudative" lesions unaccompanied by much destruction or fibrosis (as revealed increasingly by mass radiography), these are just the cases that may improve with rest alone or no treatment at all; on the other hand, in chronic fibrocavitary disease the prospect of improvement is doubtful and, if it occurs, may be confused with naturally occurring spontaneous regression. Such considerations call for simultaneous matched controls, an adequate duration of the trial, and an intelligent use of statistics; however, owing to the very obvious obstacles in selecting controls and in giving them inert preparations for some months, most trials have relied instead upon the pre-chemotherapeutic behaviour of the treated patients and on the general clinical experience of the medical observers. Patients and controls should, so far as is possible, form homogeneous groups susceptible of classification, with emphasis in the first instance on bronchopneumonic, "labile," reversible changes. The foregoing difficulties and others inherent in clinical trials, as well as standard procedures to overcome them, are discussed by Hinshaw and Feldman (1944). There is divergence of opinion among experienced workers on some of the points; thus, Zucker, Pinner, and Hyman (1942) and Pinner (1944) hold that, with proper selection of material, preliminary results are obtainable in a brief period, and any positive effect should be obvious enough without controls. Now, if any type of case is suitable for non-controlled observation, it is the "acute" rapidly developing forms of pulmonary disease seen in young adults, and meningeal and some other non-pulmonary forms. One might therefore ask: Will a chemotherapeutic agent produce dramatic enough reversal of progression in such a case to prove that the agent was the determining factor, as has been achieved with penicillin in the absence of direct controls? It is a great deal to ask of it. Or will the ambiguities of "sanocrysin" be repeated? The current clinical trials of streptomycin are relevant to this question, and it should be noted that success has been reported in a few cases of tuberculous meningitis.

Conclusion

Having thus discussed the history of, and some of the research problems particularly involved in, the search for chemotherapeutic agents in tuberculosis, we can see that two paths are being followed: by way of substances synthesized biologically by various forms of plant life, and by way of

products synthesized in the laboratory by the chemist. Along the first path, as with the initial discovery of penicillin, little chemical principle is at present involved in the exploratory phases, which are therefore somewhat empirical. Along the second path the design of synthetic agents is being based on a number of suggestive "leads"; but one fundamental guide is as yet little developed. This is the hypothesis that many antibacterial agents function in virtue of structural similarities to substances that participate in the essential metabolic processes of the bacterial cells ("essential metabolites"), such chemical similarities leading to interference with these processes and so to inhibition of growth. This concept was much strengthened by the study in 1940 of the mutual antagonism between sulphanilamide and the closely related *p*-aminobenzoic acid in the inhibition of streptococci; and it has been used since as a basis for the design of fresh synthetic growth inhibitors for a variety of micro-organisms in which essential metabolites could be defined (e.g., see Knight, 1946). Knowledge of the metabolism of *M. tuberculosis* is, however, still very deficient, this micro-organism seeming able to use the simplest nutrients, to dispense with preformed growth factors, and to synthesize all its essential metabolites—at least after adaptation to the *in vitro* cultural environment in which it is usually studied. Efforts to define its essential metabolites, and to model growth inhibitors on their structure, have so far been confined to lipids, without as yet much result (see above); but further study of the nutritional requirements and metabolic reactions of this micro-organism as a whole may provide a valuable guide to the synthetic design of anti-metabolites that will block some biosynthesis essential to the functioning of its cells.

These two paths along which present work is moving, which originated separately about 50 years ago, can be expected to converge and ultimately to meet; for knowledge of the chemical structure of antibiotic substances may promote laboratory synthesis of active related compounds, while knowledge of the point of interference of such substances may give new information on the essential metabolism of the tubercle bacillus and lead to the purposeful creation of simpler synthetic anti-metabolites.

Should a real measure of success be reached with one or a number of chemotherapeutic agents this is not likely by itself to lead to the eradication of tuberculosis. During the past decade much else has been added to the understanding of this disease and to the ability to control it. Fuller appreciation of the importance of social factors in its incidence and spread, and of the value of social assistance (both financial and re-abling) in consolidating treatment; greater emphasis on the factor of household contact and on earlier diagnosis by means of mass radiography; and the coming to maturity of the various methods of collapse therapy and other surgical procedures: these are among the features of this period in the more favourably placed countries, such as Britain. It is improbable that success in chemotherapy will supersede all the tried and trusted methods of control acquired through the years which are applied to the individual patient, to his family, and to the community. Thus, rest can be expected to remain the foundation of treatment, and surgical methods to be needed in certain types of case; the conditions of life to which the patient returns will surely affect critically the ultimate results of even the most spectacular chemotherapy; and the state of housing and nutrition of the people generally may be expected to continue to influence the secular trend of tuberculosis mortality and incidence. There are in the world perhaps between 10 and 20 million sufferers from active tuberculosis. In order to reduce this inroad on world health we shall probably need most of the reasonable measures—social and economic, preventive and therapeutic—that we possess now or that we can acquire in the future. The attack will remain multiple; the tactics will change.

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AMBIGUOUS INHIBITION OF STAPHYLOCOCCI BY PENICILLIN INACTIVATED WITH PENICILLINASE

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some time past penicillinase prepared by the growth of strain of *B. subtilis* in broth has been used in this laboratory to inactivate penicillin before testing for sterility. A batch of penicillinase is assayed by a method devised in Bacteriological Laboratory of Messrs. Boots Pure Drug Co., (personal communication).

1:20 dilution of the penicillinase preparation in water is added in ascending quantities to a series of broth tubes each containing 4,000 units of penicillin. These are inoculated with a loopful of a broth culture of a sensitive staphylococcus. The end-point is read after 40 hours' incubation at 37° C. On one occasion 20,000 units of penicillin was erroneously added to each tube in setting up the assay. On this being realized the penicillinase was diluted 1:4 instead of 1:20, the assumption being that this would give the same result, since the portion of penicillinase to penicillin in each tube would be the same. However, no growth of staphylococcus occurred in any of the tubes. The assay was then repeated at the normal 1 of dilution and an end-point was obtained as usual near middle of the range.

This incident suggested that the ability of staphylococci to grow in broth plus inactivated penicillin is limited to a certain degree of concentration of penicillin.

Experimental Results

It was first shown that failure to grow was not due to a change in pH of the broth. The following experiment was then tried out. Serial dilutions of penicillin in broth were made in metrical progression, beginning with 200,000 units, the last containing 781 units. Corresponding dilutions of penicillinase in water were made and 1 ml. of each dilution was added to each corresponding tube of penicillin, so that the proportion of penicillinase to penicillin was the same in each tube. A loopful of staphylococcus broth culture was added to each tube and the series was incubated at 37° C. The tubes were examined first after 24 hours' incubation; growth had occurred in the tube containing 6,250 units of penicillin. Examination after 40 hours showed growth in the tubes containing 500, 3,125, and 1,562 units, but no growth at the four highest dilutions or at the lowest one.

The experiment was then repeated using quantities of penicillin from 100,000 down to 390 units, and on this occasion examination of the tubes was made at hourly intervals. Growth occurred with 6,250 units at less than 19 hours (as it did in a control tube of plain broth), with 12,500 units in 22 hours, with 3,125 units in 24 hours, and with 1,562 units in 30 hours. No growth occurred with 100,000, 50,000, 25,000, 781, or 390 units up to 3 days.

The results of three further experiments are given in Table I.

TABLE I

Penicillin (Units)	Expt. 1	Expt. 2	Expt. 3
100,000	0	0	~
50,000	0	0	0
25,000	0	0	0
12,500	0	± 3 days	(4) + 3 days
6,250	(2) + 22 hours	(3) + 26 hours	(1) + 24 hours
3,125	(1) + 21 "	(2) + 24 "	(2) + 23 "
1,562	(3) + 23 "	(1) + 22 "	(3) + 40 "
781	(4) + 30 "	(4) + 27 "	0
390	0	(5) + 40 "	0
195	—	± 3 days	0

Control + 18 hours

0 = No growth. + = Normal growth. ± = Trace of growth. — = Not done.

It will be seen that growth always begins first in one of the tubes near the middle of the series and spreads outwards through the tubes on either side of the first, though the order is not constant. If the solutions in the high-concentration tubes in which no growth has occurred are diluted with broth to fall within the range of the positive tubes, growth immediately occurs, sometimes being visible in as short a time as three hours after dilution, showing that the penicillin has in fact been inactivated and that the staphylococci have not been killed by the high concentration, for only the original inoculum is still present. Similar results were obtained in other experiments, using three different samples of penicillinase prepared in media other than papain digest broth.

The penicillin used in all the foregoing experiments was manufactured some time ago and was relatively impure, containing 700 to 800 units per mg., assayed against staphylococcus.

Inhibition of growth is not due to anything in the penicillinase; this was shown by making serial dilutions of penicillinase in broth of the same strengths as used in the experiments with penicillin and inoculating with the same staphylococcus. Growth occurred in 18 hours in every tube. It seems evident, therefore, that there is some substance present with the penicillin which, while not affected by penicillinase, in high concentration inhibits the growth of staphylococci.

Confirmation of this hypothesis was obtained by repeating the experiment using purified penicillin, containing 1,600 units per mg., assayed against staphylococcus. An amount of this material containing 100,000 units was diluted serially and each tube was treated with the corresponding quantity of the penicillinase used in previous experiments. The tubes were inoculated from a broth culture of the same staphylococcus. Growth occurred simultaneously in 18 hours with the six highest concentrations, from 100,000 units down to and including 6,250 units. It occurred with 3,125 units in 21 hours, with 1,562 and 781 units in 40 hours, and with 390 units in 3 days. No growth occurred with 195 units up to 5 days. Inhibition at the low end of the scale thus occurs even with pure penicillin.

Three further experiments were done with penicillin from batches having potencies of 1,000, 1,210, and 1,450 units per mg respectively. The results were as shown in Table II.

TABLE II

Penicillin (Units)	1,000 u./mg.	1,210 u./mg.	1,450 u./mg.
100,000	(7) ± 3 days	(5) ± 3 days	(5) ± 42 hours
50,000	(3) + 20 hours	(1) { ± 18 hours }	(1) + 20 "
25,000	(2) + 18 "	(3) + 24 "	(3) + 24 "
12,500	(1) + 16 "	(2) + 20 hours	(2) + 24 "
6,250	(4) + 22 "	(3) + 24 "	(4) + 40 "
3,125	(5) + 40 "	(4) + 40 "	(6) + 3 days
1,562	(6) ± 3 days	0	0
781	0	0	0
390	0	0	0
195	0	0	0

Control + 16 hours

It will be seen that, as the potency of the penicillin in units per mg. increases, the first tube to show growth is one step higher in the series. As has been shown, when a potency of 1,600 units per mg. is reached the phenomenon no longer occurs, growth occurring simultaneously with all the higher concentrations.

Further evidence that inhibition with high concentrations of penicillin is due to impurities was obtained by inactivating in the autoclave, a solution of penicillin containing 100,000 units in 5 ml., or 20,000 units per ml., and inoculating with one loopful of staphylococcus broth culture. No growth occurred in 7 days, though it occurred in lower concentrations.

Speculation about the nature of any unknown inhibitory substances and their possible therapeutic action is beyond the scope of this paper.

Failure of growth at the very low concentrations of penicillin must be a phenomenon quite distinct from that observed at the other end of the scale and is much more difficult to interpret. In an attempt to elucidate it the following experiment was done:

To four tubes of broth each containing 195 units of penicillin were added the corresponding concentration of penicillinase and one loopful of staphylococcus broth culture. They were incubated for three days; no growth occurred. They were then treated as follows:

Tube 1: excess penicillinase added. Tube 2: one loopful of staphylococcus broth culture added. Tube 3: excess penicillinase and one loopful of staphylococcus broth culture added. Tube 4: no additions. All were incubated at 37° C. with a broth control.

The results were:—Tube 1: +, 24 hours; tube 2: +, 4 hours; tube 3: +, 4 hours; tube 4: 0, 7 days. Control: +, 24 hours.

Tube 1 shows that the original inoculum was still living, but that the original amount of penicillinase added was not sufficient to inactivate the penicillin. Tube 2 indicated that the penicillin had been sufficiently reduced in activity to allow a fresh inoculum to grow; tube 3 is thus redundant, in view of the results with tubes 1 and 2. Tube 4 confirms that the penicillin had not been inactivated by the original addition of penicillinase. The extremely rapid growth in tubes 2 and 3—full growth with maximum turbidity in 4 hours—is difficult to explain. It seems to be analogous to the very rapid growth, noted above, with high concentrations diluted to fall within the critical range of concentration. Both these observations seem to indicate that treatment of penicillin with penicillinase at sub-maximal levels for several days increases the susceptibility of the medium to growth of staphylococcus when the conditions are altered sufficiently to allow growth to take place. That the alteration is in the medium and not in the inoculum seems clear from tubes 2 and 3, where the inoculum was fresh.

Discussion

The observations here reported are, apart from any academic interest, of practical importance for sterility-testing of penicillin.

This laboratory is frequently called upon to test for sterility dried penicillin in phials containing up to 1,000,000 units. In the light of the observation here reported it is clear that to make certain of getting growth of sensitive contaminants the final dilution in the test medium should be related to the potency of the sample in units per mg. With potencies of less than 1,000 units per mg. it should be of the order of 1:100. However, with penicillin of recent manufacture, potencies of at least 1,400 units per mg. are usual, and it should not be necessary with such samples to employ volumes of test broth larger than those normally used for sterility testing. Where very low concentrations of penicillin are to be tested for sterility care must be taken to add gross excess of penicillinase, of the order of 10 times the equivalent quantity, whatever the potency of the sample. This does not normally arise in practice.

Apart from the above practical considerations, the phenomenon described is interesting from several points of view. Inhibition by high concentrations suggests that impurities in penicillin exert on staphylococci an inhibitory effect that is not a true penicillin effect, for it does not occur with "pure" penicillin. Inhibition at the low end of the scale is more difficult to understand. It would seem that penicillinase does not act proportionately to its concentration—that the relationship of penicillinase activity to concentration of penicillin is in fact

not linear. Consequently the value obtained by the method assay described holds good only for a limited range of penicillin unitage—round about 4,000 units. The quantitative relationship of penicillinase and penicillin may have a bearing on the generally assumed enzymic action of penicillinase.

The extremely rapid growth of staphylococci (full growth from a single loopful in 3 to 4 hours at 37° C.) after reduction to a normal dilution a concentrated penicillin solution in which growth has so far failed to occur is a most striking phenomenon and difficult to explain. So also is the similar rapid growth of very dilute penicillin in broth after excess penicillinase has been added to a tube in which no growth has so far occurred. Such rapid growth has never previously been observed in the laboratory: it would seem to merit further study.

Summary

Staphylococci are inhibited by penicillin above a certain concentration, notwithstanding that the penicillin is shown to have been inactivated by penicillinase.

This does not occur with "pure" penicillin, suggesting that inhibition is due to impurities.

Similar inhibition occurs in penicillin dilutions in broth below certain concentration. In this instance the inhibition is due to penicillinase having failed to inactivate.

In both instances, if the penicillin in broth is rendered capable of supporting growth by diluting the high concentrations or by adding excess penicillinase to low concentrations, growth of staphylococci occurs with extraordinary rapidity.

The implications of the observations are discussed from the point of view of sterility-testing of penicillin.

MESENTERIC OCCLUSION

A REVIEW OF RECENT METHODS OF TREATMENT WITH NOTES ON SIX INSTANCES

BY

H. MORGAN WILLIAMS, M.B., B.S., F.R.C.S.

Mesenteric occlusion is one of the rarer abdominal disasters and one that is very difficult to diagnose pre-operatively, very difficult to treat, and recovery from which is most exceptional. Having had experience of six cases in the last four years, with three recoveries, my interest was aroused and I was stimulated to consult the literature.

The occlusion may be arterial or venous, and may be thrombotic or embolic. Venous thrombosis is usually a complication of a septic process within the peritoneum. Arterial embolism may arise from cardiac vegetations, whereas arterial thrombosis is likely in blood disorders—e.g., purpura. The arterial architecture is very important. The small intestine is supplied entirely from branches of the superior mesenteric artery dividing into a series of arcades. There is no marginal artery such as is found in the large intestine. When an occlusion occurs in the area of the small intestine it has been suggested by Litten (1875) that a violent spastic contraction occurs from the ligament of Treitz to the middle of the transverse colon. The last case described below is difficult to explain on an arterio-anatomical basis. The symptoms may be acute or subacute: constant pain is a regular feature, with only moderate or ill-defined tenderness. Vomiting is more likely if the upper reaches of the alimentary tract are involved. Constipation or diarrhoea may occur.

Diagnosis may be facilitated in subacute cases by a plain skiagram, where gas is seen as far as the splenic flexure as a barium enema reveals no obstruction. Prognosis is always grave, but patients have lived many years after operation.

Treatment must be decided after the state of affairs has been assessed at laparotomy. The appearances found vary considerably: the bowel affected may be black, and profuse haemorrhagic exudate may be present; in others a deeper cyanotic colour is seen, with ecchymoses and less heavily blood-stained exudate. If the affected length of bowel is not too great and the patient's condition is good enough, a resection can be undertaken and anastomosis performed. Ficarra (1944) describes fifteen cases, three of which were cured by resection; Atkin (1937) reports recovery by resection, exteriorization, and subse-

ant closure; D'Abreu and Humble (1946) describe cases where small intestine was removed successfully, and careful administration of heparin subsequently is emphasized as an important factor. In all cases of cure resection had been performed, except in a case of lymphatic leukaemia (Murray and Lissimore, 1944), where the only treatment was dicourol 0.05 g. on alternate days. In three of the cases quoted below it will be seen that recovery occurred without resection; only one case was heparin used. The routine followed (after missing the possibility or advisability of resection) was to institute an intravenous glucose-saline drip and, when vomiting threatened, to aspirate the gastric contents through a Ryle's tube. Except in one slight case (No. 4) this was maintained for 7 days, and then the bowels were opened by pituitrin 0.5 ml. and a turpentine enema.

Case Histories

Case 1.—Miss C., aged 80. The patient was an arteriosclerotic subject with some evidence of myocardial failure. She had diffuse abdominal pain for two days, constipation, and vomiting; and there was distension without localized tenderness. Laparotomy showed anosis and distension of almost the whole of the small intestine. Nothing could be done, and the abdomen was closed. The patient died a few hours later.

Case 2.—Captain P., aged 76, a stout man retired from seafaring, had two days' abdominal pain—not localized; vomiting; and constipation. A few days before this he had developed a slight purpura. Examination showed a dry tongue and distended abdomen, with no localizing features; his general condition was good. The diagnosis was mesenteric occlusion. Laparotomy brought to light mesenteric occlusion affecting about five feet (1.5 m.) of small intestine. Resection was immediately decided upon and rapidly performed with an end-to-end anastomosis. The patient's condition on return to bed was good; but he never recovered consciousness, dying twenty-four hours later. Evidence suggested death from cerebral thrombosis.

Case 3.—Mrs. C., aged 58, had two days' history of right-sided abdominal pain with profuse diarrhoea; temperature 99° F. (7.2° C.), pulse 92. Her previous health had been good. Examination showed a dry tongue, and the abdomen slightly distended, with marked tenderness in the right iliac fossa. The diagnosis was appendicitis. Operation revealed a normal appendix, but the bowel was cyanosed from a point just distal to the caecum to the upper part of the descending colon. This was considered too extensive to resect, and nothing was done. The clot was found in the right iliac artery. The patient was put on an intravenous drip, which was continued for seven days, and then a rectal drip for three days. Complete starvation by mouth was ordered. At the end of ten days the patient—to my surprise being still alive—was given an injection of pituitrin 0.5 ml. and a turpentine enema, with an excellent faecal result and the passage of flatus. For several days things went smoothly, the bowels acted on alternate days with enemas, and she took a gradually increasing amount of food by mouth. On the sixteenth day abdominal pain and tenderness were felt just above the caecum; her temperature rose to 100° F. (37.8° C.) and a slow perforation with localization was suspected. She was put on penicillin for four days, when the temperature subsided and the abdominal pain abated. She vomited several times. At the end of a week she seemed out of danger. She took light invalid solid diet, and the bowels responded to liquid paraffin and cascara. The tender mass gradually decreased in size, and after a month she went home. The patient remains well after six months.

Case 4.—Mr. H., aged 70. Hitherto a fit man requiring no medical attention, he had two days' history of abdominal pain, vomiting, and constipation. Examination showed a dirty tongue, slight distension of the abdomen, and localized tenderness over the right iliac fossa. Blood pressure was 230/120. A diagnosis of appendicitis was made. At operation the appendix was found normal; there was free blood in the peritoneal cavity, and ecchymoses of the caecum and a short length of ascending colon pointed to local occlusion of a mesenteric vessel. The abdomen was closed and an intravenous drip set up. Heparin was used in the drip, which was continued for three days, and complete starvation by mouth was insisted upon. Pituitrin 0.5 ml. and a turpentine enema resulted in a good bowel movement and passage of flatus. Light food by mouth was now taken, and the patient rose from bed on the eleventh day. He made normal progress as from a laparotomy.

Case 5.—Miss T., aged 74. This case is most interesting, as the patient had two attacks. The first ended in complete recovery (following laparotomy) for thirteen months. At the second attack there was partial recovery, but death resulted from a subsidiary cause. Originally she complained of abdominal pain with vomiting for four days. There was vague tenderness in the centre of the abdomen, but no disturbance of temperature or pulse, and the bowels responded to enemas. Laparotomy disclosed an extensive

occlusion affecting the upper two-thirds of the small intestine. Nothing operative could be done, so the abdomen was closed and an intravenous drip established. No food or drink by mouth was allowed, and a Ryle's tube was left *in situ* for several days, with frequent aspirations of stomach contents. This was continued for ten days. Pituitrin 0.5 ml. and a turpentine enema were given, and faeces and flatus were passed. The Ryle's tube was withdrawn and the drip discontinued. Liquids by mouth, and then solids, were allowed. Gradually recovery ensued; the abdominal distension slowly subsided, and the patient was as well as she had been for years.

After thirteen months the symptoms returned and were an exact repetition of the previous attack: vague abdominal pain with persistent vomiting. She went to a nursing home, and, being confident of the diagnosis, I did not advise laparotomy. She was treated as before with a Ryle's tube (which sometimes withdrew up to four pints (2.3 litres) of faecal matter), and an intravenous drip (later replaced by a rectal drip owing to difficulty with her available veins). After ten days the pituitrin and a turpentine enema produced a good result. She began to take fluids by mouth, but this time her convalescence was much impeded by vomiting and tremendous distension of the abdomen. Unfortunately she developed an ulcerative stomatitis with cervical lymphadenitis and parotitis. She was given penicillin, which controlled the accompanying fever, and pus was aspirated from the abscess that formed in the submaxillary region. She made a gallant fight for seven weeks, and seemed to be definitely better, with no vomiting for the last two weeks. Then she suddenly died from heart failure, apparently due to toxæmia. Post-mortem examination showed the same area of the bowel to have been affected—the upper two-thirds of the small intestine. It was still distended to twice the normal calibre, and the walls were cyanotic and thin. No accurate estimate of the state of the vessel could be obtained as examination was very difficult.

Discussion

In two cases (Nos. 3 and 4) the area affected was the large intestine, and one can understand how an anastomosis could be established by collateral vessels. In Case 5 a great length of small intestine was involved; on both occasions of occlusion recovery took place, although the intestine as seen at necropsy was still poor in appearance and performance. How did the length of bowel recover? In both the large-intestine cases the diagnosis made beforehand was appendicitis, presumably because of the localized tenderness over the distended caecum. In Case 2 and Case 5 mesenteric occlusion was diagnosed before laparotomy.

The choice of treatment at laparotomy would seem to be along the following lines. In large-intestine cases, if the intestine is not too gravely affected, expectant treatment is justified even if resection be thought practicable. In small-intestine cases resection should be carried out unless the amount of intestine involved is too great or the patient's condition makes it impossible. As much as 19 ft. (5.85 m.) of small intestine has been successfully removed.

Summary

The case reports of five patients with mesenteric occlusion are discussed. The possibility of the success of expectant treatment, particularly when the large intestine is affected, is emphasized.

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To secure the full use of the services of all available specialists, in view of the needs of the National Health Service, the Secretary of State for Scotland has informed the principal hospital authorities concerned that he is willing to meet the cost of additional full-time specialists at salaries up to £1,000. The approval of the Scottish Department of Health is to be obtained in each case. The Secretary of State will expect hospital boards to co-operate with the post-graduate organization of the appropriate university in making an appointment. The Department's approval will be given on the understanding that each appointment and the conditions attached to it are subject to review once the National Health Service is established. These arrangements are a development of the scheme set up by the Scottish universities and the Department of Health, under which ex-Service doctors training as specialists are appointed to special training posts in hospitals with salaries paid by the Department.

REITER'S DISEASE

BY

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The recent article by Jackson and the case report by Wrigley on the syndrome known as Reiter's disease (*B.M.J.*, 1946, 2, 197, 199) will no doubt have stimulated clinicians to review in retrospect a number of hitherto obscure cases. It will be remembered that the disease is characterized by the triad of non-specific urethritis, arthritis, and conjunctivitis, with the occasional accompaniment of keratoderma blennorrhagica, haematuria, and diarrhoea.

A. M. H. Gray in his article on keratoderma blennorrhagica (*Med. Annu.*, 1941) quotes Epstein as associating this disease with inflammation of the joints and eyes and discussing its relation to psoriatic arthritis, believing the two conditions to be distinct; for, whereas psoriasis more usually appears on knees and elbows and sometimes on trunk and extremities, the lesions of keratoderma are entirely confined to soles and palms. This view, he goes on to point out, is further confirmed by Taylor, who describes the condition as one secondary to severe polyarthritis and posterior urethritis of gonococcal origin. Gray further quotes Combes, Dietrich, and Cohen, who, after minutely describing the skin lesions, point out that the arthritis is not of the more usual monarticular variety seen in gonococcal infections but a polyarthritis which involves chiefly knees, ankles, wrists, and acromio-clavicular joints, and which, further, shows less than the usual periarticular oedema and inflammation.

Reports of cases of Reiter's disease are so few that the occurrence of a case which in retrospect fits closely into the clinical picture would appear to justify its publication.

Case Report

The patient was an English soldier of 41 who was admitted to Hillingdon County Hospital on Dec. 12, 1945, with the following history. Until the beginning of August, 1945, he had been in perfect health and had not—and in this he is to be believed—run the risk of venereal infection. About Aug. 1, while serving in Norway, he developed an acute conjunctivitis, which became purulent within a short time and for which he received local treatment. He was repatriated on Sept. 6 and admitted to another hospital, where the conjunctivitis, still acute, was treated with penicillin drops. A few days after his admission an acute purulent urethral discharge made its appearance; he had never had such a thing before. Repeated examinations of the discharge failed to reveal the presence of gonococci, and serological examinations were likewise negative. Parenteral penicillin resulted in complete disappearance of the discharge in five days; nor was there any recurrence. Three months after the onset of the conjunctivitis the patient developed an intra-ocular haemorrhage in the right eye, and a few days later iritis in the same eye. The iritis ran its usual course of ten to twelve weeks, and settled down only to recur after his admission to this hospital, as will be described later.

Four months after the original conjunctivitis joint symptoms were first complained of, the ankles, knees, and shoulders becoming stiff but exhibiting no signs of redness or swelling. Not until two weeks later was the first sign of swelling noted—in the second left metacarpo-phalangeal joint—and the temperature for the first time was found to be above normal. At approximately the same time that joint symptoms first became manifest a scaly eruption of the soles was observed.

On Dec. 12 the patient was admitted to this hospital, and his condition was then as follows. He was somewhat thin, and arms and legs showed wasting consistent with a prolonged stay in bed from subacute arthritis. The ankles were swollen and painful and only slightly red; the knees were stiff and painful but not swollen; the left shoulder and elbow were in a similar condition, and the only other affected joint—the second left metacarpo-phalangeal—was swollen, slightly red, and very painful. There was a thick scaly eruption of both soles, which was misdiagnosed as psoriasis in spite of the absence of other skin lesions, and under the free edges of the oails of some of the fingers was a collection of dry cheesy material. The conjunctivae were slightly inflamed, but there was no crusting of the lids. The right eye showed signs of old iritis, with a fixed irregular pupil and posterior synechiae. There was no urethral discharge and the urine was normal. Examination of the other systems was negative, but the E.S.R. was 106, and the gonococcal complement-fixation test and Wassermann reaction were both negative. The temperature on admission was normal.

A course of "myocrisine" was started on Dec. 31, to which response was satisfactory in that, the day after each inject increased pain was experienced in the affected joints, and a but steady improvement in mobility and pain took place so two months later the patient was once more able to walk. S then there has been no relapse, and on Sept. 13, 1946, the sign of trouble is a persistence of some swelling and stiffness of metacarpo-phalangeal joint.

A recurrence of iritis of the right eye took place on Jan. 31, resolving in the course of ten weeks with the help of hot bath and instillations of atropine, "protargol," and other eye drops. May 8 the left eye developed iritis, which resolved in about 6 weeks. At the time of the last examination, on Sept. 13, there was no sign of inflammation in either eye, although synechiae persist.

The scaly eruption of the soles continued *pari passu* with the lesions, and at one time it caused considerable distress from foul odour arising from the layers of dead skin. Treatment with Condy's-fluid baths and the use of a detergent ointment resulted in some improvement, but as the joints cleared so did the skin, now there is no trace of it on the soles; under three nails on hands there is a small collection of dry cheesy material.

During the first twelve weeks after admission he ran a slightly irregular temperature—never above 98.8° F. (37.1° C.).

The patient has recently been readmitted to have an operation for hammer toe, and, apart from the few signs mentioned above, he now shows no trace of the illness which started just over a year ago. Weight and colour have returned, and he looks forward to being able to restart work soon.

Comment

The interest in this case lies in the exhibition of all symptoms of the disease except for the diarrhoea and haematuria, as well as in the sequence in which the symptoms manifest their appearance—conjunctivitis, urethritis, then polyarthritis and keratoderma coincidentally, with recurrent iritis as a concomitant. In view of the complete clearance of symptoms and signs as reported in other cases, it is doubtful if the treatment given in this case had any effect if we except only rapid clearance of the urethral discharge with penicillin.

I have to thank Dr. W. Arklay Steel, medical director Hillingdon County Hospital, for permission to publish this report.

Medical Memoranda

Perineal Suture in Obstetric Practice

In my practice the patient is generally delivered lying in the left lateral position, even when delivery is instrumental, as it is easier when one is single-handed. In this position, satisfactory as it is for the delivery, visualization and suture of a perineal laceration are difficult, since the raw edges tend to fall together and it is far from easy to locate the upper end of the vaginal part of the tear. In an attempt to solve this difficulty the method described below has been evolved. The basis of the technique is insertion of two deep-tension silkworm-gut sutures placed longitudinally on each side of the perineum before delivery of the child. The insertion of these sutures is made near the edge of the second stage in such cases as (1) where perineal laceration may be expected; (2) where episiotomy is necessary; (3) where there is marked stretching of the perineum.

TECHNIQUE

Two semi-curved Hagedorn needles are threaded with strong silkworm gut. The area round the perineum is thoroughly sterilized by washing the part with biniodide solution. The index and middle fingers of the left hand are inserted into the lower third of the vagina, and then separated in fanlike manner in order to protect the presenting part and also to draw the perineum forwards. The needle is inserted through the perineal skin about 1/4 in. (6 mm) from the midline and 1/4 in. from the muco-cutaneous junction, the point passing deeply into and through the vaginal mucosa. The needle then travels within the vaginal cavity, re-entering the deep tissues 2 in. (5 cm.) nearer the vaginal vault and emerging through the perineal skin 1/2 in. (1.25 cm.) above and lateral to the anus. With the vagina the suture lies on the mucous membrane and the lower end traverses the muscles surrounding the anus. The suture is repeated on the other side of the perineum, and both stitches are secured by clamping the free ends of the silkworm gut with artery forceps. With these stitches in position the delivery of the child is completed. Should a laceration have taken place or an episiotomy been necessary the inspection of the wound and the estimation of its extent can easily be carried out by traction on the two lateral

sutures. Access to the depth of the wound is made easy, and the insertion of catgut sutures for the repair of the vaginal mucosa and deep muscles made relatively accurate. After the catgut sutures have been inserted and tied the skin is closed by tying the free ends of the silk worm sutures.

COMMENTARY

The value of this technique lies in the fact that (1) it renders the single-handed repair of an episiotomy or laceration moderately easy; (2) the sutures are in place should laceration occur; (3) if there has been no laceration or episiotomy, but considerable stretching of the parts has caused injury to the deeper tissues, these separated deep tissues are held together by the sutures.

I am aware that self-retaining retractors have been devised to facilitate perineal repair. These are more satisfactory when stitching is done with the patient in the dorsal position, but their use also implies introduction of instruments into a fresh wound in that area.

Broomhill, Selkirk.

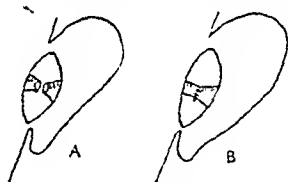
D. CHARTERIS GRAHAM, M.B., Ch.B.

Transverse Rupture of External Auditory Meatus

Recent reports in these columns of minor but interesting and unusual injuries prompt me to record a case of traumatic transverse rupture of the external auditory meatus. I have not previously heard or read of this injury. In the present case the nature of the causal trauma was no doubt a shearing force transverse to the line of the meatus.

CASE HISTORY

A girl aged 9 was knocked down by a motor car. In the casualty department a small and superficial cut behind the right auricle was cleansed and sutured, and the patient was admitted to the ward for observation in case of intracranial injury. No evidence of serious injury was found, however, but blood was seen to be escaping from the right auditory meatus. Examination with the auriscope revealed a complete annular laceration of the skin tube at a depth of 5 mm. from the bottom of the concha. The inner part of the meatus had retracted and was visible only as a small circular skin edge, round which lay the damaged supporting cartilage. Repair was undertaken under general anaesthesia. The cut behind the auricle was reopened, excised, and extended, and then deepened anteriorly so as to expose the divided ends of the meatus (see Fig. A). After excision of all tags of tissue, including loose pieces of cartilage, the ends of the skin-cartilage tube were found to fit neatly together and were sutured with five fine catgut stitches, passing through skin and subcutaneous tissue (Fig. B). Sulphanilamide powder was



Showing the external meatus (A) before and (B) after repair

inserted, and the retro-auricular wound closed with a small rubber dam drain through its lower end. A flavine-in-glycerin pack was inserted into the now continuous meatus. Healing took place rapidly and without sepsis, and a slight tendency to stenosis was subsequently treated by repeated dilatation.

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A Case of Reiter's Disease

Practically all the articles on Reiter's disease during the past three years have appeared in American or Canadian medical journals. I understand from colleagues that cases with symptoms that correspond to the recognized syndrome of polyarthritis, urethritis, and conjunctivitis are not rare in this country, especially in V.D. departments, but as very few cases have been recorded the following typical case may be of interest. As an allergic reaction to bacillary dysentery may be the cause in some cases (Reiter's original case was associated with diarrhoea and blood in the stools), it is interesting to note that this patient had not had diarrhoea in the year preceding the onset of his illness, during which time he had been in this country.

CASE HISTORY

The patient, an Englishman aged 34, served in various parts of the Middle East from November, 1940, to January, 1945, when he returned home. He had three mild attacks of diarrhoea during that time.

was no blood in the stools, and he was not admitted to hospital. He believes he had conjunctivitis in both eyes in December, 1944, which persisted for about two weeks. A dental abscess developed in December, 1945, and a tooth was removed on Feb. 5, 1946. In January, 1946, he experienced pain in the left side of the back, and a week later there was a slight urethral discharge, but no dysuria or frequency. The following day he had conjunctivitis of both eyes. Two urethral smears showed many pus cells and some mixed organisms, but no epithelial cells or Neisserian organisms. He denied any chance of exposure to venereal infection before the onset of his illness. Non-gonococcal urethritis was diagnosed, and a course of sulphathiazole (27 g. in all) was given. Ten days after the onset of the urethral discharge his right ankle became swollen, and a few hours later there was swelling and pain in the left knee. Next his back became stiff, and pain and stiffness in the shoulders, elbows, and fingers began; none of these latter joints became swollen. He was admitted to hospital on Feb. 9, two weeks after the onset of the urethral discharge.

On examination he was seen to be a well-developed adult male. He had severe bilateral purulent conjunctivitis. There was some pain and stiffness in the lumbar region on movement. The right ankle was red, hot, and swollen. There was some limitation of flexion of the right knee but no swelling. Movements of the arm-joints were full, but he could not flex the fingers of the right hand owing to pain. His oral temperature was 101° F. (38.3° C), pulse rate 100, and respirations were below 20; his pulse was regular. The blood pressure was 130/85. The throat was clean, and the teeth showed no obvious sepsis. There were no abnormally enlarged glands and no sign of abnormality in the chest or abdomen. Smears from the eye swabs showed a few polymorph pus cells but no organisms, and cultures were sterile. The blood count showed: haemoglobin, 14.8 g. %; R.B.C., 4,640,000; W.B.C., 6,800 (polymorphs 66%, lymphocytes 34%). He was given sod. sal. and sod. bicarb., 33, 30 gr. (2 g.) four-hourly, and the eyes were treated with irrigations and atropine instillations. On Feb. 11 the B.S.R. was 75 mm. per hour. The urine contained a fair amount of pus; a stained deposit showed a few Gram-positive diplococci. He continued to run a mild pyrexia of 99 to 100° F. (37.2-37.8° C). On Feb. 22 the prostatic smear was crowded with polymorph and epithelial cells. Only a very few staphylococci were seen in the fresh smears. The urethral discharge was very scanty by this time. Next day he was given 200,000 units of penicillin in beeswax and peanut oil. He had no further urethral discharge after this. During the next two days there was a definite improvement in the eye condition, but the temperature and joint pains remained unaltered. Sodium salicylate was stopped on Feb. 23. On March 1 the B.S.R. was 74 mm. per hour.

The temperature had not settled by March 9, and he was still getting pains in the left lower back and across the shoulders and some pain and stiffness in the legs. Penicillin, 30,000 units intramuscularly, was given, followed by 15,000 units three-hourly. This was continued for six days, when a total of 645,000 units had been given. The temperature was not affected and the pulse rate remained at between 80 and 100. On March 13 the blood showed Hb, 13.3 g. %; R.B.C., 3,720,000; W.B.C., 8,100 (polymorphs 66%, lymphocytes 29%, monocytes 4%, eosinophils 1%). Mist. ferri ammon. cit. was given and he was sent to a convalescent home on the 15th to remain in bed there. The temperature became more settled about the end of March, and early in April it was mainly normal, with occasional rises to 99° F. (37.2° C). The pulse was steady, between 80 and 90. While at the convalescent home he had toothache.

The patient returned to hospital on April 15 complaining of pain in the right shoulder, down the right arm, and in the right ankle. He still had conjunctival injection after sleeping. His blood count now was: Hb, 16.3 g. %; R.B.C., 5,200,000; W.B.C., 7,500. Wassermann, Kahn, and gonococcal complement-fixation tests were negative. B.S.R. 36 mm. Urine: pus cells two per field, no organisms seen. Examination showed slight injection of the left conjunctiva. Right ankle: full movements, but skin reddened over the outer part. He still complained of pain in the right ankle, but skiagrams revealed nothing abnormal. On April 22 he complained of some tenderness in the left ankle and slight puffiness. He still had toothache, and a skiagram on the 26th showed some bone infection near the root of $\frac{1}{2}$. On May 2 $\frac{1}{2}$ and $\frac{2}{2}$ were extracted under gas. B.S.R. 30 mm.

On June 9, four months after admission, he was feeling better, but still had occasional joint pains and slight conjunctival injection in the morning. B.S.R. 9 mm. Urine: no albumin, no pus, blood, or casts, no organisms seen. He started to get up, and sulphacetamide ointment was applied locally to the eyes, without improvement. He was discharged from hospital on June 28. The temperature was normal, rising very occasionally to 99° F. (37.2° C), the pulse rate between 70 and 90, and the B.S.R. 8 mm.

He was seen on three occasions as an out-patient, the last time on Oct. 26—nine months after the onset of his illness. He still had some mild aching in the joints, especially of the right arm and right ankle, and also occasional pains in the lumbar region and the back of the neck, which varied with the weather. A skiagram of the right ankle showed no evidence of structural change in the joint. He had no urinary symptoms, but was still getting slight injection of the eyes on waking. B.S.R. was 8 mm. per hour.

I wish to thank Dr. Ronald McD. Cairns, who was in charge of the case, and at whose suggestion I have written it up, for permission to publish this report.

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Reviews

DIGITALIS

Digitalis and other Cardiotonic Drugs. By Eli Rodin Movitt. (Pp. 204; illustrated. 30s.) New York and London: Oxford University Press. 1946.

The use of digitalis is attracting increasing attention in the United States at the present time to judge from the appearance of a second monograph within a few months of a first. This second book contains a frontispiece showing the beneficial effect of "cedilanid" on the x-ray appearance of the chest of a patient with rheumatic heart disease and congestive heart failure. Cedilanid is the name given to lanatoside C, which is a glycoside obtained from digitalis lanata, and which on further breakdown (loss of glucose and of an acetyl group) gives rise to digoxin. In part Dr. Movitt's book reads like a benediction on cedilanid, and a suspicious mind might think the book represents successful propaganda on behalf of this substance. Cedilanid is discussed with enthusiasm in 24 pages, while digoxin is discussed in 3½ pages, in which it receives no bouquets whatever.

A foreword is written by William Dock, who, together with Tainter, demonstrated the action of digitalis in causing constriction of the hepatic vein in normal dogs as a result of which there is a fall of venous pressure. The author is at pains to state that Dock and Tainter do not consider that the action of digitalis in congestive failure is to be explained by this action. Nevertheless, increasing interest is being shown, especially by clinical workers, in the possibility that in congestive failure the action of digitalis is exerted not on the heart itself but on the vessels elsewhere. Thus there appears to be no doubt from the work of McMichael and Sharpey-Schafer, which confirms the earlier observations of Steward and Cohn and also of Ryland, that in the normal human subject digitalis causes a fall in cardiac output and a fall in right auricular pressure. The fall in cardiac output must be a consequence of the fall in right auricular pressure, and this in its turn must be the consequence of some change in an organ or in a vascular area away from the heart. In the patient with heart failure, however, digitalis causes the same change of pressure in the right auricle, but this is attended by an increase in cardiac output, and therefore both effects are more likely due to an improvement of the heart's action. It is very easy to demonstrate the increased force of contraction of the failing heart when digitalis is administered to the heart-lung preparation of the dog. It is clear, however, that it will be some time before agreement is reached on this subject.

Dr. Movitt's book deals not only with digitalis but also with the glycosides of strophanthus and squill. The literature has been widely studied and the exposition is interesting.

PEPTIC ULCER

Peptic Ulcer. Its Diagnosis and Treatment. By I. W. Held, M.D., F.A.C.P., and A. Allen Goldbloom, M.D., F.A.C.P. (Pp. 382; illustrated. \$6.50.) Illinois: Charles C. Thomas. 1946.

This book is written by two New York consulting physicians. It might well have been built up out of a series of lectures to students or graduates, and it gives a rather static picture of ulcer. Successive chapters deal with aetiology, pathology, diagnosis, and treatment. The various complications of peptic ulcer and the surgical treatment are dealt with fully. There are many excellent reproductions of x-ray photographs but little about the gastroscopic appearances of peptic ulcer in activity and healing. The survey of the material tends to be compendious rather than critical. The problems of diet and treatment with alkalis are not handled in a scientific manner, whereas a number of bizarre and unorthodox remedies are mentioned. The authors tell us very little about the natural history of peptic ulcer and there is no statistical information about the effects of different treatments on its course. Hardly anything is said about the secular changes in incidence of peptic ulcer or the social pathology and psychology of the disease. An immense amount of good British work on incidence, haemorrhage, perforation, psychological factors, differential diagnosis of ulcer from nervous dyspepsia, alkaline treatment, and a variety of other topics

has escaped the notice of the authors. The book is extremely well produced and printed, and is reasonably priced, but it is not one we can recommend. It is twenty years behind the times for readers in this country in both matter and approach.

NATIONAL HEALTH INSURANCE

National Health Insurance in Great Britain, 1911-1946. By R. W. Harris. (Pp. 224. 12s. 6d.). London: George Allen and Unwin Ltd.

Anything on this subject coming from the pen of Mr. R. W. Harris demands respect. As a young Civil Servant he was in at the beginning of our National Health Insurance legislation and took a very active part in its early administrative stages. When he retired from the Service he continued his practical interest in it as chairman of the London Medical Services Subcommittee. He is well known as joint author of *Medical Insurance Practice*, which for many years has been the valued guide of all insurance practitioners. His present book covers a much wider field, for it surveys the whole of National Health Insurance as it at present exists—its sources, its inception, its evolution, its anomalies and difficulties, its successes and failures. His facts can always be relied on, and his opinions are always temperate and founded on knowledge and practical experience. It is a pity that the war prevented the publication of this book six years ago, for it is possible that a study of it by those responsible for the imminent developments in National Health Insurance might have learned from it some useful lessons in how not to do it—lessons which were painfully learned by Mr. Lloyd George and his staff.

Every aspect of the system is clearly described and analysed. Part I deals with "National Insurance"; Part II with "National Health." Our system was "made in Germany," but we were by no means the first country to follow the example set by Germany in 1893. Mr. Harris shows, however, that Germany owed much to the pioneer work of British friendly societies, and that the benefits they had gradually built up for their members grew out of the desire of the British working man to provide a decent burial free from any help from the Poor Law. Mr. Harris clearly shows how the decision of Mr. Lloyd George to use the friendly societies and trade unions in the administration of our system led to many complications and anomalies, all of which are examined in detail. He comes to the conclusion that in spite of these, as an organized scheme for the payment of money during sickness and disablement it has been "an unqualified success." He does not feel so sure about "its value as a contribution to the general health and welfare of the community." His reasons for this reservation are very similar to those which have been presented, without success, by the B.M.A. to one Government after another. This part of the book has a bearing on the prospects of the extended National Health Insurance now before the country. Mr. Harris has at any rate the satisfaction of knowing that finance and health are to be separated administratively, as he has advocated for some years. If this book has, through no fault of its author, been deprived of its opportunity of full usefulness in influencing a further stage of National Health Insurance it can at any rate claim to be a valuable contribution to the social history of our country.

AN AMIABLE AUTOCRAT

Men, Medicine, and Myself. By S. Vere Pearson, M.D., M.R.C.P. (Pp. 254. 12s. 6d.) London: Museum Press Ltd. 1946.

It would be unfair for anyone to complain that Dr. Vere Pearson's "apologia pro vita sua" is too full of his political prepossessions or of tuberculosis "shop," for the title of it gives everyone due warning of what to expect. To his friends (and everyone who has met him is, or wants to be, one of them) this frank record of his career in medicine, of his achievements at Mundesley Sanatorium, of his interest in agriculture, sociology, oecology, and so forth, reveals him just as they have known him. It is no inconsistency that first made him an ardent Labour Party propagandist (though he admits he never believed in Socialism) and then led him to disillusion and dislike of all politicians—red, pink, or blue—but rather the reaction of a generous nature compelled first of all by his sympathies with under-dogs to champion their cause, and then by his intellect to realize that some remedies are worse than the social diseases for which they are prescribed.

To his colleagues in the profession, especially his contemporaries, the first chapters, which deal with his early days in medicine, his adoption of tuberculosis as a specialty in consequence of developing that disease, and his pioneer work in collapse therapy in this country, are of greater interest than the later ones, which are rather for enlightenment of the general public as to hygiene and social problems, especially those connected with tuberculosis. There are many well-told anecdotes about eminent physicians of the older generation, and much that enables those who can look back on the medical world of forty-five years ago to see more clearly than they otherwise might do the problems of that time and the evolution of methods for solving them.

When the author deals with the problems of medical education as he sees them to-day, his suggestions are perhaps more debatable, though there will be many to agree with his comments on what is often called "penny in the slot" diagnosis of disease. At any rate he has, we may be sure, thoroughly enjoyed "getting things off his chest"—which after all is to be expected of an expert in pulmonary lesions. At Mundesley he confesses that he finds it necessary to be an absolute autocrat—though doubtless he does not regard his patients as under-dogs—and it would certainly be interesting to know what his nickname is, to learn whether he has carried there the old sobriquet of student days, "Severe" Pearson, given to him by antinomy as being the very last adjective that could justly attach to him, or whether anyone has thought to call him "Mr. Chips." It is typical of his reticent modesty that he nowhere mentions that he was a rowing blue at Cambridge and a member of one of the outstanding crews of those days.

Notes on Books

All About the Deaf is a handbook compiled by the National Institute for the Deaf (105, Gower Street, W.C.1: 3s. or 3s. 3d. post free). Its forerunner was first issued over twenty years ago. Since that time there has been a great stirring of the public conscience in regard to the needs of the deaf and of the deafened, and this is illustrated in the number of agencies which now exist for their relief and help, and the variety of forms which such assistance takes. The legal provisions which affect the deaf, the education of the deaf and dumb, the work of local authorities on behalf of the deaf community, the recent developments in hearing aids—these and many other matters are set out so as to convey the maximum amount of information in the most concise form.

The Cardio-pulmonary Function during Pregnancy, by Dr. G. WIDLUND, Supplement I to *Acta obs. gynae scand.* XXV.: (Uppsala) is a symposium valuable both for its original studies and for its comprehensive bibliography of some 300 papers in which there is incidentally, no doubt as a consequence of war, a noticeable shortage of references to recent English and American contributions. The pregnant woman is shown to have an increased oxygen consumption, increased vital capacity, and slight increase in pulse rate and blood pressure, and the material will allow a considered evaluation of the techniques of pneumothorax and pneumoperitoneum. The painstaking study is presented in English and gives one more proof of the liberality of Swedish medical education.

Preparations and Appliances

CHIP GRAFTS IN THE NECK OF THE FEMUR

Mr. F. P. FITZGERALD, F.R.C.S.I., Harley Street, London, W.1, writes:

One of the great difficulties in the treatment of fractures of the neck of the femur by nailing is the delay before union is complete. Some years ago, in an attempt to overcome this, I treated a fairly large series of cases by grafting the neck of the femur with the fibula, alone and reinforced with a nail (*Lancet*, 1943). The results were disappointing. Recently I have utilized chip grafts from the ilium, so far with complete success, and a detailed account of the cases is in preparation. The following is an account of the method and instrument used.

The instrument, or chip graft gun (see Fig. 1), resembles a large trochar and calibrated cannula with a funnel (A and B), and a special hollow auger bit to fit the cannula (C). Two guide

wires are placed in the neck of the femur. A nail is threaded over the upper one in the usual way. The auger-bit is fitted into the cannula, and threaded over the lower guide wire. By rotating the handle a hole is bored in the femoral neck along the guide wire, and the instrument forced into the bone to the required depth, as noted on the calibrated cannula. The auger-

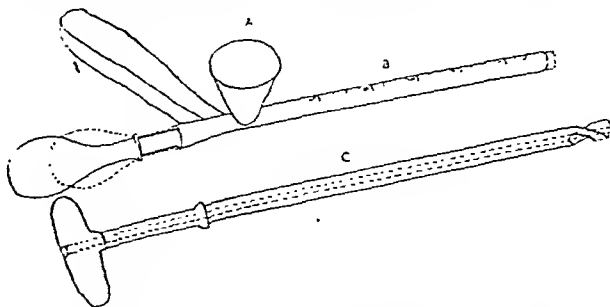


FIG. 1.—A, funnel or hopper. B, graduated cannula with solid plunger or trochar in place. C, hollow auger-bit which fits the cannula.

bit is then withdrawn, leaving the cannula in place. Finely cut chips are then dropped into the hopper, and packed home through the cannula with the solid plunger or trochar. The cannula is gradually withdrawn as the space becomes filled with chips, and the instrument is removed when the cavity has been filled to the outer cortex of the bone. The wound is then closed in the usual way.

The instrument can also be used for extra-articular arthrodesis of the hip-joint.



FIG. 2.—A case one month after operation.

The broken lines in Fig. 2 show the position of the chip grafts.

Nurses' Salaries Committee Notes nos. 12 and 13 have been issued by the Ministry of Health (price 4d. and 2d. respectively from H.M. Stationery Office). The former is concerned with (a) female hospital nurses, (b) male hospital nurses, (c) public health nurses, (d) ex-Service male student nurses, (e) trained nurses: title to increments in respect of service in the Forces, and (f) post-certificate leave for public health nurses; and the latter with nurses variously employed in the public health services. The recommended revised scales have effect from Jan. 1, 1946.

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THE CHEMOTHERAPY OF TUBERCULOSIS

The ever-widening field in which chemotherapy has attained clinical success leaves the few hitherto resistant conditions in increasing prominence. Among these, tuberculosis and virus diseases stand out above all others. There is so far scarcely a hint that the viruses are susceptible to any such attack, and nothing that we know of their properties and behaviour encourages belief to the contrary. In tuberculosis, on the other hand, much has already been done, and those who care to take stock of the situation will find ample material in the Mitchell Lecture by P. D'Arcy Hart, the full text of which is given in the present and preceding issues of this *Journal*. It can rarely have happened that two such notable contributions to the study of a single subject should be made in the same month as this and the Harben Lectures¹ delivered a few days later by W. H. Feldman, of the Mayo Clinic. Both lecturers trace the history of their subject and recognize that present-day developments date from the observation of Rich and Follis in 1938 that the progress of experimental tuberculosis in the guinea-pig is retarded by the administration of sulphanilamide. Thence sprang a series of studies embracing further sulphonamides and, later, sulphones, revealing increasing degrees of therapeutic efficacy in the experimental disease. The origins of antibiotic therapy may be said to go much farther back—more than thirty years ago Vaudremer in Paris treated over 200 cases of tuberculosis with a substance derived from an *Aspergillus*—but the effective study of such substances dates only from the recognition of penicillin as a true chemotherapeutic agent in 1940. Development on these lines has led us to streptomycin, the only antibiotic so far to receive adequate trial, both experimental and clinical, in the treatment of tuberculosis.

Feldman's contribution is notable for its very full description of experimental study, in which he has taken a major personal part. That properly conducted therapeutic trials in animals should precede any sort of clinical trial will be generally recognized: what "properly conducted" means is not so well understood. Feldman lays down rules for therapeutic tests in guinea-pigs which might with advantage be generally followed. The strain of tubercle bacillus used for producing the infection should preferably be a "classical" one available to other workers. There should be two sets of control animals—untreated, and treated by some other agent of known degree of efficacy, such as one of the sulphones. The severity of the test can be varied by varying the quantity of tubercle bacilli with which the animal is inoculated, but still more by extending the period which elapses between inoculation and the beginning of treatment. The agent has the best chance if administration is begun at

once. The severity of the test can be progressively increased by delaying treatment for any period up to seven weeks by which time disease is well advanced. This may be verified by a tuberculin test or even by liver biopsy before treatment is started. Feldman also provides a scheme for assessing the extent of disease in numerical terms, taking into account not only gross but histological findings. The extreme test—freedom from disease of such an organ as the spleen—is tested by inoculation with it of another animal. What sulphonamides and sulphones on the one hand, and streptomycin on the other, will do is clearly set forth in his paper, both diagrammatically in terms of gross lesions and numerically in terms of his system of scoring. The sulphones, notably promazine, do much: their "suppressive" effect—meaning arrest of the progress of the disease without actual elimination of the organism—is prolonged, even when treatment is delayed for six weeks; but they do not eradicate the infection, and the disease progresses when treatment is stopped. Streptomycin on the other hand, when administration was begun at the same time, appears actually to have cured a large proportion of animals: in 52% there was "no discernible tuberculosis either gross or microscopic"; some had ceased to react to tuberculin when finally killed, and in 7 out of 10 such negative reactors the spleen was non-infective to other guinea-pigs. Similar results were obtained with many strains of tubercle bacilli, and with the bovine as well as the human type. They were also obtained, when treatment was begun 23 days after inoculation, regardless of whether the daily dose of 4 mg. was given in four, two, or one daily injections, or even in doubled quantities daily during alternate weeks. Whether this surprising result means that streptomycin can be given infrequently to patients instead of according to the usual 3-hourly schedule is a question which is not discussed. Feldman also records, in tabular form, the results of treating 75 tuberculous patients with streptomycin. The most striking item in this list is the survival of 4 out of 7 patients with meningitis. In other categories assessment is naturally more difficult, though a majority in most are judged to have shown a favourable response.

We must turn to our own pages and the wider outlook of D'Arcy Hart for a more comprehensive account of what is going on now, and for a far-sighted appreciation of future possibilities. For those not fully apprised of the scope of modern tuberculo-chemotherapeutic work his list of chemical compounds, with a statement of their activity—*in vitro*, in the experimental, and in the human disease—against *Mycobacterium tuberculosis* will be astonishing. These compounds fall into no fewer than five categories, and although of very unequal merit they embody two strictly rational lines of approach: an active compound may conceivably either enter and attack the organism by virtue of lipid-solubility or it may block an essential synthesis. The latter approach appears to be the more promising, but in the absence of more clearly defined knowledge of the metabolism of *Mycobacterium tuberculosis* there is no certainty that a substance acting in this way exists. Another equally formidable list of potential chemotherapeutic agents, their activity in many cases being still largely unexplored, is that of the antibiotics. Here we are on purely empirical ground, and D'Arcy Hart's prophecy—that the approach from this direction and from the study of synthetic chemical compounds

backed by some hypothesis as to their possible mode of action will ultimately meet—is perhaps looking rather a long way into the future. Apart from a few agents derived from such peculiar sources as garlic, a lichen, toadstools, and streptococci, substances inhibiting the growth of the tubercle bacillus have been obtained chiefly from *Aspergilli*, *Actinomycetes*, and *Bacilli*. Some of these are known to be too toxic for clinical use; others have not yet been tested *in vivo*; and hundreds of others doubtless remain to be identified. Certainly no other agent is yet known to approach streptomycin in therapeutic efficacy; on the other hand, streptomycin is not the ideal beyond which no one may hope to go. Its clinical efficacy cannot be finally assessed, but it is certainly not absolute. Some toxic effects are now being observed after heavy dosage; and the fact that in some patients tubercle bacilli recovered after a course of treatment have exhibited a thousandfold increase in their resistance to streptomycin must be a bad augury.

The discussion of the future outlook with which the lecture concludes emphasizes some of the difficulties with which the work contends. One is only comparative—the very leisurely pace at which everything proceeds where the tubercle bacillus is concerned: *in vitro* and *in vivo* experiments take weeks and months, whereas with most other bacteria they are a matter of hours and days. More formidable is the series of barriers, in the tissues and perhaps in the tubercle bacillus itself, which any effective agent must penetrate. It is encouraging to hear the view expressed that these difficulties have perhaps been exaggerated. On the other hand, the difference between the experimental disease in the guinea-pig and its more chronic form in man is distinctly to the disadvantage of the latter. It is perhaps noteworthy in this connexion that the success of antibacterial chemotherapy as we know it now, though its two agents are unrelated, varies in each case directly with the acuteness of the disease, and with the rate of multiplication of the infecting organism. Chronic infections, whether because the organism is multiplying less actively or because it is protected by the surrounding tissue reaction, are more resistant both to sulphonamides and to penicillin. If it is legitimate to apply this finding to the field of tuberculo-chemotherapy the result is not encouraging. On the other hand it is, fortunately, reasonable to hope that in a semi-resistant animal such as man treatment which does not produce complete sterilization of the lesion may yet achieve a large measure of success.

RESEARCH IN TROPICAL MEDICINE

Few engaged in medical research or practice in the Tropics but will acknowledge a debt of gratitude to the many activities and helpful publications of the Liverpool School of Tropical Medicine. Founded in 1898, and now not far from its fiftieth anniversary, the School has been second to none in the wealth of research it has carried out or in the extent and usefulness of its publications. A record of what the School has achieved during the six years of war, recently published, gives evidence of its valuable work during this critical period. Under the late Prof. Warrington

Yorke's energetic organization the Liverpool School has provided courses of instruction in tropical medicine for medical officers of the Army and Navy attended by approximately 2,000 officers. Additional classes were given at the request of the War Office for R.A.M.C. pathologists, and at the request of the Chief Surgeon of the United States Army for members of the U.S. Army Medical Corps waiting to be drafted to tropical areas. Publication of the *Annals* was continued under considerable difficulties, 175 papers appearing from 127 different authors between September, 1939, and December, 1945. In the six years of the war the staff of the School contributed more than 90 papers to scientific journals besides many secret reports for Government Departments and Committees. In the wards over 1,000 cases of amoebic dysentery were treated. In West Africa the staff of the Sir Alfred Jones Laboratory at Freetown, at the request of the Sierra Leone Government, took over the greatly expanded pathological service at this large wartime naval and shipping centre.

Members of the Liverpool School staff have as individuals and as representatives of the School served on many committees and bodies concerned with the progress of the war effort. Prof. Yorke was appointed a vice-president of the Anglo-Soviet Medical Union in 1941, and shortly before his death went to the United States on a commission on the vital matter of improving the prospects of adequate supplies of mepacrine—in which he was brilliantly successful. In 1940 and again in 1944 Prof. D. B. Blacklock at the request of the Colonial Office returned to West Africa to investigate and advise upon the menacing malaria situation in the West Coast ports. Researches in many urgent matters relating to the war have been extensively conducted. Undoubtedly the most striking event in this respect has been the discovery of the antimalarial drug paludrine, which promises to solve some of the most difficult features of drug prophylaxis in malaria. During the war experience showed that mepacrine as a prophylactic was capable of changing the whole outlook on malaria prevention in a tropical campaign. But even mepacrine was not a completely satisfactory drug, and search for the ideal drug has been actively carried out in the war years both in this country and in America. Among compounds submitted for test by Imperial Chemical Industries there was discovered at the Liverpool School in 1942 an entirely new range of chemical substances having a therapeutic action on the malarial infection of birds, and early in 1943 one of these drugs—No. 2666—was tested on human cases. This and the compound No. 3502 were, however, not very effective, but further compounds of the series were successively tried, including Nos. 3349 and 4430, which were about as effective as quinine or mepacrine, until finally No. 4888 or paludrine was reached. Tested in human malaria by Adams, Maegraith, and their co-workers, this was found not only to arrest acute attacks of both benign and malignant tertian but to be devoid of any side-effects. Judging from the results reported elsewhere obtained by Fairley in Australia, it would appear that paludrine is eminently suitable for prophylactic use, since it does not, like mepacrine, produce yellow coloration, is extremely non-toxic, and even taken one day in the week appears to be an effective prophylactic.

Among other important researches that have been made are investigations of the action of different diamidines in kala-azar, trypanosomiasis, and babesia infections, on an epidemic of sleeping sickness in which these drugs were successfully used, on acquired drug resistance, and on the treatment of scabies and its control by the use of 5% tetmosol soap. The report includes a tribute to the memory of Warrington Yorke, whose outstanding contributions to chemotherapy have brought fame to himself and the School. It is gratifying to read that response to the appeal for the Warrington Yorke Memorial Fund had up to the end of 1945 led to contributions and promises under deed of covenant of £46,530 towards the capital sum of £60,000 asked for.

THE CLOSED MIND

What has this country come to when a Medical Officer of Health is compelled to dismiss from hospitals under his control nurses and doctors because they will not join trade unions—and this at a time when hospital beds have to remain empty because there are not enough nurses to go round? Yet this is what has happened at Willesden. The matron, the deputy matron, 36 nurses, and one doctor of Willesden Municipal Hospital, and the matron, resident medical officer, and 11 certified State midwives at Willesden Council's maternity hospital, Kingsbury, were last week given one month's notice. This notice of dismissal was, according to the accompanying letter from the Medical Officer of Health for Willesden, "in view of the fact that you have not complied with the Council's resolution regarding membership of a trade union." Seventy nurses and a number of probationers at Walthamstow Council's two hospitals have just been notified that they must join a recognized trade union or organization: this notification was tactfully handed to them along with their pay packets. According to a statement in the Press, the Medical Officer of Health for Walthamstow said: "We have given the nursing staff a list of nine professional organizations which they may join, such as the Royal College of Nursing and Nalgo." Heston and Isleworth Borough Council decided at its last meeting "that all employees shall be members of their respective trade unions, provided that such unions be affiliated to the T.U.C. or eligible for affiliation thereto." The Gateshead Council has also decreed that all its employees should become "members of an appropriate trade union," and Gateshead teachers are up in arms about it. These fresh bungles of Bumbledom are fortunate because their crass folly has drawn on them the wholesome publicity of a Press which still remains free. The next scene in "Insanity Fair" will, no doubt, be the refusal of the authorities to admit patients to hospitals unless they have a trade union ticket.

At Willesden, the sister tutor and deputy matron had been serving at the hospital for 24 years and the night sister for 26 years. Two of the staff nurses had given their faithful service, one for 20 and the other for 28 years. Yet these women were given a month's notice because they

would not conform to a requirement which had no relation to their function or capacity as nurses who care for the sick. It is no exaggeration of language to describe such treatment as outrageous. They have, along with their fellow nurses, stoutly refused to accept a position which is intolerable to them as free individuals practising a humane and self-sacrificing profession. Miss Ward, matron of one of the Willesden hospitals, said in a statement to the Press: "The staff will do their duty, but I cannot guarantee, with the feeling there is among the staff, that they will all remain after this. . . . The staff are more determined than ever that they will not join a union." The stand taken by the Willesden nurses will, it is suggested, compel the borough's General Purposes Committee to withdraw the notices of dismissal, and it is believed that the Committee will recognize the Royal College of Nursing.

Though Willesden may wriggle out of the ludicrous situation in which it has placed itself there still remains unsettled the issue of compulsion by local authorities on their medical and nursing employees to join a trade union or recognized professional organization. Dr. F. R. Ellis stated in a letter published in the *Supplement* of November 23 that in answering an advertisement in the *Journal* for a full-time medical officer at a borough council—it was Willesden—he received with his application form a notice which included this statement:

"That trade union membership be a condition of employment of all persons continuing in or entering the service of the Council, and that present employees who are not members of a trade union be advised of this decision and given a reasonable time—i.e., by Nov. 1, 1946—in which to join a trade union."

At a meeting of the Council of the B.M.A. on November 6, 1946, it was explained that local authorities were requiring employees (1) to be members of a trade union or professional association, (2) to be members of a trade union, but accepting membership of "Nalgo" as satisfying the condition, or (3) to belong to a trade union affiliated to the T.U.C. The Association immediately appointed a Committee to investigate the position, and the matter will be discussed once more at the next meeting of Council. In the meanwhile, the Secretary of the B.M.A. has stated that "In the view of the B.M.A., no doctor should be required to join any body, the B.M.A. or other. Membership should be a voluntary act. Wherever a local authority imposes a condition of trade union membership the Association will advise the profession not to apply for appointments under such an authority." A statement of the attitude of the B.M.A. in relation to the position in Willesden and other areas, and the steps it proposes to take, will be made after the meeting of the Council on Dec. 11.

The medical profession is to-day independent, and the majority of its members are free to choose their way of life and livelihood. When officialdom exercises its petty tyrannies we can resist with effect and safeguard the professional liberties of doctors in whole-time employment. But when the whole profession is in the employment of the State where will be the safeguards? Willesden is a disturbing sign of the modern menace—the "closed mind."

PENICILLIN IN ACUTE MASTITIS

There is probably no malady which causes more suffering to the mother than acute mastitis at a critical time in her life and that of her baby. Treatment has so far proved unsatisfactory, especially in the case of the mother who is in her own home, suffering perhaps from severe pain, struggling to keep the household going and to look after a young infant. Even in hospital the various methods of treatment in current use have proved far from ideal. For these reasons, and because treatment with the sulphonamides has proved disappointing, treatment with penicillin opens up great possibilities. The primary infection appears to be almost invariably due to *Staph. aureus*, an organism not generally very sensitive to sulphonamides but sensitive to penicillin.

In this issue of the *Journal* Lady Florey, Mr. MacVine, and Miss Bigby describe the treatment of breast abscesses with penicillin, giving the results in 18 cases and comparing them with those of 16 control cases treated with sulphonamides. It was found that in the penicillin-treated cases there was a significant reduction in the duration of pyrexia and suppuration and a decrease in the healing time. Penicillin was given at first systemically by intramuscular injections of 15,000 Oxford units every three hours. As soon as fluctuation was detected, or when the abscess appeared to have localized and was small, pus was aspirated and penicillin injected into the abscess cavity, under local analgesia—120,000 units in some cases and 500 units in others. It was found that under treatment pus gradually disappeared and was replaced by sero-sanguineous exudate. A culture was made from this fluid, and if *Staph. aureus* was absent no further treatment was necessary. It was found that 4 to 7 daily local injections were required. Sinuses developed very readily in penicillin-treated cases, and penicillin was instilled along the track of the sinus after expression of pus or, in other cases, by a needle inserted until a sinus formed and then along the track of this sinus. Abscesses containing more than 10 ml. of pus were incised and drained, and penicillin was instilled twice daily after expression of pus. The importance of complete expression or aspiration of pus before injection or instillation of penicillin is emphasized. Suckling is continued, and the authors consider the administration of stilboestrol unnecessary.

In a recent article in this *Journal*¹ Mary D. Taylor and Stanley Way describe the use of penicillin in 10 cases of acute puerperal mastitis. Treatment was started early, the indications being pyrexia associated with flushing and hardening of the breast, or in some cases pyrexia with pain in the breast. Systemic injections were given, but details of dosage are not stated, only the total doses, which varied from 300,000 to 1,050,000 units. Suppuration occurred in only one case, and all were cured in seven days, 6 out of the 10 patients being cured in three days or less. These authors recommend that suckling be temporarily discontinued if it causes discomfort, and that in these cases a small dose of stilboestrol (not more than 1 mg. in 24 hours) be given. The breasts are kept empty.

Penicillin is now within reach of every practitioner in adequate quantities, and it seems that it should prove very valuable in treating acute mastitis and in preventing and treating breast abscesses. Treatment should begin as soon as possible and penicillin should be given in adequate doses. In domiciliary practice three-hourly injections are difficult, but good results can be obtained by giving two or three injections of 100,000 units or more per day. Use of the oily solution prolongs the effect. Taylor and Way recommend stilboestrol where there is flushing and discomfort, but advise only a small dose. Lady Florey and her

colleagues are opposed to this, but they do not say why: perhaps it is because they do not wish to inhibit lactation. It has been found, however, that if suckling is continued stilboestrol in small doses does not generally inhibit the production of milk, though it does often help to diminish vascular engorgement and discomfort.

A partial solution has been found for a problem which has long proved difficult and distressing for those entrusted with the care of puerperal patients and mothers who are feeding their babies. It is to be hoped that the use of penicillin will not only diminish suffering from mastitis but will help to increase the incidence of breast-feeding.

PENICILLIN SYNTHESIS

The ending of the official secrecy with which the laboratory synthesis of penicillin has hitherto been invested compels some attention, even if the achievement proves of no more practical importance than as an entry in future textbooks of biochemistry. Penicillin was first synthesized more than two years ago by the Oxford team, of which, as is generally known, Sir Robert Robinson is the senior chemist. At about the same time—and it is presumed independently—synthesis was also achieved by the Merck organization in New Jersey. The yield was, however, only about one-tenth of 1%; and in addition the synthesis was not of such a kind as to be chemically informative. No attempt was therefore made by the Oxford workers to prepare synthetic penicillin in chemically pure form by this method. Instead, later efforts have been directed, so far without success, towards the development of a further synthesis of greater practical utility. Subsequently a second American team, working in the Department of Biochemistry of Cornell University Medical College, applied the original method of synthesis to produce a small supply of chemically pure penicillin II. The Oxford synthesis was of penicillin I. But since the method, within its obvious limitations as to yield, is generally applicable to all the penicillins, the distinction is of no significance. The present paper, which is of a preliminary character, is the work of the Cornell team—Du Vigneau, Carpenter, Holley, Livermore, and Rachele. It is published in *Science* of Nov. 8, the journal of the American Association for the Advancement of Science, with due credit to the earlier work both at Oxford and in the Merck laboratories. Authority for publication in this form was given by the joint Anglo-American committee which is responsible for the release of information on the work which has been carried out for the Committee on Medical Research of O.S.R.D. in the United States and the Medical Research Council in Great Britain. The result takes us little if any further as regards knowledge of penicillin, but among the general public in the United States it has given rise to the erroneous impression that the first synthesis of penicillin was a purely Cornell achievement.

REITER'S DISEASE

The symptom complex known as Reiter's disease—conjunctivitis, arthritis, and urethritis—appears to be a definite disease entity, though reference to standard textbooks provides little or no information on the subject. The condition was first described by Reiter¹; and soon afterwards Fiessinger² in France and Macfie³ in Africa recorded some cases. Most of the earlier cases occurred in France, Germany, and Scandinavia. Little more was heard of the condition for some years, but recently other cases have been reported, including ten from the Pacific area and six

¹ *Dtsch. med. Wschr.*, 1916, 42, 1535.

² *Bull. Mém. Soc. méd. Hôp.*, Paris, 1916, 40, 2030.

³ *Parasitology*, 1917, 9, 274.

from Boston; and Vallee,⁴ in a review of the literature, refers to 151, while Touraine and Ruel⁵ put the number at about 300. The latter authors call it "pseudo-gonococcal enteritis," whereas Sargent⁶ proposes the term "idiopathic blennorrheal arthritis."

Almost all the described cases are in males (usually young); there is no relation to sexual intercourse. Some French observers consider that the condition is associated with dysentery or other intestinal infections. In the light of recent war experience Paul Wood,⁷ Marsh,⁸ Herson,⁹ Kay,¹⁰ and Manson-Bahr¹¹ all correlate the disease closely with bacillary dysentery, but Jackson¹² shows that no identification with these bacilli has yet been made and that his two cases developed in an area where bacillary dysentery was unknown. The conjunctivitis is purulent or mucopurulent, and often bilateral; there is some photophobia and lacrimation; and there may be scleritis, iritis, and keratitis as well. The urethritis is characterized by a purulent discharge, but frequency and dysuria are not as marked as would be expected, though haematuria may occur. The arthritis affects mainly the larger joints, flitting from one to another, and imitating acute rheumatism; hydrarthrosis is common. In addition there is usually a low-grade fever. Skin rashes often appear; they start as vesicles which rupture and form shallow ulcers, and these heal leaving hyperkeratotic scars. Harkness¹³ records three cases which resembled keratoderma blennorrhagica. Generalized lymphadenitis is a frequent accompaniment; there is a moderate polymorphonuclear leucocytosis, and the erythrocyte sedimentation rate is slightly increased. All three typical signs are not always present, and consequently the differential diagnosis may be from rheumatic fever, gout, acute conjunctivitis, prostatitis, balanitis, keratitis, iritis, non-specific urethritis, and arthritis.

The causal organism was thought by Reiter to be a spirochaete, but this has not been confirmed. Harkness claims to have demonstrated inclusion bodies, but modern opinion inclines to the view that a virus is the probable causal agent. Pathological examination of the urethral and conjunctival discharge and of fluid aspirated from the affected joints has failed to incriminate any particular organism. The gonococcus has never been found. Blood cultures are uniformly negative, as are gonococcal complement-fixation tests, serum tests for syphilis, and agglutination tests against dysentery and typhoid bacilli. Treatment is mainly symptomatic, though some success has been claimed with sulphonamides and arsenicals, as well as with protein-fever therapy—it seems not unlikely that artificially induced pyrexia by means of a Kettering hypertherm or similar appliance may be beneficial (King¹⁴ *et al.*). It may be noted that two of Fieldsend's¹⁵ cases diagnosed as abacterial pyuria had arthritis. Were they cases of Reiter's disease? If so it is of interest to observe the favourable response of the urethritis to neoarsphenamine. The disease is self-limiting, though it is apt to drag on for several months, and relapses are not uncommon.

Cases recently reported in this *Journal* by Wrigley¹⁶ and Jackson¹⁷ are of interest as showing that the disease is probably not nearly so rare as has been supposed. The combination of urethritis with arthritis has led to many cases falling into the hands of the urologist or the venere-

ologist. This combination is so common in gonorrhoea often with conjunctivitis as well, that the practitioner can hardly be blamed if he makes a provisional diagnosis gonococcal, or at any rate of infective, arthritis, though he will be saved from the former error if he has the benefit of and faith in, adequate pathological facilities such as culture examinations and complement-fixation tests. Denfield,¹⁸ as a result of observation of its association with gonorrhoea in West Africans, hints at an allergic origin of the syndrome, as it requires more than one attack of gonorrhoea to provoke it, and, when provoked, subsequent attacks of the acute urethritis successively intensify the Reiter disease.

WORLD LIST OF SCIENTIFIC PERIODICALS

Active preparations are being made for the issue of a third edition of the *World List of Scientific Periodicals*. The last edition of this invaluable scientific reference work was issued in 1934 and covering the years 1900–33, is now out of print though still in constant demand. It contains upwards of 33,000 titles of journals and includes the holdings of some 180 libraries in Great Britain and Ireland. The new edition, which is designed to include all the scientific and technical periodicals that appeared during the period 1900–47 as well as the holdings of additional libraries, will therefore be considerably larger. Librarians are being asked to co-operate as before by sending particulars of all the journals on their shelves that do not appear in the second edition, or are shown there as having no location in the country, to: The Secretary, World List of Scientific Periodicals, c/o The Zoological Society of London, Regent's Park, London, N.W.8. Further information may be obtained from this office.

Sir Arthur MacNalty will give the FitzPatrick Lecture before the Royal College of Physicians of London on Dec. 10 and 12 at 5 p.m. His subject is the History of State Medicine in England: Lecture 1, "From the Accession of Queen Victoria to the General Health Board"; Lecture 2, "The Medical Department of the Privy Council".

The President and Council of the Royal Society have awarded the Copley Medal to Prof. E. D. Adrian, O.M.D., for his researches on the fundamental nature of nervous activity, and more recently on the localization of certain nervous functions.

¹⁸ *British Medical Journal*, 1946, 2, 555.

Col. Malcolm Stoddard-Scott, M.D., Conservative M.P. for Pudsey and Otley, has presented to the Minister of Health a memorandum urging that Bradford hospitals should be classed as teaching hospitals under the National Health Service Act. The memorandum was prepared by a committee of local authorities in Bradford after considering in detail the requirements for a medical faculty in that city. In the committee's view Bradford could provide accommodation, teachers, and clinical material for a medical school and could from October, 1947, train 50 undergraduates a year. A letter to the Minister Col. Stoddard-Scott informs him that the Bradford Technical College already trains undergraduates for the first part of the London M.B., and is recognized by London University for that purpose. If a medical school is established in Bradford it would be prepared to train undergraduates for the final M.D. of London and Leeds Universities, and would also admit students wishing to take the English and the Scottish conjoint examination and those for the licence of the Society of Apothecaries. Medical and surgical work under the scheme would be carried out in the Bradford Royal Infirmary, St. Luke's Municipal Hospital, the Royal Eye and Ear Hospital, the Children's Hospital, the City Fever Hospital, the Bierley and Grassington Sanatoria, and the Rawdon Rehabilitation Centre.

⁴ *Arch. Intern. Med.*, 1946, 77, 295.

⁵ *Ann. Derm. Syph.*, Paris, 1946, 2, 61.

⁶ *J. Urol.*, 1945, 54, 556.

⁷ *British Medical Journal*, 1946, 2, 309.

⁸ *Ibid.*, 1946, 2, 276.

⁹ *Ibid.*, 1946, 2, 275.

¹⁰ *Ibid.*, 1946, 2, 309.

¹¹ *Bull. War Med.*, 1944, 4, 653.

¹² *British Medical Journal*, 1946, 2, 403.

¹³ *Brit. J. Vener. Dis.*, 1945, 21, 93.

¹⁴ *Ibid.*, 1946, 22, 1.

¹⁵ *British Medical Journal*, 1946, 2, 493.

¹⁶ *Ibid.*, 1946, 2, 199.

¹⁷ *Ibid.*, 1946, 2, 197.

ADAPTATION OF E.M.S. HUTS FOR CHILDREN'S WARDS

BY

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AND

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In the report of the British Paediatric Association's *ad hoc* committee on cross-infection in children's wards, published in the *B.M.J.* (May 4, 1946, p. 673), sections 6 and 7 deal with the subdivision of wards and other desiderata. With the recommendations of this report in mind, we prepared a plan to show how a typical E.M.S. hutted ward may be modified at reasonable cost and with minimal structural alterations to accommodate infants and children in surroundings where the chances of cross-infection are lessened and other desiderata are provided.

Just after the preparation of our plan, the Ministry of Health published a series of plans, including one for a children's ward, prepared by Dr. T. S. McIntosh and Mr. H. R. Coales, on the adaptation of E.M.S. huts for peacetime hospital purposes (Supplement to the *Monthly Bulletin of the Ministry of Health*, February, 1946). Our plan is not intended to rival or better

theirs; indeed, Dr. McIntosh and Mr. Coales point out that it is all to the good that different methods of adaptation should be explored.

Figs. 1 and 1a show the proposed adaptation and the existing E.M.S. hut in Warwickshire, respectively. Figs. 2 and 2a are reproduced from the Supplement to the *Monthly Bulletin*, by permission of H.M. Stationery Office, for comparison.

E.M.S. huts vary, and the type chosen by the Ministry is admittedly the most difficult to adapt architecturally, with its flat roof and central supporting pillars. It differs structurally from those existing in Warwickshire County Council hospitals in the following details:

Fig. 1a (Warwick)

Pitched roof 35°
Floor to eaves in ward, 10 ft. (3.05 m.)
Ceiling, 12 ft. 8 in. (3.86 m.)
Four pairs of doors in each long wall

Fig. 2a (Ministry)

Flat roof with central columns in ward
Ceiling, 10 ft. 1 in. (3.07 m.)
Two pairs of doors in each long wall

Arrangement of Ancillary Rooms

Overall length, 36 ft. 4 in. (11.07 m.)
Ceiling, 9 ft. 8 in. (2.95 m.)
Corridor, 5 ft. wide (1.52 m.)
Sluice, 9 ft. 1 in. (2.77 m.) by 8 ft. (2.44 m.), adjacent to W.C.s.
Kitchen adjoining ward, with observation window
No store-room
Small heating chamber for domestic hot water, towel rails, and radiators

Overall length, 40 ft. (12.2 m.)
Ceiling, 8 ft. 1 in. (2.46 m.)
Corridor, 6 ft. wide (1.83 m.)
Sluice, 9 ft. 7 in. (2.91 m.) by 8 ft. 7 in. (2.62 m.), adjacent to ward
Sentry near entrance
Store-room, 8 ft. 7½ in. (2.63 m.) by 7 ft. (2.13 m.)
No heating chamber. Hot water presumably from central service

EXISTING WORK
NEW WORK

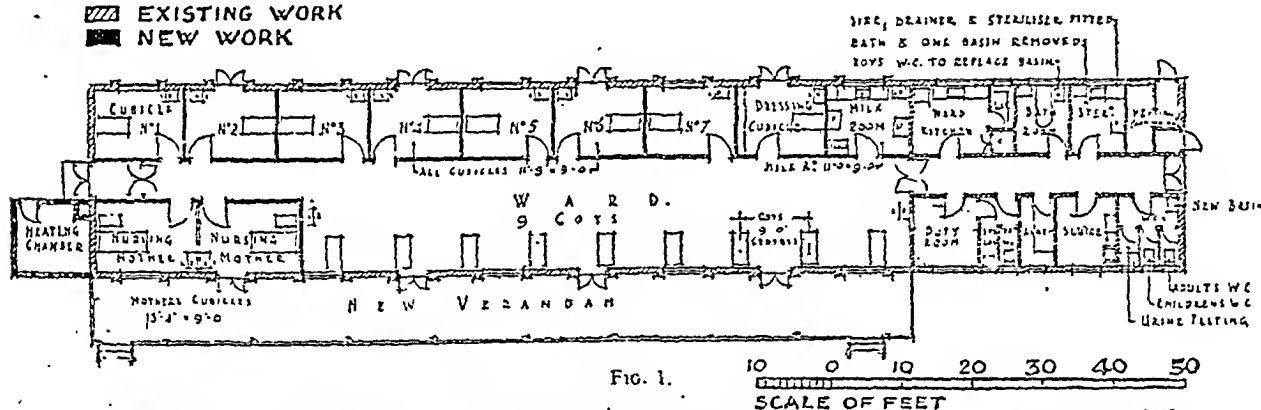


FIG. 1A.

Plan showing typical 32-bedded hutment adapted to provide a children's ward with protection against cross-infection. FIG. 1.—Plan after alteration; accommodating 7 cots in separate cubicles, 9 cots in open ward, 2 cubicles for nursing mothers, 1 cubicle for dressings. Cubicles to have plug point and lavatory basins in each. FIG. 1A.—Plan before alteration—32 beds.

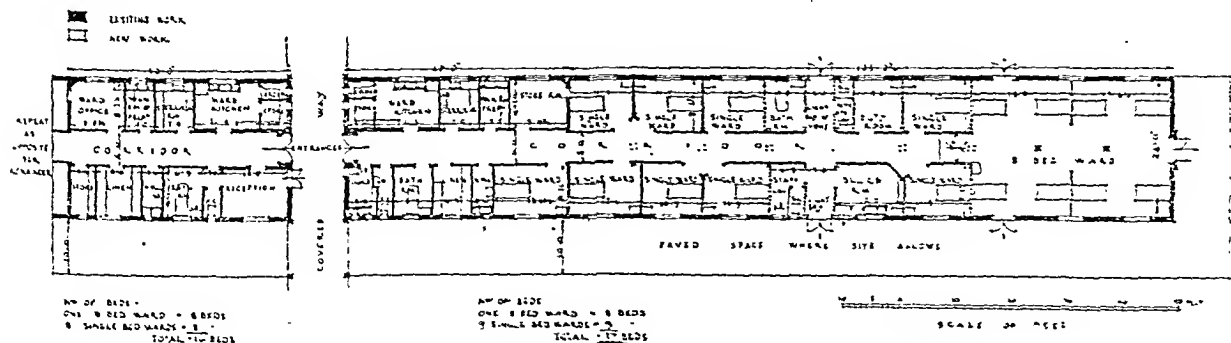


FIG. 2.

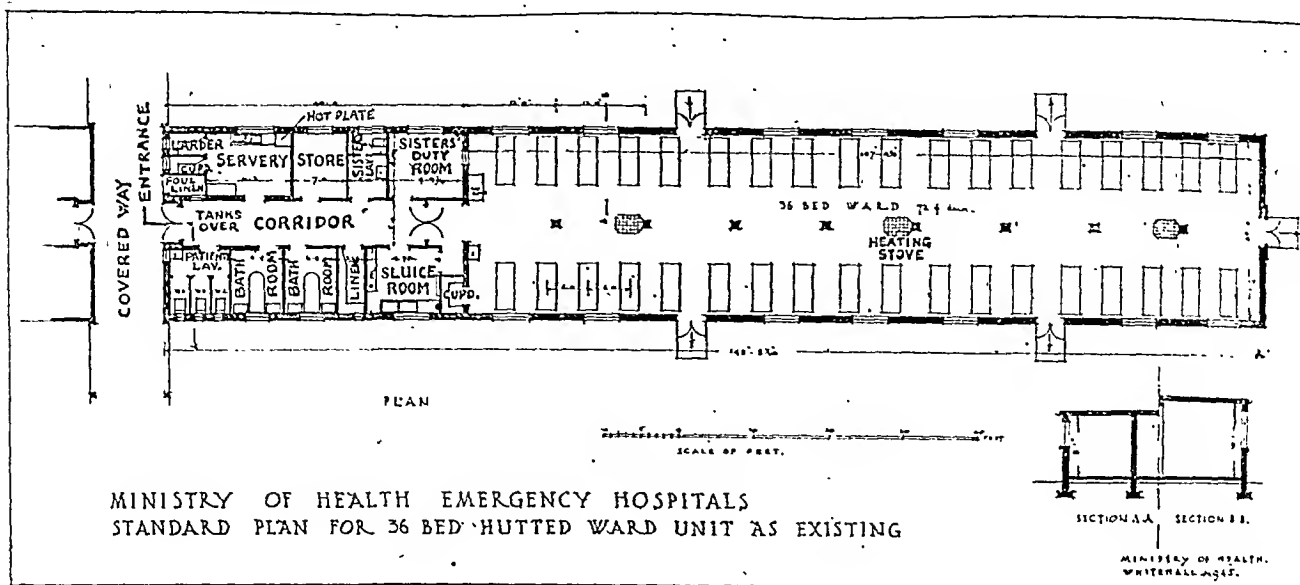


FIG. 2A.

The total length and breadth of each ward are the same—viz., 108 ft. (33 m.) by 24 ft. (7.3 m.), so that the differences are really of a minor nature and chiefly limited to the ancillary rooms.

The ward as existing has accommodation for 32 patients. By subdividing it into cubicles (Fig. 1) this number is reduced to 18. Seven of the cubicles are single, which provides a percentage for isolation considerably higher than the 25% minimum recommended by the subcommittee. The 9-bedded open ward allows of a friendly communal atmosphere for older children, who do not need the strict isolation that is necessary for young infants. It should be a rule that no infant under 1 year of age is to be admitted to an open ward. It will be seen that there are two cubicles provided for nursing mothers and their infants. When there are no breast-fed babies in the ward these cubicles could of course be used as single cubicles for children, or two infants could be nursed in each, bringing the total beds available up to 20. (The word "cot" in the plan refers equally to a child's bed.) The existing heating arrangements consist of three centrally placed coke-burning stoves. These are not suitable for a children's ward, and we have substituted an outside heating chamber.

One of the subcommittee's special points was the desirability of having a separate room in which to do surgical dressings,

lumbar punctures, aspirations, etc., and this is provided. There is also a small room for testing urines. The milk-room, which is 11 ft. (3.35 m.) by 9 ft. (2.74 m.), is more adequate in size than the one proposed by the Ministry, which is only 8 ft. 7½ in. (2.63 m.) by 5 ft. (1.52 m.). In our plan, the ward and all the cubicle doors can be under direct supervision from the duty room.

The Ministry's plan allows for a store-room 9 ft. 9 in. (2.97 m.) by 8 ft. 7½ in. (2.63 m.), a housemaid's closet, and an additional sluice. This arrangement of a sluicing compartment and lavatories in the central part of the ward is advantageous from the point of view of access, but we wished to undertake a minimum of structural alteration in our plan, in which cost was also taken into consideration. We think one bathroom would be sufficient, but if necessary the end bed in the open ward might be sacrificed and a small bathroom, lavatory, and sluice included for the use of the nursing mothers. The other modifications in the ancillary part of the ward are as outlined in the plan.

Summary

A plan is suggested for the adaptation of a typical E.M.S. hutted ward for the accommodation of 7 babies in single cubicles, 9 children in an open ward, and 2 nursing mothers with their infants, together with a room for dressings, a milk kitchen, and the other usual ancillary offices.

SOCIETY OF APOTHECARIES AWARD TO PENICILLIN DISCOVERERS

At a special meeting of the court of the Society of Apothecaries of London on Nov. 28 Sir Alexander Fleming and Sir Howard Florey were presented with the Society's gold medals in therapeutics in recognition of their discoveries in penicillin. The presentation was made by Dr. C. Thackray Parsons, the Master, in the presence of a large number of freemen and of guests, who included Sir Alfred Webb-Johnson, President of the Royal College of Surgeons, and Sir Hugh Lett, President of the British Medical Association. The Master referred with pride to the addition of these names to those of Dixon, Gowland Hopkins, Dale, Banting, and others on the Society's roll of medallists. "In the nurseries of the future the contaminated Petri plate of Fleming will probably displace the legend of Newton and the apple, and as future generations eat their prophylactic breakfast of mixed moulds they will pray for the good estate of Fleming and Florey."

Prof. E. C. Dodds, in a brief oration, compared the present occasion to the gathering at the Sorbonne in 1892, when Pasteur on his seventieth birthday was acclaimed by the President of the French Republic and a distinguished company which

included Lister. In the work of Fleming and Florey they saw one of the last acts in the drama which opened with the work of Pasteur. The veil of mystery which for centuries had covered the processes of infection had been rent, and an uncertain empiricism had given way to scientific principle. Never before in the history of the world had it been possible to honour two men who had been personally responsible through their labours for the fact that literally millions of people to-day were alive who would otherwise be in their graves, and, unlike many brilliant discoveries of science, not even the most malignant mind could suggest that this discovery could be applied in an offensive or destructive manner.

Sir Alexander Fleming, in receiving the medal, said that it had been his good fortune—he emphasized the word "fortune"—to be in at the beginning of a movement which had done something for medicine and surgery. He contrasted the conditions obtaining in the first world war with those obtaining in the second from the particular point of view of fracture of the femur. In 1918 he was in charge of a hospital for cases of fractured femur, and it was a grim experience, very different from that which attended these cases during the recent war. Not all the difference, of course, was due to penicillin, but it helped. He paid a warm tribute to his co-recipient.

Sir Howard Florey also spoke of his own good fortune in being associated with Sir Alexander Fleming in a work which had proved of value in medicine. The experience had been for him particularly exciting, because it had given him the opportunity of travelling all over the world and of meeting thousands of people. Coming as he did from a young country (Australia), he perhaps more than those in England appreciated the antiquity of the hall in which they had met and the general setting of the ceremony. He added that they were only just beginning to realize the extraordinary series of fortunes with which this work on penicillin had been favoured. There were 100,000 species of moulds such as those that rotted timber or grew in the fields; there were 15,000 species of *Ascomycetes* to which penicillium belonged, and there were several hundreds of species of penicillia. Many of these produced chemical substances and, almost without exception, they were extremely poisonous. Yet penicillin was the first one to be examined in any detail, whereas it might well have been one of the other thousands of organisms, and they might have endeavoured to extract the active substance and, realizing that it was extremely poisonous, have abandoned the investigation.

Occasion was also taken to make a presentation to Mr. W. T. Withers, who is retiring from the position of bedel of the Society after fifty-nine years' service.

ROYAL COLLEGE OF SURGEONS AND THE ACT

SPECIAL MEETING OF FELLOWS

A special meeting was held at the Royal College of Surgeons of England on Nov. 29 following upon a requisition made by a number of Fellows and Members at the Annual Meeting of the College earlier in the month. The purpose was to consider the position which has arisen consequent upon the passing of the National Health Service Act. Sir Alfred Webb-Johnson presided and there was a very large attendance.

The Council's Corporate "Yes"

The President said that in the College they had always done their best to approach this question non-politically. They regarded the freedom of the profession, not as a vested interest, but as guarding one of the fundamental rights of a citizen in a free country. They had contended that the Negotiating Committee should be supported because it was representative of the whole profession; they had always resisted attempts to undermine its authority, and they had desired to support their general practitioner colleagues. Four important points affecting general practice remained in the Act, notwithstanding the endeavour to get them removed: prohibition of the sale and purchase of practices; restriction on the individual practitioner as to where he should practise; the setting up of a tribunal (with final appeal only to the Minister) which had power to decide that a practitioner should no longer remain in the Service; and remuneration by basic salary (this last not in the Act but in the White Paper and in the intention of the Minister).

Personally he confessed that he did not think any of these items sufficient ground for refusing to discuss the implementation of the Act and the planning of the Service. The most important was the salary element in the remuneration of general practitioners, which might undermine the doctor-patient relationship. On principle he thought it undesirable, but he recognized that a considerable number of young men would welcome such an arrangement. In hospital practice the most serious thing was that the Act created a monopoly of hospital surgery. That might have serious effects, but he did not know that they could refuse to discuss the Act with the Minister because he was taking over the hospitals. By negotiation it might be possible to induce him to frame regulations whereby the patient would be left with as much freedom as he had at present. It was undesirable that the Minister should be empowered by regulations to control the fee charged for all patients admitted to the paying blocks of hospitals; it was said that the ceiling would be high, but that was not the point. The point was that in some of the accommodation in the private wings of hospitals there should be complete freedom of relationship between doctor and patient, though he agreed

that in some portion of such accommodation there should be some control so that people of moderate means might be able to be accommodated privately. What might be obtainable by negotiation was the preservation of independent practice. That was an important thing for a free profession.

"I have fought for all these things," Sir Alfred Webb-Johnson concluded, "at the stage when the law was in the making. Considerable concessions have been obtained during the passage of the Bill; I believe considerable concessions may be obtained in the form of regulations. The Council has to answer in a corporate capacity the question whether it desires the Negotiating Committee to enter into discussion on the framing of such regulations. As a corporate body the Council has answered 'Yes.' As individuals it is for each of us to make up his own mind."

Runnymede or Munich?

Mr. Lawrence Abel opened for the opposition. He quoted resolutions of the Council of the College, especially those of May 8 last, expressing opposition to certain proposals which were then in the Bill and now remained in the Act. He also quoted from the reported speeches of the President of the College, warmly supporting the case of the general practitioners and protesting against State monopoly and other dangers. It was said that the Act was only the bones of the scheme and the regulations would clothe this skeleton with flesh. But the "bones" were ill conceived, they were worm-eaten and decalcified, and the more flesh that was put on a rachitic skeleton the greater would be the deformity. He asked the Council of the College, "Are you going to let your Fellows down?" If they were convinced that their principles remained sound they would answer "No" in this plebiscite. Was this to be their Runnymede or their Munich?

Mr. W. Etherington-Wilson said that he had come up from the West Country with the expectation of his colleagues that he would return with the assurance that at all costs the Royal College of Surgeons was going to stand rock-like for the principles which the profession had established.

A New Act of Uniformity

Mr. Reginald T. Payne said that the question now was whether the profession was to negotiate on regulations. Regulations would not alter the principles of the Act, but only its details. The implications of this Act were far wider than its application to the medical profession: they opened up important constitutional and legal considerations. Was a Government department to be entrusted with the powers which this Act conferred on the Minister? Further, was a monopoly of medicine justified in a democracy? If they answered these questions as members of a liberal profession their duty and responsibility to the community would take them far away from merely personal or professional answers. The catchwords of the age were "organization" and "efficiency," but these could be gained at too great a sacrifice of freedom. In Italy under Fascism the trains ran much more punctually, but intellectual and political liberty disappeared.

Mr. Payne entered upon a lengthy discussion of constitutional aspects. All parliamentary business was now extremely hurried, which meant lessened parliamentary control and a greater dependence on regulation. The judiciary was short-circuited. This Act was an outstanding example of delegated legislation. Quasi-judicial bodies were gradually being developed in this country—bodies which often sat in *camera*, and from whose findings there was no appeal. Under this new Act there could be no appeal to the courts by any dismissed doctor. It also created a State monopoly of medicine. It was an Act of Uniformity for the better discipline of doctors and patients. The consultant would be "directed," it would be a case of "join the Service or be liquidated." The student would be "grant-aided, State-conditioned, and rendered servile, mobile, and docile." What about the Royal College? In ten years' time half the Council would be civil servants in all but name and the other half would be Government pensioners. If this Act was operated it would be necessary to restart independent institutions in the interests of the public and of medicine. Fundamental democratic rights would have to be re-established and reasserted. In a democracy there must be a right to dissent.

His own sympathies for many years had been with the Labour Party, but he was terrified by the position into which

they were now forcing the community. The crisis was comparable with that of the seventeenth century on the issue of liberty versus the tyranny of central power. Then it was a question of kingship and religion, now it was a question of the executive and political and social theory. He begged them to stand for their essential freedom and not to become Government pensioners with their minds in cold storage. The power which the central organization had in this Act meant coercion and regimentation. The analogy with 1912 was false. We had not then a dictator-ridden world. Of the National Health Service Act he could only use colloquial language and say that it "stinks of dictatorship." It was a whip in the hands of the executive. "You can negotiate, if you are going to negotiate, on how the whip should be used."

A Resolution Not Put

Dr. N. E. Waterfield proposed the following resolution:

That this meeting of Fellows regrets the decision of the Council to recommend members of the College to agree to enter into negotiation with the Minister on the regulations to be made in connexion with the new National Health Service Act, as the decision runs counter to the feeling of the meeting of the Fellows here present.

This was seconded by Mr. Lawrence Abel.

The President said that he was unable to accept the resolution; it stated what was not a fact. The Council had made no recommendation to the Fellows and Members. He had taken the trouble to explain very carefully in his opening remarks that it was for each man to decide for himself.

Dr. Waterfield: I thought you said that the Council had come to a decision in its corporate capacity.

The President: I said that the Council had instructed me what to reply as a College. This meeting has been called at short notice for the purpose of exchanging views. Up to now certain people have monopolized the platform. Is there any contrary view?

Major J. S. Horn said that he thought they should answer "Yes" in the plebiscite. They had been urged to say "No" because it was stated that certain fundamental points of principle were at stake. There were certain points in the Act which they all agreed were bad, but others which they all agreed were good, and it seemed to him of first importance not to confuse points of principle with expediency. He thought that the scheme, which was brought forward by a Government recently returned to power at a general election, should be accepted and the best possible job made of it.

Mr. C. E. Beare said that it was a sad day for him to find himself not in agreement with Sir Alfred Webb-Johnson, for he admired so much the way he had worked for the profession. But the British Medical Association, which represented over 50,000 members of the profession, had instructed its representatives to take a firm stand on certain principles, and those principles had been established by votes of between two and three hundred to an insignificant minority, if not unanimously. Having affirmed those principles, how could they possibly negotiate merely on regulations and terms of service? The report of the Negotiating Committee declared that the independence of medicine was at stake. On a recent Sunday he visited between 20 and 25 doctors in his locality and there was not one "Yes" among them, and at a meeting of 80 practitioners at Reigate there were only eleven affirmatives. The majority included a number of young men who said: "We thought we had been fighting for freedom, and we come back to find dictatorship imposed upon us."

Mr. Dickson Wright said that he was perturbed at the prospect of hospitals being a public monopoly. Free choice of hospital was just as important as free choice of general practitioner. There would be no medical committee in Government hospitals. Consultants would be directed from hospital to hospital in the most unpleasant way. Direction was even more unpleasant for the established consultant than for the young general practitioner, for it was hard to settle down in a new place when one was fifty. A State monopoly of medical treatment would lead to loss of morale in the profession. Doctors were not going to strike, but they were at liberty to say, "We are not going to work for you." When the Government had overstepped its mark there was nothing wrong in

one section of the community making a sacrifice if necessary and putting its foot down and saying, "We are not going to do this, not because we are afraid of having less money, but because we think it is a bad thing. We want free choice of hospitals." He felt strongly that this consultant body should have been recommended to say "No" in the plebiscite.

Mr. Sangster Simmonds said that the result of this Act was not going to depend on the regulations with which they were so much concerned, but on the way in which the medical profession did its work. The success of voluntary hospitals had been achieved because the physicians and surgeons on their staffs had done their work well. The success of this Act would depend on individuals and how they worked, not on Regulations from Whitehall. The old Insurance Act was a piece of legislation which the profession did not help to negotiate but which was forced upon them, yet the profession had made a success of it.

Concurrence with the Main Body of the Profession

Mr. A. J. Gardham said that he found it difficult to say in the same breath that he disapproved of the principles of the Act and that he wished to participate in the framing of its Regulations. He desired to move a resolution on one matter on which he felt strongly:

That with regard to the National Health Service Act the Royal College of Surgeons of England shall take no action which is not in accord with the wishes of the main body of the profession.

Such a resolution might save the College from a disastrous decision.

The President: What do you mean by "the main body of the profession"?

Mr. Gardham: That is a matter we should have to ask the Council to decide.

The President: I was very anxious to avoid putting any definite resolution to this meeting, because this is a meeting called at short notice for the expression of views. Any formal resolution should have been circulated with the notice.

Mr. Gardham said that he had put forward the resolution, not with a view to instructing the Council, but as a means of assuring the profession at large that the surgeons were with them and not against them. (Loud applause.)

The President: Will it satisfy those who have brought forward this resolution and the meeting generally if a notice is sent to the Press stating that it was generally agreed that the College should act in conformity with the general feelings of the profession in regard to the question of negotiations on the regulations of the Act? (General murmurs of assent.) The President added that the Council had told the Negotiating Committee what the College recommended concerning negotiation, but if other members of the Committee did not concur and the general feeling was in a different direction the recommendation of the Council would not carry. Why should he be put in this quandary regarding what the earlier resolution called the "decision of the Council"? It was not quite fair to him.

Dr. Waterfield said that the Council, apparently, was not desirous of knowing the feeling of the Fellows generally. He asked that his resolution should be put.

The President said that the decision of the Council as representing a corporate body was not binding upon any individual. The Council had thought it to be its duty to recommend agreement to enter into negotiations. He did not think it fair, on the strength of that, to be asked to put a resolution to the meeting regretting the action of the Council. Members might not know how difficult and distressing the position of leaders of the profession might be.

Dr. Waterfield said that he was prepared to withdraw his resolution.

The President: Thank you very much. I appreciate your anxiety that the College should take a firm stand. I will convey to the Council the general feeling of this meeting and will include in a communication to the Press a statement that this College will stand loyally by the majority of the profession, whatever their decision may be.

In reply to Mr. T. A. Green, the President said that a considerable majority of the Council had voted in favour of negotiation. What reasons moved them he could not say. It might

have been his persuasive eloquence, though he did not unduly try to influence them. He thought they felt that they were going to get very poor support from the public if at this stage they refused to negotiate, whatever might happen at a later stage. It must be admitted that they had not had a very good Press up to now. He himself held the view strongly that at this stage it was their duty to negotiate.

The meeting then terminated. It was attended by 150 Fellows, and although no vote was taken the volume of applause suggested that there was a large majority against negotiation.

PRIORITY SUPPLIES OF MILK TO INVALIDS

On Oct. 29 the Minister of Food made a statement on milk certification. He implied that there had been laxity by doctors in issuing their certificates and announced that all certificates issued before Nov. 3 must be renewed on or after the 30th of that month unless their time expired before that date. It will be recalled that the matter was discussed at the November Council Meeting and a strong protest issued.

The Minister's announcement was made in the Press, in the *British Medical Journal* (Nov. 2, p. 661), and over the wireless, but this method of notification resulted in a certain amount of confusion. Doctors had not been notified personally, and consequently only those who saw or heard these announcements were aware that certificates must be reissued. The result has been that doctors have been annoyed by frequent demands from their patients for renewed certificates, and patients have been unable to obtain their priority needs of milk.

Practitioners are reminded that patients are unable to obtain their priority supplies of milk unless they submit a certificate issued after Nov. 3.

Reports of Societies

TREATMENT OF ACUTE PERITONITIS

At a meeting of the Section of Surgery of the Royal Society of Medicine on Nov. 6, with Mr. E. F. FINCH in the chair, Prof. JOHN MORLEY said that he would confine himself largely to the diffuse or general infection of the peritoneum rather than deal with the localized abscess. Surgical opinion had passed through various stages since Lister laid the abdomen open to surgery. When surgeons at last put aside their unreasoning dread of the peritoneum their reaction was to treat it with far too little respect for its delicate defence mechanism. At one time there was a great belief in the drainage of the peritoneum, and the abdomen after an operation would be left bristling with tubes. A great step forward from the vigorous and ill-advised flushing was made when gentle sponging of the peritoneum with swabs wrung out of normal saline took its place, later to be replaced by suction. The greatest advance in treatment was the realization of the important part played by dehydration in peritonitis, the loss of water and sodium chloride from the blood, and the practice of replacing this fluid by normal saline given at first by the rectum and subcutaneously and later by the intravenous route. A further step forward came with the introduction of the Ryle tube, and the crowning mercy was chemotherapy. As the vast majority of the cases of peritonitis were secondary to perforations of the alimentary tract, he would put first among the principles of treatment the closure of the ulcer or removal of the appendix. The operation itself, necessary though it was, did inevitably add somewhat to the risk of paralytic ileus, which was in its essence a defence mechanism. He preferred the term "inhibition ileus" as emphasizing the initial state when treatment could do some good; later, when the gut was distended with gas and fluid and oedematous or inflammatory changes had taken place and there was a failing circulation, the wall of the gut became truly paralysed and a stage was reached when the paralysis was irreversible. The fundamental difference between inhibitory or paralytic ileus and mechanical ileus must be emphasized. Peritonitis, of course, often led to mechanical ileus by causing

fibrous adhesions which resulted in kinking, torsion, or compression of the bowel. Operation should be carried out with the least possible trauma, and that was the main reason why, in addition to spinal anaesthesia, an adequate incision and suction should be used rather than sponging to cleanse the peritoneum of infected fluid.

Should the Peritoneum be Drained?

Should the peritoneum be drained? The answer in perforated peptic ulcer was emphatically "No." He had not drained a perforated peptic ulcer, except in an occasional late case with subphrenic abscess, for twenty years; drainage was unnecessary and was likely to give rise to dangerous adhesions. In peritonitis from a gangrenous appendix he seldom drained unless an abscess cavity was present which was prone to bleed, but always drained the abdominal wall if it was heavily contaminated. In general, drainage of the peritoneum did very little good, though when in doubt there was no great harm in draining for a day or two. On the subject of chemotherapy there was still no unanimity as to which was the best drug to use or the best manner of its application. It was bad practice to apply masses of sulphonamide powder within the peritoneal cavity; a much sounder method was to introduce it in suspension in normal saline. It was a matter for discussion whether intraperitoneal applications of the sulphonamides should be supplemented by sulphonamides given by the intravenous route or by penicillin.

Within recent months two vigorous tugs had been made at the pillars of the house of surgical orthodoxy—namely, Spalding's attack on the time-honoured Fowler position and Hermon Taylor's advocacy of the non-operative treatment of perforated peptic ulcer. The belief that Fowler's was the best position to protect the patient from subphrenic abscess formation did not emerge unscathed from Spalding's attack. Without subscribing to all the arguments about the hydraulics of the peritoneal cavity the contention concerning the limitation of breathing when the patient was propped up in the Fowler position was impressive and Prof. Morley felt that Spalding had made out a good case against it. Hermon Taylor's plea for the expectant treatment of perforated peptic ulcer was less convincing. In a patient who was a bad operative risk owing to old age or chronic bronchitis it was preferable to try expectant treatment, but in the average risk, if one got the perforation early—within the first six hours—he would not advise it. It was wrong to regard the present operative mortality as serious. In the last 24 cases of perforation on which he himself had operated there was only one death (of a man who had perforated five days before and had a subphrenic abscess), and in his unit in Manchester Royal Infirmary during the last five years in 100 cases of acute perforation there had been only 8 deaths, all of them in patients who were either bad risks by reason of bronchitis and emphysema or in whom the perforation had taken place more than twenty-four hours before.

Protein Balance

Mr. C. G. ROB said that recovery from established acute general peritonitis, while depending to some extent upon the skill of the operating surgeon, was governed to a far greater degree by the pre- and post-operative care which the patient received, and one factor in ward care was protein balance. From the investigations on protein metabolism during the late war some surprising facts about the easily estimated plasma proteins came to light. For example, the patient with chronic long-standing wound sepsis usually had a normal plasma protein level although considerable protein loss had occurred. In burns or acute peritonitis the plasma protein level might fall before the tissue protein could be mobilized to replace the loss. Patients with established acute general peritonitis suffered from reduction of body proteins which occurred in four principal ways: (1) exudate from the surface of the peritoneum; (2) into the lumen of the distended intestine when paralytic ileus had occurred; (3) into the subserous and serous layers of the peritoneum, and (4) owing to associated reduction of protein digestion. Mr. Rob entered upon a description of the mechanism involved, leading up to a fact of great clinical importance, namely, the need of giving a

plasma transfusion to every patient whose peritoneal infection was severe enough to require an intravenous infusion, thereby maintaining the plasma protein at normal level. Not only would such a procedure prevent the onset of peripheral circulatory failure, but if given in sufficient quantity it might even correct established peripheral circulatory failure in an apparently moribund patient. During the past three years he had treated 31 patients who had established general peritonitis and had placed them on a post-operative regime which included plasma transfusion. In 25 of those who received the plasma transfusion before there was peripheral failure no sign of such failure developed, and all made a satisfactory recovery. The other six did not receive a plasma transfusion until after peripheral circulatory failure had developed. They were moribund, with a very rapid and thready pulse and a subnormal temperature; but in spite of this three of them recovered, due no doubt to the very large amount of plasma they received. Every patient whose peritonitis was severe enough for an intravenous infusion to be necessary should receive plasma as a prophylactic measure against the peripheral circulatory failure to which such patients so often succumbed.

General Discussion

Mr. VAUGHAN HUDSON spoke of the value of penicillin as an auxiliary in the treatment of peritonitis or as a preventive of complications. There was a definite place, as war experience had shown, for parenteral penicillin in all injuries from without. The failure of the sulphonamides to prevent the post-operative complications of pneumonia after collapse of the lung and infections in the renal tract was disappointing; but the control of these complications by parenteral penicillin was encouraging. Mr. NICHOLSON criticized Fowler's position. In a unit with which he had been connected the practice was to have the patient flat on the back, and in that position the subject did as well as in Fowler's position. Many patients did not like Fowler's position, and more harm than good was done by compelling them to be in a position in which they were uncomfortable. Prof. IAN AIRD spoke of the difficulty of estimating the value of the sulphonamides and penicillin in a condition such as peritonitis owing to the absence of a control series. An attempt at a control series was made in the children's hospital in Edinburgh, but the figures obtained were not significant.

Sir HENEAGE OGILVIE said that towards the end of the war nearly every surgeon dealing with abdominal injuries adopted the principle of replacing lost protein by intravenous plasma, but the methods used were very haphazard. It was very interesting to find it put on an experimental basis by Mr. Rob. In peritonitis they were perhaps too apt to be concerned with the bacterial side. Certainly peritonitis was an abscess in the largest cavity of the body, but surely it was a cavity which could deal with infection better than any other. He agreed with Prof. Morley that drainage should not be carried out in a wide general peritonitis; in fact, any local drainage in a widespread infection was almost a waste of time, but he would have thought that a localized abscess should be drained every time. In the presence of an abscess they drained not for the pus they found to-day but for the pus expected to be there to-morrow. In all conditions the forestalling of ileus was one of the most important things to be done. He endorsed what had been said in criticism of the Fowler position. The position was based on "nursery mechanics," and had no support in physiology or animal experiment. Prof. PATERSON ROSS raised the question of morphine in acute cases. It was often taught that a well-localized peritonitis could quite safely be treated by morphine; but it was not safe with a diffuse peritonitis. He could not help thinking that if there was diffuse peritonitis and it was desirable to give the bowel complete rest morphine could be used both with safety and benefit. He added his condemnation of Fowler's position. The obstruction to the return of venous blood from the lower limbs set the stage for thrombosis and increased the risk of embolism. The advantages to the circulation by not adopting the Fowler position were considerable. Mr. DICKSON WRIGHT spoke of the importance in peritonitis of the abstraction of fluid from the general body circulation. He was a great believer in the use of suction. If the body fluids could be shifted a great

deal of good could be done to the patient. Mr. MARTIN said that he invariably used morphine in acute peritonitis and was convinced that it was life-saving. He had used it both in traumatic cases during the war and in ordinary cases following appendicitis and perforated ulcer, as it prevented distension and brought about rest. Mr. DONALD asked whether Prof. Morley would differentiate between children and adults in the matter of drainage, remembering the old adage: "When in doubt with an adult, do not drain; when in doubt with a child drain." Mr. SOLLY COHEN asked whether there was any danger in giving blood rather than plasma. Was the increased cell concentration dangerous? He wanted a reasonable explanation of what was meant by peripheral circulatory failure. Again, what penicillin dosage should be given? Which type of sulphonamide was most useful given by mouth? What was meant by the term "splanchnic reflex"? He doubted whether the Fowler position itself contributed to subphrenic abscess.

Mr. Rob, in reply, said that during the war he had treated abdominal wounds both before and after the introduction of penicillin. Of 89 abdominal wound cases treated with sulphadiazine, none of which were drained, the abdominal incision became infected in 6. Of 37 treated with sulphadiazine and penicillin, all healed by first intention. On the question of blood or plasma, in his opinion blood should be used when blood had been lost and plasma when plasma had been lost as the two fluids were not interchangeable. Prof. MORLEY said he was sure that for peptic ulcer drainage was not only unnecessary but dangerous, because it was so particularly liable to give rise to bands of adhesions. He did not attach much significance in acute cases to the blood picture. One had to depend much more on the general clinical phenomena. He was a whole-hearted believer in the use of morphine in peritonitis; the bowel needed the rest which morphine ensured.

FAMILY PLANNING ASSOCIATION

Some 130 doctors attended a medical conference of the association held on Nov. 24, when "the experience of some local authorities in providing contraceptive advice within the term of the Ministry of Health Memoranda" was discussed under the chairmanship of Dr. ANNIS GILLIE. Since 1933, thanks largely to the F.P.A., the provision of advice on contraception at clinics has become a generally accepted part of the medical services, and there was great hope of further progress under the new Health Act.

Dr. MARGARET TURNER described her experiences in running one of the ten clinics provided by Essex County Council and emphasized the great need for a service which would cover fully all the aspects of family planning, such as marriage guidance, sub-fertility, and the treatment of minor gynaecological ailments as well as contraception. Experience in many different types of clinics was represented in the ensuing discussion, which ranged widely over all the problems that their organization present.

Developments in the Treatment of Sub-Fertility

With Prof. W. C. W. NIXON in the chair, Dr. MARGARET JACKSON outlined the methods and investigations that she used and made the following points: that one of the most important aspects of the clinic was to sort out the hopeless from the hopeful patients; the importance to the peace of mind of the former group of patients of knowing exactly where they stood could not be overestimated; that as fertility was greater before than after the age of 30, it was important for married couples to try to have children as early as possible so that if sub-fertile they should have a chance of successful treatment. She emphasized the importance of investigating the husband as well as the wife and illustrated the growth of her work by the fact that, whereas in 1933 0.5% of her clinic patients came for sub-fertility, the proportion is now 33%.

The conference ended with a showing of the film "Studies in Human Fertility," which was made in the United States and has been used in that country for the instruction of medical students.

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Correspondence

Unswerving Support

SIR,—I resigned from the B.M.A. at the end of 1939 owing to a difference of opinion with an official of the Association on what I considered a matter of principle. For the past three months I have been reading the *Journal*, and am now quite convinced that not only is this not the time to perpetuate a grievance (fancied or otherwise), but that it is the proper time for every member of the profession who values his personal liberty and the welfare of his patients to give his unswerving support to the Association. I am therefore making a formal application to the Association to be readmitted to membership to-day.—I am, etc.,

London, N.19.

C. H. JOHNSON.

The Plebiscite

SIR,—I have answered "No," but I am distressed to think that my answer may be construed as having the implications referred to in the preamble of the plebiscite form. I hold that "the profession should decline to accept service under the Government scheme," but I do *not* hold this opinion "in view of the wide divergence between the principles of the profession and the provisions of the Act," for I disagree with the first four of the five decisions of the Representative Body mentioned in Dr. Hill's letter.

I approve in principle of the enactments regarding "direction," State ownership of hospitals (but not nursing homes), sale of practices, and basic salary; but my emphatic hostility is aroused by the many points—I have counted eighteen in the Act—at which the Minister may exercise an arbitrary power. To my mind the worst of these eighteen relate to his (a) withholding the annual report of the Central Health Services Council, and (b) compulsorily acquiring any medical institution which may be set up in the future. If the referendum shows a substantial majority of "Noes" I trust that the Council will not aim that this majority is unanimous in its reasons for condemning the National Health Service Act.—I am, etc.,

London, N.19.

G. A. VAN SOMEREN.

SIR,—To read the correspondence in recent numbers of the *Journal* one might think that the future of the human race was at stake in the plebiscite. Your correspondents dislike the Labour Government and all that it stands for. Let them say so and have done with it but not confuse the issue by indulging in political diatribes. The fact is that the Labour Government (supported in this instance by the Liberal Party) have a clear mandate from the electorate to pass the National Health Service Act. Your correspondents forget too that all political parties and the B.M.A. have urged the creation of a free and comprehensive health service. In 1944 the plebiscite of the medical profession confirmed this general wish, and more recently the students have shown that they were largely in favour too.

We doctors now have the right to negotiate with the Minister regarding the terms of service. Shall we now behave like a lot of sulky schoolboys and refuse to have anything to do with an Act of Parliament which clearly represents the wishes of the country? One's only possible doubt in answering "Yes" is whether we are wise in putting the powers of negotiation in the hands of men who have already shown their political bias and determination not to meet the Minister in a reasonable spirit.

Is the Negotiating Committee a democratically constituted body? What say—direct or indirect—had the Service doctors? Can it or the Council of the B.M.A. be said to represent the wishes of the majority of the profession? There must be tens of thousands of members of the B.M.A. who have joined—this being the cheapest and most convenient way of securing the *Journal*—and who never attend B.M.A. meetings. The difference between the viewpoint of the B.M.A. Council and the Negotiating Committee on the one hand and that of the profession as shown by the 1944 plebiscite on the other is so marked that one is forced to conclude that the former do not really represent the opinions of the profession as a whole.—I am, etc.,

H. B. O. CARDEW.

Bristol.

Northern Ireland and the Plebiscite

SIR,—Dr. Conn McCluskey's letter (Nov. 23, p. 791) came under discussion at a Divisional committee meeting this afternoon. I am asked to take immediate steps to correct the impression which may be given. The committee has no reason to assume that Mr. Grant intends to do anything other than follow the English Act in all its major details. It should not be assumed that the alternative measures which Dr. McCluskey mentions will be acceptable to the Northern Ireland Government. All evidence points to the opinion that Mr. Grant will be compelled to follow the English Act closely. Northern Ireland practitioners should not permit themselves to be misled by any assumptions to the contrary.—I am, etc.,

Belfast.

DOUGLAS BOYD,
Hon. Secretary, Belfast Division,
British Medical Association.

The Act and Ophthalmic Treatment

SIR,—Those of us who have interested ourselves in this National Health Service during the past four or five years are amazed at the apathy of the medical profession generally in a measure like a State Medical Service, which affects their living and their mode of life. Most Divisions have held meetings to discuss this plebiscite; and I should think that the experience of other Divisions has been much the same as our own at Guildford, where 12% came to hear the views of their colleagues on this subject. Of those who came the vote was a unanimous "No," and I take it that if there had been any very keen "Yes"-men they would have come to the meeting to state their views.

The planners are already at work, and in ophthalmology major ophthalmic surgery is only to be performed at key hospitals. Smaller hospitals which may have quite considerable ophthalmic departments are to be closed, for major surgery at any rate, for no better reason than that they are small hospitals. The key hospitals are well named, for those who are already installed in what are to be the key hospitals not only have the key of their own hospitals but also intend to take the key of hospitals with which they have had previously no association, and lock the door at will. I fully realize that it is only by closing the smaller hospitals that patients could be compelled to make the long journeys to key hospitals which they have been unwilling to make in the past.

Surely this must be the writing on the wall for the whole profession; and it is quite incredible to me that doctors who may have been 20 or 30 years in practices of their own should now be willing to return to their house-surgeon days without so much as a fight.—I am, etc.,

Camberley.

LESLIE HARTLEY.

The Patient's Dilemma

SIR,—Apropos the National Health Service Act, wherein we are assured that the mutual freedom of choice as between doctor and patient will be retained, how would one reconcile the fact that when a practitioner chooses to remain and practise outside the scheme his patients will not be provided with free medicines and appliances under the Act. Yet, it is presumed, these same patients will compulsorily have to pay their weekly contributions to that scheme without deriving any medical benefit from it.

Should they insist upon their rights to free medical benefits under the scheme they will presumably be advised or directed to join the list of a practitioner within the scheme. Is this consistent with the freedom of choice of a doctor by the patient?—I am, etc.,

Aldershot.

D. M. RAYNES.

National Health Service Act

SIR,—Surely no right-minded citizen, no matter what his political views—unless Fascist—could desire the B.M.A. to negotiate terms with the Minister of Health. The Act as it stands is an unscrupulous, expensive political pawn which gives the Minister dictatorial powers over the medical profession. The Socialist should bear in mind that the next Minister of Health might be a Conservative.

The expense of running this dictatorship, with its multitudinous subcommittees and boards, all ultimately appointed by the Minister, does not bear thinking.

which is on the borderline of bankruptcy it is not ludicrous but terrifying. Those prepared to use the Act as a basis of negotiation admit by implication approval of it as far as it goes. It is not a case of making the best of a bad job, but of resisting evil all along the line and having as little to do with it as possible. The idea of increasing the facilities for, and the medical care of, the country is good and perhaps overdue; but we must not be party to a scheme which can only lead to a decrease in this ideal.

A further rather important snag in the scheme as proposed, which seems to have been overlooked at the present, is in regard to hospital accommodation. The latter is inadequate at the moment to cope with all the cases who would honestly benefit from it. In consequence many patients are treated as well as possible, and frequently with success, in their own homes, though ideally they would be hospitalized. Under the new scheme all pay equally to the upkeep and have equal right to the very best care. Therefore all these cases have the right to hospital treatment. What right has the mere doctor, an executive in a monster machine, to deter them merely because the bed situation is difficult? At the moment, because it is not a "right" for all, the doctor can and does use his discretion, even though this may throw a great deal of hard work upon him—visiting regularly the more seriously ill. The situation might become, and certainly could be made, quite impossible. —I am, etc.,

Cheam.

NEVILLE K. CONNOLLY.

SIR,—A decision not to enter the National Health Service would be, according to your leading article of Nov. 16 (p. 739), "strictly legal and honourable" (italics mine). I entirely disagree.

The "fundamental principles" on which the B.M.A. has taken its stand are not moral principles. They are merely political, the cornerstones, in fact, of Conservative policy—private enterprise (or practice); private ownership (of practices); vital businesses (including medical practices) run as independent, competing, profit-making units, unplanned as to their location or number; and minimal "evolutionary" changes at slow tempo. But these are no longer the guiding principles of society. A Socialist administration has been freely elected to power and is committed to the nationalization of certain basic undertakings—communications (Cable and Wireless, Ltd.), banking, coal-mining, railways, and medical services.

We are entitled no doubt to vent our displeasure and disappointment to a reasonable extent, but do not let us carry opposition too far. We are citizens even before we are doctors, and we have surely a moral obligation as citizens to co-operate in putting into effect Acts passed by Parliament however distasteful to us personally. I suggest our profession should take its "medicine" in a sporting spirit and try to make a success of the National Health Service. This is probably, moreover, wise practical politics. In the event of a prolonged and bitter struggle with the Government it is we, I am convinced, who would suffer most.—I am, etc.,

Wallasey

LENNOX JOHNSTON.

SIR.—A useful purpose may now be served to forecast the present views and feelings of medical men as judged by the literature, personal contacts, local meetings, and consultant gatherings in London. As I see the position, individual opinions may be grouped into four classes.

1. Against any clause or remote threat which involves loss or possible loss of freedom. A majority, I am sure, if they are honest hold this view, but not all of them will commit themselves. A large backing of unshakable, determined men and women is essential in this category, not only to prevent the dangers of shackles, dictates, and direction, but as an example to the next group.

2. A weak collection of waverers who need guidance, further knowledge of the dangers threatening, and an assurance of their personal safety; some of these individuals are continually wondering what their colleagues in opposition practice will do instead of making up their own minds and helping the team.

3. Those who favour undiluted State service. Included here, of course, are the small Socialist group. Many of these doctors are young, have been in the Services, or may still be serving. A large number of these have seen the red light on returning home and discussing matters with colleagues, or having listened to addresses. Such men and women, fearing for their future livelihood, should be made to realize that there is a shortage of doctors and room for all

in our country. Apparent Government concern for their poverty is just propaganda.

4. A necessarily small group of leaders and those in high places, whose recent expressed views are, to put it mildly, disturbing. This is a pity, as many would have liked a strong lead from such presumably well-informed quarters. This is no time for half-way measures and compromise. It does not seem possible that such people are willing to take a risk and give way on some of the principles agreed by a great majority of the rank and file. This vacillation from a position mid-way between the Government and the main loyal body of the profession is not good enough. It should be realized such is in fact the case—hence the dangers of saying "Yes" in the referendum. After the way in which the Bill has been introduced, a Bevan concoction, without advice from those expected to work it, refusal to discuss matters, a *fait accompli*, etc., surely such matters can be met only by standing firm on any point even remotely threatening future dictation. Let us hope that these important individuals, on account of their high level, will not fear to present a bolder front when the time comes.

I believe our position generally has been greatly strengthened of recent months. We hope that the quiet, unassuming Guy Dain and others will not cease their valuable addresses to groups of medical men. If they need any encouragement they might like to know that they have made many converts and assisted others to a firmer frame of mind. It may help some to know that at a recent discussion of Fellows it was obvious that the rank and file of consultants and specialists present were, as far as I could assess, wholly or almost entirely in favour of supporting the principles already laid down. I mention this because there is a growing feeling among general practitioners, whose house is now in better order, that the profession may be let down by the consultant or specialist. Meetings at the Royal College of Surgeons do not appear to support this view. Mr. Reginald Payne, Laurence Abel, and others should be thanked for their efforts at the Fellows' discussion. Mr. Payne, who has taken much trouble in studying laws, rules, and regulations, and the dangerous growing power of the politician, should receive special thanks for his effort, and I hope he will publish his remarks. During his lengthy and necessarily dry discourse I heard a whisper behind me, "For Heaven's sake keep politics out of this discussion." Such a remark savours of much dangerous ignorance. Much as we dislike it the politics of the present Government are thrust on us and we must face, discuss, and fight the dangers inside and outside the profession.

How many doctors know the meaning and implications of the "closed shop"? Why must we wait for incidents like the Willesden Hospital staff-sacking threat before we blink our large baby blue eyes! It will be amusing to see how the Ministry of Health explain or minimize this blunder. Possibly to save face some minor official will be rapped over the knuckles. The "closed shop" is on our doorstep. Basic freedoms and minorities are daily involved in an overbearing and destructive process. The medical profession is a minority community, unassailable if we stand together. We have the opportunity; we have also a chance of perhaps setting an example and encouraging other bodies of men and women who are British to call a halt to the Britons already on the road to serfdom. We do not seem to realize the dangers, in spite of having just emerged from the world's greatest disaster—the result of a one-party dictatorship.

I cannot understand how supposedly sane professional men and women can countenance drastic changes and chances at this particular moment of all moments in our long and honoured medical history, while the process of aping recent Continental dictatorships is in our midst and hot-headed M.P.s will tell us when, where, and how we will do our work. I recommend this thought to everybody—even to those who would fail us in the fight for freedom.—I am, etc.,

Torquay.

W. ETHERINGTON-WILSON.

Ends and Means

SIR.—I have just received a copy of Bulletin No. 16 from the Medical Policy Association (London), which strongly urges the professions not to send a deputation to the Minister of Health to discuss with him the Health Act. I am second to none in my dislike of the Act, and the overbearing attitude of the Minister in the matter. I deplore the proposed rape of the hospitals and the twilight of the freedom of medical men as

individuals. Nevertheless, in my humble opinion a refusal to meet the Minister is playing right into his hands—it is both undignified and unwise. One can almost hear his reply—"I have them a chance to meet me, and they sulked and would not play." It would show a pettiness that is unworthy of the profession. I believe a large section of the public would take the same view, and we cannot afford to ignore public opinion in such a vital issue.

The last paragraph but three (heavy type) leaves one bewildered, if words have any meaning. It states: "To vote or negotiation is to agree with the Minister's aims because *you cannot honestly discuss means unless you are in agreement with the ends.*" One assumes that the deputation would tell the Minister in unmistakable terms what it thinks of the Act as a whole—and of many of its clauses. How this could be construed as "agreement" passes comprehension.—I am, etc.,

London, N.20.

B. HALLEY STEWART.

Cerebral Malaria in Britain

SIR,—I read with interest the account (Nov. 30, p. 815) by Drs. J. R. Ryder and R. T. Towson of their case of cerebral malaria, which reminded me of a case seen by myself and described in the *Journal* of April 27 (p. 650). In my case the patient was completely comatose and had not had any previous recognized attack of malaria, but he did show a profound amoebolytic anaemia and an enlarged spleen.

As in the case of Drs. Ryder and Towson, my patient had not long returned from W. Africa, and the onset of coma and high fever in a young man from that region roused an immediate suspicion of the presence of cerebral malaria. His condition appeared so desperate that an even larger dose of intravenous quinine (20 gr.) than that given by Drs. Ryder and Towson was employed. He made an immediate recovery, but my impression was that had effective treatment been long delayed this would not have been the case.

I reiterate these facts to support the statements in the recent case report that cerebral malaria should be considered as a possible cause of coma and that its early treatment is essential. The fact that a febrile comatose individual has not long returned from an area where malignant tertian malaria is endemic should certainly make us alert to this possibility.—I am, etc.,

Edgware,

G. H. JENNINGS.

Evaluation of Barrier Creams

SIR,—I would like to pay tribute to the article by Drs. G. A. Sadler and R. H. Marriott (Nov. 23, p. 769) and to their caution in presenting their conclusions. The practical use of barriers (and I think the writers would agree) is bound up with the physical and chemical factors operating in the aetiology of industrial dermatitis. One of the most neglected aetiological factors is that of friction. Often enough the causation of industrial dermatitis is not merely that of skin plus irritant, but of skin plus irritant plus friction. The element of friction is so important that certain abrasives, chemically inert, can by virtue of their physical property alone produce an eczematoid reaction. With substances chemically hostile to the skin the sites of the rash are not necessarily those places where the agent soils the skin: it is more often those soiled areas where the agent is rubbed into the skin. So a man whose whole forearms are bathed in irritant may only present a rash where his rolled up and soiled shirt sleeves constantly abrade his skin, or where the ulnar borders of the forearm rub against a protective apron or on a bench.

Because of this element of friction medical officers in industry must often be struck by the exact similarity from case to case where these dermatitis cases come from one particular job. The importance of this element of friction can be readily understood by computing how many thousands of times a muscular movement may have to be performed in a day's work. By virtue of this repetition a mildly irritating substance may be transformed into a potent source of dermatitis. All this is important in regard to the practical use of barrier creams for very obvious reasons, and because of these reasons it is not uncommon to see a correct barrier religiously applied proving useless.

Nevertheless, friction should not be overstressed. Dermatitis occurs where this is minimal, as in the formalin dermatitis of laboratory workers; but in this sort of case the chemical is often potent and hostile to the skin to an unusual degree. Where friction is great, chemical irritation can be minimal, but where friction is slight, chemical potency must be marked in order that a serious cause of dermatitis may arise. No doubt this is only a rough rule to which there are exceptions, but it may well be that a motion study of employees at work, with a view to minimizing wear on the skin, could often be a better answer than the application of a barrier to the skin. It is at any rate remarkable in industry that the risk of dermatitis does not necessarily run parallel with the irritating power of the substances handled. The very irritant substance may in practice be less harmful than a mild chemical because the nature of the work may be the main determinant.

The housewife might merely immerse her hands in warm alkaline solutions with impunity, but who can doubt that the element of friction on washing-day adds the final touch to the destructive power of the alkali on the horny layer? How does a barrier behave to this great but unrecognized element of friction? It seems to me an important point in very many jobs with a dermatitis risk.—I am, etc.,

Morris Motors, Ltd.

G. WHITWELL.

Penicillin and Acute Puerperal Mastitis

SIR,—Drs. Mary Taylor and Stanley Way's instructive publication on "Penicillin in Treatment of Acute Puerperal Mastitis" (Nov. 16, p. 731) has appeared most opportunely for me, as I have just finished my observations on a case of mine.

CASE REPORT

A.B., aged 34 years, para. 2. On Oct. 23, 1946, dribbling of liquor amnii commenced, and continued with irregular short pains. Admitted into the maternity home late Oct. 27. Occipito-posterior position of the vertex, with restitution and abrupt normal termination of a tedious labour on the evening of Oct. 28. Lactation commenced Oct. 30.

Nipples cracked and breasts began to be tender on Nov. 1. Rigor and pyrexia 102° F. (38.9° C.) early hours of Nov. 3. By mid-day temperature was normal and breasts soft with no tenderness on pressure. Lactation stopped. Nov. 7: rigor and pyrexia, with flushing and exquisite tenderness of the left breast and lower half of the right breast. The patient felt and looked ill. Penicillin injections commenced Nov. 8—500,000 units twice daily till 5,000,000 units had been injected. Nov. 11: patient passed from great distress into comfort, and the breasts became soft and palpable.

Nov. 13: patient returned home and is now going about. Stilboestrol 5 mg. was administered throughout this treatment, and breasts were pumped.

The magical clearing up of both the breasts under the massive penicillin injections in so short a time is worthy of note.—I am, etc.,

Warrington.

FEROZE GANDEL.

"Benadryl" for Penicillin Urticaria

SIR,—The article by Lieut.-Col. R. R. Willcox (Nov. 16, p. 732) on the use of "benadryl" for penicillin urticaria prompts me to record a recent case in our practice in whom a similar beneficial effect has been observed in urticaria following liver injections.

This is a woman who had been having a maintenance dose of 2 ml. "anahaemin" monthly for the past five years for pernicious anaemia. In January this year she had a mild urticaria following her injection, which settled down after a few days. After her next injection in February she had a most violent and profuse attack of urticaria with oedema of the tongue, the glottis, and the eyelids—this despite the fact that 5 min. (0.3 ml.) of adrenaline was given with the "anahaemin." Once more "anahaemin" was injected with 10 min. adrenaline, but with the same unfortunate effect. After this she refused to have any more. An attempt was made to desensitize her by giving her orally minute increasing doses of proteolysed liver, but each time she reached about a teaspoonful dose the urticaria appeared again.

On Oct. 16 I was summoned to see her and found her in a state of collapse, with dyspnoea, feeble heart sounds with tachycardia, and oedema of the feet and legs. Her pallor was intense,

and she was almost moribund. From that date onwards for a fortnight she was given 2 ml. "anahaemin" daily, but at the same time she took two capsules of "benadryl," 50 mg. each t.d.s., and to my great relief and hers no urticaria appeared. For the past three weeks she has been given 2 ml. "anahaemin" twice weekly, and the dose of "benadryl" has been reduced gradually to one capsule taken after the injection only. As an experiment, on two occasions the "anahaemin" has been given without "benadryl" at all, and each time a mild urticaria of the arms and legs has appeared.

She is now very fit, and is continuing on once-weekly injections of the liver followed by one capsule "benadryl," with no untoward effects. No haematological examinations have been done on this occasion, partly for financial reasons and chiefly because the diagnosis of pernicious anaemia had been established in the past.—I am, etc.,

Bournemouth.

JAMES NICHOLSON.

Treatment of Osteoarthritis by Lactic Acid Injection

SIR,—I am grateful to Dr. R. Mawson for his article (Nov. 9, p. 691), and I envy him his power of lucid exposition and graphic description. As originator of this method of treatment I find little to cavil at, and if I differ from him in certain details of technique I hope he will not think me captious. During the last twelve years I have been responsible for the injection of approximately 10,000 cases, and this experience has led me to the following conclusions.

(1) It is a mistake to use a local anaesthetic. I use much finer needles than Dr. Mawson—e.g., for hip-joint a needle $3\frac{1}{2}$ in. (9.4 cm.) with a bore of 0.55 mm., for the knee a needle of 20 S.W.G. bore. (Incidentally, why, oh why do the manufacturers cut down the length of the needle with the bore?) I attribute my complete absence of sepsis to these two factors.

(2) I very rarely use the anterior approach to the hip-joint, for the reason that effusion in the joint (more often experienced than I had thought likely) or an excessive amount of periarthritic thickening may displace the vascular packet and the femoral nerve laterally, and in stout patients the pulsation of the artery is not easily felt.

(3) For the wrist-joint proper I inject via the anatomical snuff-box; but the division of this joint into radio-carpal and ulna-triangular ligament-lunate articulations is an artificial discrimination remote from clinical reality—vide Prof. Seddon's x-ray movies of the wrist or the average case of atrophic arthritis, where the ulnar side of the wrist is frequently more seriously affected than the radial; and I agree with Dr. Mawson that it is frequently useful to enter the wrist-joint via the ulnar side. In any case the synovial cavity communicates on the proximal side of the triangular ligament with the inferior radio-ulnar joint, and on the distal side with the radio-carpal articulation.

(4) I believe from x-ray examination that if severe pain is complained of immediately after injection the point of the needle is under the periosteum or the cartilage. I have not experienced it since I formed the practice of withdrawing the needle a short distance before pushing the plunger. Deliberate infiltration of the thickened capsule does not cause undue pain.

(5) The use of acid injection in active atrophic arthritis is not recommended. My admittedly inadequate observations of the joint pH in this phase tend to show that it is certainly not alkaline.

The suggestion has been made repeatedly that the procaine is the active ingredient in the improvement gained: Warren Cowie, however, using acid potassium phosphate without procaine, obtained highly satisfactory results; and in any case, most procaine solutions have a pH figure well under 7.—I am, etc.,

Sunderland.

W. GRANT WAUGH.

Immunization against Whooping-cough

SIR.—It is very encouraging to read in the *Journal* of Nov. 9 (p. 699) that the Medical Research Council is initiating in certain limited areas, in co-operation with the medical officer of health of those particular areas, experimental inoculation against whooping-cough. Its results and conclusions will be awaited with great interest.

The following comments are from the point of view of G.P. interested in this subject for close on 20 years. (Sugar H., and McLeod, J. W., *Lancet*, 1929, 2, 165.) There is great need in this country for a more extensive study of immunization against this disease, which causes such impairment of health and loss of school attendance. Several extensive investigations of its value have now been carried out, chiefly in Denmark and the United States. Their results are very favourable as to its successful prophylactic use.

It is suggested that facilities for active immunization against whooping-cough should be made available by the public health authorities in the same way as in diphtheria, taking into account the view that the injections should commence about the age of 6 months. Combining the injections against whooping-cough with those against diphtheria has also been used. Preliminary trials have been favourable in doses of 0.5 and 1 ml. at intervals of four weeks. This combined vaccine is not generally available. More extensive trial is required, however, before assessment of the efficacy of its prophylactic use can be established.—I am, etc.,

Leeds.

H. SUGARÉ.

The Fenestration Operation for Otosclerosis

SIR.—In the interesting article by Mr. I. Simson Hall (Nov. p. 647), the passive part attributed to the stapes, one of the most fascinating mechanisms in the body, appears to me rather misleading:

In 1931 I challenged the theory, held at that time, that the function of the secondary membrane was limited to permitting the passage along the *scala* of movements generated at the *fenestra ovalis*, and I give a brief summary of the main points in support of my present view. In the case of a cone, such as that of the *membrana tympani*, with its base attached to the *sulcus tympanicus* and its apex directed inwards, any movement inwards would be arrested, and its pressure sustained by its attachment to the *sulcus*. The pressure of the apex of the cone and the resulting movement of the *malleus* would represent a negligible fraction of the energy of a sound wave. I maintained that, mathematically, pressure on the interior of a cone of radiating fibres would produce movement of the apex inwards, towards and not away from the base.

Subsequently, in my little work *Hearing and Equilibrium*, published photographs of an improved model (Figs. 1 and 2) which, in my view, demonstrated conclusively that the hypothesis was correct, and that pressure, insufficient to produce extension of the fibres, tends to convert the cone into a segment of sphere, which expands as the pressure exceeds that strength. In the case of the *membrana tympani* the effect of the initial change is a movement of the apex and manubrium outwards towards the plane of the *sulcus*, while that of the second change is a movement in the reverse direction; movements respectively supplementing weak, and resisting excessive, movements of the fluid generated at the *fenestra rotunda*. The only light pressure which would resist, instead of assisting, the outward movement would be any directly on the handle of the *malleus*; but owing to the downward direction of the inner end of the external canal and the further extension downwards of its roof, wave sweep down towards the *fossula rotunda*, across rather than against the membrane, and the short process of the *malleus* diverts pressures, which would otherwise reach the handle, on to the membrane on either side. In the middle ear the depth, direction, and position of the *fossula ovalis* protects the surface of the stapes from pressures created by sound waves, while not interfering with the action of the ossicles. Finally the fluid movements generated by the secondary membrane are immediately to and from the *scala tympani*; while, on the contrary, those by the stapes are directed across the entrance to the *scala vestibuli*, a construction which, for reasons given elsewhere, does not affect its supplementary action.

Action of the *tensor tympani*.—Waves do not penetrate the *membrana tympani*; movements in the middle ear in harmony with sound waves are generated by its deep surface. Those from its lower more vertical part are directed immediately towards the *fossula rotunda*; while those from its upper relatively more horizontal part are mainly directed to the region above the *fossula ovalis*. The *tensor tympani*, responding to sound in a manner resembling the response of the iris to light. As sound becomes excessive it forces the stapes into the *fenestra ovalis* with

increasing strength, thus preventing excessive movement of the fluid. Simultaneously it raises the tension of the membrane, reduces the amplitude of the movements generated by sound waves and, consequently, of the movements generated by its deep surface towards the *fossula rotunda*. It would be difficult to conceive a more beautifully co-ordinated arrangement for the rapid appropriate conversion of a supplementary into a protective mechanism.

The apparatus consists of a cone of elastic tissue ribbed with comparatively inelastic material, and sealing the upper glass vessel, thus simulating the *membrana tympani* separating outer and middle ears. Two straws (B and S) lie side by side across the base of the cone, but S is hinged at H, and has a looped attachment at L to a small vertical straw resting on the apex of the cone, while A serves as a guide and an indicator for the upward movement of S. S thus simulates the *malleus*.

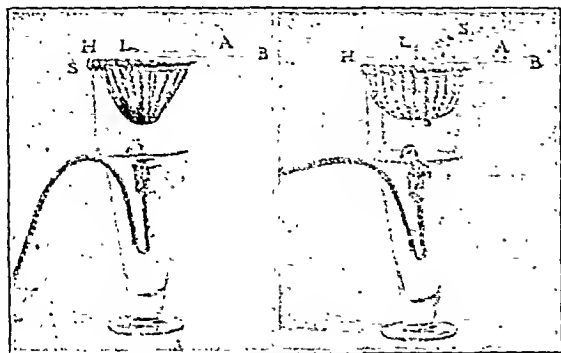


Fig. 1

Fig. 2

In Fig. 1 the atmospheric pressures are equal on the two sides of the membrane, while in Fig. 2 the glass chamber is partially evacuated with the cone assuming a more hemispherical shape and its apex unexpectedly rising as a consequence of the inelasticity of the radiating ribs.—I am, etc.,

H. MACNAUGHTON-JONES.

Facial Palsy Accompanying Acute Mastoiditis

SIR,—With regard to Mr. Arthur Miller's letter (Sept. 28, p. 474), it seems to be worth mentioning that high power magnification now enables one to view the horizontal or intratympanic portion of the facial canal much more clearly than before. The pinkish-yellow nerve appears to be very thinly covered by bone, so thin in fact that one suspects that an actual dehiscence is present, only to find that there is a covering of very transparent bone. Personally I am surprised that facial palsy is not more common when the tympanic cavity is the site of severe inflammatory changes.—I am, etc.,

London, W.1.

IAN G. ROBIN.

SIR,—May I comment upon the sulphonamide treatment of Case 4 of facial palsy accompanying acute mastoiditis as reported by Dr. Kenneth R. Ogilvie (Aug. 24, p. 263), as this is a matter of considerable importance. The history as reported gives no information as to the onset or duration of the preliminary attack; and apparently, although otorrhoea was present, the only treatment was "a sulphonamide—2 g. daily for five days."

It is a golden rule in cases of otorrhoea that the ear must be kept "clean and dry," and this suffices for the great majority of cases—at least in this part of the world. With regard to sulphonamide therapy, it is unfortunate that indiscriminate and ill-informed use of sulphonamides is so widespread. Sulphonamides are not without their dangers, but it must be realized that insufficient dosage is worse than useless, for not only does it fail to cure but it does develop resistance to sulphonamides in organisms that are otherwise susceptible, and may lead to a false sense of security. I consider it wrong and dangerous to give sulphonamides to ambulatory patients.

In the case in question 2 g. daily for five days was a totally inadequate dosage, and from the information given was probably administered not early enough. In cases of acute otitis media the administration of sulphonamides must be in adequate dosage, be commenced early, be conducted with the proper

safeguards, and under careful supervision. Neglect to observe these conditions has been responsible for much unwarranted criticism of the use of these drugs in acute otitis media. To reserve chemotherapy for "cases which show a tendency to spread outside the mastoid process . . ." is to subject many patients to the risk of operations, illness, and expense which could be avoided by early and sufficient intelligent care.—I am, etc.,

Brisbane.

ERNEST CULPIN.

Transmesenteric Hernia

SIR,—The recent correspondence on this relatively uncommon subject has produced interesting differences of opinion concerning its aetiology. As I recently had the opportunity of operating on one of these cases I would like to add my support to the view of its congenital origin so well stressed by Mr. E. G. Dolton (Nov. 2, p. 667).

In my case there was a history of apparently intermittent obstruction extending over a fortnight, and the patient when seen was in *extremis*. There had been no history of abdominal injury. At operation it proved impossible to reduce the prolapsed small gut, and as the obstructing twist was seen in the terminal two inches (5 cm.) of the ileum and was not gangrenous, a rapid lateral anastomosis between the lower portion of the distended ileum and the caecum was done. Unfortunately, on completion of the operation, a tragedy supervened. The patient vomited violently and aspirated a quantity of vomitus, dying in a few moments despite all attempts at aspiration and cardiac massage, etc. I should add that the stomach had been emptied and spinal analgesia employed, but it was found necessary to supplement this by inhalation anaesthesia.

At the subsequent necropsy it was found that the opening in the mesentery measured four inches (10 cm.) at its greatest diameter and was approximately circular. Twelve feet (3.6 m.) of small gut had herniated through the opening, explaining the difficulty in attempting to reduce it at operation. But the important point was that a very careful and detailed examination of the edges of the opening was possible, and this left no doubt whatever that it was in fact a congenital development. Blood vessels of normal size ran along the free margin and anastomosed to complete the pattern before entering the gut. There was no evidence of any previous inflammatory changes and no evidence of healed blood vessels, which must have been torn if the defect had been caused by injury. The very shape of the defect—almost circular—must, I think, dispose of the possibility of trauma, since massive haemorrhage must have resulted.—I am, etc.,

Londonderry.

W. V. BEACH.

Fewer Strengths of Insulin Preparations

SIR,—Originally there was only one strength of insulin solution—20 units per ml. Now there are three strengths on our market—20, 40, and 80 units per ml. Each batch has to be carefully and expensively standardized, checked, labelled, and issued. The manufacturers and the M.R.C. carry out this long-accepted labour ingrained by pharmacopoeial regulations, and it remains for a clinician to state that it would be both helpful in practice and economical in production to omit the weakest solution—20 units per ml.

For many years my diabetic clinic and many others have never used the weakest solution—U.20—nor found it necessary. Even if an unusually small injection of under 10 units is being given, it can be measured accurately enough in U.40 strength. In doses of over 10 units U.40 should always be used for the benefit of small-bulk injections. For the same reason, for still larger doses U.80 should be used instead of U.40.

Mistakes in insulin dosage are all too frequent and would be minimized with only two strengths. Other countries have been worse off, and the Americans have produced 10, 20, 40, 80, and 100 units per ml. strengths. They now propose only two—40 and 80 units per ml. Surely there will be unanimity over this simple suggestion. The clinicians give their blessing, the M.R.C. and the *Pharmacopoeia* add theirs and change the regulations, the manufacturers bless everybody and act quickly—I hope.—I am, etc.,

King's College Hospital, S.E.5.

R. D. LAWRENCE.

Obituary

J. SHAW BOLTON, M.D., F.R.C.P.

After a long illness Dr. Joseph Shaw Bolton died on Nov. 12 at his home at Beaconsfield. He was born in 1867, son of the late Isaac Bolton, of Whitby, and elder brother of Dr. Charles Bolton, F.R.S. He was educated at Spring Hill School, Whitby, close to which his home was, and went on to University College, London, and to the medical school of University College Hospital. He took the degrees of B.Sc. in 1888, and of D.Sc. in 1912. In 1894 he qualified as M.B., B.S.Lond., with a gold medal in medicine, and proceeded to M.D. the following year. He became M.R.C.P. in 1902 and F.R.C.P. in 1909—to the latter distinction he was admitted on the same day as his brother, which one would suppose must surely be a unique event. He also received an honorary D.Sc. from Leeds University in 1934. At University College he was Atchison Scholar, Filler Exhibitioner, and Fellow of the College. After qualifying he was demonstrator of anatomy at his own hospital, and lecturer on physiology at Mason's College, Birmingham, in 1897-9. He was then appointed assistant medical officer and pathologist to the L.C.C. asylum at Claybury, and remained in the mental hospital services for the rest of his career. He was at Hellingly 1903-5, at Rainhill 1905-10, and was then appointed superintendent at Wakefield, where he remained until his retirement in 1933. He was also professor of mental diseases at Leeds University from 1911 to 1934.

Shaw Bolton was a tireless worker and a prolific writer, whose reputation was firmly established by his publication (in 1914) of *The Brain in Health and Disease*; he had then already to his credit the Goulstonian Lecture for 1910 on "Localization of Cerebral Function," and in 1935 he was Lumleian Lecturer to the College of Physicians on "The Evolution of Mind." He was also Maudsley lecturer in 1925, Henderson Trust lecturer in 1933, and author of monographs in Quain's *Dictionary of Medicine*. He was on the Council of the R.C.P. 1928-30, and President of the Royal Medico-Psychological Association in 1928. Such a record speaks for itself; and if he was not in sympathy with some of the more extravagant psychiatric speculations, it is yet to be proved that he was wrong. Even when immersed in the administrative duties of a very large mental hospital he found time to continue his pathological work, in which his researches were of real value. At the same time he had the gift of training his staff and of imbuing them with his own enthusiasm; many of his junior medical officers have subsequently risen to eminence in psychiatry. In 1906 Shaw Bolton married Miss Ellen Rogers, who survives him with their three children, two of whom—their daughter Marjorie and their son Reginald—are also members of the medical profession.

An old colleague writes:

His home life was a perfect example of domestic harmony and delightful simplicity, and to be a guest at his house was a most enjoyable experience. Content for himself with very simple fare, he encouraged without stint or limit the most gay and liberal hospitality, and although himself an abstainer he took pride and pleasure in the care of an excellent wine-cellar for the entertainment of his many friends. To know him well was to love him, and to some of his personal admirers it seemed sometimes unfortunate that the quite extraordinary charm of his personality was, by his retiring habits, concealed from the world that knew him only through his scientific work. He scorned to display this work with an eye to kudos or reward; and generously allowed those working under his direction to take full credit for research that would have been impossible without his guidance. Otherwise he might have attained even higher honours than he received. To his pupils and assistants he was a wonderful man, to whom they owed an irredeemable debt. In his home, to his own family, he was nothing more nor less than just Dad.—J. I. R.

WILLOUGHBY HENWOOD HARVEY, M.A.Cantab., M.D.Toronto, who died on Oct. 7, was a well-known figure in Cambridge. Born in Canada in 1881, he had several medical ancestors, some of whom practised in the backwoods of Ontario in early days. Harvey came to England and studied at Bart's in the first decade of the century, graduated M.B. at the University of Toronto in 1904, and subsequently entered Christ's College, Cambridge, as a research student in pathology, acquiring his M.A. degree by research. He held in succession almost all the research scholarships available, first a B.M.A. Scholarship and then the Beit, Grocers Company's, and John Lucas Walker Fellowships. During this time his work was mostly histological in connexion with arteriosclerosis, and he published in Virchow's Archives on experimental bone formation in blood vessels. For some years he worked with the late Prof. W. E. Dixon in pharmacology, demonstrating that excessive tea and coffee produced nephritis in rabbits; at one time he was excited to discover muscle in the kidney, only to find that it had been demonstrated long since and never got into the textbooks. In the war of 1914-18 he was captain, R.A.M.C., in charge of a central V.D. laboratory in Cambridge, and was later a Secretary of that Section at the B.M.A. Annual Meeting there in 1920. For some years he lectured on immunity to the D.P.H. classes. Nothing would ever persuade Harvey to consider leaving his beloved Cambridge, but family needs made him give up pure research, and take up clinical pathology, which he practised for the rest of his active life, being bacteriologist to the borough and county of Cambridge; but he remained a research man at heart. He had an original, unworldly mind, and like a true pioneer he always questioned the axioms.

Dr. STUART ERNEST GORDON, who died on Nov. 18, was born in Dublin on Oct. 17, 1889, son of the late Alexander Gordon, L.R.C.P. He was educated at St. Andrews and Wesley Colleges, Dublin, and studied medicine at the School of the Royal Colleges of Physicians and Surgeons. After qualifying in 1915 he held resident posts at the Newcastle Sanatorium, Co. Wicklow, and at the Norwich City Asylum, Norfolk. He was in general practice for a time and then took up tuberculosis work at the Middleton-in-Wharfedale Sanatorium, Ilkley, and at the Ashover Sanatorium near Chesterfield.

Dr. C. Thackray Parsons writes: The first reaction of many of HARRY ROBERTS's intimate friends to the broadcast announcement of his death must have been the same as mine—"It is impossible." We knew how precarious his hold on life was, but it seemed as if his personality, will, and mental activity were keeping death at bay and might continue to do so. His was a full life, full of many activities and many achievements. He had a passionate love for freedom and for humanity. A lifelong Socialist, he dreamed of a Commonwealth organized to produce at the least possible cost in distasteful work and leaving each member free to live his own life in his leisure. He was friends with all men, but he sought most those who were unusual and unconventional, if they were free from pretence. He assumed a veil of cynical humour which failed to hide the warmth of his feeling for all who were wounded in the struggle of life, and for what he held to be righteous and true. His energy was inexhaustible. What he did in the East End of London, in Petersfield, and in Hawkey brought him hosts of friends and of workers who looked to him for guidance. He has left a memory that will endure. An original thinker, his mind stored with the best in literature, he was able to clothe his thoughts in words of beauty and force both in his writings and in his talk. He loved to gather friends around him, to interchange thoughts and discuss problems. With his clear and logical mind he was quick to seize upon a fallacy in an argument and to expose it mercilessly and wittily without leaving any aftertaste of bitterness. His life was an inspiration, and when so many charmed memories remain there is no death.

The following appreciation of Dr. WILLIAM HENRY PEACOCK comes from Prof. R. M. Gordon: The loss sustained by the Colonial Medical Service through the death of Dr. Peacock has already been recorded in the *Journal*. The announcement of his death will have been read with sorrow by all who have interested themselves in furthering medical projects in West Africa. It was characteristic of the man that his help and kindness extended far beyond his official duties, and reached out to all who, like himself, were interested in alleviating suffering. It was in this way that each newcomer to the Sir A. L. Jones Research Laboratory (of the Liverpool School of Tropical Medicine) in Freetown came to know and trust Peacock, and to appreciate his sound common sense, his very considerable medical knowledge, his gift of foreseeing and eliminating obstacles both official and unofficial, and above all his loyalty and devotion not only to the Service in which he worked but to the profession which he so finely represented.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Sir Edward Mellanby, K.C.B., M.D., F.R.S., Secretary of the Medical Research Council, has been elected into an Honorary Fellowship of Emmanuel College.

At a Congregation held on Nov. 16 the following medical degrees were conferred:

M.B., B.Chir.—N. H. Harwood-Yarred and W. A. A. Hodges (by proxy). H. G. Mather (in person).

UNIVERSITY OF LEEDS

At a meeting of the Council, held on Nov. 27, the Pro-Chancellor drew attention to the recent losses by death of two emeritus professors—J. Shaw Bolton and T. Wardrop Griffith—and referred to the valuable services which they had given to the University as professors for twenty-two and thirty-eight years respectively.

Dr. R. N. Tattersall was appointed full-time lecturer in medicine, and Dr. D. Taverner tutor in medicine.

UNIVERSITY OF MANCHESTER

The Council has appointed Alexander Michael Boyd, F.R.C.S., a full-time Professor of Surgery and Director of the Department of Surgery, from Dec. 25.

UNIVERSITY OF EDINBURGH

Prof. R. J. Kellar, F.R.C.S.Ed., F.R.C.O.G., who has succeeded Prof. R. W. Johnstone in the University Chair of Midwifery and Diseases of Women, gave his inaugural lecture on Nov. 14 in the Pollock Memorial Hall, with the Principal, Sir John Fraser, in the chair. Discussing the modern trend of maternity hospitals Prof. Kellar expressed the view that some 75% of all women in urban areas would be delivered in institutions, and any calculation of future needs in maternity accommodation must use this as a minimum figure. It might be taken as an axiom that a maternity hospital was out of date in many of its features within a decade of its construction, and he recalled that Sir J. Y. Simpson had seriously proposed burning a maternity hospital every few years to rid it of puerperal infection. Prof. Kellar said that Edinburgh might be regarded as the birthplace of antenatal care. But notwithstanding the saving of lives each year most of them were extremely dissatisfied with certain aspects of the antenatal clinic. This must become in future more of a social centre, where the patient could receive not merely a brief intensive abdominal examination, but also instruction in elementary hygiene, in preparation for delivery, and in infant management. More antenatal beds were needed. Again, the time might be ripe for setting up some central organization to deal with all the problems of abortion, stillbirth, infertility, and population trends. Child guidance and marriage guidance clinics would have much to gain in association with such a group, which might well be a subdivision of the Department of Social Medicine. The managers of the Edinburgh Royal Infirmary had allotted accommodation for a clinical research laboratory within the precincts of the Maternity Hospital, and this might well work in conjunction with the new extended University Department.

UNIVERSITY OF GLASGOW

Sir John Boyd Orr, M.D., F.R.S., has been elected Chancellor of the University of Glasgow. The election was conducted by postal ballot and resulted in 6,113 votes for Sir John Boyd Orr and 5,420 for Sir Iain Colquhoun.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Primary F.R.C.S. Examination Overseas

The Council of the Royal College of Surgeons of England, having acceded to requests from the Royal Australasian College of Surgeons, from the medical faculty of the Egyptian University, Cairo, and from the Director-General of Medical Services in India, to conduct the Primary F.R.C.S. examination overseas, has appointed the following examiners for this purpose: Sir Heneage Ogilvie, Prof. B. A. McSwiney, F.R.S., and Prof. G. Hadfield. They will conduct the examination in Cairo, Madras, Melbourne, Sydney, and Dunedin, beginning in Cairo on Dec. 12, in Madras on Dec. 23, and in Australasia on Jan. 6. The examiners should arrive back in this country about the end of January.

The extent to which the facilities thus offered to those medical graduates of recognized universities and colleges overseas are appreciated may be indicated by the numbers who have entered for the examination at the several centres: Cairo, 32; Madras, 65; Melbourne, 63; Sydney, 29; and Dunedin 35, a total of 224 candidates. In due course those candidates who satisfy the examiners will

be eligible to appear for the final F.R.C.S. examination in this country, and will have the opportunity of studying surgical practice in England.

The following associate examiners have been appointed to assist the examiners: In Cairo, Prof. D. E. Derry and Prof. G. V. Anrep, F.R.S. In India, Prof. A. Ananthanarayana Iyer. In Melbourne, Prof. S. Sunderland. In Sydney, Mr. Douglas Miller. In Dunedin, Mr. John Cairney.

A course of 72 lectures in anatomy, applied physiology, and pathology will begin at the College on Feb. 3, 1947, and will continue until March 28. There will be two lectures daily (Monday, Tuesday, Wednesday, Thursday, and Friday) at 3.45 p.m. and 5 p.m. The fee for the whole course is £15 15s. Fellows and Members of the College and licentiates in dental surgery will be admitted on payment of a fee of £10 10s. It will not be permissible to take one or two subjects only. Applications, accompanied by a cheque for £15 15s. or £10 10s., should be sent to the assistant secretary, Royal College of Surgeons of England, Lincoln's Inn Fields, W.C.2.

Practical demonstrations in anatomy, applied physiology, and pathology have been arranged by Profs. F. Wood Jones, John Beattie, and R. A. Willis, and will be given from Monday, Jan. 6, to Friday, March 28, 1947, from 10 a.m. to 1 p.m., and from 2 to 3.30 p.m. daily. The fee is £21, and the closing date for applications is Dec. 16. The demonstrations will be open to those attending the main course of lectures to be held in Feb. and March and will be limited to 40 students, preference being given to those unable to obtain practical instruction elsewhere and to ex-Service men. Applications, accompanied by a cheque for £21, should be sent to the assistant secretary, Royal College of Surgeons of England, Lincoln's Inn Fields, W.C.2.

The Services

Surg. Rear-Admiral J. A. Maxwell, C.B.E., C.V.O., R.N., has been appointed an Honorary Surgeon to the King in succession to Surg. Rear-Admiral H. R. B. Hull, R.N., who has been placed on the retired list.

Surg. Capt. Lambert C. Rogers, and Surg. Lieut.-Cmdrs. C. M. Lamont and A. B. Bateman, R.N.V.R., have been awarded the R.N.V.R. Officers' Decoration.

Surg. Capt. D. A. Pritchard and L. Lockwood, M.V.O., D.S.C., R.A.N., have been appointed Honorary Physician and Honorary Surgeon to the King, respectively.

Lieut.-Col. J. Morrison, O.B.E., M.C., and Major H. Mannington, R.A.M.C., have been awarded the Efficiency Medal (Territorial).

Cpts. J. H. Annan and G. McL. Gorrie, R.A.M.C., have been mentioned in dispatches in recognition of gallant and distinguished services in the field.

Col. J. F. O'Grady, T.D., R.A.M.C., T.A., to be Honorary Colonel, 42nd (East Lancashire) Division, R.A.M.C., in succession to Col. A. M. Johnson, C.B.E., M.C., T.D., R.A.M.C., T.A., deceased.

Capt. T. R. Subramaniam, I.A.M.C., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services in S.E. Asia.

CASUALTIES IN THE MEDICAL SERVICES

On or after Oct. 18, 1942, while a prisoner of war in Japanese hands.—Capt. James Walsb Lillico, I.M.S.

Flying Officer CHARLES KING ALLAN, R.A.F.V.R., who was killed in a flying accident on Nov. 7, was born in December, 1922, studied medicine at Glasgow University, and qualified M.B., Ch.B., in 1945.

AIRBORNE MEDICAL SOCIETY

It has been decided to enlarge the membership of the Airborne Medical Society, the formation of which was announced in the *Journal* of Aug. 24 (p. 282), to include all medical and dental officers who are eligible for membership of the Airborne Forces Club. That, in fact, includes all medical and dental practitioners whose business it was or is to go to war by parachute or glider. Quartermasters and transport officers of airborne field ambulances are also eligible. Application forms may be obtained from the honorary secretary, Airborne Medical Society, 63a, Belsize Park Gardens, London, N.W.3.

The Ministry of Health announces in Circular 193/46 the removal of restriction on the engagement of chiropodists, physiotherapists, radiographers, hospital almoners, pharmacists, dispensers, and psychiatric social workers; and the procedure for securing staff in these categories.

Medical Notes in Parliament

The National Health Service (Scotland) Bill was presented by Mr. Westwood on Nov. 26 and was read a first time. The Bill had already been formally introduced and printed late last session.

Medical Unemployment

Answering Mr. SOMERVILLE HASTINGS on Nov. 28, Mr. BEVAN regretted that he did not know how many ex-Service doctors were unable to obtain employment in general practice. Ex-Service general practitioners could take hospital posts and refresher courses available under the Government's post-graduate scheme. It was then open to them to buy or open a practice or to seek assistantships or other appropriate employment in the usual way until the National Health Service Act came into operation. He was aware that there was at present a difficulty in doctors obtaining assistantships. It was a difficulty which always arose immediately before great changes. The Ministry of Health was doing its best to mitigate the hardships where it could.

Temporary Registration

Mr. BEVAN, on Nov. 28, told Sir HENRY MORRIS-JONES that he and Mr. Ede were consulting about temporarily registered alien doctors. He was not yet in a position to make a statement. There was no provision for temporary registration of alien dentists apart from a few practising solely by virtue of temporary medical registration. Those admitted to the dentists' Register had secured admission in the ordinary way. He imagined that under the new National Health Service Act all persons who were competent to practise would be competent to enter.

Penal Reform

Replying on Nov. 27 to a debate in the House of Lords on penal reform, the LORD CHANCELLOR, Lord Jowitt, said the comprehensive Bill of 1938 would need to be reconsidered by the present Government. It was impossible to introduce this Bill this session, but he thought it was almost certain to be one of the major Bills introduced next session. The Government would use the interval in pressing ahead with probation and Borstal treatment.

LORD TEMPLEWOOD, in his introductory speech, said that during the war years young offenders under 17 had increased by 55%. In offenders between 17 and 21 the increase had been 52%, and in offenders over 21 it had been 2%. Comparing 1938 with 1945, crimes against the person had increased from 1,583 to 2,459, and sexual offences from 2,321 to 3,228. Offences committed by women had more than doubled during the war. Women's convictions for cruelty to children had increased from 345 to 1,170. Among young delinquents offences of every category by girls had gone up fourfold.

Prescriptions for Dangerous Drugs.—On Nov. 21 Dr. CLITHEROW asked whether Mr. Bevan knew that prescriptions for dangerous drugs and scheduled drugs were being issued to national health insurance patients in quantities sufficient, in many cases, to ensure a constant supply for many weeks—for example, 200 barbitone tablets in one case. He asked Mr. Bevan to take steps to prevent the issue of N.H.I. prescriptions containing dangerous drugs and scheduled drugs for more than one week's supply at any one time. Mr. BEVAN said that he did not think it would be proper to interfere with a doctor's discretion by any such general prohibition.

Medical Students Not Admitted.—Statistics given by Mr. GLENVIL HALL on Nov. 26 show that of students possessing the certificate of fitness for entrance to a Scottish University 238 made application for admission for the Session 1946-7 to the faculty of medicine, including dentistry, in Aberdeen. Of these 119, or 50%, were refused admission. Comparable figures for the same faculty were: Edinburgh 827-637, or 77%; Glasgow 760-334, or 43.9%; St. Andrews 501-398, or 78%.

Social Surveys.—Mr. GLENVIL HALL announced on Nov. 25 that the Social Survey of the Central Office of Information was engaged on an illness survey for the Ministry of Health, and was preparing for the Medical Research Council a report on the incidence of deafness in this country. A report was now being written for the Medical Research Council and the Ministry of Fuel and Power on the employment of miners certified as suffering from pneumoconiosis.

Ice-cream.—Mr. STRACHEY would like to fix a minimum standard for ice-cream but thinks this must wait until the supply of the necessary ingredients has improved.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery, Obstetrics and Gynaecology will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, *British Medical Journal*, B.M.A. House, Tavistock Square, London, W.C.1.

A joint meeting of the Food Group and the Manchester Section of the Society of Chemical Industry will be held at the Engineers' Club, Albert Square, Manchester, on Friday, Dec. 6, at 6.30 p.m., when papers will be read by Dr. N. J. Berridge on "Rennin," by Mr. H. F. Frost on "Enzymes in the Food Industry," and by Mr. S. Hilton on "Soft Curd Milk." Time will be allowed for discussion.

The fourth quarterly meeting of the Franco-Anglo-American Medical Society will be held at 11, Chandos Street, Cavendish Square, W., on Tuesday, Dec. 10, at 2.30 p.m., with Lord Horder, president of the British Section, in the chair.

A meeting of the Nutrition Panel of the Society of Chemical Industry will be held at the Chemical Society's rooms (Burlington House, Piccadilly, W.) on Wednesday, Dec. 11, at 6.30 p.m., when Mr. D. P. Hopkins will read a paper on "Fertilizers, Manures, and Nutrition." A discussion will follow. Members of the Agriculture and Food Groups are invited to attend.

A meeting of the Middlesex County Medical Society will be held at Redhill County Hospital, Edgware, on Thursday, Dec. 12, at 4 p.m., when there will be clinical demonstrations.

Sir Arthur MacNalty will deliver the FitzPatrick Lectures at the Royal College of Physicians of London, Pall Mall East, S.W., on Tuesday, Dec. 10, and Thursday, Dec. 12, at 5 p.m. The subject will be the History of State Medicine in England: (1) From the Accession of Queen Victoria to the General Board of Health, (2) The Medical Department of the Privy Council.

Mr. W. Rowley Bristow will deliver the Robert Jones Memorial Lecture on "Injuries of Peripheral Nerves in Two World Wars" before the Royal College of Surgeons of England (Lincoln's Inn Fields, W.C.) on Thursday, Dec. 12, at 5 p.m.

A sessional meeting of the Royal Sanitary Institute will be held at the Baths Hall, Leigh Street, Warrington, on Friday, Dec. 13, at 10.30 a.m., when papers will be read by Dr. S. F. Allison on "The Welfare of Old People" and by Dr. J. E. Nicole on "The Mental Health of the Elderly."

The Medical Society of London announces that Sir James Chadwick will deliver the Lloyd Roberts Lecture at 11, Chandos Street, W., on Monday, Dec. 16, at 8.30 p.m. Subject: "Atomic Energy."

A meeting of the Eugenics Society will be held at the Royal Society's rooms (Burlington House, Piccadilly, W.) on Tuesday, Dec. 17, at 5.30 p.m., when Dr. J. W. B. Douglas will speak on "Social and Economic Problems of Child-bearing in Britain: Report of a Questionary Inquiry." All interested in the subject are invited to attend the meeting.

Sir Alexander Fleming, F.R.S., will give a talk on "Penicillin in General Practice" before the Paddington Division of the B.M.A. in the Inoculation Department of St. Mary's Hospital, W., on Thursday, Dec. 19, at 8.30 p.m. Members of other Divisions are invited to attend the meeting.

On Nov. 7 Mr. de Vajera introduced in the Dail a Bill to establish two new Ministries for Eire—a Ministry of Public Health and a Ministry of Social Welfare.

In future, hospitals and members of the medical profession should address all inquiries concerning laboratory chemicals to the British Drug Houses Ltd., B.D.H. Laboratory Chemicals Group, Poole, Dorset (Tel.: Poole 962; telegrams: Tetradome Poole), and not to the British Drug Houses Ltd., Graham Street, London, N.1.

Dr. V. Puddu, Director of a Rome clinic for rheumatic and heart diseases, is visiting this country on behalf of the Italian Ministry of Health to study British arrangements for treating rheumatism and heart diseases, particularly in children's hospitals.

Dr. Joaquim Paiva Chaves, a Lisbon surgeon, is visiting Britain to study problems of traumatic surgery under Sir Reginald Watson-Jones at the London Hospital, and to visit other hospitals to see general traumatic and repair surgery. The British Council has assisted in arranging his programme.

Fifty doctors from London and Southern England were recently entertained by the Southern Railway at a luncheon in London in recognition of their help in instructing railway ambulance workers.

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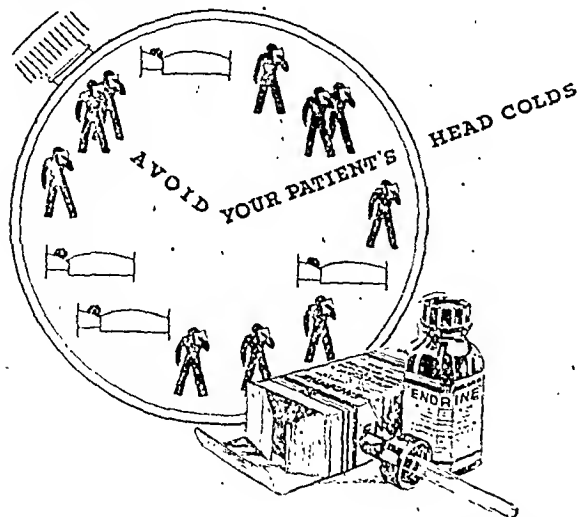
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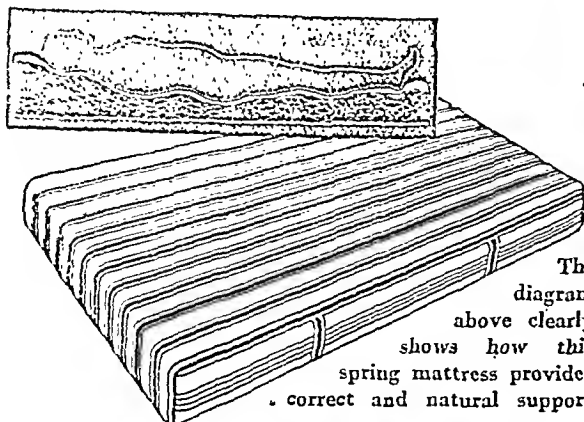
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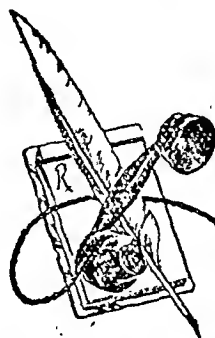


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Phenoxyetol is effective against certain gram-negative organisms, including *Ps. pyocyanea*. It is used by local application in the treatment of infected wounds . . . abscesses . . . indolent ulcers . . . associated with *Ps. pyocyanea*. It should not be used for parenteral injections.

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References: Lancet, 1944, 247, pp. 175 and 176. British Medical Journal: 1946, 1, p. 50. Pharmaceutical Journal: 1945, 155, p. 245.

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At a meeting of the executive committee of the Anglo-Soviet Medical Council on Nov. 13 the hon. secretary, Dr. D. E. Bunbury, reported on the present position. Throughout the year copies of British medical journals have been sent regularly to the Soviet Union by the Council. The British Council also sent 50 copies of each issue of the *British Medical Bulletin*, and a member of its staff is resident in Moscow. Soviet journals for the A.S.M.C. have been arriving irregularly throughout the year. These have been housed in the Royal Society of Medicine and have been presented to the Society's library when the Council has finished with them. Journals have been made available to the editors of the British medical abstract journals. The World Medical Association, which was formed during the year on the initiative of the British Medical Association, should be able to take over the broadest aspects of the Council's work in relation to the Soviet Union, as with other countries. The Society for Cultural Relations with the U.S.S.R. is willing to deal with specific inquiries concerning Soviet medicine, and might form a medical section with functions similar to its existing scientific and other sections. After consideration of all aspects of the present position, the executive committee decided to make recommendations to the Council for adoption at the fifth annual general meeting, to be held on Dec. 9, at 5 p.m., at 1, Impole Street.

The first meeting of the Pharmaceutical Liaison Committee, set up in July, 1946, to improve contact between the Ministries of Health and of Supply and the pharmaceutical profession, was attended by representatives appointed permanently from the Pharmaceutical Society, the British Pharmacopoeia Commission, the National Pharmaceutical Union, the Wholesale Drug Trade Association, and the Pharmaceutical Export Group on the one hand, and of the Ministry of Health, the Department of Health for Scotland, the Ministry of Supply, Ministry of Food, the War Office, the Admiralty, and the Air Ministry on the other.

The result of the Scottish Universities by-election was announced on Nov. 29. The Right Hon. Walter Elliot (Conservative) was returned to Parliament with a poll of 22,152 votes.

Dr. William Russell Cooper, of Clifton, Bristol, left £16,317 to the University of Bristol, upon trust, the annual income to be paid to the medical student considered to be the most proficient at anaesthetics. After other bequests to medical friends and £300 to the Cancer Hospital, London, he had left the residue of his property to Bristol General Hospital, but by codicil dated Oct. 17, 1945, he altered this, saying, "the Government being about to take over the management of the said hospital should be responsible for its upkeep."

EPIDEMIOLOGICAL NOTES

Discussion of Table

In England and Wales infectious diseases increased in prevalence. Rises were recorded in the incidence of measles 395, whooping-cough 106, acute pneumonia 24, and diphtheria 16; the only falls were in the notifications of scarlet fever 30 and cerebrospinal fever 16.

The largest increases in the returns for measles were Durham 18, Lancashire 86, Yorkshire West Riding 56, Middlesex 43, Devonshire 42, and Dorsetshire 40. The largest fluctuations in the local incidence of whooping-cough were increases in Yorkshire West Riding 34, Lancashire 29, and London 25. The chief changes in the notifications of diphtheria were a rise in Lincolnshire 10 and a fall in Lancashire 14. Cases of paratyphoid fever were notified in Yorkshire West Riding, Sheffield C.B. 14, and in Glamorganshire 6. London, with an increase from 13 to 23, provided the only appreciable change in the incidence of dysentery; 14 of the cases were notified in Islington.

In Scotland increases were recorded in the notifications of whooping-cough 48, measles 32, acute primary pneumonia 32, and diphtheria 9. Decreases were reported for scarlet fever 46 and dysentery 26. The rise in the number of cases of diphtheria was due to an increase from 68 to 80 in the Western Area.

In Eire there were 18 fewer cases of diarrhoea and enteritis and 39 more cases of whooping-cough. The two large centres of infection for whooping-cough were Co. Laoighis, Mountmellick R.D. 40 and Dublin C.B. 21.

In Northern Ireland increases occurred in the notifications of measles 20 and diphtheria 7 and a decrease was reported for whooping-cough 11.

Week Ending November 23

The notifications of infectious diseases during the week in England and Wales included: scarlet fever 1,402, whooping-cough 1,773, diphtheria 319, measles 5,428, acute pneumonia 708, cerebrospinal fever 43, dysentery 69, acute poliomyelitis 16, paratyphoid 20, typhoid 3.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 16.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	30	4	22	—	1	36	2	12	4	1
Deaths	—	2	3	—	—	—	—	—	—	—
Diphtheria	330	27	97	29	13	646	50	183	91	15
Deaths	7	—	—	—	—	11	2	2	1	—
Dysentery	70	23	22	—	—	180	37	54	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	3	—	—	1	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	47	5	4	—	—	51	9	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	63	6	10	41	2	34	2	16	50	1
Deaths	—	—	—	—	—	—	—	—	—	—
Measles*	4,382	141	263	57	43	403	35	92	118	1
Deaths	1	—	1	—	—	1	—	—	—	—
Ophthalmia neonatorum	60	4	20	—	—	54	5	19	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	26	1	—	1 (B)	—	—	—	2 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	625	49	10	3	6	420	31	9	4	2
Deaths (from influenza)†	16	3	2	—	—	14	2	2	—	1
Pneumonia, primary	—	—	308	31	—	—	—	148	15	—
Deaths	51	—	—	7	—	—	18	—	12	10
Polio-encephalitis, acute	2	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	15	1	4	7	1	32	1	1	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	5	25	—	—	—	2	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	141	13	17	3	2	125	12	16	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,293	81	273	26	42	1,674	134	269	19	42
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	3	3	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	7	—	—	2	3	1	—	—	8	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,696	99	214	71	29	1,203	84	51	32	3
Deaths	9	1	—	—	—	5	2	—	1	1
Deaths (0-1 year)	384	59	72	—	12	303	31	49	23	14
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,723	780	627	—	110	4,294	638	560	184	109
Annual death rate (per 1,000 persons living)	—	—	13.8	—	—	—	—	12.7	11.9	—
Live births	8,820	1,420	1091	—	245	6,345	855	786	335	263
Annual rate per 1,000 persons living	—	—	21.9	—	—	—	—	15.7	21.6	—
Stillbirths	297	48	40	—	—	174	26	30	—	—
Rate per 1,000 total births (including stillborn)	—	—	35	—	—	—	—	37	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the returns of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, and 16.

Letters, Notes, and Answers

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ANY QUESTIONS?

Ehrlich's Reaction in Infective Hepatitis

Q.—I should be grateful for advice on the technique and interpretation of Ehrlich's dimethylaminobenzaldehyde reaction as applied to the early diagnosis of infective hepatitis.

A.—The technique recommended for this test is that of Watson, Schwartz, Sborov, and Bertie (*Amer. J. Clin. Path.*, 1944, 14, 605), in which the amount of urobilinogen is estimated in a two-hour afternoon specimen of urine, the result being expressed in units which are approximately mg. per 2 hours. Alternatively the test may be used qualitatively by adding one volume of Ehrlich's reagent (0.7 g. *p*-dimethylaminobenzaldehyde, 150 ml. concentrated hydrochloric acid, 100 ml. water) to one volume of urine, followed, immediately after shaking, by three volumes of saturated sodium acetate. A definite red colour indicates excessive amounts of urobilinogen. It is important to test only fresh specimens.

In interpreting the result it must be remembered that many febrile patients may show evidence of transient liver dysfunction with positive urobilinogen tests, and that a positive result is not therefore pathognomonic of infective hepatitis; moreover, negative tests are occasionally seen in this condition. However, urobilinuria is certainly to be expected in most cases and often occurs well before the appearance of clinical jaundice.

T.A.B. for Children

Q.—At what age should children travelling to the Far East be given prophylactic injections of T.A.B. and anti-cholera vaccine?

A.—Recorded examples of typhoid fever in infants are rare, and consequently it is suggested that infants and young children possess a relative immunity to the disease and that protective inoculation is therefore unnecessary. This is probably true, but it must be remembered that special care is usually taken in preparing the food of infants who are in circumstances favourable to medical observation, and that as regards other children less favourably placed the paucity of precise observations may account for the apparently low incidence of the disease. A further argument adduced against the inoculation of infants is that there is some experimental evidence that antibody formation following inoculation in the early months of life is relatively poor. Nevertheless, since the immediate local and general reactions to inoculation usually are not abnormally severe in infants or small children, there seems little reason for not giving them such protection as may result from, inoculation; consequently it is suggested that children of any age should be given prophylactic T.A.B. and cholera vaccine in appropriate doses when travelling to the Far East.

Mepacrine Dosage for Children

Q.—At what age and in what dosage should mepacrine be given (a) prophylactically, (b) therapeutically?

A.—Unless a child can be protected against the bites of infected mosquitoes it would seem wise to give it a suppressive antimalarial drug, and mepacrine may be used until one of the more efficient drugs, such as paludrine, becomes generally avail-

able. The relative dose of a drug depends more upon the metabolic rate of the individual than upon age, and consequently children tend to tolerate larger doses than would be suggested by age alone.

The ratio of dosage between child and adult is not two-thirds the ratio of the child's weight to that of the adult, but is the ratio raised to the two-thirds power, and this relation may be used for calculating the appropriate suppressive or therapeutic dose of mepacrine for a child of any age.

$$\frac{\text{Dose child}}{\text{Dose adult}} = \frac{\text{Metabolic rate child}}{\text{Metabolic rate adult}} = \frac{\text{Surface child}}{\text{Surface adult}} = \frac{(\text{Weight child})^{2/3}}{(\text{Weight adult})^{2/3}} = \left(\frac{W_c}{W_a}\right)^{2/3}$$

Approximations worked out on the above formula, assuming a normal adult of 168 lb. (12 st. or 76 kg.), are as follows

For child of weight	10 lb. (4.5 kg.)	give	1/8 of adult dose
"	20 " (9 kg.)	"	1/4 " "
"	30 " (13.5 kg.)	"	1/3 " "
"	60 " (27 kg.)	"	1/2 " "
"	90 " (40.5 kg.)	"	2/3 " "
"	110 " (49.5 kg.)	"	3/4 " "
"	120 " (54 kg.)	"	4/5 " "

Dicoumarol for Coronary Thrombosis

Q.—Has any work been done in this country on dicoumarol which is being used in America in the treatment of coronary thrombosis?

A.—There was a paper by Davis and Porter in this *Journal* (1944, 1, 718) on the use of dicoumarol in puerperal thrombosis. It has also been used for post-operative thrombosis by Prof. Learmonth in Edinburgh. A paper by Barker, Cromer, Hurst, and Waugh (*Surgery*, 1945, 17, 207) gives useful information about the contraindications. Several other publications on the use of this anticoagulant in coronary thrombosis have appeared during this year in American publications. I am not aware of any papers on this subject in English journals.

Dicoumarol is being used in coronary disease with the aim of preventing retrograde extension of a thrombus and consequent aggravation of the cardiac lesion, and also with the object of lessening the likelihood of multiple thrombi and other complications. A trial of dicoumarol therapy is therefore indicated when a patient is not making a quick and progressive recovery after coronary thrombosis; when there is evidence of multiple thrombosis, mural thrombus, or pulmonary embolism; and when a patient is threatened with multiple successive attacks. Before treatment is begun the prothrombin time is determined. If this is 17 seconds or less 300 mg. of dicoumarol are administered orally in one dose. This dose is repeated daily until the prothrombin time is 30 seconds. Doses of 100 or 200 mg. are given daily when the prothrombin time is between 30 and 35 seconds; above this level the dosage should be discontinued owing to the risk of haemorrhage. An attempt is usually made to pursue this treatment for about a month after the last evidence of thrombosis or embolism. No series of cases sufficiently large or controlled to judge finally the efficacy of this treatment has yet been published, but the consensus seems at this stage to be favourable.

Deodorants

Q.—What are the constituents of the usual deodorants? Are such preparations harmful if used repeatedly? Would there be any advantage in using them for pre-operative skin preparation, and, post-operatively, to prevent perspiration?

A.—The majority of liquid deodorants contain one or other, or a combination, of the numerous mild astringents, such as dilute alcohol, alum, zinc sulphate, formaldehyde, dilute acetic acid, and so on, sometimes coloured and perfumed. As they are not curative but merely a symptomatic treatment for excessive perspiration they have to be used repeatedly. Except in the case of persons who are hypersensitive their repeated use does not appear to be detrimental. Most of them are only very mildly, if at all, antiseptic, and it is unlikely that there would be any advantage in using them for pre-operative skin preparation, or post-operatively. They are usually applied by means of cotton-wool or gauze dabbed or rubbed lightly over the surface. The nature of the deodorant being used would of course determine its compatibility with the usual antiseptics, but it is probable that incompatibility would be experienced with most of them.

Inheritance of Little's Disease

Q.—*A patient has one child suffering from Little's disease. There was no birth injury, and the labour was normal. What are the chances of any future children being similarly affected?*

A.—Little's disease or congenital spastic diplegia is probably not a single clinical entity. Some cases may be due to birth injury, others to foetal malnutrition, prenatal infection, or to unknown environmental causes. A fairly large proportion of the cases are due to recessive genes. In complete ignorance of the cause, as in this particular case, the chances of recurrence of the abnormality in a subsequent pregnancy can be only roughly estimated at one in twenty. However, no accurate assessment can be given until careful inquiry has been made into the possible incidence of similar conditions in near relatives. Even if such inquiry leads to negative results but the parents are found to be cousins, the case is probably of recessive genetic origin, and the chance of recurrence is one in four. A search for incompatibility of Rh or of ABO antigens in mother and child might also yield some relevant information.

Penicillin for Osteomyelitis

Q.—*A man of 27 had osteomyelitis of the left leg following an air-raid injury in 1943; this cleared up after nearly eight months in hospital. Since then he has had twenty-four axillary abscesses. Would penicillin injections be of any value in such a case?*

A.—If these abscesses are metastatic, a focus of osteomyelitis still existing in the left leg or elsewhere, penicillin treatment alone would be useless. It usually fails in any chronic infection depending on the continued existence of an old-standing focus, particularly if this is located in bone. Organisms situated in a chronic abscess cavity or in an area of necrosed bone cannot be eradicated completely by penicillin, if only because such an area is not adequately permeated by the drug.

Uterine Haemorrhage after Synthetic Oestrogens

Q.—*A woman of 51 has an erythematous condition of her face. A specialist prescribed 1 mg. stilboestrol daily for two months, then one month's rest. She now has uterine bleeding, though her menopause was three years ago, and is worried about the possibility of pregnancy. Can I reassure her that stilboestrol does not cause ovulation after the menopause and that pregnancy cannot supervene?*

A.—The uterine haemorrhage which may follow oestrogen therapy is anovular in type and is not true menstruation. Stilboestrol, at any rate when continuously applied, does not cause ovulation; indeed it depresses ovarian activity. The chances of pregnancy are therefore extremely remote and certainly no greater than if the stilboestrol had not been given.

The reawakening of endometrial activity is, however, a disadvantage in itself. If the treatment is continued endometrial hyperplasia and profuse bleeding may result. Already the case is one of "post-menopausal bleeding," and though the cause is probably the stilboestrol there remains the possibility that the patient may have a growth in the uterus. If it has not already been done a pelvic examination should be made to exclude any obvious lesion in the vagina and cervix. The dose of stilboestrol should be reduced or, unless the skin condition is clearly benefiting from it, the treatment discontinued. If in spite of this the bleeding continues or recurs then the only safe line of action is to carry out diagnostic curettage.

Blood Thiocyanate Estimations

Q.—*Please describe the biochemical technique for the estimation of blood thiocyanate levels in cases of hypertension under treatment with potassium thiocyanate.*

A.—Three solutions are needed for the estimation of thiocyanate in serum and plasma: (a) 10% trichloroacetic acid. (b) Ferric nitrate reagent—dissolve 20 g. crystalline ferric nitrate in 500 ml. distilled water; add 25 ml. concentrated nitric acid. (c) Thiocyanate standard (stock solution)—dissolve about 1 g. potassium thiocyanate in 500 ml. distilled water; titrate 20 ml. of a standard silver nitrate solution (made by dissolving 2.9195 g. silver nitrate in 1,000 ml. water) acidified with 5 ml.

concentrated nitric acid against the thiocyanate solution, using ferric ammonium sulphate as an indicator; add the water necessary to make 20 ml. thiocyanate equivalent to exactly 20 ml. silver nitrate solution; check.

To 5 ml. of solution (a) add 5 ml. plasma or serum, shake well and stand for fifteen minutes; filter—the filtrate must be perfectly clear; measure 5 ml. filtrate and to it add 1 ml. of ferric nitrate reagent (b). Make three dilutions of stock thiocyanate solution: 100 ml. in a litre of water; 70 ml. in a litre of water; and 40 ml. in a litre of water (equivalent to 1.0 mg., 0.70 mg., and 0.40 mg. in 5 ml.). To 2.5 ml. of these three standards in three test-tubes add 2.5 ml. of solution (a) and 1 ml. of solution (b). Read the unknown against the standard in a colorimeter, using the standard which it most nearly matches.

It should perhaps be pointed out that since the appearance of Barker's work (*J. Amer. Med. Ass.*, 1936, 106, 762 and 1941, 117, 1591) the original theory that thiocyanate is deficient in hypertensive blood has been disputed. Later determinations have shown a normal content, and clinical experience of the thiocyanate treatment in this country has not fulfilled the hopes held out for it originally by American workers.

INCOME TAX

Car Transactions

R. M. bought an "M" car in 1940 for £180; he sold it in March, 1946, buying an "R" car for £710. No depreciation allowance has been claimed.

* We suggest that he claims depreciation on the "M" car for the six years 1941-2 to 1946-7 inclusive; the claim should be made under Section 45 of the Finance Act, 1927, on the ground that overcharges have resulted from "errors or omissions in the returns." The amounts of depreciation apparently claimable are: 1941-2, £43; 1942-3, £35; 1943-4, £28; 1944-5, £21; 1945-6, £18, and 1946-7, £14. No depreciation in respect of the "R" car is due for 1946-7, but, assuming that the accounts of the practice are made up to Dec. 31 each year, allowance will be due for 1947-8 as follows:

Initial Allowance	20% of £710=£142
Depreciation Allowance	25% of £710=£178
Total	£320

Post-demobilization Appointment

"Resident" holds a Class 3 post-demobilization appointment. His salary is £550, which is paid by the hospital but made good by the Exchequer. Is the salary liable to income tax? If so, can the cost of journals and textbooks be claimed as a deduction, seeing that they are necessary for preparation for the higher degree which "Resident" is expected to take?

* It is understood that payments of this nature are not "grants" in the true sense of the word, but are regarded as made by the hospital in respect of services rendered. On that basis they are liable to income tax. Similarly any sum paid for maintenance is subject to tax in the same way as the E.M.S. living-out allowance. The position as regards the cost of technical books, etc., is not free from doubt. To be allowable such expenses must be incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." If "Resident" establishes the fact that one of the duties required of him is to prepare for the higher degree, the expense should be allowed as a deduction from the salary. The point may well be worth taking to appeal before the District Commissioners of Taxes if the local inspector of taxes is not willing to concede it.

Research Grant

W. T. is in receipt of a research grant to provide for expenses and, to some degree, maintenance. The local tax office regards the grant as assessable to tax.

* The question is governed by Sec. 28 of the Finance Act, 1920. The grant is exempt from tax if W. T. is receiving full-time instruction at a university, college, or other educational establishment. If—as appears probable—W. T. cannot claim to comply with this condition he will be liable to assessment in respect of the grant but should claim to deduct a reasonable amount for the expenses necessarily incurred in the research, the carrying out of which he is required to do under the terms of the grant. He is advised to call (preferably by appointment) at the tax office to explain what expenses he claims, and to raise the question of the tax deductions being made under P.A.Y.E. at present—they are apparently excessive and perhaps made because W. T. has not lodged a statement of income, etc.

LETTERS, NOTES, ETC.

Nomenclature of the Rh Blood Types

Dr. BRYCE R. NISBET (Hon. Sec., Ayrshire Division, B.M.A.) writes: Let me assure Lieut.-Col. G. E. W. Wolstenholme (Nov. 16, p. 753) that the lecture as delivered to the Ayrshire Division by Prof. Cappell was considerably simplified and illustrated by slides and drawings. We were thus able to see and listen and, as evidence that it was much appreciated, as many as eight of the forty-four members who were present took part in the discussion. We, north of the Cheviots, being such large consumers of porridge, like a little "meat" at our gatherings. It is about the only time we can have a surfeit. Whether we shall be able to stand it in the future is a matter of conjecture since oatmeal has been put on points.

Definition of Health

Dr. D. F. TORRENS (Market Rasen) writes: Dr. W. F. Felton (Oct. 19, p. 591) raises the fundamental question. He says "surely complete physical, mental, and social well-being is a god-like state . . ." but he goes on to say that "we can hardly hope to attain [it], let alone claim [it] as our right." He prefers "a balanced state of physical, mental, and social well-being." Neither of these definitions is yet actual in the human race. Each is a statement of an objective to be worked for. There is a vast difference between them. The first is a statement of a belief in a god and that man's goal is to become like God; as Dr. Felton says. The second does not go nearly so far, though it might be pushed a good way in the same direction; it asks only for a balance, and that balance might be established at a very low standard. Also it is man who will set the standard. It is because, in all our social legislation, the ideal expressed and implied is a super-man that the results are disappointing. The best man is not good enough, for though he is immortal he is transitory. Other men with other motives and methods take his place. This is seen in the proposed changes in medicine. Instead of a Ministry of Healing we are to have a huge business organization controlled by scientific analysis and economic theory. But there is nothing to control the controllers. Man is so puffed up (if not yet blown up) by his success (?) in splitting the atom that he has quite lost sight of the Almighty Power which made every atom. Such a mentality will never do good work. No one can who does not know his material. If medicine does not nail its colours to the mast, if it wavers in its loyalty to Christianity, it must become the tool of "scientific research" and the slave of "economic theory."

Ichthyol

Dr. J. AITKEN McEVEN (Barnsley) writes: In his letter (Nov. 23, p. 804) Surg. Lieut. G. B. Hopkins comments on the geological origin of ichthyol as being "the schist . . . regarded by geologists as having originated by fossilization of seabirds' excreta." My recollection (quoting, I believe, Poullsson's *Pharmacology*) is that ichthyol is derived from destructive distillation of a shale, found in the Dolomites, containing the teeth of fossilized fish. I always understood that this fact was responsible for the name of the product (*ichthys* = a fish). While I lay no pretensions to any qualification in geology, I beg leave to doubt the statement that any schist could be the result of fossilization. I stand, however, prepared to be corrected in both statements.

Effects of Penicillin Lozenges

Dr. A. J. COLBY TINGEY (Epsom) writes: Dr. I. G. Cameron (Oct. 26, p. 638) considers it would be of interest if doctors would write of their experiences with these lozenges. It appears possible that in some cases penicillin lozenges may actually lower the patient's resistance to bacterial infection. For example, in June last I was consulted by a patient aged 31 who had a mild form of tonsillitis with a temperature of 99° F. (37.2° C.), and at his request I gave him a prescription for penicillin lozenges. Three days later I received an urgent message from his wife, and found him in bed at home with a temperature of 104° F. (40° C.), and the usual symptoms of acute toxæmia. He was very ill for the next few days, but made a good recovery with sulphonamide treatment. I submit that acute tonsillitis is a general infection, and that to treat the complaint with penicillin lozenges is little better than a placebo. The attitude of the general public to penicillin may best be described by the Latin tag—"Omne ignotum pro magnifico."

Foreign Body in the Duodenum

Mr. D. LIVINGSTONE POW (Wrexham) writes: It is recognized that long objects—e.g., nails—are apt to become arrested in the second or third parts of the duodenum. The following case is of some interest. A female child aged 1 year and 11 months was admitted to the Wrexham and East Denbighshire War Memorial Hospital on Sept. 24, 1946, with a history of having swallowed the buckle of a pram-belt on Aug. 19. The child had been taken immediately

to the Out-patient Department; but, although x-ray examination had demonstrated the foreign body and also the fact that it was remaining in the same place, no step was taken for a time, possibly because the radiologist was inclined to the opinion that the object was not in the stomach or duodenum. (A barium examination of the child was not easy because of struggling.) The child appeared perfectly well throughout the period between ingestion and operation. The latter was performed on Sept. 25. It was difficult, as usual, to locate the buckle, but it was finally detected in the second part of the duodenum. Attempts to manipulate it downwards failed: for a time it could not be persuaded to move upwards. However, eventually it was felt to slip towards the pylorus, and while it was held there an incision was made in the anterior wall of the stomach near the antral area. A finger introduced into the interior of the stomach could feel the buckle presenting at the pyloric ring, but was only with considerable difficulty that the object was finally persuaded sufficiently far through the pylorus to enable my host surgeon—Dr. A. W. Fowler, who was assisting—to grip it with pressure forceps. The cause of the difficulty now became manifest. In the middle of one of the long sides of the rectangular buckle was an interval rather less than one-eighth of an inch (0.32 cm.) in length and in that a fold of duodenal mucosa had been caught. It was disentangled only with some effort, and thereafter the opening of the stomach was closed and the operation terminated. Convalescence was uneventful. The buckle measured one and a quarter inches by five-eighths of an inch (3.18 cm. by 1.60 cm.).

Milk Priority

Dr. ESTHER CARLING writes: A striking instance of wasteful use of milk came to my notice recently. At a small holiday guest house for ex-sanatorium patients (now workers) two pints of milk daily were being delivered for every guest. The housekeeper spoke of her difficulty in "getting rid of it." Such an occurrence suggests that the almost routine issue of two pints daily, sometimes for years, could surely be lessened in these times of stress.

Dr. W. J. LORD (Bath) writes: May I stress one point in letters of Drs. H. E. Collier and G. B. Page (Nov. 16, p. 7): namely, milk priority for old people? Not only, in most cases, their digestive functions inefficient, but they have the added burden of housework and shopping to a much larger extent than before the war. These hardships, again, are often aggravated by arteriosclerosis and high blood pressure.

Pronunciation of Medical Words

Dr. R. L. WYNN (Wallasey) writes: The problems of pronunciation which have been given publicity in your columns arise from the difficulties of assimilation of foreign and dead stems into living structure of a vigorous language, and in their usage may be expected to be variable and sometimes illogical. Many draw attention to another and more serious variety of mispronunciation—the commonly used versions of foreign proper names, mostly surgeons. This, curiously, seems related only to their professional life. An orthopaedic surgeon who correctly recounts that he admires the singing of Gigli the tenor, will later be heard calling for a "giggle" saw. The German "umlaut" suffers horribly, such a name as Böhler is usually ignored, whereas, in its own fashioned form, as in "von Graefe," it commonly acquires separate syllabification of its own, combined this time with a blasphemous disregard for the final "e." Weil and Wassermann are lucky men who generally get a near equivalent of their names. Trendelenburg, however, gets his accent displaced from the first to the second syllable, presumably because the Anglo-Saxon tongue, though accustomed to an accent on the first syllable, gets nervous when the accent of the word is too far off. Another sufferer is Braun, whose English lips brings to mind a popular meat dish rather than the familiar colour represented by his name. Before we embark on what must be purely academic discussion of the pronunciation of words which in their origin are all neologisms, would it not be wise to set our house in order regarding words of whose pronunciation there is no doubt, once due attention is given to them?

Dr. A. R. NELIGAN (Droitwich) writes: Your correspondent Dr. R. O'Rahilly (Nov. 9, p. 711) and other readers may be interested to know that, at a meeting of the International Society of Hydrology held at Buxton last month, an American doctor who read a paper pronounced the "e" of the word "syndrome" throughout.

Dr. MARGARET VIVIAN (Bournemouth) writes: Three of my colleagues have answered my question regarding the pronunciation of the word schizophrenia: two by letter, and one in your current issue. Each one gives a different version: (1) Shy-so; (2) Skitso; and (3) Skyzo. So it appears that we are, as it were, where we were.

Corrigendum

In the leading article on "The Control of Air-borne Infection" (*Journal*, Nov. 30, p. 820) the word "mass" at the end of the twelfth line from the end should read "mess."

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 7 1946

GENERAL MEDICAL COUNCIL

PRESIDENT'S ADDRESS

The 169th session of the General Medical Council was opened on Nov. 26, Sir Herbert Lightfoot Eason presiding. Dr. R. W. Craig took his seat as direct representative for Scotland for the term ending on June 30, 1951. He was introduced by Dr. Sydney Smith.

The President then delivered the following address:

Since our last meeting we have had to deplore the death of Sir Kaye Le Fleming. He was elected as a direct representative of England in November, 1928, and was three times re-elected—in 1933, in 1938, and in June, 1946, a month before he died. He served the Council in many capacities. He was a member of the Public Health Committee from 1929; of the Pharmacopoeia Committee from 1932 to 1938; and in 1939 he was first elected a member of the Penal Cases Committee, on which he served until he died. Members of the Council will, I am sure, deeply regret the passing of one of our most distinguished and useful members. Sir Kaye Le Fleming not only had a wide experience of private practice in every aspect, but served his profession with high distinction as a member of the British Medical Association, in which he held many important offices. No one who has been a colleague of his on the Council will forget his sound common sense, and his peculiar faculty of rising on occasion and putting his finger unerringly on the vital point of a discussion. His charm of manner endeared him to all his colleagues, and I think the Council will feel that they have lost in Sir Kaye Le Fleming an outstanding example of a family physician and friend. We also have to regret the death on Oct. 3 of Sir Walter Langdon-Brown, who was a member of the Council from 1932 to 1937. He was a distinguished member of the Council, and a worthy holder of the historic office of Regius Professor of Physic in the University of Cambridge. We have further to regret the death of Dr. Wardrop Griffith, who represented the University of Leeds on the Council from 1919 to 1928.

We have lost a valued colleague by the retirement from the Council of Dr. Fraser, the direct representative for Scotland, who did not offer himself for re-election in the summer. He served on the Council for five years, and we shall miss his sound advice on disciplinary matters, particularly when they concerned the maintenance of the best standards of conduct in private practice.

We have to welcome in his place Dr. Robert William Craig, whose experience as former Scottish Secretary of the British Medical Association well qualifies him to assist the Council in all their deliberations.

The Curriculum: Visit to America

The Council in May decided that a stage had arrived in the consideration of the draft Recommendations as to the curriculum when it might be desirable to consult some of those concerned with the medical curriculum in Canada and the United States with a view to finding out if they had any views on medical education which might enlighten the Council in their task. Thanks to the generosity of the Nuffield Foundation, who defrayed the cost of transport across the Atlantic, and of the Rockefeller Foundation, who defrayed the cost of living in the New World, this aspiration was fulfilled, and in the middle of September a delegation from the Council consisting of Dr. Bigger, Dr. Brocklehurst, Dr. Campbell, Dr. Cohen, and myself, with the Registrar, crossed the Atlantic and visited the following medical schools: in New York, the Long Island College of Medicine, Cornell University Medical College, New York Uni-

versity College of Medicine, and Columbia University College of Physicians and Surgeons; the University of Chicago; the University of Michigan Medical School, Ann Arbor; in Canada, the Faculties of Medicine in the University of Toronto and in McGill University; the Harvard Medical School in Boston; and the Johns Hopkins University School of Medicine in Baltimore. In addition, the delegation met representatives of the Council on Medical Education and Hospitals of the American Medical Association in Chicago, and of the National Board of Medical Examiners in Philadelphia. From all these bodies the delegates obtained valuable information as to the requirements for medical practice, the content and lay-out of the medical curriculum, and the views of those who would amend the existing regulations. The delegation returned to this country at the end of October, and a preliminary report on the visit will be presented to the Council during this session.

The Council will have to consider the draft Recommendations further at this session in the light of observations made on them by licensing bodies and medical schools, together with an explanatory introduction; but since replies have not been received from a number of bodies and schools, it appears to be impracticable to conclude the consideration of the draft Recommendations on this occasion. It will therefore probably be necessary to have an additional session in February, at which I hope it may be possible to adopt the recommendations in their final form.

It will be remembered that the Council in May approved the draft of a short medical Bill, restricted in its scope to matters which urgently required legislation. Copies of the draft and of an explanatory memorandum were transmitted to the Minister of Health and to the Lord President of the Council on Sept. 21, with a submission that the Bill should be settled by the Government draftsman with a view to its introduction, as settled, into Parliament at the first opportunity. The draft Bill and memorandum have been circulated to members.

A vote of thanks was accorded to the President on the motion of Dr. Sydney Smith, seconded by Dr. J. W. Bone.

WINTER SESSION

Dental Business

The Council considered reports from the Dental Board on two disciplinary cases. One case was that of Ascott William Harris, registered as of John Bright Street, Birmingham, Dentists Act, 1921, whom the Board had found to be associated with or employed by an unregistered person who with his knowledge and/or assent procured or sanctioned the insertion in newspapers of advertisements for the purpose of obtaining patients and to have received patients through a Hospital for Broken Dentures run by the same person. The other case was that of George William Southwood Clark, registered as of Gateshead, Dentist, 1921, who had been convicted at Northumberland Quarter Sessions of breaking and entering a dwelling-house and stealing certain property. Letters were read from both respondents protesting their innocence. The Council instructed the Dental Board to erase from the *Dentists Register* the names of Ascott William Harris and George William Southwood Clark.

The Council restored to the *Dentists Register* the names of Harry Ernest Best and Alfred Horace Myring.

MEDICAL DISCIPLINARY INQUIRIES

Cases Adjourned from Previous Sessions

The Council considered the case of Anthony John Watkins, registered as of Newport, Mon., against whom it had been found that in June, 1944, he was convicted at the Central Criminal

Court of unlawfully using an instrument and was bound over for two years. The Council also had postponed judgment for two years. Dr. Watkin now produced three testimonials from members of the medical profession as to his exemplary conduct in the interval. The Council, in view of this satisfactory evidence, did not see fit to erase his name, and closed the case.

The Council next considered the case of Graham George Robertson, registered as of Mariners Lane, Tynemouth, against whom the Council had found, in 1944, that in 1942 he had been judged by a court-martial at Quetta to have been drunk on active service and had been sentenced to be dismissed from the Army, and that in 1943 he had been convicted at Newcastle of driving a car while under the influence of drink. The Council had postponed its judgment on the finding, and subsequently at two sessions had granted further postponements owing to Dr. Robertson's state of health. Dr. Robertson now appeared, but the Council was not satisfied with the evidence tendered on his behalf and with his present condition, and instructed the Registrar to erase his name from the *Medical Register*.

The next case was that of John Corboy, registered as of Tycoch, Swansea, against whom it had been found that he had been twice convicted in 1945 at Salford Police Court of driving or being in charge of a car while under the influence of drink. The Council had postponed judgment for one year. Dr. Corboy now attended and produced two testimonials from medical colleagues. The Council, in view of this satisfactory evidence, did not see fit to erase his name.

Convictions for Misdemeanour and Charges in Respect of Patients

The Council proceeded to consider the case of William Francis Hirsch Coulthard, registered as of Aspatria, Carlisle, who appeared on the charge that in March, 1946, at Carlisle, he had been convicted of being drunk and disorderly, and in April, 1946, at Cockermouth, of being drunk in charge of a car (on which occasion he was fined £50). He was also charged with using obscene language and being under the influence of drink while attending a patient in 1942 on the birth of her child; with similar behaviour on various occasions between 1943 and 1946 when visiting another patient, on one of which occasions he was alleged to have struck the patient; with having given a certificate in October, 1945, without having seen or examined the patient at the time; and, finally, with having obtained from a firm of chemists supplies of "myocrisin" by falsely representing that the drug would be administered to one of his patients, whereas in fact certain of the supplies were not so administered.

Dr. Coulthard attended with Mr. H. D. Peacock, counsel, instructed by Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society. Members of the Council who were members of that Society withdrew and took no part in the proceedings.

Mr. S. G. Howard, counsel, instructed by Waterhouse and Co., solicitors to the Council, attended to present the facts of the case. Mr. Howard asked permission to amend the charges by adding four other convictions: in 1943 at Keswick, of failing to immobilize a car during the hours of darkness; in 1944 at Carlisle, of wrongful use of motor fuel; and in 1945 at Wigton, of two offences on different dates, both concerned with the use of obscene or abusive language. The Council ruled out the first of these convictions as not falling within its province. The others were added to the charge.

Mr. Howard explained the circumstances of the convictions. He then dealt with the first of the charges relating to patients. Dr. Coulthard was summoned to attend a Mrs. Wright, of Aspatria, on the birth of her child, and, according to her story, when he came he was under the influence of drink and used obscene language. The next charge concerned a Mr. Aitken, a patient, who had since died. It was alleged that at various times he had called at the Aitkens' house when he was under the influence of drink, had used bad language, and on one occasion had assaulted the patient, making his nose bleed. "If the evidence bears out these facts," said Mr. Howard, "the Council may have difficulty in finding language temperate enough to describe conduct of this kind." The other two charges were of a different character. The husband of Mrs. Wright had contracted malaria in Burma, and, having an attack when home on leave, it was alleged that his wife had obtained a certificate from the doctor

stating that he had malaria and was unfit to travel, though the doctor had not seen or examined the patient. The last charge related to wrongfully obtaining a drug. A Mrs. Arnott had suffered from rheumatoid arthritis, and Dr. Coulthard had attended her under a county council scheme for domiciliary medical relief and had prescribed "myocrisin" and had injected the drug, but later failed to attend for this purpose, though on two occasions he had obtained supplies of the drug.

Mrs. Eleanor Mary Wright gave evidence that when Dr. Coulthard attended her on the birth of her child he had been drinking, and he used bad language, though the only word she could recall was "Hell!" With regard to the certificate stating that her husband was suffering from malaria she admitted that her husband had been to see the doctor at the beginning of his attack a week previously. Mr. Wright, the husband, gave contradictory evidence. He agreed that, about a week before his wife visited the doctor and obtained the certificate, he himself went to see the doctor, who took his pulse and temperature. The President said that a good deal turned upon the form of the words in the certificate, but the certificate had gone to the military authorities and could not be produced.

Mrs. Sarah Aitken gave evidence that once or twice when Dr. Coulthard attended her husband he was drunk. She judged this by his attitude and language. Asked what the language was she said she would not like to repeat it, but she was persuaded to write down the words for the benefit of the Council. On the occasion of one visit he struck her husband. She also alleged that during the week preceding her husband's death, though Dr. Coulthard was repeatedly sent for, he did not come. Asked why she and her husband continued to employ Dr. Coulthard despite these alleged acts, which extended from August, 1944 to March, 1946, she said that he was her husband's panel doctor. No complaint was made to the Insurance Committee. Another witness, a Mrs. Anderson, testified that she had seen Dr. Coulthard the worse for drink at Mrs. Aitken's house, but on being pressed she could not remember the dates or even the month.

With regard to the last charge, that of obtaining "myocrisin" under alleged false representations, it was stated that four ampoules were supplied by the chemists in January, 1946, and four in April, 1946, on Dr. Coulthard's requisition on behalf of one of his patients, a Mrs. Arnott, but no part of these supplies was administered to her. In a declaration Mrs. Arnott stated that in October, 1945, she and her husband became entitled to free medical service under the Public Assistance Committee, and continued to have Dr. Coulthard, who had been their doctor for the previous nine years. She had suffered from rheumatoid arthritis, and for about five years she had been getting "myocrisin" for injections and paying Dr. Coulthard for obtaining and administering the drug. The last injection she had had was in June, 1945.

In evidence on his own behalf Dr. Coulthard admitted the convictions, but denied that on the first occasion, though there was an altercation, he was the worse for drink. With regard to the second conviction, of being drunk in charge of a car, he said that he was "run down" at the time and had had a certain amount to drink. Since that occasion he had left off drinking entirely, and he gave assurances for the future. Concerning the charges of using bad language in the presence of patients, he gave a total denial. The woman whom he had attended in childbirth in 1942, on which occasion, it was said, he was under the influence of drink and used obscene language, had been attended by him on several occasions since, and so far as he knew was still his patient. Concerning the certificate given to this patient's husband, he said that he saw him a few days before he gave the certificate to his wife, and he had no doubt that a malarial attack was beginning; he had treated him several times since. He gave a total denial of the charge in respect of the Aitkens, and said that he had never struck the male patient. With regard to Mrs. Arnott, she had been a patient of his for some years. Her husband, an old-age pensioner, was in receipt of a supplementary pension, and in these cases certain drugs were obtainable without charge from the social welfare department of the county council. He prescribed "myocrisin" and for this purpose filled in a form addressed to the social welfare department for a number of ampoules in respect of the following period. At this time, owing to a difference between himself and her stepson, Mrs. Arnott changed

her doctor and did not have the "myocrisin." Through an error he omitted to notify the social welfare department that eight ampoules were unused and were still in his possession. He had not made any false representation, and when he asked for the supply he intended to administer it to her and would have done so but for the fact that she had changed her doctor.

Miss M. McMurren, a registered midwife, of Aspatria, testified that it was she who sent for Dr. Coulthard in the case of Mrs. Wright. When he arrived he was certainly not under the influence of drink, nor did he use bad language, but on that and the following day he made all necessary arrangements for the patient. In the course of frequent professional association with Dr. Coulthard over a period of nine years she had never known him the worse for drink, or use bad language, or be other than most attentive to his patients.

After Mr. Peacock had addressed the Council on the respondent's behalf, and Mr. Howard had reminded the Council of the points brought out in the evidence for the complaint, the Council deliberated *in camera* and found the convictions proved; also the charges in respect of the Aitkens, that Dr. Coulthard had used obscene language and had been under the influence of drink while visiting them in a professional capacity, and on one occasion had assaulted Mr. Aitken; and the charge in respect of Mrs. Arnott, that he had wrongly represented concerning two batches of drugs that they were for administration to one of his patients. The Council dismissed the charges relating to the Wrights. The President stated:

"The convictions and the facts which have been proved against you are discreditable to you and to your profession and indicate habits which may be dangerous to your patients. But in view of the assurances that you have given to the Council at this hearing as to your abstinence from alcohol in the past and your assurances as to the future, the Council have decided to postpone judgment on your case for a period of two years. But they will require that you shall appear before them at the session in November next and produce testimonials from your professional brethren and other persons of standing as to your behaviour and habits in the interval."

Convictions

The Council proceeded to consider the case of Reuben Denny, registered as of Twyford Avenue, Acton, who had been convicted on May 20, 1946, at Marlborough Street Police Court of driving a motor-car while under the influence of drink, had been fined £50 and had his licence suspended for twelve months. Dr. Denny attended, and while admitting the conviction made a statement in extenuation. He had been ill during the first six months of this year, and in 1943 was invalided home from Gibraltar with head injuries.

The Council postponed judgment for one year.

The Council considered the case of Ethel Grundy Toward, registered as of Birtley, Co. Durham, who appeared on the charge that she had been convicted at Gateshead in September, 1945, and in February, 1946, of driving a motor-car while under the influence of drink. Dr. Toward, who was represented by Mr. H. D. Peacock, counsel, instructed by Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society, gave evidence that at the time of these occurrences she was helping her husband to carry on a busy practice of 2,700 panel patients, 2,500 club patients, and private patients in addition, and was also having to do the whole work of the household without assistance. She had afterwards gone to Crichton Royal, Dumfries, for a course of treatment, from which she had greatly benefited. Dr. Walter Toward, the husband of the respondent, gave confirmatory evidence.

The Council found the convictions proved, but did not see fit to direct the Registrar to erase Dr. Toward's name.

Restorations

The President announced that the following had been restored to the *Medical Register* after penal erasure: James Jackson Brown, Erich Hohenberg, Arthur Patrick Kennedy, Matthew Morgan-Daley, Brendan O'Carroll, Archibald Walker.

Reports of Committees

Dr. Campbell presented the report of the Pharmacopoeia Committee which embodied a report of the British Pharmacopoeia Commission. All the text of the new *British Pharma-*

copoeia had been sent to the printer, but it was not yet possible to announce the date of publication.

Inspection of Qualifying Examinations

Prof. R. J. Brocklehurst, chairman of the joint meetings of the Education and Examination Committees which have been considering the reform of the medical curriculum and the inspection of qualifying examinations, presented a report on the latter subject. The talks on the curriculum were not yet completed; it is hoped to report on them at the extra February session of the Council. With regard to the inspectors' reports, Prof. Brocklehurst said that these extended over the period 1942 to 1946, and the task of reinspection had now been completed. It had not been an easy task in view of the emergencies of wartime. Despite the possible effects of war conditions on the standards of the qualifying examinations, the inspectors were satisfied that the character of the examinations had not deteriorated. The inspectors first reported that, with three exceptions, the examinations which they had inspected were sufficient, and on reinspection of these three excepted examinations it was found that they also had now come up to the sufficiency standard. It had been felt that, in certain examinations the examiners spent rather a long time on the examination of the better type of candidates, and in some cases borderline candidates received rather less than adequate attention. The committees felt the need of reaffirming the paramount importance of ensuring that no candidate should be allowed to pass the qualifying examination, and thereby obtain the right to registration, unless he possessed the knowledge and skill requisite to the efficient practice of medicine, surgery, and midwifery.

An important point was the taking into account of the candidate's record at the time of the examination. It was reported that at a number of examinations in medicine such records were not taken into account, and the committees wished to draw the attention of licensing bodies to the Council's previous recommendation in this respect, and to express the hope that the assistance which could be obtained, especially in the case of borderline candidates, by the record of the work done during their course of study would be appreciated by the examiners.

Another question dealt with was the possibility of establishing a panel of examiners by the Council, from which panel examiners could be selected for the various bodies. This was carefully considered by the committees, but it was felt that the circumstances were not such as to justify the adoption of the proposal, which would be felt to impose a serious restriction on the freedom of choice of the licensing body.

The report was approved by the Council without discussion and is to be circulated to the licensing bodies for their information.

Dr. N. E. Waterfield was elected to fill a vacancy on the Penal Cases Committee caused by the death of Sir Kaye Le Fleming.

The Council concluded its business with a vote of thanks to its President, proposed by Dr. J. W. Bone and seconded by Dr. J. P. Hedley.

INSURANCE ACTS COMMITTEE CONTRIBUTIONS FOR DEFENCE FUND

The first ordinary meeting of the new session of the Insurance Acts Committee was held on Nov. 21. Dr. E. A. Gregg was unanimously re-elected to the chair. The committee agreed that an appropriate letter be sent to Dr. Lewis Lilley, who had been a member for very many years, on his retiring from membership.

The chairman gave a report on the opening of conversations with officers of the Ministry of Health on the question of the capitation fee. He said that the practitioners' case had been put forward in general terms, but also with a fair amount of detail, and a further meeting would be held on Dec. 5. There was no reason to be dissatisfied with the conversations so far. To some members who expressed surprise at the delay at reaching a conclusion on what was a matter of arithmetic it was pointed out that the Spens Committee Report had mentioned as a relevant consideration not only the difference in money values between 1938 and 1945 but the increases in incomes of members of other

professions. A report by a leading economist—an unimpeachable authority, as the Ministry itself would recognize—had been presented by the committee to the Ministry, and in this report it was stated that the level of prices for professional families in 1945 was 145 to 150% of that obtaining in 1938.

Increase of Levy

In discussion on a report of the National Insurance Defence Trust Dr. S. Wand urged that the trustees should consider whether the amount of voluntary levy should not at this juncture be increased from 1d. for each insured person to 4d. Dr. W. D. Steel supported this proposal and said that the Trust had every right to expect an allocation from the additional 2s. which practitioners were obtaining, on account, this year. Dr. F. A. Roper said that Exeter had unanimously resolved to increase the voluntary levy to 6d. The resolution that panel committees be communicated with and asked forthwith to increase their contributions was carried without dissent.

Various proposals were put forward as to the amount and method by which the voluntary levy should be increased. Members were asked to indicate whether in their own panel committee there was a small statutory fund from which the committee met its expenses, the practitioners signing a document for the deduction of a certain amount from their quarterly cheque for the defence fund, or whether there was a voluntary fund which served for both expenses and contributions to the fund. The majority indicated that the former method obtained in their areas; thus any decision as to a larger amount would require a new signed undertaking from each practitioner. The importance of the filling up of their quotas by panel committees which have not yet contributed the full amount on the existing undertaking was stressed. Difficulty was experienced in arriving at an unambiguous formula for the amount and method of the increased levy, and further consideration of the matter was deferred until the next meeting.

A letter was read from one panel committee stating that it had deferred the question of making increased contributions until it had learned how the unused money to the credit of the fund would be disposed of when national health insurance came to an end. The chairman said he could only suggest that it would be perfectly in order for the trust, under its constitution, to continue to function in whatever service was substituted for national health insurance, and sums such as had never been required before might be necessary. It was agreed that a plain statement of the purposes and uses of the fund should be prepared and sent to every panel committee.

A Standard Formulary

Dr. F. Gray reported that the joint committee of the B.M.A. and the Pharmaceutical Society had referred for consideration to the Insurance Acts Committee a resolution that consideration be given to the need for a standard formulary and that it be based on the formulary section of the *British Pharmaceutical Codex* and compiled by a joint committee of the two professions. The I.A.C. endorsed these proposals. The chairman said it was not suggested that the formulary should consist merely of formulae taken from the codex: there would have to be very considerable additions.

The committee considered the instruction of the Annual Conference that immediate steps be taken to secure the heavier weighting of mileage. Dr. J. A. Ireland said that owing to long distances and difficulty of access the rural practitioners of his area were strongly of opinion that the weighting of mileage should take place on a much higher scale. The chairman said that the question of mileage would be taken into account in the conversations concerning the capitation fee. A resolution of the Conference concerning the inadequacy of the present dispensing capitation fee was referred to the Rural Practitioners Subcommittee.

A reply was reported from the Ministry to suggestions which the committee had made concerning postgraduate courses for insurance practitioners. The Ministry stated that it was willing to consider special cases brought to its notice where a doctor had been doing a reasonable amount of insurance work although technically he had failed to satisfy the condition as to the size of list which would entitle him to admission to the refresher courses.

HEARD AT HEADQUARTERS

Nearly Unanimous

Although for the time being the question of resignation from the panel is in abeyance while conversations are proceeding over the insurance capitation fee, it is useful to have on record the returns of reports from Insurance Committee areas. A but 10 of the 190 areas have now reported. In these 10 the number of insurance practitioners is some 1,500. One of the areas, by the way, is the Isles of Scilly, where, so it was stated at the meeting of the Insurance Acts Committee, there is only one insurance practitioner, who, presumably because of his inability to get a seconder, could not send forward a resolution. In the 180 areas reporting, the proportion of practitioners who favoured the I.A.C. recommendation was 94.7% of those attending the meetings or replying to the personal and postal canvass; the proportion not in favour was 2.6%, and a similar proportion abstained from voting or gave indecisive replies. As some of these last can now be presumed to have come round to decision it is a conservative estimate to state that over 95% are behind the I.A.C. in the line it has taken. This is about as solid a demonstration as any democratic vote can be—far more impressive than the card vote at a trade union meeting while the writer attended the other day, when a resolution was carried by 300,000 to none.

Doctors and Patent Medicines

The Hunterian Society staged a good debate at the Apothecaries' Hall recently on the motion: That the uncontrolled advertising of patent medicines is a menace to the public. The motion was carried, of course—with eight dissentients in a meeting of about 100. The chief advocate on each side was a layman—Mr. Hugh Linstead, M.P., the secretary of the Pharmaceutical Society, and Mr. Arthur Mortimer, director of a company which controls a well-known proprietary remedy. One of the points made in the debate was that doctors ought to get up and bleat proprietary medicine manufacturers, for if doctors had to do with all the people who go round to get something from the chemist to relieve an ache or pain their surgeries would become impossible. The doctors would be seeing again all those people whom they hoped they had seen for the last time. What would they do? Rubber-stamp the lot, or go through them as conscientiously as they do the patients who at present come for hot-water bottles, priority milk, and corsets?

The amount spent on patent medicines called forth some widely varying estimates. One doctor in the discussion said that ninety millions a year was spent on advertising the lot, but Mr. Mortimer declared that the figure was nothing like that. The last published figure, for 1938, was £4,835,000 for the advertising of all these preparations, including tonics, wines, veterinary medicines, and rupture appliances, and the advertising accounted for no more than 8% of the total advertising space in newspapers. But he admitted that this related only to advertising in the national newspapers and took no account of advertising by posters on railways and elsewhere or advertising by correspondence.

Harvest Ahead

One suggestion made at the Hunterian Society debate sent us back to an old volume of *Punch*, for 1912, which depicted a depressed Mr. Lloyd George contemplating his National Health Insurance Bill, while in the street below there is a procession of doctors bearing a banner, "Doctors Demand a Living Wage." With the Chancellor, however, is a figure representing patent medicines, with the legend on his front, "Magic cures; the only successful remedy for . . ."—a score of complaints—who says: "Never mind, dear fellow, I will stand by you—to the death." The advent of national health insurance did not, apparently, diminish the demand for patent medicines, and now, according to the anticipations of the Hunterian speakers, the coming of a National Health Service will make patent medicines flourish more than ever. One of the speakers—Dr. G. H. Day, who prophesied that the sales would be doubled or trebled—gave psychological reasons for his forecast. He pointed out that there is an ineradicable conviction in the human mind

that what is not directly paid for is of no value. "Nothing for nothing; very little for a penny." The sufferer from any ill feels the necessity for some propitiatory sacrifice; perhaps it is connected more or less remotely with a sense of sin. He may get satisfaction by paying the doctor's fee, but with "free for all" medical treatment patent medicines will be the only altar upon which his sacrifices can be piled.

Surgeons up in Arms

There was no doubt about the feeling at the recent special meeting of Fellows of the Royal College of Surgeons, which was called by requisition to consider the situation under the new Act. Although no vote was taken, only two of the ten speakers expressed themselves in favour of entering upon discussions concerning regulations, and to judge from the volume of assent and dissent which followed the oratory that propo-

tion more or less represented the disposition of opinions held by the audience of 150. The statement of the President that as a corporate body the Council had answered "Yes" to the question whether it desired the Negotiating Committee to enter into discussions with the Minister obviously took many Fellows by surprise, but he immediately made it clear that this decision was binding upon no individual, and he agreed at once—indeed it was his own suggestion—that the communiqué given to the Press about the meeting should state that it was agreed that the College should act in conformity with the general feeling of the profession (presumably in accordance with the result of the plebiscite). It must be a long time since there was a meeting at Lincoln's Inn Fields so animated and prolonged (it lasted 24 hours). In years gone by the annual meetings of Fellows and Members often failed to muster the quorum of thirty.

MEDICAL WAR RELIEF FUND

SIXTH ANNUAL REPORT

This report covers the year from Sept. 1, 1945, to Aug. 31, 1946. During this period the applications for assistance from the fund, which had become progressively more frequent in the two previous years, continued to increase in number. The number of awards made by the Distribution Subcommittee during the year is 81, the total amount of these awards being £18,016. The corresponding figures for the year 1944-5 are 56 and £11,344. The total amount distributed since the inauguration of the fund is £52,236.

As had been expected, a large majority of the applicants during the past year were ex-Service doctors who, on returning to civil life, were faced with financial difficulties resulting from their war service. The typical case is that of the general practitioner whose single-handed practice declined seriously during his absence and who needs temporary assistance to tide him over the difficult initial period of resettlement. The other

miscellaneous applications received during the year included ten from widows of doctors who gave their lives in the war.

The audited statement of accounts for the year is appended to this report. The contributions received since the committee of the fund published the second appeal for subscriptions at the beginning of December, 1945, amount to approximately £22,000. This is much less than the sum which had been estimated to be necessary, but on the other hand the demands made on the fund during what has been the "peak" year have also fallen short of expectation; and the new subscription income, although it has not added greatly to the fund's resources for the future, has exceeded the year's relatively heavy expenditure.

The special subcommittee concerned with the provision of medical books for medical prisoners of war was not re-appointed last year, the need for its services having come to an end. The subscriptions specially earmarked for this purpose amounted to approximately £217. The committee has now fully discharged its financial obligations to the Educational

Statement of Accounts for Twelve Months ended Aug. 31, 1946

For Relief of Financial Distress

	£	s.	d.	£	s.	d.
<i>Balance brought forward:</i>						
£7,000 3% Savings Bonds, 1955/65	7,000	0	0			
£12,000 2½% National War Bonds, 1946/48	11,985	18	9			
£4,000 2½% National War Bonds, 1951/53	4,000	0	0			
£1,000 3% Defence Bonds Post Office Issue	1,000	0	0			
500 National Savings Certificates	375	0	0			
Deposit with Post Office Savings Bank and accrued interest	181	11	0			
Proceeds of Sale of Investments due but not received	5,076	18	1			
Cash in hand	4	6	1			
	<u>£29,623</u>	<u>13</u>	<u>11</u>			
<i>Less:</i> Bank Overdraft	£847	10	11			
Amount earmarked for Books for Prisoners of War	67	3	11			
	<u>914</u>	<u>14</u>	<u>10</u>			
<i>Donations</i>	22,251	0	3	28,708	19	1
<i>Interest on Investments (Gross)</i>	640	0	0			
<i>Interest on Deposit with Post Office Savings Bank (including accrued interest to Aug. 31, 1946)</i>	4	10	9	22,895	11	0

Note: Since the inception of the fund, loans to a total of £13,709 have been voted; of this sum £847 was repaid prior to Aug. 31, 1946.

£51,604 10 1

For Books for Prisoners of War

	£	s.	d.
To Balance brought forward	67	3	11
	<u>£67</u>	<u>3</u>	<u>11</u>

	£	s.	d.	£	s.	d.
<i>By Loans advanced during year</i>	6,097	0	0			
<i>Less: Repayments during year</i>	104	5	0			
				5,992	15	0
<i>Gifts (including £735 to be Administered by Royal Medical Benevolent Fund)</i>	11,819	10	0			
<i>Less: Amounts refunded</i>	232	16	5			
				11,586	13	7
<i>Petty Cash Expenses</i>				11	18	0
<i>Clerical Assistance</i>				96	0	0
<i>Honorarium to Secretary of Distribution Subcommittee</i>				175	0	0
<i>Printing and Postages</i>				12	13	4
				<u>£17,874</u>	<u>19</u>	<u>11</u>
<i>Balance carried forward at Aug. 31, 1946</i>						
£7,000 3% Savings Bonds, 1955/65	7,000	0	0			
£10,000 2½% Savings Bonds, 1946/67	9,985	18	9			
£4,000 2½% National War Bonds, 1951/53	4,000	0	0			
£1,000 3% Defence Bonds, Post Office Issue	1,000	0	0			
500 National Savings Certificates	375	0	0			
Deposit with Post Office Savings Bank and accrued interest	186	1	9			
Cash at Bank on Current Account	11,265	5	6			
Cash in hand	2	3	1			
	<u>£33,814</u>	<u>14</u>	<u>1</u>			
<i>Less: Amount due to Royal Medical Benevolent Fund for Clerical Assistance</i>	£18	0	0			
<i>Amount earmarked for Prisoners of War</i>	67	3	11			
				85	3	11
				<u>33,729</u>	<u>10</u>	<u>2</u>
				<u>£51,604</u>	<u>10</u>	<u>1</u>

(Signed) PRICE, WATERHOUSE AND CO.,
Chartered Accountants,
Hon. Auditors.

Examined with the books and vouchers and found correct.

J. Frederick's Place,
Old Jewry,
London, E.C.2.

Oct. 10, 1946.

Books Section of the Red Cross and St. John Joint Organization, which gave invaluable assistance in the purchase and dispatch of the books, and a balance of approximately £67 remains unspent. This sum has been transferred from the prisoners-of-war account to the general account in accordance with the arrangement proposed when the appeal for specially earmarked subscriptions was published.

Future needs are not easy to estimate, but it is to be expected that, as demobilization proceeds, the fund will continue to receive appeals from returning Service doctors who have legitimate claims for a substantial measure of help. It seems probable also that the assistance given to widows, usually for the education of young children, will have to be continued for some considerable time to come. Therefore, although the present financial position is not such as to cause immediate anxiety, the committee would again urge the claims of the fund on those members of the profession who have not yet responded to last year's appeal. Cheques should be made payable to the Medical War Relief Fund, and addressed to the Honorary Treasurer of the Fund at B.M.A. House, Tavistock Square, W.C.1. To the many generous supporters of the fund who have sent further contributions in recent months the committee wishes to express grateful thanks.

Once again it is the pleasant duty of the committee to record its great indebtedness to the Royal Medical Benevolent Fund and its secretary, Mr. Pennefather, for their invaluable assistance, particularly in administering the awards in cases in which the payments are made by instalments over a period of years. Their knowledge and experience have been of great advantage in cases of this kind, of which there have been no fewer than 50 since 1941. Thanks are due also to the British Medical Association for continuing to provide accommodation for meetings and for much assistance given in other ways, especially in connexion with the second appeal for subscriptions. Finally, the committee acknowledges with gratitude the valuable help received from Messrs. Price, Waterhouse, and Co., who have again given their generous services as honorary auditors.

H. GUY DAIN,
Chairman.

Correspondence

The "Closed Shop"

SIR,—Dr. F. R. Ellis (*Supplement*, Nov. 23, p. 138) raises a most important question. By a coincidence it happens that a similar attempt to that described by Dr. Ellis has just been made to impose the "closed shop" principle upon the teaching profession. I have repeatedly pointed out the analogy which exists between the measures taken under the Education Act and those threatened by the N.H.S. Act, and this new example is particularly significant. On Nov. 5 the education office of the Gateshead Council issued a circular which declared that, in response to a demand from the industrial section of the Gateshead Labour Party and Trades Council, the Gateshead Town Council now made it a condition of employment for all its employees that they should become members of an appropriate trade union—and employees were required to return forms signed as signifying acceptance of this requirement within three days of the issue of the circular. The immediate reaction to this circular was a meeting of the N.E. Federation of School Masters (Nov. 9, 1946), when a resolution was passed unanimously recommending their Gateshead colleagues that they should not complete the form; and 500 teachers have, up to date, rejected this demand.

I drew the attention of the Minister of Education to this position (*Hansard*, Nov. 21, 1946) and enclose a copy of both question and answer.

Sir Ernest Graham-Little.—To ask the Minister of Education if she is aware that the Gateshead Council are demanding that teachers employed by them shall belong to trade unions as a condition of engagement; that 500 teachers have rejected this demand; whether the action taken by the council is authorized by her; and if she will give directions in this matter.

Miss Ellen Wilkinson.—The answers to the first two parts of the question are in the affirmative and the answer to the third part is in the negative. As regards the fourth part, it is the policy of the

Government to leave the question of conditions of employment to be settled between the parties concerned, and there does not at present seem to be any occasion for my intervention.

It is to be noted that the Minister of Education, following the example of the Minister of Labour in his attitude to the "closed shop," decides to preserve a neutrality unbenevolent to the teachers.

It is notorious that there is widespread dissatisfaction in both the medical and teaching professions with the current or threatened conditions of service, and there is every prospect that both the Education Act, 1944, and the National Health Service Act, 1946, will ultimately founder on this particular rock of the refusal of members of both those professions to take service under the terms imposed upon them. It seems therefore peculiarly inappropriate at this moment to add yet another condition which cannot but accentuate that scarcity.—I am, etc.,

House of Commons.

E. GRAHAM-LITTLE.

The "Closed Shop" at Willesden

SIR,—The latest threat of the "closed shop" is against the nursing staff of the Willesden Municipal Hospital. It is to be hoped that we shall give them, and any other nurses elsewhere in danger of victimization, all the help and encouragement in our power.

The danger to the dearest traditions of medicine must surely be apparent to those who canvass an affirmative reply to the B.M.A. plebiscite. Many of our senior representatives hardly seem to be aware of the irretrievable loss of freedom and enterprise that will be killed insidiously if the present Act is ever put into effect. Medicine must never be tied to one party or associated with medico-political organizations. It is but a short step to the "closed shop"; preferment will be a political reward, an appointment will go to the man who is associated with the party's administration. My God! What have we been fighting for?—I am, etc.,

Little Aston.

J. B. W. HAYWARD.

SIR,—I wonder if it is generally known by the profession that the Willesden Council's decision that all their employees must join a trade union or be given notice applies to doctors. I know one doctor who applied for a post with them and received written intimation that this was a condition of employment. It would be interesting if we knew what union the doctor was supposed to join and whether he would be bound to come out on strike when necessary.

Personally I might be persuaded to join a union if by doing I avoided losing my job, but I am glad to see that the Willesden nurses are not adopting such a pusillanimous attitude as myself. Yet if I did so I cannot see myself going on strike; but if I didn't, then I should either precipitate a further strike or get chucked out of the union.

Perhaps the Willesden Council are prepared to clarify the situation with regard to doctors and define exactly why they must join a union and what regulations they will be bound by should they be compelled to do so.—I am, etc.,

Dartford, Kent.

J. MACKAY CRAWFORD.

Medical Unemployment and Public Appointments

SIR,—Another of the "Unemployed" (Nov. 23, p. 138) is surely striking a wrong note when he writes complaining that local authorities do not give preference to ex-Service holders of the D.P.H. Those who served their country at home did so through no choice of their own: the destinies of all were in the hands of Ministries and medical war committees, and the Government of Northern Ireland is as unfair in discriminating against the wartime civilian as other authorities may be in discriminating against the ex-officer. We were all in it together and proud to be, so let us have no disputes between one section of the profession and another.

What is wrong, and always has been wrong, is the way doctors are appointed and promoted in the public health service. If this were done by informed and unbiased persons who could give due weight to professional qualifications and to experience both in the Forces and in civil appointments, there would be no occasion for the recriminations of "Another of the Unemployed" or for the dissatisfaction of many who are already in the service.—I am, etc.,

Sussex.

F. B. P.

H.M. Forces Appointments

ROYAL NAVY

Surg. Cmdr. S. J. Wheeler has been placed on the retired list.
Surg. Lieut.-Cmdr. C. J. Mullen to be Surg. Cmdr.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Cmdr. W. H. Butcher has been placed on the retired list.
Temp. Acting Surg. Lieut.-Cmdr. W. A. Burnett to be Temp. Lieut.-Cmdr.

ARMY

Majors R. F. O. T. Dickinson, O.B.E., R.A.M.C., and M. R. C. Watters, I.M.S.(rtd.), have been restored to the rank of Lieut.-Col. on ceasing to be employed.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Col. W. R. Phillips has relinquished his commission and has been granted the honorary rank of Col.
War Subs. Majors A. Bearblock, B. Barrowman, and G. Pringle have relinquished their commissions and have been granted the honorary rank of Lieut.-Col.
War Subs. Capt. D. L. Cran, T. Lyall, H. Parsons, W. H. Jeffrey, A. M. Van de Linde, J. O. Corbin, W. G. E. Eggleton, and G. Buxton have relinquished their commissions and have been granted the honorary rank of Major.
War Subs. Capt. G. A. Wilson has relinquished his commission and has been granted the honorary rank of Capt.
War Subs. Capt. E. R. S. Phillips and J. B. T. Thomas have relinquished their commissions on account of disability, and have been granted the honorary rank of Capt.
War Subs. Capt. J. A. Kay has relinquished his commission on reversion to the Southern Rhodesia Forces.
War Subs. Capt. F. Rudyard, E. Q. Lim, V. Pekarek, J. Voracek, and A. H. Mahallawy have relinquished their commissions.
Lieut. G. A. B. Cowan has relinquished his commission and has been granted the honorary rank of Capt.
Specialist Short Service Commissions.—To be Lieuts.: S. Y. Ggetter, C. R. St. Johnston, J. A. Martinez, A. A. Shein, T. W. Iwat, P. Forgacs, R. R. Hunter, P. G. Kohnstamm, C. G. Parsons, and K. B. Rogers.
To be Lieuts.: S. M. Adye-Curran, T. R. Bennett, J. S. Barr, J. Tchelor, R. J. Belas, J. E. Blundell, W. H. Condie, H. A. Condon, A. R. Debenham, E. A. Devenish, R. J. Dias, A. McK. Dorey, H. Donald, P. Dransfield, N. K. Dryden, C. L. Dufferley, D. J. Ison, R. Fife, L. Fisch, J. C. Foster, J. W. Fullerton, R. L. Idd, J. M. Garratt, M. R. Geake, A. R. G. Gordon, G. S. Iham, J. M. Harper, P. Hogg, R. M. Lang, C. H. B. Lawfield, T. Lloyd, J. L. McDougall, N. McDougall, I. A. McGregor, Lyon, D. L. Mackay, G. L. Mackay, W. G. McIntosh, H. A. B. Mackay, S. J. R. Macoun, A. Marshall, J. Mathieson, M. B. Matthews, R. Merryweather, A. A. Mudie, J. Oldfield, R. H. Park, Ramsay, W. A. T. Robb, N. V. Sapier, M. Schwartz, I. S. R. Sinclair, F. J. Spencer, N. B. Sprague, C. P. Tanner, D. S. Thomson, Thomson, P. L. Watts, H. Williams, M. Wood, W. Wood, I. Wrenab, and H. Bourne.

ROYAL AIR FORCE

ROYAL AIR FORCE VOLUNTEER RESERVE

Flying Officers J. N. C. Cooke, A. M. Dawson, H. F. W. Fry, and D. McGrath to be War Subs. Fl.-Lieuts.

DENTAL BRANCH

W. D. Clarkson-Webb, M.R.C.S., L.R.C.P., to be Flying Officer (mergency).

WOMEN'S FORCES

EMPLOYED WITH THE MEDICAL BRANCH OF THE R.A.F.

Fl.-Lieut. M. Calvert has resigned her commission, retaining the rank of Squad-Ldr.
Fl.-Lieuts. P. E. Williams and D. R. B. Sullivan have resigned their commissions, retaining their rank.
Elizabeth M. I. Milne to be Flying Officer (Emergency).

INDIAN MEDICAL SERVICE

Major-Gen. Sir J. B. Hance, K.C.I.E., O.B.E., K.H.P., has been promoted to the local rank of Lieut.-Gen., while holding the appointment of Medical Adviser to the Secretary of State for India and President of the India Office Medical Board.
Major-Gen. R. Hay, C.I.E., I.M.S., has been granted the local rank of Lieut.-Gen., while holding the appointment of D.G.I.M.S.
Lieut.-Col. D. N. Bhaduri has retired and has been granted the honorary rank of Col.
Lieut.-Col. J. Rodger, O.B.E., M.C., to be Col.
Lieut.-Cols. C. S. V. Ramanan and L. G. Pearson have retired.
Majors K. F. Alford, S. C. Bakhle and P. J. Kelly to be Lieut.-Cols.
Majors R. De Solderhoff and J. G. Durning have retired.
Majors S. C. Colbeck and B. M. Wheeler have retired, receiving gratuity.
Capt. R. B. Davis, D.S.O., W. M. Wilson, W. A. Hopkins, L. V. Iam, F. M. Byrn, J. W. R. Sarkies, T. Donness, and W. Laurie to be Majors.

Capt. A. M. Best has retired, receiving a gratuity.
The notification regarding the retirement of Capt. A. C. S. Mann in a *London Gazette*, dated June 28, is cancelled.

EMERGENCY COMMISSIONS

Major J. Yu-Chieh Hsu has relinquished his commission and has been granted the honorary rank of Major.
Capt. D. C. Logan, J. M. Murray, G. McCracken, E. L. Jones, and E. D. MacWorth to be Majors.
Capt. G. A. Grahame has retired, receiving a gratuity.

COLONIAL MEDICAL SERVICE

The following recent appointments have been announced: D. Foskett, M.B., Medical Officer, Kenya; F. R. T. Hollins, M.B., B.Ch., Medical Officer, Grade II, Fiji; T. K. Howat, M.B., Ch.B., G. A. Owen, M.B., B.S., H. B. L. Russell, M.R.C.P., Medical Officers, Gold Coast; C. C. Langford, M.B., B.Ch., Medical Officer, Uganda; B. M. Nicol, M.B., Ch.B., Medical Officer, Nigeria; W. O. Petrie, M.B., Ch.B., Medical Officer, Nyasaland; M. T. Read, M.R.C.S., L.R.C.P., Medical Officer, Malaya; W. L. Robinson, M.B., B.Ch., Resident Surgeon, Windward Islands; A. B. Da Costa, M.B., Ch.B., District Medical Officer, St. Vincent, Windward Islands; E. F. B. Forster, M.B., Ch.B., African Medical Officer, Gambia; D. E. Freeman, M.B., B.Ch., Medical Officer, Grade II, British Solomon Islands Protectorate; Z. C. Holub, M.D., Medical Officer, Aden; M. A. Lambert, M.B., Ch.B., Medical Officer, Leeward Islands; A. D. McShine, C. H. Merry, M.R.C.S., L.R.C.P., and R. K. Richardson, L.R.C.P.&S., Medical Officers, Grade C, Trinidad; P. A. M. Van de Linde, M.B., B.S., Medical Officer, Hong Kong; P. C. Cosgrove, M.B., B.Ch., D.T.M.&H., Specialist (Physician) Sierra Leone; E. J. Foley, M.B., Ch.B., D.P.M., Specialist (Psychiatrist) Tanganyika; P. W. Hutton, M.B., B.Ch., D.T.M.&H., Physician Specialist, Uganda; R. B. S. Smith, M.B., B.S., D.T.M., Senior Medical Officer, Northern Rhodesia; T. M. Small, L.R.C.P.&S., D.P.H., Medical Officer of Health, Grade B, Trinidad.

Association Notices

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows: an Ernest Hart Memorial Scholarship, of the value of £200, a Walter Dixon Scholarship of the value of £200 and four Research Scholarships, each of the value of £150. These Scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State Medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession. Each Scholarship is tenable for nine months, commencing on Feb. 1, 1947. A Scholar may be re-appointed for not more than two additional terms. A Scholar is not necessarily required to devote the whole of his or her time to the work of the research, but may hold a junior appointment at a university, medical school, or hospital, provided the duties of such appointments do not interfere with his or her work as a Scholar.

Conditions of Award, Applications

Applications for Scholarships must be made not later than Saturday, Dec. 28, 1946, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants are required to furnish the names of three referees who are competent to speak as to their capacity for the research contemplated.

GROUP OF DERMATOLOGY

A meeting of the Group of Dermatology, to which all members of the Group are invited, will be held at B.M.A. House on Wednesday, Dec. 18, at 2 p.m.

Members of the Group are invited to forward to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, suggestions or recommendations for consideration by the meeting.

(Sgd.) C. Hill,
Secretary.

Diary of Central Meetings

11. Wed. Council, 12 noon.

Branch and Division Meetings to be Held

COVENTRY DIVISION.—At Coventry and Warwickshire Hospital, Tuesday, Dec. 10, 8.30 p.m. General meeting. Dr. Robert Forbes: The G.M.C.—Hitherto and Henceforth.

GREENWICH AND DEPTFORD DIVISION.—At Miller General Hospital, Greenwich, Wednesday, Dec. 11, 8.30 p.m. Mr. Mortimer Reddington: Maternity Problems.

PADDINGTON DIVISION.—At Inoculation Department, St. Mary's Hospital, W., Thursday, Dec. 19, 8.30 p.m. Sir Alexander Fleming, F.R.S.: Penicillin in General Practice. Members of other Divisions are invited to attend.

RICHMOND DIVISION.—At Royal Hospital, Richmond, Friday, Dec. 13, 9 p.m. Dr. Reginald Lightwood: Paediatrics.

WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION.—At Clayton Hospital, Wakefield, Thursday, Dec. 12, 8.15 p.m. Mr. D. W. Currie: Dysmenorrhoea.

Meetings of Branches and Divisions

BATH DIVISION

At a well-attended meeting of the Bath Division held on Nov. 22, with Dr. G. D. Steven in the chair, the following resolution was passed:

"That this meeting strongly urges the Council to recommend to the Negotiating Committee that if, as a result of the analysis of the plebiscite, it is found that a sufficient majority of the general practitioner group votes against entering into discussions with the Minister on the regulations, the Negotiating Committee should refuse to discuss regulations applicable to the General Practitioner Service.

"Should the analysis show other groups to be in favour of negotiating on regulations, we urge that discussions with the Minister be limited to those sections of the Act in which these groups are predominantly engaged."

WINCHESTER DIVISION

A meeting of the Winchester Division was held on Nov. 24, with Dr. C. J. Penny, O.B.E., in the chair. Of the 104 members in the Division 80 attended the meeting and 16 sent apologies (of whom 9 expressed their intention of voting against negotiations)—a record attendance.

Dr. Stevenson, assistant secretary of the B.M.A., opened the meeting by giving a clear account of the events leading up to the present National Health Service Act, the principles of the Act as pertaining to each section of the profession, and the implications to be deduced therefrom. He concluded by explaining the significance of a "Yes" or "No" vote. A fighting speech by Dr. Sybil Tremellen, of Winchester, who described the Act as an "infamous piece of tyrannical bureaucracy," was loudly applauded by the meeting.

Members had been previously asked not to record their answers until the implications of the plebiscite had been discussed at this meeting. Although no resolutions were put or votes taken (it being left to each member's own conscience as to the direction in which he should vote), the tone of the meeting was such that it was felt the majority of members were against negotiations.

The principal speaker in favour of negotiations was Lieut.-Col. C. Newton-Davis, who combined argument against the B.M.A.'s lack of negotiation with the Minister to date with a personal belief in the fallaciousness of Dr. Stevenson's address. There was no other convinced speaker on the "Aye" side.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—*Thurs.*, 8 p.m. Dr. Hilliard: The Diagnosis and Treatment of Mitral Stenosis.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, *Tues.*, 5 p.m. Prof. G. Marrian: The Biochemist's Approach to Problems of Pharmacological Activity.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—*Tues.*, 5 p.m. Dr. R. M. B. MacKenna: Principles and Practice of Treatment. *Thurs.*, 5 p.m. Dr. F. R. Bettley: Seborrhoeic Dermatitis.

APPOINTMENTS

BIRMINGHAM CHILDREN'S HOSPITAL.—Honorary Assistant Orthopaedic Surgeon, A. Innes, F.R.C.S. Honorary Assistant Ophthalmic Surgeon, A. A. Douglas, M.D. St. And., F.R.C.S. Ed.

HARDING, H. E., F.R.C.S., Honorary Orthopaedic Surgeon, National Hospital, Queen Square, W.C.1.

LONDON COUNTY COUNCIL.—The following appointments have been made in the mental health services of the Council at the hospitals indicated in parentheses. Deputy Medical Superintendent, J. Mack, Crawford, M.D., D.P.M. (Darenth Park). First Assistant Medical Officers, M. A. Walsh, L.R.C.P. and S.I., D.P.M. (Tooting Bec), and R. MacDonald, M.B., Ch.B., D.P.M. (St. Lawrence's).

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—Honorary Surgeon and Honorary Radiotherapeutic Surgeon, Gerald Townsley, M.D., F.R.C.S. Honorary Orthopaedic Surgeon, R. N. Martin, F.R.C.S. Ed

DIARY OF SOCIETIES AND LECTURES.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—*Tues.* and *Thurs.*, 5 p.m., Fitzpatrick Lectures by Sir Arthur MacNalty: The History of State Medicine in England, 1. From the Accession of Queen Victoria to the General Board of Health. 2. The Medical Department of the Privy Council.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS, 58, Queen Anne Street, W.—*Fri.*, 5 p.m. Mr. Victor Bonney: Myomectomy.

ROYAL SOCIETY OF MEDICINE

Section of Psychiatry.—*Tues.*, 5.30 p.m. Discussion: Leucotomy as an instrument of research. Openers: Dr. A. Meyer and Dr. T. McLardy: Neuropathological studies. Dr. S. Last and Dr. G. Greville: Electroencephalographic studies.

Section of Physical Medicine.—*Wed.*, 4.30 p.m. Discussion: The contribution of Physical Medicine to the care of the chronic sick. Openers: Drs. E. L. Sturdee, Marjory Warren, and A. R. Neligan.

Section of Neurology.—*Thurs.*, 8 p.m. Discussion: Treatment and prognosis of traumatic paraplegia. Opener: Dr. L. Guttmann, followed by Mr. E. W. Riches, and Drs. D. Whitteridge and P. Jonason.

Section of Ophthalmology.—*Fri.*, 3.15 p.m. Meeting at the Manchester Royal Eye Hospital. 10.20 a.m. Train leaves Euston. 3.15 p.m. Paper by Prof. Geoffrey Jefferson: The surgery of intracranial aneurysms. 4.30 p.m. Cases. 5.30 p.m. Discussion. 7.45 p.m. Dinner.

Clinical Section.—*Fri.*, 5 p.m. (Cases at 4 p.m.)

Section of Radiology.—*Fri.*, 8 p.m. Joint Meeting with the British Institute of Radiology and the Faculty of Radiologists in the Reid Knox Hall, 32, Welbeck Street, W. Discussion: Carcinoma of the stomach. Openers: Dr. J. L. Grout: X-ray diagnosis. Mr. H. Rodgers: Gastroscopy.

Section of Radiology.—*Sat.* (Dec. 14), 10 a.m. Joint Meeting at 32, Welbeck Street, W.1, continued. Discussion: Carcinoma of the stomach. Openers: Prof. M. J. Stewart: Pathology. Mr. Hermon Taylor: Surgery. Dr. Fairchild and Mr. Alan Shorter: Radiotherapy. Dr. D. Jennings: Statistics.

CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, 41, Queen's Gate Terrace, S.W., *Tues.*, 6.30 p.m. for 7 p.m. Discussion: Plastics in Surgery and Medicine. To be opened by Dr. S. Leader and Mr. R. Cutler.

DEWSBURY: STAINCLIFFE COUNTY HOSPITAL.—*Thurs.*, 8 p.m. Clinical meeting.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—*Fri.*, 7.30 p.m. Clinical meeting.

LONDON JEWISH HOSPITAL MEDICAL SOCIETY.—At Woburn House, Upper Woburn Place, W.C., *Thurs.*, 8.30 p.m. Presidential address by Mr. S. I. Levy: Some Principles of Urinary Surgery.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—*Mon.*, 8.30 p.m. Discussion: Modern Anaesthesia, to be introduced by Drs. F. T. Evans and Cecil Gray.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At 26, Portland Place, W., *Thurs.*, 8 p.m. Prof. B. S. Platt: Colonial Nutrition and Its Problems. A discussion will follow.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

HENDISSON.—On Nov. 11, 1946, at Lady Willington Hospital, Lahore, to Margaret Mary, wife of Lieut.-Colonel R. J. Hendisson, I.M.S., a daughter.

MACKENZIE.—On Nov. 27, 1946, at the North Staffordshire Royal Infirmary, to Sheila (née Joyce), wife of K. G. F. Mackenzie, F.R.C.S., a son.

MILNER.—On Nov. 30, 1946, at the Old Surgery, Middlewich Road, Sandbach, to Edna (née Key), wife of Dr. A. P. Milner, a daughter.

RANKIN.—On Nov. 25, 1946, at Parkgrove Nursing Home, to Jean Eleanor (née Crunkshank), wife of Dr. R. Rankin, 35, Kersland Street, Glasgow, a daughter. Both well.

WILLIAMS.—On Nov. 20, 1946, at Rubislaw Nursing Home, Aberdeen, to Ann, wife of P. B. Williams, M.B., Ch.B., a daughter—Linda Michele Godolphin.

WOOLSTENCROFT.—On Nov. 4, 1946, to Diana, wife of Dr. Robert Woolstencroft, 116, Rossall Road, Cleveleys, Lancs, a brother for Robert Peter—Mark Neville.

DEATHS

BOSWELL.—On Nov. 17, 1946, at Hiltonhill, St. Boswells, Roxburghshire, Henry St. George Boswell, M.B., C.M. Edin., in his 90th year.

HERBERTSON.—On Nov. 23, 1946, suddenly, at Monkstone, Ferring-by-Sea, Icha Richmond Herbertson, M.B., Ch.B., devoted and dearly loved husband of Florence Adeline.

BRITISH MEDICAL JOURNAL

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DIET AND CANINE HYSTERIA

EXPERIMENTAL PRODUCTION BY TREATED FLOUR*

BY

Sir EDWARD MELLANBY, K.C.B., M.D., F.R.S.

(From the Nutrition Building, National Institute for Medical Research, Mill Hill)

During the past twenty years or more dog-owners in this country and in the U.S.A. have been troubled by sporadic outbreaks of a nervous disorder which has been called canine hysteria, running fits, or fright disease. The condition seems to have been noted first in the southern States of the U.S.A. about 1916 and in England about 1924, and to have increased in intensity and distribution since then. Much has been written on the subject, and the disorder has at one time or another been ascribed to many causes. These include internal and external parasites; deficiency of certain food factors, especially vitamins B₁ and A; deficiency of an amino-acid such as lysine; excess of proteins; allergy to food constituents and other substances such as pollen; toxicity of flour from the Far East; yeast; meat and the method of cooking it; botulism; infection of a virus type or a complication of distemper; and, finally, heredity. In recent years, however, the majority of writers seem to have agreed that (1) food is the causal agent, though there is no agreement as to whether the trouble is due to a deficiency in the food or to a toxic agent; (2) dog-biscuits and proprietary foods are often implicated; (3) a wheat product is the most likely causal agent in the dog food, including the biscuits; and (4) excitement and physical strain influence the onset and frequency of the attacks.

Canine hysteria up to 1936 has been reviewed and discussed by Hewetson (1936); here, therefore, reference will be confined to some of the experimental investigations on the subject since that date. Melnick and Cowgill (1937) produced convulsive reactions in six adult dogs on diets in which gliadin was the sole protein and furnished 16% or more of the calorie intake. They also suggested that the toxicity of these high-gliadin diets might be due to protein sensitization. Arnold and Elvehjem (1939) found that a dog food made of wheat flour and meat scrap processed by dry heat caused fits in young dogs, which could be alleviated or prevented by adding to the ration a sufficient amount of unheated protein or protein-containing foodstuff. They thought that a lysine deficiency was involved. Later, however, the subject was again investigated by Wagner and Elvehjem (1944) in consequence of an unpublished observation by Parry that commercial wheat gluten produced symptoms of hysteria in dogs with great rapidity and intensity. They confirmed Parry's observation and suggested that the disease was caused by some toxic factor in the wheat products and not, as the 1939 work had suggested, by a deficiency of lysine. Further, they stated that the attacks were not prevented by vitamin A, vitamin B₁, hydrochloric acid, casein, or casein hydrolysate.

Canine Hysteria as Observed in this Laboratory

Although there is general agreement among writers as to the signs of the disease and the behaviour of the affected animals, it is possible that canine hysteria has been occasionally mistaken for and even superimposed on such conditions as vitamin A or vitamin B complex deficiency. It may be said at once that in the work to be described no such complication could occur, since the animals always received ample amounts of

yeast and vitamin A, except in a few experiments devised to test the effect of vitamin A deficiency on canine hysteria.

The actual observed state of the affected animals in the course of the work will now be given. Apart from the periods of the so-called "attacks," dogs subject to hysteria can usually be recognized by their general demeanour. As compared with normal dogs of the same litter, they tend (1) to be less interested in their surroundings; (2) to run or walk more slowly; (3) to lift their forelegs high when walking and to bounce along when running; (4) to have dry mouths; (5) to stand in a shady corner if the sun is shining and to resist persuasion to run about; and (6) to be less friendly and more frightened. Although the most severe attacks may develop suddenly, the above abnormalities are usually seen for some days before the onset of hysterical outbursts; the actual attacks seem to represent temporary exacerbations superimposed on a chronic abnormal condition.

Once having had fits, a dog will usually continue to suffer intermittent attacks until the diet is changed. The attacks may recur at intervals of several days or a number of fits of varying intensity may develop in one day; they tend to be induced by any sudden stimulus, nervous strain, or change of environment; even bringing susceptible dogs from an outside run to an indoor kennel often precipitates the attacks, as does moving the animals from their usual room to a warmer one. Lactating bitches appear to be particularly prone to hysterical fits.

If the harmful diet is continued for some months the fits may be reduced in number or even stop, but the animal's general behaviour remains abnormal, as described above. A time may come, however, when a dog which seems to be acquiring immunity suddenly suffers the most severe epileptiform fits and dies.

Attacks vary from what is called slight hysteria to true epileptiform fits. In *slight hysteria* the animal has a frightened look, and usually stands with either fore or hind legs rather apart and ears back. Jerking of the head backwards may be seen. At this stage the animal will sometimes shake itself, take a drink of water, and then recover. Often the attacks begin as above, after which the dog rushes across the cage or run, but after dashing into the wall sits down, quiet and dejected-looking, and then slowly recovers. This is recorded as *hysteria*. In more severe cases the animal sits in a sphinx-like posture; its head soon starts jerking, and the movement spreads throughout the body. Next it starts running round and round its cage, sometimes barking furiously, and either dashes into the walls, apparently without seeing them, or attempts to jump up them, overturning food dishes and water-pots, and getting both itself and its cage into a filthy condition. It may begin to recover at this stage, stop running, and stagger around like a drunken person. It will sit down, looking very miserable, but at the end of about 30 minutes may be more or less normal. This is recorded as a *hysterical fit*.

If the dog does not recover at this stage it goes on running, froths at the mouth, usually howls, and collapses. Even then it still moves its legs with a running movement. Finally this movement ceases and the animal remains still, with rather

* Preliminary report

deep breathing. After a varied time—5 to 30 minutes—which appears to bear a relation to the severity of the fit, it recovers consciousness, gets up, and staggers around with marked ataxia; then follow the recovery stages outlined for a hysterical fit. This is recorded as a true *epileptiform fit*. If the animal does not recover consciousness within about thirty minutes it usually dies, although it may remain in an unconscious state for anything up to 36 hours.

Basis of Present Investigation

By 1931 the idea had developed in this laboratory that outbreaks of hysteria were due to the bread portion of the diet, and, since that time, when any such outbreak has occurred the source of the bread supply has often been changed and the fits have usually ceased. Another method adopted empirically, and because we had never seen a dog develop this hysterical condition when oatmeal formed the major part of the diet, was to replace a half or more of the bread by oatmeal, and this was also effective in stopping the outbreak. Samples of the flour from which the suspected breads had been made were obtained for inspection, and thanks are due to a number of bakeries for help in this connexion.

During the period of the war it became necessary to obtain supplies of flour of known extraction and composition for experiments on nutrition, and the Cereal Division of the Ministry of Food arranged that these supplies should be prepared at one mill. The miller responsible for the production of the flour often kindly brought it in person to the laboratory, and it was natural to tell him that we suspected some flours of being responsible for outbreaks of canine hysteria and thought a bleaching or improving process might be doing the harm. He asked to be shown samples of the flours, and immediately on seeing them said that all had been heavily bleached and probably improved.

The following are the chemical agents in use for bleaching and improving flour (Lockwood, 1945; Smith, 1944):

Bleachers.—Nitrogen peroxide (gas); benzoyl peroxide (powder).
Improvers.—Ammonium persulphate (powder); potassium persulphate (powder); potassium bromate (powder); acid calcium phosphate (powder).

Combined Bleachers and Improvers.—Chlorine (gas); chlorine and nitrosyl chloride (beta gas); nitrogen trichloride (agene) (gas); chlorine dioxide (addage) (gas).

Thus there seemed a large choice from which to pick out the hypothetical offending agent. However, in discussing the matter further with the miller, the possible implication of wheat protein as the aetiological factor in canine hysteria was mentioned, reference being made to the results obtained by Melnick and Cowgill on gliadin and by Wagner and Elvehjem on wheat gluten respectively. Thereupon he said it was well known that the agene process, in which NCl_3 gas was used, affected the gluten of flour, and that this method of improving flour was used very extensively. On being challenged on this point, he said he would not be surprised if as much as 90% of flour milled in this country and used for bread-making was "agenized." He was therefore asked to supply this laboratory with agenized flour and an equal amount of untreated flour from the same grist so that the hypothesis could be experimentally tested. These are the flours described in this paper as treated (agenized) and untreated (no agene).

Agene is said to consist of approximately 1% nitrogen trichloride in air saturated with water-vapour. The gas is generated by bringing together chlorine, water, and ammonium chloride, and is removed from the solution by aeration; the air and gas are then brought into intimate contact with the flour in an agitator. The amount of agene used in any operation can be closely controlled and depends largely on the extraction rate of the flour or on the particular portion of the wheat berry milled.

Experimental Results

The flours were tested by feeding young dogs of the same litter on treated and untreated samples. The diet used was one known to be adequate and compatible with normal growth and health provided untreated flour or oatmeal was used as the cereal. It consisted of: separated milk powder, 20 g.; cereal, 50–340 g.; lean meat, 15 g.; peanut oil, 10 ml.; bakers' yeast,

5% of the cereal; ascorbic acid, 5 mg.; NaCl , 1–2 g.; vitamin A, 2,000 or 3,000 i.u.; and vitamin D₃, 200 i.u. The cereal of the diet was cooked in a steamer for 90 minutes at a pressure of 0.5 lb.

It soon became evident that the hysterical outbreaks could often be produced by the above diet if it contained the treated flour but not if it contained the untreated flour. In young puppies the attacks came on insidiously and usually took some weeks to develop. In older growing animals, whose appetites were larger, it was often possible to produce the condition more quickly—sometimes after a fortnight or less of feeding on a diet which included agenized flour. The degree of susceptibility varied from litter to litter and even from animal to animal in the same litter. Changing the flour in the diet of a badly affected animal to the untreated variety resulted in a sudden stoppage of the fits, but the animal might remain nervous and shy for a period.

Tables I–III show the effect of the treated (agenized) as against the untreated flour in regard to the number of hysterical attacks and fits produced in the animals. Attacks of slight hysteria have not been tabulated, but these were numerous in the animals receiving treated flour and were never seen in those having untreated flour. All the attacks recorded were observed, except those in the column headed "probable fits," which were deduced from the condition of the animal and its cage after periods when observation was not continuous. Many of these so-called "probable" fits were without doubt severe hysterical fits, for both animals and cages were filthy, water-pots and food dishes were overturned, and sawdust scattered, as was the case after observed fits. The cages of the animals receiving treated flour were often found in this condition in the early morning, suggesting that the night may be a common time for the attacks; but, since the severity of an attack could not be judged solely from the state of the cage after a lapse of possibly several hours, these hypothetical fits have not been included in the tables.

TABLE I

Dog No.	Type of Flour	Time to First Attack	Hysteria	Hysterical Fits	Epileptiform Fits	Probable Fits	Total
1st Period (24 weeks)							
3175	Untreated	—	0	0	0	0	0
3176*	Treated	4 weeks	0	10	5	5	20
3177	"	"	9	10	6	5	30
2nd Period (12 weeks)—Flour reversed							
3175	Treated	1 week	15	6	1	2	24
3177	Untreated	—	0	0	0	0	0

* Died after 6 weeks on diet, after having continuous epileptiform fits for two days.

It is seen from Table I that during the first period of 24 weeks dog 3175, receiving untreated flour, had no hysteria or fits, while 3177, which received the treated flour, had 30 attacks of various kinds. During the second period, lasting 12 weeks, when the types of flour were reversed, dog 3175 suffered from 24 attacks and 3177 had none.

TABLE II

Dog No.	Type of Flour	Time to First Attack	Hysteria	Hysterical Fits	Epileptiform Fits	Probable Fits	Total
3187*	Treated	4 weeks	5	7	3	1	16
3188	"	"	4	9	0	4	17
3189	Untreated	"	0	0	0	0	0
3190†	Treated	4 weeks	4	13	6	4	27
3191	"	"	5	11	2	3	21
	Untreated	"	0	0	0	0	0
3192	(1st 15 weeks) Treated (8 weeks)	2 weeks	2	2	0	1	5

* Died after 23 weeks on diet after having a severe epileptiform fit.

† Died after 15 weeks on diet after having continuous epileptiform fits for 36 hours.

Table II also shows how definite is the effect of the agenized flour. The one dog of the litter having the untreated cereal throughout, No. 3189, had no hysterical bouts or fits during the experimental period of 22 weeks, whereas the four having treated flour all the time had attacks varying in severity and ranging in number from 16 to 27 during this period. The last

the series, No. 3192, whose diet was changed in the course of the experiment, had no fits during the 15 weeks it received untreated flour, but two weeks after the substitution of treated (agenized) flour the attacks started, and it had five of them.

Vitamin A Deficiency and Canine Hysteria

Canine hysteria can be superimposed on vitamin A deficiency when animals have a diet deficient in vitamin A and containing agenzized flour. Examples are seen in Table III, which shows the results of an experiment made on four dogs of the same litter, two of which had the basal diet described above, containing 2,000 i.u. of vitamin A daily, and the other two had the same diet with the omission of the vitamin. No hysteria or fits developed in any of the dogs during the 15 weeks when untreated flour was given, whether vitamin A was included in the diet or not. In the second period treated (agenized) flour was substituted for the untreated type in each case, and all our animals suffered to some extent from hysteria or fits, though the vitamin A content of the diet remained the same during the first period. After 10 days on this diet untreated flour was again given to two of the animals—Nos. 3203 and 3205—the first being vitamin-A-deficient and the other normal. The flour has now been changed for one month, but, except during the first day, neither dog has had any form of fit, and, though not yet fully recovered, they have had no outburst which could be rated even as slight hysteria.

TABLE III

Dog No.	Vitamin A, in Diet	Type of Flour	General Condition of Animal	Hysteria and Fits
1st period (15 weeks)				
201	—A	Untreated	Definite A deficiency	None
202	+A	"	Normal	"
203	—A	"	Definite A deficiency	"
205	+A	"	Normal	"
2nd period (10 days)				
201	—A	Treated	Definite A deficiency	Slight hysteria
202	+A	"	Normal	4 hysterical fits
203	—A	"	Definite A deficiency	8 severe epileptiform fits
205	+A	"	Normal	4 " "

Discussion

The results of this investigation show that the practice of bleaching and improving flour by NCl_3 , known as the agene process, is responsible for a flour which produces canine hysteria under the conditions described above. The evidence is of a direct kind, the abnormality being produced by diets containing the treated flour, samples of the same flour untreated being harmless. Substitution of the treated flour by the untreated type tends to reverse the animal's condition and allows complete recovery from the hysteria and fits, even though the animal itself may not be normal. Recovery from the slighter but more chronic condition appears to bear a relationship to the length of time the animals have received the treated flour. If they have had it for a long period—e.g., six months—recovery may not be complete even after three to four months on the untreated flour, although the more severe abnormalities, such as hysterical and epileptiform fits, will cease within 24 to 48 hours of the change of diet.

In this connexion the Report of the Departmental Committee on the Treatment of Flour with Chemical Substances (1927) states: "An obvious method of investigating the presence of harmful compounds or suspected impairment of nutritive properties is by feeding experiments with animals. When such experiments give positive results they are conclusive, but negative results cannot be regarded as innocuous." The results described in this paper are of the positive kind referred to in this statement. It is, however, of interest to note that during the course of the present work feeding experiments on rats with agenzized flour were negative, just as similar experiments referred to in the report of the Departmental Committee on feeding rats with flour treated commercially with chlorine and nitrogen trichloride were "inconclusive."

It is agreed by experts in milling practice that the agene process affects the gluten of flour particularly. In the above-mentioned report it is stated that "chlorine can act energetically upon gluten, and that the nature of the reaction includes the entrance of chlorine into such important parts of the gluten

complex as the tyrosin and tryptophane groupings"; and, later, that "our observations upon chlorine apply also to nitrogen trichloride" and "evidence has been given that its action [i.e., that of NCl_3] on the protein of flour is probably similar to what we have already described in the case of chlorine." No experiments have been made in the present work with flour bleached and improved by chlorine.

These statements from the report, written nearly 20 years ago, taken in conjunction with the results obtained in the present work showing the toxic effect of agenzized flour, must be considered in relation to the work of Melnick and Cowgill (1937), of Parry, and of Wagner and Elvehjem (1944), referred to earlier, and it would be a matter of interest to know whether the gliadin and gluten used by the U.S.A. workers were prepared from agenzized flour. It is believed that this process of improving flour is, or has been, as popular in the U.S.A. as in this country, so it is not unlikely that the proteins used by the U.S.A. workers were prepared from agenzized or similarly treated flours. Obviously the next test to be made in regard to canine hysteria was to compare the effects of wheat gluten made from untreated and agenzized flour respectively, and this is now being done.

When the idea of testing the effect of agenzized as against untreated flour was first mooted the point was raised that, though proprietary dog-biscuits were said to be associated with canine hysteria, it seemed unlikely that the flour used in such biscuits would be agenzized. The miller, however, said that, although flour intended solely for dog-biscuits would not usually be subjected to an improving process, a long-extraction flour which had been so treated was, in fact, often used in their manufacture. Indeed, he regarded this fact as supporting the idea that agenzizing might well hold the solution to the problem of the observed hysterical attacks and account for the variations in reports implicating dog-biscuits.

The agenzized flours used in this investigation were not specially prepared overbleached specimens, but, according to our miller friend, were all subjected to a normal commercial bleach. At different times the extraction rate of the flours has varied between 80 and 90%. Some batches have had no added calcium and others have had the normal statutory additions, prescribed for 85 and 90% extraction flours, but all, irrespective of calcium content or extraction rate, have given the same results so far as canine hysteria is concerned. It is possible to increase the bleach in order to camouflage a clumsy separation in the mill. It is likely that such a flour would be even more powerful in producing the hysterical condition here described.

The abnormal behaviour of the animals affected by the agenzized flour suggests that the central nervous system is primarily affected by some toxic agent, but other organs may also be involved. A few dogs have died in these attacks, but ordinary post-mortem examination has not yet revealed any lesion which can be regarded as the essential one. It is clear that investigations must now be made to see whether human beings are affected by bread made from flour improved by NCl_3 .

Summary

Canine hysteria, sometimes called running fits or fright disease, a nervous condition which has troubled dog-owners both in this country and in the U.S.A. for the past 20 years or so, has been produced in growing dogs by including in their diet flour that has been improved and bleached by NCl_3 , the agene process. The same flour when untreated did not produce the nervous malady. Affected dogs returned towards normal and the typical hysteria and fits stopped when the agenzized flour was removed from the diet and replaced by unimproved flour of the same grist.

Warm thanks are due to the miller mentioned above, who wishes to remain anonymous, for the help he has given in this work. Not only did he supply with promptness and great care the specimens of flour needed for the research, but he also placed his specialist knowledge as a scientific miller at our disposal and so made the investigation possible. I wish also to thank members of the staff of the laboratory, especially Mr. R. J. C. Stewart, for their help and zeal in this work.

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2-THIOURACIL IN THE TREATMENT OF CONGESTIVE HEART FAILURE

BY

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It has long been thought that removal of the influence of the thyroid gland might prolong life in cases of congestive heart failure. The theoretical purpose of such treatment is usually stated to be reduction of the total oxygen requirements of the body and decrease in the work of the heart (Blumgart, Levine, and Berlin, 1933; Fishberg, 1940). Total thyroidectomy has not proved entirely satisfactory, since the immediate mortality in severe cases was high (Cutler and Hoerr, 1941). The development of the goitrogenic substances for clinical use (Astwood, 1943) has indicated another possible method of diminishing thyroid activity, and this paper reports the effects of 2-thiouracil on cases of congestive heart failure which had failed to respond to ordinary methods of treatment and in which the immediate prognosis was poor.

Methods

The methods were similar to those published previously (McMichael and Sharpey-Schafer, 1944a; Howarth, McMichael, and Sharpey-Schafer, 1946), cardiac output and right auricular pressure being measured by cardiac catheterization. The observations were made with the patient's trunk elevated 45°. Right auricular pressure is about -7 cm. (sternal angle=0) in normal subjects in this position. The work of the heart is calculated arbitrarily from the product of the cardiac output and the blood pressure.

Results

Cases of severe congestive failure treated with thiouracil may be divided into two groups: low-cardiac-output heart failure (hypertensive and valvular heart disease) and high-cardiac-output heart failure (heart failure with emphysema). Initial data before thiouracil are shown in Table I. Cases 1, 3, 4, and 5 showed the usual response of their group to a fall in venous filling pressure—i.e., an increase in cardiac output. The slight fall in output after venesection in Case 2 indicated a less severe case. In the most severe cases, 6 and 7, little change in cardiac output was produced by a decrease in venous filling pressure. Starling's venous pressure—cardiac output curve has been suggested as a convenient concept for indicating the status of an individual heart (McMichael and Sharpey-Schafer, 1944b). In the emphysema group the usual status lies near the highest point of the curve, so that a fall of venous pressure results in a decrease in cardiac output (Cases 8, 9, 10, and 11). Only the most severe cases show an increasing output (Case 12) similar to the low output group. Several cases had a long period of treatment by ordinary methods—rest in bed, digitalis, and venesection in the low-output-heart-failure group and prolonged sojourn in an oxygen tent in the emphysema group. In some patients this treatment had caused little or no clinical improvement, the venous pressure remaining high.

Clinical Effects of Thiouracil.—The dosage of thiouracil and results of treatment are shown in Table II. No clinical benefit from thiouracil can be expected under a week or ten days. Fig. 1 (Case 1) shows an example of the fall of venous pressure

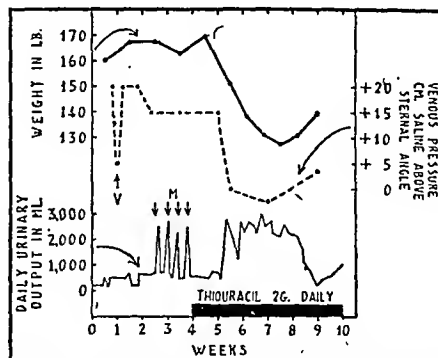


FIG. 1.—Case 1. Venous pressure fell and there was a diuresis after 10 days on thiouracil. V=Venesection. M=Mercurial diuretic

and disappearance of oedema in a successful case. The long period of observation under treatment by ordinary methods in several cases makes spontaneous improvement unlikely. After several months on thiouracil signs of thyroid deficiency appear. The mental reactions and movements of the patient become slower. The skin becomes thickened, the hair dry, and the voice deeper and hoarser. In some cases the thyroid gland appears to increase in size; in others no enlargement is detectable. Agranulocytosis did not develop in any of these cases of congestive heart failure.

Effect on Oxygen Consumption.—Basal and resting oxygen consumption are reduced by thiouracil (Fig. 2). The basal

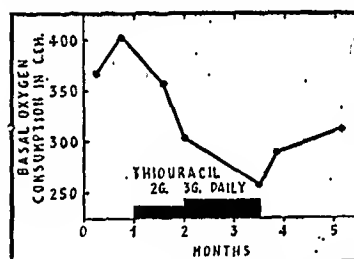


FIG. 2.—Case 2. Effect of thiouracil on basal oxygen consumption. Metabolic rate is usually increased in congestive heart failure. Prolonged treatment with thiouracil did not decrease the basal metabolic rate below -25% in any of these cases.

Effect on Cardiovascular Dynamics.—Results in a case from each group are shown in Table III. In Case 1 cardiac output was the same after thiouracil as during the control period, for although resting oxygen consumption was less, the arterio-venous oxygen difference had decreased in parallel. Since the blood pressure was the same, the work of the heart did not

TABLE I.—Circulatory Data Before Thiouracil

Case	Age	Sex	Diagnosis	Right Auricular Pressure cm. Saline above Sternal Angle	Cardiac Output litres per min.	Arterial O ₂ Saturation %	O ₂ Consumption c.cm./min.	Blood Pressure mm. Hg	Heart Rate per min.	Remarks
Low-output Heart Failure										
1	52	M	Hypertension	+20	3.1	87.5	287	190/160	100	C.O. increased after venesection
2	43	M	M.S., A.S., A.I.	+3.5	4.8	94	360	148/90	74	C.O. slight fall
3	43	F	M.S.	+21	3.15	88	289	120/90	118	C.O. increased " digitalis
4	59	M	A.I.	+2	4.4	91	297	208/103	88	C.O. " " venesection
5	35	F	M.S., A.I.	+21	1.6	92	239	248/140	88	C.O. " " "
6	39	F	Hypertension	+5	3.7	90	233		92	C.O. no change after digitalis
7	72	F	M.S., A.I.	+6	2.6	92	230	140/90	120	C.O. slight increase after digitalis and theophylline
Heart Failure with Emphysema										
8	31	M		+16	8.4	66	327	140/92	100	C.O. fell after venesection
9	56	M		+8.5	9.0	48.5	320	98/60	102	C.O. " " digitalis
10	54	F		+1	5.0	71	280	85/60	103	C.O. " " "
11	52	M		+6	6.6	67.5	260	156/92	104	C.O. " " venesection
12	42	M		+5	6.5	42	203	118/68	104	C.O. increased after venesection

TABLE II.—*Effects of Treatment with Thiouracil*

Case	Probable Duration of Failure before Admission	Treatment before Thiouracil	Daily Dose of Thiouracil	Result
1	4 months	B.D.M., 1 month; no improvement	2 g. for 154 days	V.P. normal for 100 days. Died after 154 days
2	3 "	B.D.M., 2 months; slight improvement	2 g. " 28 "	Thiouracil stopped. Alive, working 18 months later
3	2 years	B.D.V.M., 6 months; no improvement	3 g. " 18 "	V.P. normal. Left hospital after 3 months. Thiouracil stopped. Died 170 days later
			2 g. " 275 "	
4	1 year	D., 1 year. Progressive deterioration	1 g. " 42 "	Slight improvement. Died
5	5 years	B.D.V.M., 7 days; no improvement	2 g. " 33 "	V.P. fell to +2 cm. Died 3 months later
6	6 "	D., 6 years; chronic failure	1 g. " 21 "	Initial improvement. Died
7	2 "	B.D., 4 days; no improvement	2 g. " 18 "	
			2 g. " 23 "	No improvement. Died
8	1 year	B.D.O., 2 months; no improvement	2 g. " 93 "	V.P. normal. Working. Arterial O ₂ saturation = 84%
9	3 months	B.O., 2 weeks; no improvement	1 g. " 94 "	V.P. normal up to 8 days before death (acute respiratory infection)
			2 g. " 160 "	
10	6 "	B.O., 6 weeks; slight improvement	1 g. " 36 "	V.P. normal. Thiouracil stopped. Died 169 days later
11	3 weeks	B.D.O., 10 days; slight improvement	2 g. " 61 "	
			2 g. " 37 "	V.P. normal. Thiouracil stopped. Died outside hospital of acute respiratory infection
12	1 year	B.D.V.O., 1 month; no improvement	2 g. " 10 "	No change. Died
			1 g. " 22 "	

B. = Bed-rest. D. = Digitalis. V. = Venesection. M. = Mercurial diuretics. O₂ = Oxygen tent. V.P. = Venous pressure.TABLE III.—*Circulatory Data Before and After Thiouracil*

Case	Time	*Right Auricular Pressure cm. Saline above Sternal Angle	Cardiac Output (litres per min.)	Arterial O ₂ Saturation (%)	O ₂ Consumption (c.cm./min.)	A.V. O ₂ diff. (c.cm./litre)	Blood Pressure	% Change Cardiac Work
1	Before	+20	3.1	87.5	287	92	190/160	} No change
	After	+12	3.1	91	199	64	198/155	
	Before	+8.5	9.0	48.5	320	35.8	98/60	
	After	-7	5.4	61	263	48.4	114/80	

change. In Case 9 the high initial output decreased to a normal level. This was due not only to a decrease in the oxygen consumption but to an increase in the arterio-venous oxygen difference.

Effect on Thyroid Gland.—Detailed histological studies will be reported elsewhere on two surgical biopsies and ten post-mortem specimens (Doniach and Sharpey-Schafer, to be published). Clear-cut evidence of stimulation was present in cases receiving more than 70 g. The average weight of hyperplastic glands was not significantly greater than that of control untreated cases. Colloid re-formed and follicular epithelium was reduced in weight within a few months of cessation of thiouracil treatment.

Discussion

"Clinical improvement" in patients with severe chronic congestive failure may be defined as a change which shows itself by a fall of venous pressure towards normal levels and an increase in exercise tolerance, which allows the patient to get about or to leave hospital. This definition covers both the high-output and the low-output groups. The data presented in this paper suggest that some cases which have reached a chronic state on ordinary methods of treatment will show "clinical improvement" when the activity of the thyroid gland is depressed by thiouracil. No benefit can be expected in cases which are becoming rapidly worse, since there is probably little effect on thyroid activity under ten days.

The exact mechanism by which induction of a hypothyroid state results in improvement is still uncertain. It involves the nature of the changes producing "congestive heart failure"—a subject on which our knowledge is as yet scanty. When the venous filling pressure is lowered by venesection or digitalis in cases of low-output heart failure, the cardiac output increases, and "clinical improvement" is associated with increased work of the heart (McMichael and Sharpey-Schafer, 1944b; Howarth, McMichael, and Sharpey-Schafer, 1946). In these cases, however, the oxygen consumption is unchanged as an immediate result of treatment.

Case 1 shows that the work of the heart may not change after thiouracil, and it is probable that some cases of low-output heart failure may show increased work in the hypothyroid state. In cases treated with thiouracil, although cardiac output may be unaltered it is maintained at a lower filling pressure and in relation to the oxygen consumption of the individual it is relatively increased.

Detailed studies on cases of heart failure with emphysema will be reported elsewhere, but in view of the poor prognosis in this group it is encouraging that even a few cases can be improved sufficiently to leave hospital.

Summary

Cases of severe congestive heart failure showing no response to usual therapy (bed-rest, digitalis, and mercurial diuretics) were given 2-thiouracil 1 to 2 g. a day over long periods. Life may be prolonged both in the low-cardiac-output cases (valvular and hypertensive heart disease) and in the high-cardiac-output cases (heart failure with emphysema).

In the low-output group the arterio-venous oxygen difference may decrease as well as the resting oxygen consumption. The work of the heart may be unchanged, but output is maintained at a lower venous pressure, and in relation to oxygen consumption cardiac output is relatively increased.

Cases of high-cardiac-output heart failure with emphysema may improve sufficiently to leave hospital in spite of permanent reduction of arterial oxygen saturation.

There is histological evidence that the thyroid returns to normal after stopping thiouracil.

These observations were made in collaboration with Dr. John McMichael and Dr. Sheila Howarth. The Medical Research Council defrayed some of the expense.

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Assistant nurses who have been enrolled by virtue of two years' whole-time nursing experience acquired since Sept. 3, 1939, may be granted a remission of six months in the normal three-year period of training for State registration. This concession is already available to men and women who have had suitable nursing experience in the Forces or as members of the Civil Nursing Reserve, the British Red Cross Society, or the St. John Ambulance Brigade, and the Minister of Health has now informed hospital authorities of its extension to assistant nurses. Applications should be made to the hospital at which the applicant wishes to train. A concession in the period of training for the Tuberculosis Association's certificate is also announced.

DIAGNOSIS OF CHRONIC DYSENTERY IN SERVICE PERSONNEL

ANALYSIS OF 1,000 SIGMOIDOSCOPIES

BY

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The conclusion of hostilities has led to the demobilization of large numbers of Service personnel, many of whom have served in the Tropics, and an aftermath of recurrent dysenteries and chronic diarrhoeas will be inevitable in a small minority on their return to civil life. It is felt that an analysis of 1,000 diagnostic sigmoidoscopies carried out in the last two years will be of interest. The cases under review were either invalided home with a diagnosis of chronic amoebic or bacillary dysentery or returned to the United Kingdom at the expiration of their tour overseas, and were referred by their station medical officers in England for a sigmoidoscopy in view of their symptoms. In addition, a small group of men who had been invalided from overseas for surgical or other reasons were found to be *Entamoeba histolytica* cyst carriers on routine stool examinations and were sigmoidoscoped. A small series of sprue cases are included, as early in the course of these investigations we were surprised at the number of undetected cases of dysentery among them.

Method

Sigmoidoscopies were carried out in the knee-elbow position without an anaesthetic. The new type plastic sigmoidoscopes were used; these take a 6-volt car bulb light and give an excellent illumination, and a magnifying eyepiece of 4 diameters was invariably used. The question of preparation is a most important one, as any preliminary bowel washout within six hours of sigmoidoscopy, even with normal saline or tap water, produces a hyperaemia that renders extremely difficult, if not impossible, the identification of the "raised crateriform pits" pathognomonic of chronic quiescent amoebiasis; this is the reason why this characteristic pitting is so often missed.

The following preparation was eventually adopted. On the previous day a light lunch and tea are followed by a bowel washout with ordinary tap water at 8 p.m.; no supper is given that night. No breakfast or early cup of tea is allowed on the morning of the examination. A natural call to stool must be obeyed, but the patient should make no attempts at voluntary straining; the bladder should be emptied immediately before examination. A scraping and swab from any suspicious area should be mounted and examined without delay for *E. histolytica*, and a warmed plate of Hynes's modification of Leifson's desoxycholate citrate medium inoculated and cultured. If there is no obvious lesion a culture should be made from a direct swabbing of the bowel wall, and any faeces adherent to the bowel wall examined for *E. histolytica*.

Out of 1,000 cases sigmoidoscoped at this institute only 513 gave positive findings; in the remaining 487 both sigmoidoscopy and laboratory investigations were negative (see Table I). The positive laboratory findings were as follows: Amoebiasis, 215 (mixed amoebic and bacillary dysentery—11); bacillary dysentery, 52 (Shiga 2, Schmitz 3, Sonne 4, Flexner 43); lambiasis, 40. In approximately 20% of the 215 amoebic cases the sigmoidoscopic appearances were normal. In bacillary dysentery, out of 52 positive laboratory findings the appearances were normal in 9 cases. (Two cases were not sigmoidoscoped before treatment.)

Amoebiasis

The amoebic ulcers found conformed to the textbook descriptions, but 5 cases of amoeboma were encountered in cases of amoebiasis which had remained unrecognized for long periods. Dyak hair sloughs were present in only 4 cases, and all these were extremely refractory to treatment.

Raised crateriform pits, in my opinion, are pathognomonic of quiescent amoebiasis. They were present in 169 patients, in 78 of whom *E. histolytica* were found in the stools. The crateriform pits are circular in shape, from 1 to 2 mm. in

diameter, and are raised about a millimetre above the surrounding mucosa. In order to recognize them it is essential that no bowel washout be administered for at least six hours before the examination, as the resultant hyperaemia caused by even so bland a fluid as normal saline will completely obscure the A good description of these pits has recently been published by Cropper (1945). My only criticism of his excellent article is that I consider a half-strength soap-and-water enema given six hours before a sigmoidoscopy absolutely contraindicated by the resultant hyperaemia. It is usually impossible to find *E. histolytica* in scrapings taken directly from the pits owing to the amoebae lying dormant deep in the submucosa; but their presence calls for repeated and persistent search of the stools for cysts. I do not hesitate to treat cases showing this characteristic pitting even if the stools are negative, as look upon the condition as positive evidence of quiescent amoebiasis; in the majority these pits completely disappear after specific anti-amoebic treatment, or are replaced by circular depressions in the mucosa. In a small number of cases where these pits have still been present after specific treatment at the stools were negative I have allowed the patients to leave hospital under surveillance, only to find that sooner or later they have had a clinical relapse with positive stool findings. These raised crateriform pits must not be confused with the pseudo-cystic "sago grain" follicles occasionally following bacillary dysentery (Manson-Bahr, 1943). The essential point of the amoebic pits are their regularity, concentric appearance and the presence of the circular lip of the volcano surrounding a slightly depressed crater. Raised lymphoid follicles may also be distinguished from these crateriform pits; they are evidence of a lymphoid hyperplasia, and again the distinguishing feature is the absence of the central pit. It is difficult at times to be certain whether the pits are still active at the conclusion of treatment; a gentle swabbing giving rise to petechial bleeding at the site of the pits is always suggestive, and a further test is to provoke an artificial diarrhoea by giving the patient salts thrice daily for three days and examining fresh stools passed in the laboratory annexe.

Depressed pits were present in 126 cases. *E. histolytica* was found in 20 of these, and the explanation is that active lesions were probably present higher up in the colon. Pitting is frequently seen in healed bacillary dysentery cases (Hamilton Fairley and Boyd, 1942); but here it is more irregular in shape and size, is tessellated, and lacks the circular uniformity of pitting in amoebiasis, which has been aptly described as "pitted skin pitting," and is, in my opinion, evidence of healed amoebiasis.

Symptomless Cyst Carriers.—It is the practice in R.A.F. hospitals for all patients who have been invalided home from overseas to have a complete blood count and three stool examinations; as a result of this 58 symptomless cyst carriers were detected. A sigmoidoscopy was carried out before starting treatment, and in 16 cases typical crateriform pits were seen. In one case, in addition to active pitting, a small superficial ulcer some 2 mm. in diameter was present on the anterior wall of the rectum, although the patient categorically denied any symptoms referable to the intestinal tract. It is assumed in the 42 cases in which the sigmoidoscopic appearances were normal, that lesions were present out of range of the sigmoidoscope.

Complications of Amoebiasis

Amoebic Abscess.—Ten cases occurred in this series, which 8 developed overseas. In 2 of the latter a spontaneous rupture of the abscess into the general peritoneal cavity was diagnosed only at operation, and in both the abscess was the left lobe of the liver.

Amoebic Hepatitis.—In a total of 60 cases only 4 developed in England. A moderate leucocytosis was found to be of great value in the differential diagnosis, and a routine screening of the diaphragm was carried out in every case of amoebiasis. The lowest total white cell count recorded before treatment was begun was 14,200 per c.mm., the highest 27,500; the average for the series was 15,800 with 75% polymorphonuclears. It is recommended that, as this finding is so constant, a total white and differential count should be carried out in every case of amoebiasis to exclude amoebic hepatitis. The

value of this constant leucocytosis was first stressed by Manson-Jahr (1943). Paradoxically the total white cell count may not be raised in a small proportion of cases of amoebic abscess of the liver.

Amoeboma or Amoebic Granuloma.—This may be defined as a hyperplastic localized tissue reaction of the colon, the hypertrophy chiefly affecting the submucosa, which is infiltrated with lymphocytes, histiocytes, and plasma cells, together with *E. histolytica* in localized clusters. The condition is relatively rare, but occurs in a chronic unrecognized amoebic infection and is liable to be mistaken for a neoplasm. The symptoms are usually atypical, and it is felt that, unless surgeons are warned of the possibility of its occurrence, many cases may be operated upon unnecessarily, with disastrous results. Five cases were detected—4 at home, and 1 overseas in an expatriate; in 4 out of the 5 the growth was within the range of the sigmoidoscope. It is in these cases that the protean manifestations of amoebiasis lead the clinician astray, the usual symptoms being a history of intermittent attacks of alternating diarrhoea and constipation associated with the occasional passage of blood, which is as a rule attributed to the concomitant haemorrhoids so often present. On physical examination the finding of a palpable abdominal swelling or a fungating cauliflower mass in the rectum naturally suggests malignancy. In one case, which had remained unrecognized for many months in various hospitals, it was only on taking scrapings from the

reports an incidence of 1% of rectal stricture in chronic amoebic dysentery; possibly a similar aetiology is responsible.

Amoebiasis Simulating Appendicitis.—Four cases of this occurred, where, following an appendicectomy in India, acute amoebic dysentery ensued within 48 hours of the operation, and it is probable that the symptoms were due to an amoebic involvement of the caecum. Perforation of an amoebic ulcer of the caecum occurred in one case which was operated on successfully in India.

Malignant Disease.—Six cases of adenocarcinoma of the rectum or sigmoid were seen. In only one patient had this diagnosis been made overseas, and ironically he developed amoebic hepatitis while convalescing from his colostomy in the United Kingdom. The ages of the patients were 31, 37, 38, 39, 43, 43 years, which is considerably higher than the mean age group of this series—namely, 26 years. In only two cases had *E. histolytica* been found, and all the cases had received repeated courses of treatment for amoebiasis or bacillary dysentery with no effect, in spite of negative laboratory findings. In three cases the growth was within reach of the examining finger, and the pronounced induration present suggested malignancy rather than amoeboma.

Lambliasis

Cysts or free forms were found in only 40 cases, in 18 of which infestation appeared to be giving rise to a chronic

TABLE I—Sigmoidoscopic Appearances in 513 Cases with Positive Findings

	<i>E. hist.</i> Positive	Mixed Amoebic and Bacillary Dysentery	Bacillary Dysentery	Negative Laboratory Findings in England	Remarks
Ulcers (56)	42	1	4	9	Ulcers with Dyak hair sloughs, 4; typical button-hole ulcer, 1; amoeboma, 5
Raised crateriform pits (169)	77	1	2	No <i>E. hist.</i> found in 91	Positive <i>E. hist.</i> , 46%
Depressed pits (126)	17	3	5	101	" " 15%
Hyperaemia only (78)	25	5	20	23	
Normal sigmoidoscopy with positive laboratory findings (70)	43	1	8		Lamblia in 20. Some of these were cases of double infection with either amoebic or bacillary dysentery. Two bacillary dysentery cases not sigmoidoscoped before treatment

Miscellaneous Findings:

Adenocarcinoma	6
Multiple polyps	1
Ulcerative colitis (idiopathic)	7
(6 completely negative laboratory findings at home or overseas. Sigmoidoscopy typical.)	

ulcerated growth in the rectum that the diagnosis was made and *E. histolytica* was demonstrated for the first time: six previous examinations of the stools had been completely negative. Stenosis of the lumen of the bowel is often present, but after a course of emetine and penicillin the growth simply melts away and fibrosis and stricture rarely develop. If the response to specific treatment does not lead to the complete disappearance of the growth a dual pathology must be considered and laparotomy is necessary, as in a case recently reported by Naunton Morgan (1944).

Stricture of the Rectum.—This, as a remote complication of amoebic dysentery *per se*, probably rarely occurs. However, one case was seen in this series in which the diagnosis was fully substantiated, though the actual pathology is open to conjecture. The patient, a proved case of acute amoebic dysentery, while undergoing routine specific treatment developed an acute exacerbation followed by the passage of a large slough per anum, which on section was shown to be a separation *en masse* of the inner bowel wall; attempts to isolate bacillary dysentery organisms were unsuccessful. Stenosis followed this sloughing, and a colostomy was carried out in India. On his return to the United Kingdom an attempt was made to close the colostomy, but the wound broke down and active *E. histolytica* were found in the discharge and also in a biopsy from the site of the stricture; this in spite of the fact that all stool examinations had been negative for the last three months and he had received intensive anti-amoebic treatment in the interim between the first and second operations. The aetiology here is obscure, but it is possible that the sloughing of the bowel wall was due to a massive secondary bacterial invasion in a mucosa that was the site of extensive amoebic ulceration. Hargreaves (1946)

diarrhoea for which no other cause could be found, and the symptoms disappeared after mepacrine therapy. This surprisingly low incidence (4%) of lambliasis is probably due to the fact that the majority of these patients had received repeated therapeutic courses of mepacrine for malaria. In three instances *Lamblia intestinalis* was found in patients who had been taking suppressive mepacrine in the normal dosage over long periods. Whittingham (1923) in a similar series of 716 cases found 8% of cases of lambliasis, so one can presume that suppressive mepacrine has cut down the incidence.

Bacillary Dysentery

The large number of cases in which the causative organism of bacillary dysentery was cultured from sigmoidoscopic swabbings and from fresh stools in these chronic cases is surprising, especially in view of the disappointing results obtained in the past (Martin and Williams, 1918). These results must be due to the extreme selectivity of the modern media, as in 31 of the 52 cases the diagnosis had never been made overseas. The majority of the cases had been treated for amoebiasis with little benefit. Table II gives the various strains isolated together with the geographical distribution.

The sigmoidoscopic appearances in the bacillary dysentery cases under review were:

- (1) A generalized hyperaemia with excess of mucus.
- (2) A general hyperaemia with a tubular stenosed lumen, the mucosa having a granular appearance and bleeding readily on instrumentation, which is painful. The patient passes some six to eight stools a day. The prognosis is poor in this type of case.
- (3) Superficial oval or circular ulcers up to 1 cm. in diameter: the bowel wall distends readily, and there may be no inflammation

of the intervening mucosa. These lesions are particularly liable to be mistaken for those found in amoebic dysentery. One such case was encountered recently in which the appearance mimicked an amoebic ulcer so closely that it was only after two scrapings from the ulcer had been fruitlessly examined for *E. histolytica* that a third scraping was cultured and *B. flexneri* VI isolated. Hamilton Fairley and Boyd (1942) report similar cases.

TABLE II.—Geographical Distribution of Bacillary Dysentery

India or Burma		Egypt		Italy	
Type	No. of Cases	Type	No. of Cases	Type	No. of Cases
Shiga	1	Shiga	1	Schmitz	1
Schmitz	2	Flexner I ..	1	Flexner III ..	1
Flexner I ..	7	(Iraq)	2	Untyped	1
Flexner II ..	10	Flexner II ..			
Flexner III ..	2	Flexner III ..	1		
Flexner IV ..	2	Flexner VI ..	1		
Flexner V ..	3	Flexner untyped	1		
Flexner VI ..	3				
Flexner untyped	8				
Sonne	4				

(4) A puzzling appearance which is, however, characteristic of chronic bacillary dysentery and was first reported by Manson-Bahr is a pseudo-cystic condition arising from the occlusion of the crypts of Lieberkühn. The appearance suggests "sago grain" elevations varying in size from 1 to 3 mm. scattered over the mucosa; sometimes the entire mucosa is studded in this way. These "cysts" on rupture are found to contain clear or blood-stained mucus, from which the causative organism can frequently be isolated by culturing direct swabbings obtained at sigmoidoscopy. One such case was invalidated from Italy with a diagnosis of multiple polyposis, but on rupture of these cysts *B. flexneri* III was isolated on culture.

Hamilton Fairley and Boyd (1942) in an admirable review of the sigmoidoscopic findings in bacillary dysentery state: "(1) In our opinion all bacillary dysentery carriers have lesions of this or a similar type somewhere in the colonic mucosa. (2) The bacilli are derived from the ulcers. (3) Once the ulcers have completely healed dysentery bacilli disappear from the stools."

Complications of Bacillary Dysentery

Complications were relatively infrequent, this undoubtedly being due to the introduction and extensive use of sulphaguanidine in all cases of severe diarrhoea overseas. Two cases showed a general narrowing of the rectum, associated with a granular, hyperaemic, easily traumatized mucosa. The prognosis in this type of case is poor, the patient being condemned to a life of semi-invalidism for many years, if not indefinitely. Two cases of arthritis of the ankle-joint developed during the course of an attack of acute bacillary dysentery overseas, complete recovery following in both cases with no residual arthritis.

Ulcerative Colitis (Idiopathic).—Seven cases were diagnosed, in six of which laboratory investigations were completely negative for bacillary dysentery and agglutinations carried out against bacillary dysentery were inconclusive. In one case both bacillary and amoebic dysentery were confirmed by laboratory findings overseas, but investigations here were fruitless. The association between bacillary dysentery and ulcerative colitis, so strongly stressed by Felsen (1945), has therefore not been found except in one case, and temperamentally this patient showed no evidence of the typical ulcerative colitis diathesis.

Hyperplastic Colitis.—Four cases were seen. The sigmoidoscopic appearances were identical, consisting of deep greyish depressions, the site of healed ulcers, surrounded by overhanging hypertrophied bridges of red mucosa giving one the impression of a rabbit warren. The mucosa bridged the depressions, and in one instance divided the lumen of the bowel into two; the remaining mucosa was unaffected and of a much paler colour than the affected part. The only symptoms were pain and bleeding following constipation, and in one case it was found necessary to divide a band of mucosa bridging the lumen of the bowel; this was carried out by Mr. Lloyd Davies, to whom I am indebted for the biopsy. The sections showed a rather hyperplastic mucosa with no evidence of inflammatory change. No pathogens were discovered in any of these cases on their return to England, but two of them were said to have had amoebiasis overseas. Three of them have been kept under observation for over a year, and, provided the bowels are

regulated, they suffer no ill effects and are in perfect health. Sir Philip Manson-Bahr kindly examined one case and considered it was a sequel to bacillary dysentery. Agglutinative were carried out for bacillary dysentery, and one case agglutinated *B. flexneri* I in 1/50; the other three were completely negative. It is probable that this condition is an excess healing response to extensive ulceration—a mucosal hypoplasia analogous to keloid.

Post-dysenteric Colitis.—In 16 cases a residual colitis persisted after treatment; in only one case was it necessary to invalidate the patient out of the Service. The other 15 have been kept under observation, and there has been a slow but gradual improvement in their condition; check-up sigmoidoscopies reveal a definite improvement. It is difficult, however, to convince a colon-conscious patient that improvement has occurred despite the objective evidence of gain of weight, when a flatulent properties of a post-war carbohydrate diet produce a cogent but fallacious evidence to the contrary.

Sprue Syndrome

Numerous cases have been invalidated from India with a diagnosis of sprue or para-sprue. In some cases the syndrome developed within four months of the man's arrival in India. The usual history is of an attack of non-specific enteritis shortly after disembarkation, followed by recurrent attacks of diarrhoea, bacillary or amoebic dysentery. The response to specific treatment is at first good, but the tendency to recurrent attacks of diarrhoea persists, and finally the patient notices that stools are copious and pale and complains of a flatulent dyspepsia and intolerance to fatty foods. There is rapid loss of weight, and in many cases a soreness of the tongue develops with or without an anaemia. A flattened low blood-sugar curve is commonly present and persists for some time after specific sprue treatment, and its return to a normal curve is a useful index of recovery.

Eighty cases invalidated from India with a diagnosis of sprue or para-sprue were sigmoidoscoped and investigated on the same lines as the dysentery cases. It was found that 46% of them were harbouring pathogenic intestinal protozoa or bacteria, and that after eradication of this concomitant infection the sprue symptoms responded more readily to the routine orthodox treatment for sprue. A detailed analysis of the findings is given in Table III. It was possible to compare the

TABLE III.—Analysis of Findings in 80 Cases with Sprue Syndrome

Laboratory Investigations Negative	Laboratory Investigations Positive			
	<i>E. hist.</i> Positive	<i>L. lamblia</i>	Mixed Bacillary and Amoebic	Bacillary Dysentery
43	21	7 (<i>E. hist.</i> + <i>lamblia</i> , 2; <i>Flexner</i> IV + <i>lamblia</i> , 1)	3 (<i>E. hist.</i> + <i>Sonne</i> , 1; <i>E. hist.</i> + <i>Flexner</i> I, 1; <i>E. hist.</i> + <i>Flexner</i> II, 1)	6 (<i>Flexner</i> untyped, 1; <i>Flexner</i> I, 1; 1; <i>V</i> , 1)

series with a larger series of 152 similar cases investigated at other R.A.F. hospitals in England; these patients had their specimens of stools examined but were not sigmoidoscoped. The incidence of pathogenic protozoa or bacteria in the large series was 4.5%. This marked difference in positive findings provides convincing proof of the value of sigmoidoscopy in sprue.

Summary and Conclusions

The sigmoidoscope is as necessary in the diagnosis of chronic dysentery as the microscope is in the diagnosis of chronic malaria.

The examination of three fresh stools passed in the laboratory annex after the administration of salts appreciably increases the number of positive findings in amoebiasis.

The sigmoidoscopic appearances were normal in 20% of positive cases of amoebiasis and in 9 out of 52 cases of chronic bacillary dysentery (2 cases of the total 52 were not sigmoidoscoped before treatment).

In 16 out of 53 symptomless cyst carriers of *E. histolytica* type lesions were seen in the rectum.

In 46% of Service personnel invalidated from the Tropics with a diagnosis of sprue or para-sprue pathogenic intestinal protozoa or bacteria were isolated from sigmoidoscopic swabs.

I am indebted to the Director-General of the R.A.F. Medical Service for his permission to publish this paper; to Sir Harold Whittingham for his helpful criticism; to the numerous medical officers of the R.A.F. for their loyal co-operation; and particularly Miss M. Sage and Sgt. A. G. Greenfield for their able assistance.

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PREVENTION OF INFANT DEATHS

LIAISON BETWEEN HOSPITALS AND HOME SERVICES

BY

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he need for ensuring the suitability of the home to which it may be necessary to discharge a premature baby has been stressed by many authorities (Hess and Lundeen, 1941; Potter, 1944; Tyson, 1944; Crosse, 1945; Ministry of Health Circular No. 20/44). To what extent disregard of this precaution (which is as important for full-term babies and those convalescing from acute illnesses as for prematures) contributes to the number of preventable infant deaths is unknown, for while investigations into the ultimate fate of prematures are not uncommon (e.g., Brockington, 1944; Asher, 1946), the follow-up of babies, full-term as well as premature, in the first year after discharge from maternity unit or hospital seems to have been neglected. A hint of what an extensive survey might show is given, however, by Collis and Majekodunmi (1943), who traced 5 premature infants that had passed through their department: had died—two of these within the first month of discharge and four during the first year.

Attention was directed to this question while attempting to evaluate the efficiency of the infant health services in this area (Lewis and Blackwood, 1946). Of 31 infant deaths which were probably preventable, 7 might have been caused by discharging a baby (premature or full-term) to a household where conditions were prejudicial to the successful rearing of an infant. It has become a commonplace to speak of the importance of liaison between the hospital and the home. Like all platitudes its truth is obvious, but it happens that the attainment of really effective liaison is not as simple as would at first appear, for it raises clinical, sociological, and administrative problems that themselves have yet to be solved.

The purpose of this paper is: (i) to emphasize the need for effective liaison by describing case histories where its absence probably contributed to an infant's death; (ii) to discuss the respective points of view of the hospital and field worker and the principles underlying liaison; (iii) to suggest means by which liaison may be attained.

The Need for Liaison

The following cases illustrate the need for liaison and co-ordination of services, for in each instance death might have been attributable to lack of co-ordination.

Case Histories

Case 1.—Male, born Dec. 13, 1944, in maternity unit. One of triplets. Birth weight, 4 lb. 2 oz. (1.87 kg.). One baby died in hospital. Mother aged 26. One other child born, 1943. Normal pregnancy; W.R. negative. Hb, 66%; R.B.C., 3,700,000. Spontaneous delivery. Two surviving triplets discharged home on Jan. 10, 1945. Father (29 years old) in Forces. Home clean but overcrowded. Babies fed on breast complemented by half-cream dried milk. Lactation failed after about six weeks. The child seemed to be making good progress up to Jan. 29, 1945, but died on Feb. 8 of pulmonary congestion and bronchitis, being moribund when the doctor was called in. He thought that these babies would have been better for being retained a little longer in hospital than was the case.

Comment.—This mother had suffered from anaemia during pregnancy and had given birth to triplets. Although the home conditions were reasonably good the house was overcrowded and the mother had to cope with the two surviving triplets and the elder child of 18 months without the support of her husband, who was in the Forces. These babies should preferably have been retained in hospital until they were more firmly established.

Case 2.—Male, born Feb. 10, 1945, in maternity unit. Birth weight, 8 lb. 2 oz. (3.68 kg.). Mother aged 24; high-grade mental defective. One other female child, aged 2 years 9 months. Normal pregnancy; W.R. negative. Hb, 70%; R.B.C., 3,500,000. Spontaneous delivery. Discharged in satisfactory condition to very unsuitable home on Feb. 20, 1945. Father (31 years old) in Forces. Four people living in one small room not very clean and unfit for young baby. Breast-fed. In spite of these poor conditions the baby did well at first, but in a month or so began to deteriorate. When he was four months old he was admitted to hospital with pneumonia, and there remained for three weeks. He was discharged home, but was readmitted in a few days with an abscess of the back. He was subsequently transferred to another hospital, where he died, aged 6 months, of an abscess of the back and consolidation of the left base. He was also found to have an enlarged congenital heart.

Comment.—This baby was healthy at birth and thrived for the first few months in spite of a grossly unsatisfactory home environment. He should preferably not have been discharged to such home conditions, although it is difficult to see what the alternative could be. On discharge from hospital after pneumonia he should not immediately have been returned to the home conditions that probably had occasioned his admission.

Case 3.—Female, born July 24, 1945, in maternity unit. Birth weight, 7½ lb. (3.4 kg.). Mother aged 30. Two other children aged 10 and 3 years. Normal pregnancy. Hb, 60%; R.B.C., 3,700,000. Spontaneous delivery. Father aged 30. Family living with grandmother in council house. Home reasonably good. Mother developed breast abscess and baby then fed on one breast and complementary feeds. Discharged on 15th day and gradually went downhill. Baby readmitted to hospital on Aug. 13, 1945, where it died of marasmus on Sept. 4.

Comment.—This baby was healthy at birth and should have done well. On discharge from hospital the mother was not really fit. She had been anaemic during pregnancy and had had a breast abscess. Although the home conditions were reasonably satisfactory she had to handle two other children and a husband in someone else's home, and her mothercraft consequently was inefficient. It would have been advisable for this baby (and mother) to be retained in hospital a little longer until the mother was fit and the baby firmly established.

Case 4.—Female, born Aug. 8, 1945, in maternity unit. Illegitimate. Birth weight, 5 lb. (2.27 kg.). Mother 29 years old; works in chemical factory. Pregnancy normal, but she defaulted from the antenatal clinic from April to July. Spontaneous delivery. Discharged on 10th day. Mother and baby lived at two different addresses in the five-day interval between discharge from hospital and the death of the baby on the 15th day from bronchopneumonia. The first address was in an old, overcrowded house not very clean.

Comment.—A 5-lb. baby should with experienced care have survived, but should not have been discharged on the 10th day to unknown home conditions in the care of an inexperienced mother with no resources.

Case 5.—Male, born Aug. 8, 1945, in maternity unit. Birth weight, 5 lb. (2.27 kg.). Mother aged 26 years; first baby. Normal pregnancy; W.R. negative. Hb, 50%; R.B.C., 2,700,000. Spontaneous delivery. Discharged on 10th day. Father (aged 35) a miner. Clean home. Seen at infant welfare centre five days after discharge. General condition not good; frequent stools. On half-cream dried milk three-hourly. Readmitted to hospital on Aug. 27, 1945, where it died on Sept. 11. The family doctor stated that the mother was quite incapable of looking after the child, which was frail and difficult, and she had had no opportunity of learning to handle it.

Comment.—A baby of 5 lb. should survive with experienced care. The mother had been very anaemic during pregnancy, and on the 10th day was probably not feeling fit. She had had no experience of babies previously, and clearly the care demanded by a 5-lb. infant was beyond her capacity. The mothering it received during the first critical days after discharge from hospital was inadequate, and it never recovered from the setback it then received.

Case 6.—Female, born Aug. 18, 1945, in maternity unit. Birth weight, 5 lb. (2.27 kg.). Mother aged 35. One other boy, aged 10 years. Mother rather highly strung. Normal pregnancy, but with excessive sickness and general health not very good. Spontaneous delivery. Father (aged 36) a colliery deputy. Baby on breast and complementary feeds two-hourly. Died suddenly on day after discharge—aged 10 days. Necropsy: caillary bronchitis.

Comment.—It is at least possible that this baby was infected before discharge from hospital (although it showed no signs of this) and that it would have died in any case. But it is questionable whether a 5-lb baby should have been discharged on the 9th day in the care of a rather highly strung mother whose only other experience of child-handling was 10 years previously. If the mother and child had been retained in hospital, and arrangements made with the domiciliary services for the reception of the child at home and for instructing the mother how to handle it, it might have survived.

Case 7.—Male, born Sept. 10, 1945, in maternity unit. Birth weight, 5 lb. 4 oz. (2.38 kg.) Mother aged 22. One other child, 1 year old. Antenatal clinic attended regularly. W.R. negative. Hb, 58%; R.B.C. 3,500,000. Spontaneous delivery. Father (aged 23) a miner. Living conditions fairly satisfactory; no overcrowding. Discharged from hospital on the 9th day. Mothercraft not very good. Admitted to isolation hospital at age of 3 weeks for acute enteritis, but little abnormal found. Discharged two days later, but readmitted next day with vomiting; nothing found clinically. Died suddenly the following day. No necropsy.

Comment.—Although living conditions were reasonably good, the mother had been anaemic and her mothercraft was poor. She was incapable of caring for an immature baby as well as a child of 1 year in addition to a house and husband. The latest baby suffered. Although it would have been difficult to forecast the inadequacy of the care it actually received, it would have been better for remaining in hospital until more firmly established. When the child was admitted to the isolation hospital the diagnosis was doubtful, and an error of judgment was made in discharging it after two days. This might be understandable, but in any case it should not have been discharged to the conditions which probably brought on its illness.

Principles Underlying Successful Liaison

Clearly, the death of each one of these infants was caused, directly or indirectly, by the poor "mothering" and care it received after leaving the hospital or maternity unit. Premature infants who have done well in hospital and achieved a weight in excess of 5½ lb. (2.5 kg.) still need special attention and care. But it is not only the premature that need this care. Weakly or feeble infants, those convalescing from acute illnesses, and even those born healthy and robust will fail to thrive on leaving hospital unless the careful treatment they have been used to is maintained. It should not be overlooked that in hospital they became accustomed to expert attention, and the sudden change to the charge of a relatively inexperienced mother may be more than they can withstand. When returned to a good home with a capable and sensible mother such infants will do well. But when they enter unsatisfactory households they are exposed to a serious risk. This risk may be partly averted by making provision for the care of the mother and baby (or, where the child is older, of the baby alone) beyond the period when hospital care is strictly necessary, until the baby is firmly established or has recovered from its illness, while at the same time giving the mother an opportunity of learning how to care for and handle it.

The provision of such care is not easy. The best arrangement would be a hostel where mothers and their babies could be accommodated and where special instruction would be given in baby-care and mothercraft. A hostel on the lines described by Brodie (1946) would be suitable. For the moment this must remain an ideal, although it should have a place in the infant health services of the future. Where, therefore, such post-hospital accommodation is desirable it will usually be necessary to retain the baby in the hospital or unit. This raises difficulties, not the least of which is the availability of beds and cots. But undoubtedly the chief concern of hospital administrators and paediatricians would be the risk of cross-infection. This, of course, is a danger which would have to be faced in any *ad hoc* nursery or hostel for mothers and babies, although as many of the babies would have passed the neonatal period the danger would be rather less.

Parsons (1944) considers the risk of contracting an acute infectious illness to be much greater in an institution than in the home, and, while much will depend on the institution and much on the home, in general this dictum is unassailable. Where, then, do the interests of these infants lie? Is the potential danger of cross-infection in hospital greater than the hazard of grossly unsuitable home conditions? Whichever way lies the answer—and it is unlikely that any two cases will be similar—these dangerous alternatives must be carefully

balanced. The former is a problem in hospital administration; the latter in social medicine: if infants are not to die in no-man's-land that divides these two branches of medicine must be the closest understanding between the hospital practitioner and the field worker. If they are to find common ground the one must be aware of and understand the difficulties the other has to face and the problems which confront these difficulties and problems may briefly be considered.

Cross-infection In Maternity Units and Hospitals

Dealing first with cross-infection, the question most urgently needing an answer is, What are the chances of an infant being infected if he is retained in a children's ward or nursery? To this question, unfortunately, it is impossible to give an answer. According to a committee of the British Paediatric Association (1946) frequency, extent, and results of cross-infection in children's wards have never been ascertained. In the absence of such knowledge perhaps the most outstanding fact to be grasped is that the risk of cross-infection may be entirely fortuitous: "In spite of crowding and poor hygiene, one ward may for long be without manifest cross-infection, whereas another which has every facility and is staffed by well-trained nurses may suddenly be the scene of a virulent outbreak." Similarly, the seriousness of outbreak of infection in children's wards seems to be equally unpredictable: there is little means of foretelling how severe the infection will be. Outbreaks of so-called neonatal gastro-enteritis may have an alarming mortality, as described by Sakula (1943), when 20 out of 25 newborn infants died, and by Henderson (1943), who reported a mortality of 69% in immature infants. An estimate of the mortality from respiratory infections is not easy, owing to the difficulty of diagnosing pneumonia at this early age; undoubtedly a frank pneumonia or bronchitis would be attended by a high death rate even with modern chemotherapy. Skin infections usually take the form of a bullous impetigo, and the outbreak described by McFarlan (1942), Benians (1943), and Nisbet (1944) were mild, causing little anxiety apart from the worry inevitably connected with staphylococcal infections in nurseries. The use of the sulphonamides and penicillin has further reduced the risk of these staphylococcal infections of the skin, and it may be that dangers need not be exaggerated.

Adverse Home Conditions

It will be generally agreed that there is a positive correlation between a poor home environment and a high infant mortality. That there are specific and definable factors operating within homes or households is certain, but there seems to be little definite knowledge as to what exactly these factors are or what is their relative significance. Ryle (1946) has drawn attention to the logical aspect of this problem, and unquestionably its clarification is urgently needed. Reference is made below to an attempt to collect information which will do something to help in this direction. Without anticipating what will emerge from the inquiry, the preliminary findings indicate that the following are involved:

Conditions Affecting the Mother.—(1) Mental defect. (2) Low intelligence, but not amounting to mental defect—"mere feebleness." (3) Mental or psychological abnormality of the mother. (4) Maternal inefficiency; poor mothercraft and homecraft; lack of parental responsibility. (5) Chronic or subacute ill-health. (6) Unmarried girl with no friends or resources.

Environmental Conditions.—(1) Unhygienic, insanitary, or crowded housing conditions. (2) Lack of equipment. (3) Economic circumstances; insufficient income; mother having to go out to work. (4) Large family of young children, so that the mother cannot give enough attention to the latest baby. These factors can be added to, and it is usual to find several operating in a household, where they form a vicious circle. The amelioration of such conditions is extremely difficult, and in the light of experience so far gained may even be impossible; no attempt is made to do so with them here, although the urgency is self-evident. Such households are called "observation households," and it is of paramount importance that their existence be ascertained as early in pregnancy as possible and the potential danger to the expected infant assessed (Lewis and Blackwood, 1946).

These two subjects—the danger from hospital cross-infection and the hazard of the home environment—are the main matters of immediate importance to be discussed by the hospital doctor and the medical officer of health. But if the discussion is to stop at this point liaison would fall far short of the ideal. Where there is any question of the home environment affecting the well-being of a baby the clinician must be made aware of the child's background and the necessary information must be in his hands at the earliest moment. This is important; a real and permanent reduction in the infant mortality rate can be effected more readily by attending to the conditions in

which babies have to be reared than by studying their morbid pathology. Liaison should not be an end in itself but an integral part of the infant services, and it cannot be planned as a separate entity. Regard must be paid to these principles: liaison is to be effective.

Methods of Attaining Liaison

Through the courtesy of colleagues working in certain other areas I have had an opportunity of studying methods of attaining liaison there. In general, the usual practice seems to be for the maternity unit or hospital to inform the public health department of the impending discharge of a baby, to furnish a short report on the child, and to request, where necessary, or an early call to be made by the health visitor. It is no use carping criticism to say that such "liaison" could hardly be effective. The clinician is quite unaware of the home environment: a child may be discharged to grossly unsatisfactory home conditions, and irretrievable damage may be done before the health visitor calls.

With these thoughts in mind a trial scheme was introduced in this area, based on the principles stated above. It would be premature to describe its detailed working or the results to date, but after five months' experience it has worked well. It involves the following matters.

- (1) The unofficial reporting of pregnancies to the public health department by antenatal clinics and domiciliary midwives.
- (2) Following on (1), the early investigation of the social, economic, and environmental characteristics of the families and households into which a baby is to be born.
- (3) Based on (2), the ascertainment of observation households as early in pregnancy as possible and the maintenance in the public health department of a list of such households.
- (4) Attempts to counteract or ameliorate the adverse conditions discovered to be present in observation households.
- (5) The checking off of all birth notifications against the list of observation households, so that the birth of the baby into an observation household is known immediately it occurs.
- (6) Where the birth of a baby from an observation household (observation baby) occurs in hospital, an immediate written report of the home circumstances is sent to the hospital doctor, who is thus made aware of the home background.
- (7) When a baby under 1 year old is admitted to hospital for illness the fact is reported to the public health department. The baby is found to be from an observation household a report of the home conditions is sent to the hospital doctor.
- (8) When a baby from an observation household (either born in hospital or subsequently admitted) is considered to be ready for discharge, a discussion takes place between the hospital doctor and the medical officer of health with special reference to the question of cross-infection and the adverse home environment.

This scheme, here briefly described, is not devoid of administrative difficulties, but these can be ironed out. It places the onus for initiating liaison on the public health department, where it should rightly belong, and makes the medical officer of health responsible for reporting to the hospital when the home environment is not satisfactory—a function which is properly his. The problem of effective liaison is put in its right perspective; it is not regarded as a separate entity, but co-ordinated with the other aspects of the plan. It is hoped, moreover, by the ascertainment, investigation, and follow-up of observation families and babies to collect information which will throw light on those sociological factors known to maintain a high infant mortality rate. With the coming cleavage between hospital and domiciliary services it will be the more necessary for liaison and co-ordination to be placed on a solid basis.

Summary

The need for close liaison between maternity units and hospital home services, especially public health departments, is emphasized by describing case histories where lack of liaison might have resulted in an infant death.

The principles underlying effective liaison are discussed. There are households where the successful rearing of a baby is made precarious by specified adverse environmental conditions, and in such cases it may be necessary (pending the provision of suitable hostels) to retain mother and baby in hospital for a period. Such cases the risk of cross-infection must be balanced against the dangers of the home environment. In all such cases a full

report on the home conditions and environment should be supplied to the hospital doctor by the medical officer of health.

A trial scheme is briefly described by which effective liaison and co-ordination may be attained as an integral part of the infant health service.

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OBSERVATIONS ON VASCULAR INJURIES

WITH SPECIAL REFERENCE TO THE VALUE OF SYMPATHECTOMY IN LIGATION OF MAIN VESSELS*

BY

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My experience of vascular injuries is limited to those cases reaching a base hospital in Egypt between October, 1942, and October, 1945, consisting principally of aneurysms. A few recent injuries of blood vessels due to local shooting and stabbing affrays were admitted, and there were a few secondary haemorrhages requiring ligation of main vessels.

Altogether 41 main arteries were ligated. With one exception every case was submitted to sympathectomy 14 days before or at the time of operation on the artery. Prof. Paterson Ross, at Hill End Hospital, for one reason or another ligated 15 main vessels, also preceded by sympathectomy. It is with the results of ligation of primary arteries that I wish to deal here. The solitary point I hope to make is that ligation of a main vessel should be accompanied by sympathetic denervation of the limb. Ligation of the main artery of a limb carries with it a considerable risk of gangrene. This is especially so in gunshot wounds because, as a rule, many collateral vessels are injured at the same time. Sir George Makins collected a series in the war of 1914-18 in which the primary artery had been ligated and the fate of the limb left to the collateral blood flow. The percentages of cases complicated by gangrene according to arteries involved were as follows:

TABLE I

Subclavian	..	25%	Femoral	..	25%
Axillary	..	16.6%	Popliteal	..	41.6%
Brachial	..	23%			

Averaging these cases, gangrene occurred in 26%. The popliteal artery is especially dangerous. Most surgeons would agree that ligation carries a risk of at least 40%, and many would assess the risk considerably higher. Apart from frank gangrene, depleted blood flow leads to ischaemic necrosis of muscles with crippling contractures, fibrosis, wasting of muscles, and nerve palsies. Even if these grosser manifestations are not seen, inadequate blood supply to the muscles is revealed in the lower extremities by intermittent claudication. The fate of the limb after ligation depends on the collateral circulation. Every effort must be made to expand it quickly. Blood pressure must be maintained by transfusion. The limb should be kept below the level of the heart by blocks under the head of the bed. The affected limb should be kept cool and the rest of the body warm to aid sympathetic release. The surest method of

* A short paper read before the Association of Surgeons of Great Britain and Ireland, May, 1946.

dilatation of the collateral circulation is by sympathectomy. It has been practised in America for many years. Gage and Ochsner (1940) have carried out sympathetic block in all cases of traumatic injuries to blood vessels, and in operations for aneurysm since 1930, without the occurrence of a single case of gangrene. British surgeons seem to be suspicious of sympathectomy largely because of the inability of physiologists to reconcile this procedure with the results of their researches on the experimental cat and dog. It has become the fashion to doubt the value of operations on the sympathetic nervous system. It has been stated that stimulation of the sympathetic leads to vasoconstriction in the skin but increased blood flow to the muscles, sympathetic block to increased blood flow to the skin but reduced flow to muscles. The points were stressed in a paper by Siddons (1945) condemning sympathetic block. There are, however, certain solid facts in favour of the value of sympathectomy: (1) In spite of the deductions of the laboratory worker in the experimental animal it is well known clinically that sympathectomy will improve intermittent claudication; (2) Theis (1933) has shown convincingly in animal experiments that sympathectomy increases the total in-flow to a limb and increases the collateral circulation after ligation of a main vessel. Barcroft and Edholm (1943) have shown that there are vasoconstrictor fibres to the blood vessels supplying muscles in man. There is, in fact, a weight of clinical and also some experimental evidence that sympathetic denervation improves the circulation to the whole limb—muscle as well as skin. Three cases of main-vessel ligation in forward areas without gangrene but with severe claudication were admitted to hospital: one patient with common iliac ligation, able to walk only 10 yards (9 m.) without cramp, one popliteal and one femoral ligation, all "claudicating" under 100 yards (90 m.). They were submitted to lumbar ganglionectomy and were able to walk half a mile (0.8 km.) on leaving hospital. I have ligated 41 main vessels. In 40 of them a sympathectomy was carried out either at the time of ligation or a fortnight before; most of them were not simple ligations but excisions of long segments. Twice I have performed triple ligation with excision of the common femoral, superficial, and deep femoral arteries. Next day, in both cases, the foot on that side was appreciably warmer than the other. The popliteal artery has been ligated and portions excised at all levels in its length. In this series there was one example of gangrene following excision of an arterio-venous aneurysm at the adductor opening. This man, an Italian P.O.W., had multiple wounds round the knee; many of the collateral vessels had been divided. Clinically the peripheral circulation in both legs was very poor. In the only case not submitted to sympathectomy in this series ischaemic necrosis of the forearm muscles occurred.

TABLE II.—Ligation of Main Arteries

External iliac ..	9	Subclavian ..	4
Common femoral ..	4	Axillary ..	4
Superficial femoral ..	6	Brachial ..	5
Popliteal ..	9		

Traumatic False Aneurysm

Our experience of this condition is limited to 15 cases. It is usually stated that operation should be delayed for three months in order that a good collateral circulation may form. While this policy may be sound, it seldom seems possible. In my

TABLE III

Common femoral ..	3	Subclavian ..	2
Superficial femoral ..	2	Axillary ..	2
Popliteal ..	3	Brachial ..	3

series 13 out of 15 had to be operated upon before the optimum time because of external haemorrhage, progressive enlargement with threat of rupture, nerve compression, and in one case infection. Other surgeons have had similar experiences. I rather doubt the soundness of the policy of waiting for a collateral circulation to develop. A few arteriographs of aneurysms that I have made have not shown the characteristic tortuous vessels that are usually seen in arteriographs of main-vessel thromboses. The hypertrophied vessels that do form seem to be around and, in connexion with the sac, and are of necessity injured during operation. In two cases operation had to be carried out as an emergency for external haemorrhage between the second and fourth weeks while the aneurysm was

only just out of the pulsating arterial haematoma stage, much impressed by the ease of operation. Soft clotted mopped away and the vessel could be easily identified through the floor of the sac. Owing to the extreme culty of operation between the fourth and tenth weeks the fact that the surgeon's hand is so often forced by conditions to operate during this difficult period, I am persuaded that to operate upon them between the second and fourth is preferable to waiting until a later date. I do not but that the increased collateral circulation is worth waiting. Relief of tension by operation combined with vasodilatation sympathectomy should be adequate.

Arterio-venous Aneurysms

I have operated on 13 arterio-venous aneurysms of the I have only one observation to make about the diagnosis that is the extreme difficulty in deciding before exploration what vessels are involved. Complications necessitating

TABLE IV

Common femoral ..	2	Subclavian ..	..
Superficial femoral ..	3	Axillary ..	..
Popliteal ..	3	Brachial ..	..

operation are unlikely to occur in arterio-venous aneurysm and therefore it is possible to wait six months or longer before exploration. A quadruple ligation accompanied by sympathectomy was the routine procedure, with excision of the sac possible without damage to neighbouring structures. In case of arterio-venous aneurysm of the first part of the subclavian sympathectomy was impossible owing to adhesions around the apex of the lung. Ischaemic contracture of the forearm muscles occurred.

Late Results

Out of Prof. Ross's 14 cases in which leg arteries had been tied with sympathectomy 11 have been seen again more than six months after operation. In all cases nutrition of the leg was excellent. The patients could all walk at an ordinary pace for three miles (4.8 km.) without claudication. Four complained of claudication if they walked fast. In assessing late results insufficient attention has been paid to distal following ligation of a main vein (Ross, 1946), the symptoms of which have sometimes been misinterpreted as the result of arterial ligation.

Conclusions

If operation is planned for ligation of a main artery sympathectomy should be carried out.

If ligation is carried out in an emergency, sympathectomy should be done at the same time or as soon as possible afterwards.

In traumatic false aneurysm operation should be performed two to four weeks after injury, accompanied by sympathectomy.

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The population increase of the Middle East is touched on in PEP in their recently issued pamphlet *Basic Problems in the Middle East*. Famine, war, and disease have for long been the most important limiting factors; in addition scarcity of water prevents habitation of many areas. Improved systems of cultivation, introduction of forestry in Cyprus, and the settling up of industries all contribute to raising the standard of living; but between beginning of this advancement and the point where raised standards themselves limit population growth there may be a period of overcrowding and all the suffering that ensues from it. That the problem is not insuperable seems indicated by the experience of Japan, where the population has greatly increased in recent decades without an appreciable depression of living standards. On the other hand the situation in India is grave indeed, as John Megaw pointed out in a letter to this *Journal* on June 1946. Detailed population studies are required for all these countries. In Sudan, for example, traditional methods of estimating population have given figures that in some areas may be inaccurate.

A CASE OF PRIMARY AGRANULOCYTIC ANGINA

BY

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AND

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view of its comparative rarity, we feel that it is worth while porting the following case, which was treated by continuous transmuscular drip pentose nucleotide and oral sodium icleinate.

Case Record

A married fitter aged 30 was first admitted to hospital on ay 27, 1943, with a history of pains in the knees, ankles, and the 'elbow, wrist, and fingers of five days' duration. He was a oderate drinker and smoker. The previous history included an ack of rheumatic fever at the age of 7.

On examination his temperature was 100° F. (37.3° C.), pulse 80, spiration 22. He looked pale, but had no other gross physical gns. The urine was normal; the blood sedimentation rate was mm. in one hour. He was thought to be suffering from acute eumatism, and was given salicylates, with little or no effect. On ne 1 an ulcer of the gum was noted, and three days later several ore had appeared, with a lymphadenitis of the deep cervical ands. The white cell count was 2,400 per c.mm. (neutrophil ymorphs 17%, lymphocytes 69%, and monocytes 14%). aemoglobin and red cell count were normal. He was given 1 ml. of pentose nucleotide daily for three days, after which the hite cell count remained the same, but the neutrophils had risen 28% and there were 2% myelocytes. On June 11 he was feeling ater, the ulcers had gone, and he was afebrile, but the white ils had dropped to 1,900 per c.mm. (neutrophils 22%, lympho- tes 69%, monocytes 9%). Pentose nucleotide, 60 ml. daily, was ven for three days, and on the last day he was transfused with a nt of Group B whole blood, three days old. On June 14 there as no change in his total white cell count, and a marrow puncture ive the following result:

Cell Type	%	Range of Normal Values (%)
ro-erythroblasts	4.0	0-4
rythroblasts	16.5	2-7
onoblasts	1.0	7-19
ature polymorphs	13.5	20-50
asophils	0.5	0-1
asimorphs	1.0	0-4
yeloblasts	6.0	0-2.5
lyelocytes	11.0	2-9
ter immature polymorphs (metamyelocytes)	36.5	2.5-14.5
ymphocytes	10.0	5-20

he patient was anxious to go home and was discharged. The last hite cell count was 2,750 per c.mm., neutrophils 17%.

On March 2, 1944, after nine months at home, he was re- dmitted with similar symptoms and signs. He was again dis- charged after being given low doses of pentose nucleotide, the white ell count showing no gross change. He was again admitted on uly 14 with a severe recrudescence of symptoms, especially the int pains. The white cell count was 3,150 per c.mm., neutrophils 6%. At the suggestion of one of our colleagues (Dr. Marchmont) continuous intramuscular drip containing 40 ml. of pentose ucleotide in 540 ml. of normal saline was given into the vastus ternus at the rate of ten drops a minute, and was continued for hree days, 120 ml. of pentose nucleotide being given in all. A hite cell count then showed a total of 6,700 per c.mm.; the nucle- ide was, however, continued by the intermittent method, 10 ml. eing given intramuscularly twice daily for three days, and 5 ml. wice daily for a further three days, but the count remained the ame. A further 5 ml. once daily for three more days was ordered, and on the completion of this course the white cells numbered 1,500 per c.mm.

Further investigation showed that the haemoglobin percentage, red blood cell count, and platelet count were normal, having remained o throughout his illness. A fractional test meal revealed low cidility, with some delay in emptying of stomach. Biopsy of an uillary lymph gland showed marked reactive hyperplasia of lymph erm-centres and reticulo-synctium.

Between July 31 and his discharge on Aug. 12 no further nucle- ide was given, but the white cell count remained around 6,500 per c.mm. On the analogy of the replacement therapy of Addison's aemia, sodium nucleinate in doses of 1 to 2 dr. (4-8 g.) daily was given, and in the subsequent follow-up at the out-patient department o significant change in the count was noted after ten months. The

oral nucleinate was therefore stopped, and up to the time of writing the count has remained within normal limits.

Discussion

Speculation has been rife on the aetiology of this disease, and many theories have been put forward. Rutledge *et al.* (1930) believe that the condition is a primary disease of the myeloid tissue of the marrow and that the necrotic ulcerations are produced as a result of the neutropenia allowing of bac- terial invasion. Osgood *et al.* (1939) quote the normal white cell differential count as follows:

Cell Type	No.	Range %
Neutrophil	1,500-7,500	15-75
Eosinophil	0-400	0-4
Basophil	0-200	0-2
Lymphocyte	1,000-4,500	10-45
Monocyte	0-800	0-8

When our own case was first suspected on June 4, 1943, the patient had 408 neutrophil polymorphs per c.mm. of blood, and the marrow film count, on June 14, 1943, showed a clear majority of young immature cells of the prematuration series, suggesting the maturation rather than the aplastic type of the disease. His relapses in March and July, 1944, suggest a critical level of 1,500 neutrophil polymorphs per c.mm. below which symptoms and signs are observed. Of course, this critical level, below which stomal ulceration may occur, possibly varies from patient to patient. The following case is an example.

A boy aged 10 was admitted with ulcers on the buccal mucosa. The white cell count was 4,600 per c.mm., of which 59% (2,750) were polymorphs and 38% lymphocytes. He had had 12 g. of sulpha- thiazole. Was he suffering from sulphonamide granulocytopenia with a critical level above that of the other case? Whitby maintains that the polymorph counts in children approach the adult level one week after birth. Within eleven days this child's white blood cell count had risen to 9,000 per c.mm., of which 50% (4,500) were polymorphs.

The stimulus which causes granulocytes to enter the circula- tion is said to be nucleic acid and its derivatives, though its role in maturation is uncertain. Again, pentose nucleotide is said to be useful in both primary and secondary granulocyto- penia, the usual method being by daily intermittent intra- muscular injections; but though our patient had 105 ml. by this technique his white cell count only slowly improved. A transfusion of a pint of blood made no appreciable difference. However, the value of blood transfusion in these cases is dis- puted, the only effect, theoretically, being to add nucleotide to the patient's blood by the breakdown of donor leucocytes. Whitby and Britton (1944) state that the total white cell count may actually be lowered as a result of transfusion. It occurred to us that failure may have been due to too rapid destruction of the nucleotide or the overstimulation of the marrow by one massive dose. We therefore thought that a continuous intramuscular drip transfusion, of a total of 120 ml. of nucle- tide in saline, at the usual rate of ten drops a minute might be better. The total white cell count rose in three days from 3,150 to 6,700 per c.mm. at a much greater rate than that obtained with the intermittent injections of 105 ml. of nucle- tide for a further nine days.

The question remaining unsolved was whether he might recover in any case (as these cases sometimes do). On Jan. 1, 1946, after he had been ten months off sodium nucleinate, his white cell count was 6,400 per c.mm. This would seem to indicate a spontaneous recovery and the uselessness of the oral nucleinate, possibly because, unlike the haemopoietic prin- ciple, it never reached the marrow in an unmodified state, it being thoroughly digested in the gut beforehand. Glutathione and liver extract were never given, as the rationale of their use is doubtful, though the haemopoietic principle in the latter has some influence on white cell maturation. The patient gave only a five-day history when first seen, though whether this was really the first attack of his present malady is, of course, debatable. Finally, though neutrophil granulocytes were always present—i.e., the condition was a granulocytopenia rather than an agranulocytosis—we labelled it primary agranulocytosis, as most authorities, such as Wintrobe (1942), Whitby, etc., con- sider it the term best fitted to cover what is, after all, a very heterogeneous group.

Reviews

BIOLOGICAL EFFECTS OF RADIATION

Actions of Radiations on Living Cells. By D. E. Lea, M.A., Ph.D. (Pp. 402; illustrated. 21s.) Cambridge: The University Press. 1946.

Since the first use of radiation as a means of producing biological effects, both desirable and undesirable, there has been only a limited body of information available by which the worker with radiation could attempt to explain or understand its action. In this clearly written and thought-out work the author surveys the hitherto uncharted field of the immediate effects of radiation. Moreover he publishes charts which enable the serious worker to continue the exploration for himself.

Remembering that Lea has concerned himself with effects on visible structures on which experimental evidence is available and has only skirted the swamps of conjecture surrounding the more diffuse effects of radiation, we must admit that he has succeeded admirably in his aim. He starts by discussing the radiation and its physical properties, providing figures which must have required prodigious work to collect, and which form a basis for the detailed understanding necessary for all research workers in the subject. He goes on to discuss the chemical effects of radiation in an essentially quantitative way, based on the physical properties of the radiation and the ions which they produce and their relation to the aqueous medium in which their energy is absorbed. He then deals with the target hypothesis and its limitations. He considers its validity "unquestionable in the case of the inactivation of small viruses by radiation and the production of certain chromosome aberrations in higher cells," and "highly probable in the killing of larger viruses and bacteria and the production of gene mutations." He states that it is inapplicable to changes brought about by circulating blood or intra- or extracellular fluids affected by the radiation.

Lea specifies three types of investigation necessary to determine the applicability of the target theory to any given biological action—viz., the relation to dose, to dosage rate, and to the nature of the radiation—and lays down three corresponding criteria—viz., the survival curve is exponential, the effect is independent of dose rate, and the effect of gamma rays, hard x rays, soft x rays, neutrons, and alpha rays for a given dose decreases in that order. He provides graphs and figures which enable the investigator rapidly to determine target size from his own experimental results, and in subsequent chapters applies his criteria with such effect as to prove to our satisfaction that his statements quoted above are a true estimate of the position. The discussion of the effects of radiation on chromosomes is given in great detail.

No worker in the field of radiation should remain unacquainted with the contents of this book, though for the medically trained the physical and mathematical aspects may be too advanced for complete understanding. There is no doubt that this work is a masterpiece of clear and original thought applied to a most intricate subject, and that it will be considered in time as a classic work. It is to be hoped that Lea will bring the same power and energy to producing a similar work on other aspects of radiobiology hitherto unexplained. Explanation of the action of radiation brings us nearer to an understanding of the fundamentals of life.

PSYCHOLOGICAL TESTS

Manual of Diagnostic Psychological Testing. II. Diagnostic Testing of Personality and Ideational Content. Review Series, Volume III, No. 1. By David Rapaport, Ph.D., and Ray Schafer, B.S., with the collaboration of Merton Gill, M.D. (Pp. 100; illustrated. \$0.75). New York: Josiah Macy, jun., Foundation.

This is the second part of a survey of psychological tests and is concerned with a review of the word association, Rorschach, and thematic association tests. These are tests of personality, of the way in which the subject approaches problems and the underlying impulses and conflicts which determine such approach. Each test is described in detail and its purposes are discussed. The methods of administration are described and the pitfalls in interpretation recorded. The results are then

set out in various groups such as schizophrenics, depressives, neurotics, and normals.

The authors point out how the same sort of tendencies may be recognized through a series of tests, and make a plea for the use of a battery of tests instead of relying on single tests. They claim that it is possible in this way to distinguish between psychotics and neurotics and normals with a fair degree of certainty and, with sufficient care and variety of test, between preschizophrenics, depressives, and paranoids. It is obvious that if the promise of such distinctions can be maintained and extended it will have most important repercussions on medicine, especially in its preventive aspects, on vocational guidance, and in many other branches of social science. The present volume therefore merits close attention as a record of what has already been achieved and as a stimulus to further work.

DISORDERS OF INNERVATION OF PHARYNX, LARYNX, AND OESOPHAGUS

Les Troubles de L'Innervation Pharyngo-Laryngée et Oesophagienne. By Prof. F. J. Collet. (Pp. 320; 22 figures. 300 francs.) Paris: Masson et Cie 1946.

The innervation of the pharynx, larynx, and oesophagus, though well understood in broad outline, has always given rise to perplexities and apparently paradoxical phenomena in matters of detail, which have at times been the grounds of heated dispute. Prof. Collet in his recently published book on the disorders of innervation of the pharynx, larynx, and oesophagus gives in great detail the fruits of half a century of careful observation and profound study of these questions. If he has nothing original to say he at least presents these questions in full detail to the reader and avoids that over-simplification which is often thought sufficient but provides a very imperfect understanding of the subject. Clinical studies and case reports naturally figure largely in such a review, and the author is still inclined to rely rather on a description of syndromes than to elucidate the underlying processes or lesions which cause the syndromes. He therefore dismisses rather lightly the plea made by Burger some ten years ago for the abolition of eponymous syndromes and the substitution for them of a system of groups of paralyses at different levels based on a rigidly scientific anatomical localization. The eponymous syndromes have in fact of themselves no anatomical basis, with the exception of that of Tapia and possibly of Avellis, and are modifications of the group of associated paralyses originally described by Hughlings Jackson; and they have the further disadvantage that the different varieties are difficult to remember by their authors' names. This comment is made in order to illustrate the conservative attitude of Prof. Collet to his subject, but he has omitted no detail in his description, and, as the borderland of neurology and laryngology is the territory concerned, his book is of interest to specialists in those branches as well as to those who practise general medicine.

SURGERY FOR DENTAL STUDENTS

Essentials of Surgery for Dental Students. By J. Cosbie Ross, M.B., Ch.M., F.R.C.S. (Pp. 284; illustrated. 20s.) Edinburgh: E. and S. Livingstone.

The curriculum for the dental student requires that he shall have some knowledge of general surgery and especially of that of the head and neck. To gain this from study of the medical student's textbook of surgery is a very unsatisfactory method of procedure, not only on account of the difficulties of picking out the essential parts but also because the detailed descriptions often goes far beyond that which the dental student wants. The need therefore arises for a smaller textbook dealing with those aspects of surgery which are of interest to the dentist in just such detail as he requires. This need appears to be adequately met in Mr. Cosbie Ross's *Essentials of Surgery for Dental Students*. The author, who is lecturer to dental students in the University of Liverpool, is evidently very well acquainted with the type of teaching which the dental student appreciates. The whole of the matter is of course quite orthodox, but it is clearly laid out with appropriate headings in heavier type. The illustrations deserve special praise—they are exceptionally good, much to the point, and the reproduction is perfect; as the author says in his preface, "In the confident belief that our

good diagram is of more value to the student than pages of print, I have attempted to illustrate all important diseases." We feel sure this book will become very popular among dental students; it is excellently produced by the publishers.

CARE OF PATIENTS WITH VENEREAL DISEASE

Public Health Nursing in Syphilis and Gonorrhoea By Evangeline Hall Morris. (Pp. 240. 12s.). London: W. B. Saunders Comp. Co. 1946.

The title of this book may seem a little strange to the British reader since we have no one in this country who corresponds exactly to the American public health nurse; perhaps "the nursing and welfare of patients suffering from venereal disease" would describe its contents more effectively. The book starts with some account of the problem as it presents itself in the U.S.A. and goes on to relate the history and describe the signs and symptoms, diagnosis, and treatment of the two main venereal diseases; there follow chapters on the patient's needs, epidemiology, the organization of V.D. clinics, a description of the various agencies which deal with the problem, education of the individual at various ages, and finally an account of the duties of the public health nurse.

The clinical sections contain all that a nurse or nursing orderly need know about V.D., though it is news to be told that the gonococcus is anaerobic; most readers will be more interested in the later chapters, particularly those on sex education and the duties of the nurse. The author evidently knows what she is talking about, and those who were privileged to see American public health nurses at work in England during the war were greatly impressed with both their methods and the results they obtained.

All who have to deal with the V.D. patient and his problems, whether doctors, nurses, almoners, or social service workers, will profit from a study of this excellently produced little book.

A SURGEON'S AUTOBIOGRAPHY

Talk of Dreams. An Experiment in Autobiography. By Kenneth Walker. (Pp. 219. 10s. 6d.). London: Jonathan Cape. 1946.

Mr. Kenneth Walker in this latest work has provided us with an interesting, entertaining, and thought-provoking work. He takes his autobiography as far as the end of the 1914-18 war, judging that more recent events have not yet got into proper perspective. His theme is that only very occasionally has he been able to see himself or the universe of which he is part as a whole, and much as he dislikes the conception of psychological determinism he is forced to the conclusion that almost always his behaviour has been determined by four characters within himself largely founded on boyhood fantasies: "Black and white," the Red Indian brave who is impervious to hardship or pain; "Selous," the intrepid explorer always seeking some new thing; "Knight-Paton," the chivalrous knight-errant-missionary; and "Personage," the rather snobbish seeker for reflected distinction to be derived from association with the very important persons of this world. This is a quartet which many might recognize in themselves. Mr. Walker describes certain high-lights in his life and the reactions of his four inner actors in these circumstances.

A schoolboy at the Leys, an undergraduate of Caius, and a medical student at Bari make the setting. An expedition to Iceland, an ascent of the Matterhorn and of the Rothhorn, a thunderstorm, big-game hunting in East Africa, and six months in India are special high-lights. Next, five years of practice in Buenos Aires in an attempt to make money enough to escape from medicine; but then the Great War. This culminates in Walker's work in the forward areas, which was of the greatest value but which unfortunately for him never quite came to the fruition it deserved. The reviewer, who was also there, can vouch for the author's description of the disaster of Thompson's Cave on the third night of the Battle of Arras, which deprived him of the first forward operating set-up in the history of warfare, which has borne such great fruit in a later war. Nevertheless perhaps Mr. Walker gives too scanty a raise to the New Zealand tunnellers, by whose exertions 400 badly wounded men were got out of the cave without further casualties. Some of us less under the influence of "Knight-Paton" at that time envied and rather wondered at Kenneth Walker's apparent delight in mixing himself up with air-borne metal which we so cordially disliked. Now we know—or do

we? Clearly this book needs a sequel: we want to know how these characters have mellowed and co-operated to develop Mr. Walker's more philosophic ego of recent years. May he be persuaded to round off this admirable contribution to psychological literature by further conclusions on the vexed question of determinism and free will and the construction of the personality.

Notes on Books

In the fifth edition of H. M. TRAQUAIR's *Introduction to Clinical Perimetry* (Henry Kimpton; 36s.) anatomical names have been revised to conform to current usage. There are ten new illustrations. The text has been amplified to include experience gained in injuries seen during the war.

A second edition of R. M. HANDFIELD-JONES's *Surgery of the Hand*, which we reviewed favourably in 1941, has now been issued. The book has been enlarged by the addition of short chapters on amputations and burns, and there are new paragraphs on the use of penicillin in various types of infections. There are also a few fresh illustrations chiefly related to the new matter. The new edition retains the attractive format of the first. It is published in Edinburgh by E. and S. Livingstone at 20s.

The full text has now been published as a booklet (London: Christopher Johnson, Ltd.; 5s.) of Sir ARTHUR MACNALT's Thomas Vicary Lecture for 1945 on *The Renaissance and its Influence on English Medicine, Surgery, and Public Health*. A shortened version appeared in these columns on Dec. 1, 1945. Sir Arthur gives a description of the times in which Thomas Vicary lived, and of the sovereigns, statesmen, scholars, physicians, and surgeons of his day, with reproductions of Holbein's famous picture of Henry VIII granting the Act of Union to the Barbers and Surgeons and of his drawing of Sir Thomas More at the age of 50, from the Royal Library at Windsor Castle.

In *The Health of the School Child* Miss GERTRUDE E. CROMWELL (W. B. Saunders Company; 12s. 6d.) describes the general plan for school health work with particular emphasis upon the part to be played by the school nurse. She wisely sees the school as a unique opportunity for inculcating healthy habits and regards health education as something which can be best carried out with the child. American methods and outlook differ in some respects from the usual British standards, but this book should certainly be read by those responsible for the school health service in this country.

James Woolley and Co., Ltd., have issued a commemorative booklet entitled *Woolleys of Manchester*, being a record of 150 years in pharmacy. The firm was established by R. H. Hargreaves in 1796 and the business was acquired by James Woolley, who started as a medical student but was advised by John Dalton to make pharmacy his career, because he could not bear to witness the major operations, which were performed without anaesthetics. On the formation of the Pharmaceutical Society of Great Britain in 1841 James Woolley became one of its first members and took a leading part in the promotion of a Manchester branch. His great-grandson, Mr. G. S. Woolley, is now vice-chairman of the board of directors.

L'anémie infectieuse, by G. HEMMELER (Basle: Benno Schwabe and Co.; Swiss fr. 5), is a reprint of the author's researches on the anaemia of infection. The methods used were examination of the blood and the bone-marrow and estimation of the serum iron. Dr. Hemmeler concludes that the anaemia is of a hypoplastic type, due to toxic depression of the marrow. The serum iron is low during infection, but there is no reason to believe that the anaemia is due to iron deficiency. Owing to the isolation of Switzerland while the war lasted there are no references to American and English work during the last five years. Nevertheless, the author is in harmony with the American and English workers in believing that the intestinal epithelium plays a vital part in controlling the absorption of iron, and that in infection absorption is shut down.

American methods of heating would make it possible to provide heat throughout the whole of one of our houses for 24 hours a day for about the same amount of fuel as was used before the war by open fires in warming a small part of the house. This is one of the conclusions of a joint party from the Ministry of Fuel and Power and the Building Research Station and Fuel Research Station of the Department of Scientific and Industrial Research after spending nearly three months of the winter of 1944-5 studying heating, cooking, and hot-water supply in small houses in the U.S.A. and Canada. H.M. Stationery Office has now published (price 3s.) a report, *Domestic Heating in America*, which was prepared by the party on its return. This gives a comprehensive picture covering climatic conditions, fuel resources and costs, heat demand, distribution and maintenance of appliances, the relation of heating to house planning, smoke abatement, descriptions of heating, cooking, and water-heating appliances, chimneys, and heat insulation.

Nova et Vetera

ANCIENT MEDICAL TREATISES

Omar, he tells us, often wondered "what the vintners buy one-half so precious as the wares they sell"; and in much the same spirit is the wistful preface by Mr. J. I. Davis to the first post-war catalogue of medical and scientific desiderabilia issued by his firm (Davis and Orioli, now in Maddox Street, W.), hinting that he would like to keep rather than to sell his delectable wares and apologizing for the high prices which market trends have dictated. It really is a remarkable assembly of rarities which is here catalogued, and it is feasible to indicate only the most covetable of mouth-watering items—not always, by the way, the most expensive. Aretaeus of Cappadocia is represented by the second edition of a pamphlet (Paris, 1554) at £8 10s.: his claim to fame is that he was the first to give a full description of diabetes, and he probably had some knowledge of cardiac auscultation. Then there is a first edition of Francis Bacon's *Instantatio Magna* (1620), to which science is indebted for the exposition of inductive reasoning; this seems very reasonable at £65. Very precious, too, is the textbook on anatomy by Jacob Berengarius da Carpi (Bologna, 1521) which is priced at £350: it is one of only eight known copies, most of which are in public libraries, and is the first and only edition. Berengarius was the leading authority until Vesalius eclipsed him. A translation into English by H. Jackson, published in London, 1664, of another of this anatomist's works is listed at £75; only about four other copies appear to exist. Bernard of Gordon, believed to be a Scot, who taught medicine at Montpellier in the thirteenth century, is represented by a treatise on medicine (Lyons, 1491), priced at £110: in it he describes plague, phthisis, epilepsy, scabies, erysipelas, leprosy, trachoma as contagious diseases, so clearly he had got beyond the demoniac conceptions of most of his contemporaries. Sir Thomas Elyot's *Castell of Health* is offered in an edition of 1559 (at £22 10s.)—of enhanced interest because it belonged to Edward Fenton, Frobisher's navigating officer, and one who took part in the defeat of the Armada. The treatise of Ferrerius on syphilis (1564, £12 10s.) recommends sarsaparilla for the "Spanish disease." The first edition of William Gilbert's book on magnetism (London, 1600) has an interest far outside medicine, of course; it does not seem dear at £105. The third edition of Harvey's *De Motu Cordis et Sanguinis* (Leyden, 1639) is priced at £68 (until recently it was thought to be the second edition); and the first edition (1651) of the *De Generatione* at £60. Extremely rare is a popular English digest of Hippocrates, published in London, 1530, one of about half a dozen copies, offered at £145. Ulrich von Hutten's book on the use of guaiacum in the treatment of syphilis—from which the author himself suffered—published at Strassburg in 1519, costs £75; whereas £130 is asked for the first edition of Jenner's classical treatise on smallpox and vaccination. An edition, believed to be the fourth, of John de Gaddesden's *Rosa Anglica*, which runs to over 1,200 pages (1595), can be got for £21, whereas £350 is the price of John de Ketham's *Medicine*, Venice, 1500: it is supposed to be the work of Johannes Kellner, professor at Vienna, 1445–70, and contains woodcut illustrations never previously equalled. Laennec's first account of auscultation (Paris, 1819) is quoted at £35. Then there are three medical works by Jean Paul Marat, the French Revolutionary celebrity—incidentally Messrs. Sotheby were selling by auction on Oct. 14 a collection of a number of his writings. Ambroise Paré is represented by the first edition (Paris, 1564, £185) of his magnum opus on surgery—only two or three copies exist; and also by his book on plague and other topics (1582, £150). Peyer, of the patches, a Swiss anatomist, is the author of the book announcing his discovery published at Schaffhausen in 1677 (£27 10s.). An edition of Roesslin's *Midwifery* (Paris, 1538, £55) is of great rarity: it was the source-book of Raynalde's *Byrthe of Mankynde* (1545). There is space only to mention three or four items by Vesalius: perhaps of greater surgical interest is a book by Volkmann in 1875, annotated by Lister himself, who praises the author for having so fully comprehended the antiseptic doctrine. This is on sale at 4 guineas.

A further rarity deserving mention was to be sold, on the same day as the Marat pamphlets mentioned above, at Sotheby's Rooms. It is *The Treasur of Health* by Pope John XXI, translated by Humphrey Lloyd and published in London about 1550 by William Coplande: only one other copy is known to bibliographers, so keen competition was natural enough, and it fetched £65. At a further sale on Oct. 28 at the same Rooms a small medical library was catalogued: most of the items are of moderate rarity, but there are a few exceptions, such as Celsus, *De Re Medica*, Lyons, 1554; Dioscorides, *De Medicinali*, Venice, 1538; Glisson, *Anatomia*, Amsterdam, 1659; Harvey, *De Generatione Animalium*, Hague, 1680; Roesslin, *Ghestande Artzneybuch*, Frankfurt, 1590; Alexis of Piedmont, *The Secrets* (English translation), 1578.

H. R.

CHARLES BATEMAN, CHIRURGEON: EXECUTED FOR HIGH TREASON, 1685

Macaulay has noticed the trial and execution of Bateman, a surgeon, in his *History of England*. A man of this name was apprenticed at Barber-Surgeons' Hall in the year 1651–2 to Thomas Bell, surgeon, and is almost certainly the man in question. *The State Trials* (Hargrave's Edition, 1776) gives an account of the proceedings.

In the first year of King James the Second Charles Bateman was tried at the Old Bailey on Dec. 9, 1685. He was accused of conspiring to bring about the death of the late King. In the first instance he asked for a postponement of his trial, but was told by Mr. Recorder (Sir Thomas Jenner) that he must plead before he could be heard. The indictment was read and Bateman pleaded not guilty. He said he had been kept a close prisoner for ten weeks, was much indisposed, and had had neither notice nor panel of jury. After some discussion he was allowed pen, ink, and paper, and his son to assist him. It appears that his residence was in the parish of St. Dunstan's in the West, in the ward of Farringdon Without.

Mr. Phipps, Counsel for the King, opened the case and was followed by Mr. Serjeant Selby and Mr. Charles Moloy. The prosecution's first witness, Josias Keeling, swore to having been at divers meetings at which methods were discussed. Rumbold*, since executed for high treason, was present at one of them; a discussion took place on a design to divide the City into twenty parts, to raise 500 men for each part, who were to be under one chief with nine or ten subordinates. Bateman said that the evidence of this witness contained nothing against himself, and this was allowed by the Court. Thomas Lec swore to the plan to divide the City as mentioned above and stated that Bateman had been nominated as manager of one part, his particular task being to try to obtain possession of the Tower. To this Bateman replied that had he been conscious of what was laid to his charge he was fit for Bedlam. Richard Goodenough gave evidence that Bateman had promised his assistance to a design to seize the City in connexion with the Duke of Monmouth's rebellion.

Bateman seems to have relied on endeavouring to show that the witnesses for the Crown were not to be depended upon; and the Court seems to have allowed that Goodenough, who had previously been pardoned, was not a creditable witness. The Lord Chief Justice (Jeffreys) summed up impartially and the jury found Bateman guilty. He was executed at Tyburn on Dec. 18, 1685.

In the Remarks on the Trial it is stated that Bateman was reputed to have been chirurgion to the Earl of Shaftesbury; that he had attended Oates after his whipping and had let him blood. That infamous scoundrel Titus Oates was sentenced to be whipped at the cart's tail from Aldgate to Newgate, and after two days' interval to be whipped from Newgate to Tyburn. It may have been after the first whipping that Bateman attended him. One would have thought that he would have lost enough blood to have rendered any further phlebotomy unnecessary. It is a fact that both parts of the whipping were carried out.

Mr. Le Fanu informs me that Charles Bateman's son, Richard, was apprenticed at Barbers' Hall on April 9, 1678, for seven years.

R. R. J.

The new quarterly *Journal of the History of Medicine and Allied Sciences* will in future be issued in this country and the British Empire by William Heinemann (Medical Books), Ltd., 99, Great Russell Street, W.C.1. No. 3 of Volume I is now available. The English subscription terms are 50s. per annum (or four issues) and 12s. 6d. for a single issue.

* Rumbold was concerned in the Rye House plot.

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THE MENACE OF BLEACHED FLOUR

One of the most remarkable developments in the long struggle for wholesome and nutritious bread is reported by Sir Edward Mellanby at page 885 of this issue. In his laboratory dogs given a diet consisting largely of flour which had been bleached by the "agene" process invariably developed hysteria. Control animals fed upon the same diet but with unbleached flour remained free from this syndrome. For about twenty years canine hysteria has presented a problem which is as interesting to the pathologist as it is distressing to the dog-owner. Those familiar with the dog's sidelong glances at some unseen terror, the frightened barking, and the aimless rushing round which precedes exhaustion will appreciate the accuracy of Mellanby's description. Various authorities have ascribed his condition to factors as diverse as the after-effects of distemper, worms, ticks, or even a perverted appetite for gravel. For some time, however, enlightened veterinarians have concluded that more often than not hysteria in dogs is nutritional in origin.

It has long been known that certain wheat products are liable to cause this hysteria. Dog-biscuits and meals manufactured under excessive exposure to heat have been especially suspect. There has been difficulty, however, in deciding whether the trouble was due to a toxic factor or to deficiency of some essential nutrient. Melnick and Cowgill¹ found that their dogs had hysteria when given diets containing gliadin, the alcohol-soluble fraction of wheat gluten, and they considered that protein sensitization was involved. Arnold and Elvehjem² thought that the syndrome was attributable to deficiency of the amino-acid lysine, though Wagner and Elvehjem³ later discarded this view in favour of the theory of a toxic agent. Mellanby's new finding seems to indicate that the toxic substance is not present in the natural wheat but is formed by the action of the bleaching agent, which in the "agene" process is nitrogen trichloride. This and other processes have been widely used here and in America to bleach flour and improve its baking qualities. It is therefore likely that wheat products found to be toxic by previous workers have been submitted to similar treatment.

Attempts to elucidate the nature of the toxic substances are being made. Mellanby intends to find out, and it will be of crucial importance to know, whether wheat gluten, like flour, acquires toxicity only after bleaching. Meanwhile it is interesting to speculate on the possible mechanisms by which such a trustworthy food as wheat can become poisonous. The most important constituent of wheat gluten is glutamic acid, which makes up as much as 43% of the total amino-acid content. There seems little

reason to suspect injury from this direction. Indeed, Price, Waelsch, and Putman⁴ have claimed that *dl*-glutamic acid hydrochloride is a useful drug in the treatment of patients suffering from petit mal and psychomotor seizures. As Mellanby has pointed out, however, chlorine may act upon the tyrosin and tryptophane groupings of the gluten complex, and it is possible to visualize the formation of toxic bodies in this way. Kodicek, Carpenter, and Harris,⁵ for example, have shown recently that indole-3-acetic acid (heteroauxin), a substance related to tryptophane, may in certain circumstances have an adverse action on rats.

Mellanby's observations have been confined to the effects of the bleached whole flour. If the American work on the toxic properties of wheat gluten were unknown it might well have been assumed that these effects were due to the destruction of vitamins. Vitamins are present in such minute amounts that in many instances they are selectively attacked by the relatively small amounts of chlorine used in bleaching. They therefore suffer far greater damage than would be the case if the chlorine distributed its action evenly over all the components of the flour. In particular it might have been thought that the hysteria resulted from a destruction of adermin (vitamin B₆). Chick, El Sadr, and Worden⁶ found that rats deprived of this factor developed epileptiform fits which were obviously very similar to hysteria in dogs. Wagner and Elvehjem were unsuccessful in a single attempt to prevent hysteria by giving vitamin B₆, and Mellanby's dogs developed hysteria even though their diet contained yeast, a rich source of this vitamin. Against these findings we may place the experience of some veterinarians, who find that hysteria is often amenable to treatment with yeast. While awaiting further experimental developments it may be premature to exclude completely the possibility of dietary deficiency. Even if it is proved that wheat gluten becomes toxic after bleaching it is still possible that it may exert its injurious action by interfering with the absorption or metabolism of adermin. For this hypothesis we have a parallel in the work of Boas⁷ on the increased demand for biotin in rats given avidin in the form of unboiled egg white.

Whatever the true explanation of the action of bleached flour may be, it is clearly undesirable that food unfit for dogs should be eaten by the human subject without at least a full realization of the dangers involved. Perhaps some comfort may be drawn from the different response to wheat products shown by different species. Wagner and Elvehjem were unable to detect fits in rats, guinea-pigs, monkeys, and chicks feeding on sufficient wheat gluten to cause hysteria in dogs. As yet we have little, if any, evidence that diet is a significant factor in human epileptiform fits, and the consumption of large quantities of bread made from bleached flour is obviously not inconsistent with the maintenance of an ordinary state of health in most people. All will agree, however, with Mellanby's statement that carefully planned experiments with human volunteers are now required. Until such experiments have been completed the estimate that 90% of the flour consumed in this country is "agenized" cannot fail to give rise to some anxiety.

¹ *J. Nutr.* 1937, 13, 401.² *J. Amer. vet. med. Ass.* 1939, 95, 303.³ *J. Nutr.* 1944, 28, 431.⁴ *J. Amer. med. Ass.* 1943, 122, 1153.⁵ *Lancet*, 1946, 2, 491.⁶ *Biochem. J.* 1950, 34, 595.⁷ *Ibid.*, 1927, 21, 712.

THE UNSTABLE ADOLESCENT GIRL

Criminal statistics are notoriously difficult to interpret. Whether an individual is charged or not depends as much on the social conventions of the neighbourhood, and the efficiency of the police, as on his or her behaviour. Even so, the figures given recently in the House of Lords¹ are disturbing. Whereas during the war years the overall increase in convictions has been of the order of 50%, in the case of girl offenders it has been more than fourfold. As a result the facilities for dealing with them have been overstrained and have in many cases broken down. Quite apart from the embarrassment of numbers, however, is the problem of devising scientific methods for effecting their rehabilitation. The report on the unstable adolescent girl by a joint committee set up by the Magistrates' Association and the British Medical Association, which appears at page 909 of this issue, is, therefore, timely.

The committee goes to the heart of the problem in its third paragraph: "It is important to realize that the girl's appearance in court is seldom the result of her first misdemeanour. . . . Thus the magistrate has to deal not with first offenders, but with girls whose undesirable behaviour and standards of conduct may already be well established. . . . The fundamental cause of the delinquency is usually found by the psychiatrist to be some defect of character structure." Unless these facts are kept constantly in mind, plans to deal with the problem will remain ineffective. Punishment, for instance, is of little or no avail in these cases. Had it been so, persistent misbehaviour would have been checked long ago, for few if any of these girls have escaped their share of punishment. Indeed it is this failure to react to punishment and to the disapproval of friends and relatives which constitutes a major feature of the character defect from which they suffer. To say that legal proceedings and punishment are of little avail for these cases is not to call them in question as methods of saving the ordinary citizen from speeding or shoplifting.

In fact most of us are aware that such conditions have a deterrent effect on us. That is a measure of our normality.

The failure of the persistent delinquent to respond to praise or blame is a part of her "social deficiency." The report emphasizes this: "She is lacking in feelings of love, either for her parents or anybody else; she has no sense of loyalty . . . she is incapable of friendship. . . ." This, of course, is the "lesion" from which so many delinquents suffer—a dysfunction of their capacity for loving or loyal human relationship. The origin of this dysfunction is perhaps less of a mystery to-day than formerly, when airy assumptions of constitutional factors gave a false impression of knowledge and directed attention away from the influence of environment. Psycho-analytical researches have demonstrated the developmental continuity of human relationships from the cradle to the grave. Relationships in later life are the descendants, often modified and usually camouflaged, of earlier relationships, particularly those to parents and siblings in infancy. The first of all our human relationships, that to our mothers, is in fact the foundation on which all our later relationships are based. If it is unsatisfactory, then later relationships will also be

unsatisfactory. This traditional truth has been particularly stressed by A. Freud,² Edelston,³ and others, who have drawn attention to the adverse effect of prolonged separations of mother and child in infancy and early childhood on the child's capacity for making good personal relations in later life. That such prolonged separations are specifically related to persistent delinquency has been demonstrated by Bowlby.⁴

Our greater understanding of the psychopathology of the unstable adolescent permits of a more rational approach to prevention and treatment. "Existing methods of handling these girls," the committee reports, "are often likely to exacerbate rather than improve their tendency to misconduct." Particularly to be condemned is the present tendency for girls to be sent from remand home to hostel, from hostel back to remand home, from there to a classifying school, then for a period in an approved school, and perhaps finally to Borstal. It is as though cases of advanced phthisis were, to spend months or years going from general hospitals to clinics and to convalescent homes before being sent to a properly equipped sanatorium. In the case of the unstable offender this chopping and changing is so serious because it is her incapacity to make stable and good personal relations which constitutes the heart of her illness. Frequent changes of this kind can only make matters worse.

In its recommendations the committee emphasizes that treatment and supervision of most of these girls will require to be prolonged if they are to be effective. Lay staff in charge of schools and hostels must be specially selected and trained and, it might be added, generously paid, since no work is more exacting, and a high degree of professional competence must be demanded. The nature of the training is not touched upon, but it is evident that special attention must be given to the psychology of human relations and to group techniques for dealing with individuals whose capacity for making good relationships is impaired. The work of Merino⁵ is still too little known in this country. The grave shortage of psychiatrists, both to assess personality and to undertake therapy, is stressed. This shortage will be increasingly felt as the true nature of the problem is more clearly appreciated.

Perhaps the greatest defect of the report is its relatively scant attention to preventive measures. Improvements in housing and nutrition are, of course, not unimportant, but nothing is said of other measures for promoting healthy family life. It is now well known that many homes already disrupted or in danger of disintegration can be mended by enlightened social welfare. Family clubs, such as the Peckham Health Centre, and nursery schools each have an enormous contribution to make to the promotion of good mother-child relations. Furthermore, an adequate child guidance service, with access to all children and not only to those already seriously ill, could identify in childhood many girls likely to get into difficulties in adolescence and guide them or treat them before the sorry tale of trouble has begun.

Though in some respects the committee's report fails to go sufficiently far it is none the less encouraging to find

¹ *Infants Without Families*, 1944, George Allen and Unwin.

² *Separation Anxiety in Children*, 1943, Genetic Psychology Monographs.

³ *Forty-four Juvenile Thieves*, 1946, Baillière, Tindall and Cox.

⁴ *Who Shall Survive?*, 1934, Nervous and Mental Diseases Publishing Co., Washington, D.C.

in this document, as in most others prepared in recent years, that doctors and magistrates alike have approached their problem in a realistic and scientific spirit. Moral indignation and ignorant sentimentality have been displaced. If Samuel Butler were to chance upon this report he might perhaps wonder if, after seventy-five years, he was paying a second visit to Erewhon. But a glance at the records of the recent Titchener case would all too soon convince him that the retributive motives of the nineteenth century rather than the therapeutic outlook of Erewhon still govern much of our legal action.

DERIVATIVES OF THIOURACIL

With the demonstration of the inhibition of thyroid function by thiouracil and related compounds a new era began in the treatment of thyroid diseases. The therapeutic use of such compounds has demonstrated their efficacy in abolishing the hyperthyroid manifestations of toxic goitre, and early reports were so encouraging that their widespread and enthusiastic administration was undertaken. Dosage was often haphazard, impatience sometimes prompting the use of ever-increasing amounts, and although such measures relieved thyrotoxic patients of their symptoms it was soon apparent that the treatment was not without risk, for toxic effects were not infrequently observed and agranulocytosis often caused alarming manifestations. Such occurrences became fewer as the management of the treatment was elucidated and the quantity of the drug administered was reduced to minimal requirements, but even under the most careful conditions accidents were still apt to happen. Notwithstanding these drawbacks the treatment was obviously a great advance in therapeutics; the hyperthyroidism could be effectively controlled by maintenance therapy.

Two courses of action were now available: medical treatment only could be employed and the disease controlled apparently indefinitely, or the drug could be used to render the patient non-toxic before surgical interruption. The duration of treatment required by medical means alone was unknown, and is still debatable. In any case treatment must of necessity be protracted, and careful observation is required to avoid undesirable effects and the production of hypothyroidism. Experience has shown that although the toxic effects of these drugs are more likely to appear early in treatment, when the dosage is higher than that required for maintenance therapy, they may still occur even after months of administration. In addition the goitre itself may cause trouble by a considerable and often progressive increase in size. These hazards and the length of treatment required can be reduced to a minimum if such drugs are used as a preparatory treatment to surgical operation. Early experience showed that, although the dangers of the operation on the hyperthyroid patient were reduced by the removal of the toxic factor, the technical difficulties were often magnified, since the increased vascularity of the gland made haemostasis an almost impossible task and moreover obscured the field of operation to such an extent that it was difficult to avoid damage to surrounding structures and to assess how much gland should be removed.

It was known that previous treatment with iodine rendered the response to thiouracil less rapid. Similarly, iodine used concurrently with thiouracil diminished the response and increased the dosage required. However, it has now been found that it is possible, after obtaining the maximum desired response to thiouracil, to use iodine to produce pre-operative involution of the thyroid; and operation can then be performed before hyperthyroid manifestations recur and without the gross increase in vascularity associated with thiouracil treatment alone.

There is little doubt that the larger the dose of the compound used the greater is the liability to toxic phenomena. This has led to an investigation into related compounds to find a substance which would have greater efficacy in the reduction of thyroid secretion and less liability to produce toxic reactions. The continuation of this search is described by E. B. Astwood and W. P. Vander Laan,¹ who discuss the use of two substituted thiouracils—namely, 6-ethylthiouracil and 6-*n*-propylthiouracil. The former, which was used in only fourteen patients, showed a high order of activity, but was abandoned in favour of 6-*n*-propylthiouracil owing to difficulties in synthesis of the former and the apparent superiority of the latter, with which twenty-nine patients were treated.

It seems that this compound is as uniformly successful in controlling the hyperthyroidism rapidly and effectively as is thiouracil, but that the dosage required is much smaller. The difficulties of comparing dosage are enormous, and it is obvious that an endeavour was made to use the smallest dosage compatible with the production of an adequate therapeutic result. It is abundantly clear, however, that the dose required for both initial and maintenance therapy is many times smaller than that of thiouracil. Moreover, of these cases only one showed any evidence of toxicity, and that was a patient treated with 6-ethylthiouracil. This finding appears more significant than would perhaps be justified by the figures alone in this comparatively small series, for a number of the cases had obviously shown such marked intolerance to thiouracil itself that treatment had been abandoned. It seems therefore that 6-*n*-propylthiouracil not only shows greater activity in reducing thyroid secretion than its parent compound but has, as the authors suggest, a greater specificity in its action and in consequence is freer from side-effects. There is little doubt that it is a considerable advance on thiouracil, but its discovery must not be regarded as ending the search. One patient in this series developed progressive enlargement of the goitre in spite of very small doses. It is hoped that further work will be done to find a better compound

TREATMENT OF AGRANULOCYTOSIS

In this issue of the *Journal* (p. 897) Librach and Cronin report an example of an unusual type of agranulocytosis in which recovery followed pentose nucleotide given by continuous intramuscular drip. Their discussion of the case closes on a note of scepticism. They conclude that recovery was spontaneous and not determined by their novel method of administering this drug. This comment would be endorsed by others who have experience of treating

feature of the condition. Nisbet describes the following three types of reaction, and though all stages may be seen in the same patient the lichenoid and generalized eruptions commonly follow the patchy eczematoid. (1) The patchy eczematoid type accounts for 30–40% of cases; the hands and feet, groins, eyes, and ears are the sites of election. (2) The hypertrophic lichenoid type may arise as such primarily but usually follows the former type. Spread is rapid, and the appearances resemble a very severe and unusually extensive chronic hypertrophic lichen planus. Mucous membranes are involved, as are the scalp and the face. The latter is rarely attacked in true lichen planus. A peculiar bluish-grey pigmentation occurs. The typical polygonal papules with flat, shining surface are absent, and the glans penis is not affected. (3) The generalized exfoliative type usually follows upon the eczematoid or lichenoid. If it is a primary occurrence it may be acute and oedematous and cause pyrexia.

The patients are ill and unfit for duty, are in hospital for an average period of three and a half months after being evacuated from the Tropics, and may not recover for six to twelve months. Pigmentation may be very persistent and in some cases a fine reticular atrophy is seen. Hair and nails were often shed, but they grew again in all cases observed. No drug therapy proved of value except penicillin for the secondary sepsis that was a frequent complication. Nisbet thought that light aggravated his cases, but Schmitt and his fellow-workers did not find this. They stressed the affection of mucous membranes in one-third of the cases, the presence of glandular enlargement, and occasional pyrexia. Their paper gives in more detail several case histories and is well illustrated. They discuss the differential diagnosis from eczema, contact dermatitis, urticaria, lichen planus, heat rash, and fungous infections.

The incidence of this adverse response to mepacrine was not sufficiently high to justify withdrawal of the drug from general use, but those subject to the disturbance could not subsequently take the drug without relapse of the dermatosis. They had therefore to be withdrawn from those areas where prophylactic measures against malaria were necessary.

VITAMINS IN HUMAN MILK

Carefully planned and co-ordinated investigations recently reported by Macy and others¹ provide further information on the vitamin contents of human milk, and an accurate assessment has been made of the substantial demands for these nutrients made by the infants. The general plan of the experiments was to estimate the vitamins by chemical or microbiological methods in specimens of colostrum and of mature milk taken from large numbers of mothers at successive intervals after parturition. It was fully realized by Davies and colleagues² that the composition of milk varies greatly according to whether it is collected in the early or late stages of any particular withdrawal, and precautions were taken to avoid undue errors from this source. Usually the milk from mothers on a carefully chosen institutional diet was compared with that of mothers who had chosen their own diet, but the differences found, even if in some cases statistically significant, were relatively small. It is perhaps remarkable that even the approved diet failed to reach the standards originally recommended by the U.S.A. National Research Council for ascorbic acid, thiamin, and nicotinic acid. Yet the diet included liberal quantities of chicken, eggs, liver, spinach, carrots, apricots, butter, cream,

and milk: the authors hint that for normal adults the official standards may have been unduly high.

The different concentrations of vitamins in colostrum and mature milk was one of the points studied. Previous knowledge has been confirmed, and valuable new facts have been collected. Thus, as compared with mature milk, colostrum contains ten times more carotene, twice as much vitamin A, and half as much again of ascorbic acid and nicotinic acid. On the other hand milk is about five times richer in pantothenic acid than is colostrum; the concentration of biotin is doubled as the milk matures, and the content of thiamin and riboflavin increases greatly. A difference in behaviour between fat-soluble and water-soluble vitamins might perhaps have been expected, but the observed divergences between the various water-soluble vitamins present an interesting problem to the biochemist.

Equally interesting, and possibly of more practical importance, are the differences shown by Lawrence and his colleagues³ in the vitamin contents of mature human milk and mature cows' milk. The data for human milk were mostly taken from Macy's investigations,¹ with the women choosing their own diets. Human milk is much richer than cows' milk in vitamin A, ascorbic acid, nicotinic acid, inositol, and folic acid, and much poorer in thiamin, riboflavin, and biotin. The differences between human milk and cows' milk are even more numerous than had been suspected and provide a further pointer to the superiority of human milk to cows' milk for infant feeding. But lactation makes severe demands on the mother's vitamins. If 900 ml. per day is taken as a typical output during the middle stages of lactation, the mother loses on an average 585 µg., or about 2,000 I.U., of vitamin A, and 45 mg. of ascorbic acid daily. Experiments by the Medical Research Council⁴ have shown that 1,250 I.U. of vitamin A daily are enough to cure experimental deficiency in adult humans, while a daily intake of 45 mg. of ascorbic acid would be considered by many to be an adequate safeguard against scurvy. The drain by lactation on the mother's reserves of these two vitamins is therefore considerable when compared with the normal daily requirements, and the National Research Council of the U.S.A. has ample justification in setting high standards of intake for lactating women.

R.M.B.F. CHRISTMAS APPEAL

Sir Arnold Lawson, long an active worker for the Royal Medical Benevolent Fund, is now its President in succession to the late Sir Thomas Barlow, and he takes the same personal interest in the Annual Christmas Appeal on behalf of the poor beneficiaries of the Fund. Last year he asked for £2,000, and his appeal brought in £2,127, which provided £4 for each beneficiary. These gifts were very welcome as a token of goodwill from members of the medical profession and as a means of buying a few extra comforts for Christmas. A short time ago Sir Arnold Lawson wrote to ask our readers for a similar sum this year, and his letter appeared in the *Journal* of Oct. 19 (p. 588). Life is difficult for everybody these days, but especially for those "very poor brethren" whom the R.M.B.F. takes under its wing. We hope that all who can help and have not yet responded to the appeal will do so at once. Donations marked "Christmas Gifts" should be sent to the Secretary, Royal Medical Benevolent Fund, 1, Balliol House, Manor Fields, Putney, London, S.W.15.

Viscount Addison, M.D., F.R.C.S., Secretary of State for Dominion Affairs, has received the signal honour of appointment by the King to the Order of the Garter.

¹ *Amer. J. Dis. Child.*, 1945, 70, 135, 150.

² *Ibid.*, 1945, 70, 148.

³ *Amer. J. Dis. Child.*, 1945, 70, 193.

⁴ *Nature*, 1945, 156, 11.

THE UNSTABLE ADOLESCENT GIRL

The following appendix to the Report of the Committee on Psychiatry and the Law has been approved by the British Medical Association and the Magistrates' Association.

I. The Problem

1. The girl with whom the committee is concerned in this investigation is usually between 13 and 17 years of age and she comes before the court on a charge of stealing or because she is out of control, or is in moral danger or in need of care and protection. Superficially she is a "good-time girl," living only for her own personal enjoyment, morally and emotionally unstable, perhaps guilty of sexual misbehaviour, and unamenable to discipline and control. Her appearance in court is followed by an investigation by the probation officer, a stay in a remand home, then perhaps a period in a hostel; and, if that is not successful, she may finally be sent to an approved school, which to her means a sentence of imprisonment.

2. The existence of this type of girl in the community is a serious social problem which at present is being far from satisfactorily handled. The causes and the nature of the problem are not always clearly understood or appreciated by those concerned with such girls. The facilities for dealing with it are inadequate, and those that exist are not always fully utilized. The general attitude towards the girl is often mistaken; little attempt is made to prevent her undesirable behaviour, and the decision of the court or other authority often serves only to increase her difficulty.

3. It is important to recognize that the girl's appearance in court is seldom the result of her first misdemeanour. Investigation usually shows that the girl charged with theft has been stealing for a considerable period and has either succeeded in remaining undetected or her victims have taken no action against her. Similarly in girls charged with civil offences there will usually be found a long-standing history of a tendency to sexual deviation and refusal to accept parental control. Thus, the magistrate has to deal not with first offenders but with girls whose undesirable behaviour and standards of conduct may already be well established.

4. Investigation will usually reveal that the girl's behaviour is the result of interaction between temperament and environment, but always at the root there is some defect of character-structure that is the real cause of her difficulty. It is not necessarily a defect of intellect but rather a degree of social insufficiency. The concept of social deficiency is not yet generally understood, and work on the measurement of social defect has not yet reached the stage for practical adoption, but it appears to the committee that consideration of the problem of the unstable adolescent girl and of the means of dealing with it must take full account of this character defect and of its consequences to the individual and to the community.

The Probation Officer's Findings

5. The emotionally unstable girl appears in all walks of life, but investigations by probation officers and psychiatrists reveal all too often an unfavourable environmental history. Frequently the normal home life is found to have been broken by the death or absence of one or both parents, or else there is such gross overcrowding or such disharmony among the members of the family that ordinary healthy adolescence is wellnigh impossible. The absence of parental love and understanding and control and the lack of stability and security in the home are a serious loss to a girl in her teens, and she may try to find compensations outside the home. She picks up casually a superficial knowledge of the "facts of life," makes undesirable acquaintances, and frequently comes into contact with the law.

6. Again, it may be found that the girl is unhappy in her work. She has left school at the age of 14 and immediately begins work in the first job that offers, whether or not it is suited to her ability or inclinations. Her outlook on life is changed almost overnight from that of a dependent child to that of a grown-up who, as long as she makes her weekly contribution to the family exchequer, may be independent of parental control, may seek her own recreation and friends of

either sex, and may spend whatever money she keeps for herself on personal adornment and pleasure. She is not interested in her work, she has no security in her firm, and she may drift from one job to another without striking root.

7. The war must take its share of responsibility. Irregular schooling, evacuation, sleeping in shelters, and bad housing may have accentuated any tendency to moral or emotional instability and may often have provided temptation. But there has also been in recent years, apart from the effects of the war, a general slackening of adult moral standards; the general trend of legislation and propaganda has weakened the sense of parental responsibility; the influence of religious and spiritual values has diminished; and family life has for many people lost much of its attraction and satisfaction. Against such a background it is small wonder that a proportion of girls go astray.

8. In some cases the girl has been brought up in an institution and has never known home life. For the first time she comes into contact with girls who have real homes and she feels her own inferiority in this respect. Having no sense of responsibility towards anyone, she is self-centred and seeks only her own gratification; and, being without knowledge of the value of the money she earns, or of the standards of behaviour in life outside the institution, she frequently finds herself in trouble.

The Psychiatrist's Findings

9. The circumstances mentioned above are those that probation officers find in the environment of girls appearing before the courts, but the psychiatrist can explore more deeply into the cause of the girl's trouble. A bad environment does not necessarily produce delinquency, and, indeed, it is a matter for wonder that large numbers of girls in atrocious situations rise above them and keep straight. The fundamental cause of the delinquency is usually found by the psychiatrist to be some defect of character-structure, not always amounting to a mental defect. It is often found that the undesirable behaviour dates from a period closely associated with the onset of puberty, occasionally starting some months or even a year before its onset.

10. In a minority of cases a degree of mental deficiency will be found. The I.Q. of this group is frequently below 70; if it is above 70 they are apt not to be regarded as mental deficiency cases because of a misinterpretation of the Mental Deficiency Acts. The point which it is necessary to bring out is that moral or social deficiency is not necessarily measured in terms of low I.Q. Certification under the Mental Deficiency Acts does not therefore necessarily depend on the I.Q., and these Acts should not be interpreted in this way.

11. In order to prevent any misunderstanding it may perhaps be pointed out that the term "mental deficiency" in the Education Act, 1921, has disappeared from the new Education Act, 1944, and that certification as mentally defective under the former Act has been abolished. Now, under the new Act the degree of disability of mind of a child is based entirely on the degree of educability, and it is only when the disability of mind is of such a nature and extent as to make the child incapable of receiving education at school that the child is reported to the Mental Deficiency Acts Authority as a subject to be dealt with by them. This procedure includes the child who, besides being educationally subnormal, should not be educated with other children either in her own interests or in theirs. It will thus be seen that certification as a mental defective can only be carried out now under the Mental Deficiency Acts.

12. In the case of a girl with an I.Q. of 60 or under the physical development is often retarded, and she appears from the physical point of view to be younger than her age and has a definitely childish manner. This type of mental defective is often facile, friendly, and apparently co-operative, and may even appear to be superficially bright. She frequently chatters away, but soon reveals the fact that she is lacking in self-criticism and that her powers of reasoning and judgment are poor. She does not really appreciate the social implications of her behaviour or the personal consequences.

13. On the emotional side there is a notable deficiency, that is to say, she is lacking in feelings of love either for her parents or anybody else; she has no sense of loyalty either to her home, her school, or employers; she has no sense of duty or

obligation to the community; she is incapable of friendship, although she not infrequently goes about with a girl who is somewhat similar to herself in tastes and temperament but whom she is quite ready to throw over or to blame if her own interests demand it. She is lacking in any kind of ambition; she seldom shows a preference for any particular type of occupation, and is lazy and lacking in drive and initiative. She is impatient of any kind of discipline or control and usually becomes sulky or hostile if she is criticized or thwarted.

14. If she steals she does it so stupidly and childishly that she is nearly always found out. She invariably tries to lie herself out of the difficulty but does it so badly that she is easily detected. If she steals she usually takes money, clothes, or jewellery for her own personal use. Her sexual adventures are also of a very elemental and primitive type. She is completely indiscriminating and will go with any man who makes overtures to her regardless of whether he is personally attractive. Girls of this type seem to be quite unable to visualize the future or to adopt a long-term policy; the gratification of the moment is the limit of their mental horizon.

The Home Life

15. Most of these girls of lowered mentality come from unsatisfactory homes. In many cases the mother is herself a mental defective or mentally subnormal, and quite often the father is of a similar type. The moral standards are frequently low and there is a complete lack of sense of social responsibility or of any spiritual values, so that the child has lacked any influence that might help to modify her own unfavourable innate tendencies. Quite often the parents quarrel or are separated or drink or are work-shy or frankly dishonest, and the girl has had no love from them. She has been ill-nourished and ill-clad and regards her home and her parents with hostility and often with fear. On the other hand in a few cases the home is of quite a good type and the parents and other children satisfactory, the patient being the one black sheep.

16. But mental defectives in terms of intellectual inferiority are in a minority. Most of the unstable girls who come before the courts have an intellectual capacity between 70 and 90, the commonest range being between 74 and 88, but an I.Q. of 100 may be encountered. Unlike the girls with an intelligence quotient of 60 and under, these girls often show precocious physical development, especially in the breasts and hips, and it is not uncommon for a girl of 14 or 15 to appear to be 17 or 18 in her general development. Emotionally they closely resemble those of a lower intelligence, but their actions are much more premeditated and organized, and they show more discrimination in the type of men they go with, deliberately choosing those who have money and, if they can get them, men with some physical attraction. They are cleverer at covering up their traces, and their lies are much more circumstantial and specious. They spend a great deal of time on making up their faces and adorning themselves, though they often do not trouble to wash and are sluttish about their undergarments. Their favourite reading matter consists of the weekly journals dealing with the love life of film stars, and they live in a fantasy world of erotic glamour. Frequently they are a good deal more intelligent and sophisticated than their parents, whom they outwit and despise. They sometimes appear docile and submissive to authority so long as they are definitely in its power, but their promises are like piecrust, and they are, as a rule, only waiting for a chance to get free in order to resume their former way of life.

17. These girls very often come from a broken home, but on the whole the parents tend to be of a higher mental level than those of the defective girls, though their moral standards are frequently very low and the home background is lacking in comfort and affection. Another type of home which may be productive of cases of this kind is that which is dominated by a very narrow and rigid set of religious values. In a certain number of cases, however, the home is quite satisfactory and the parents are decent intelligent people who have done their best to bring up their family to be honest and responsible citizens.

18. It is usually found that there has been no proper and adequate sex education.

19. There is a special type of girl which should be recognized. She is over-sexual in her behaviour and easily picked

up, but is essentially over-ingenuous, over-trusting, and over-credulous where admiration from men and what she thinks is romance are concerned. She easily imagines herself in love, but in fact has a less than average capacity for the non-sexual expression of affection and for any permanent love. Her behaviour, apart from her sexual behaviour, is not usually either asocial or antisocial—at any rate to begin with—consequently she is not a moral defective in terms of the Mental Deficiency Acts. Her intelligence level is not characteristic and may be high or low, though many seen in court are of low intelligence. She shows in many ways a general emotional immaturity, but this is often masked by the pseudo-sophisticated air lent by her sexuality.

This type of girl may easily acquire venereal disease or produce illegitimate children and may develop into a true nymphomaniac—i.e., a person who feels (and usually obeys) a very strong inner urge to behave sexually with any man who attracts her.

Such cases usually come under notice in adolescence but may not be discovered until they are in the early twenties. They are primarily a medical problem, and, if not of too low intelligence or too antisocial in other ways, can be helped by psychological treatment, which must be prolonged and often begin under residential supervision, which may suffice in itself. Every possible effort should be made to persuade such girls to co-operate voluntarily and undergo residential treatment. Punishment alone is unlikely to have a favourable effect on them.

II. Present Methods of Dealing with the Problem

20. Under the Children and Young Persons Act only girls under the age of 17 can be brought before the court as in need of care or protection, although the year or two after that age often prove the most difficult and dangerous for the emotionally unstable girl. The facilities available to the juvenile courts in dealing with her are entirely inadequate, especially in regard to approved homes, hostels, and lodgings. A member of the committee has described in the following words the probable experiences of the girl after her appearance in court:

"When she appears in court—either as being in moral danger or for petty theft—she may be put under the supervision of a probation officer and will really intend to settle down at home if she is given a chance by both parent and court to do so. As she has never been taught that she has any obligations in return for her 'rights,' she will resent any attempt to control her undisciplined way of life and will probably completely disappear for several days after the first row at home. When she is found again she has nearly always had sex relations with one or two men, sometimes more.

"Then will follow all the emotionally upsetting series of events—the full statement of her story to the women police, the stay in the remand home exchanging stories with her companions there, perhaps the interview with the psychiatrist—too superficial to help either girl or magistrate—the medical tests, and the appearance again in court with the gnawing anxiety as to what 'They' will do with her. This time perhaps she is given a chance in a hostel: owing to the shortage of the places it will have to be chosen by a harassed probation officer on account of a vacancy more than because of its suitability. The probation officer will assure her she will try and find somewhere else if she is really unhappy and will watch anxiously to see if she settles down. As before a short cut to everything will be wanted; and as these hostels so often have not the homely atmosphere and friendly welcome both girl and probation officer are trying to find, it is often only a question of a few weeks before she is off again. 'Too much religion,' 'Too many rules,' 'Didn't like the type of girl,' are some of the reasons afterwards given when she again appears in court. This time it will almost certainly be an 'approved school,' and a sobbing or defiant girl is led out of court feeling the worst that could happen has fallen on her. She will not go direct to the school but back to the remand home to await a vacancy in a school chosen by the Home Office. If the Home Office, on reading her reports, consider she is likely to respond to 'being classified,' she will be sent—sometimes after a wait of 4 or 5 months in a remand home—to one of the two classifying centres for girls. Here she will undergo tests of every kind, get perhaps a little more physical exercise than in the remand home, have to make new friends, get used to a new staff; and after 10 to 12 weeks of this, off she goes at last to her school."

21. Such an experience is obviously unsettling to a girl in her teens already emotionally unstable, and when her period of detention is over she returns to exactly the same environment

and influences that were probably at least partly responsible for her misconduct.

22. Not only are facilities for dealing with these girls inadequate, but those that are available are often of the wrong kind. It is wrong to treat as guilty of an offence a girl who needs and cannot find care and protection. An emotionally unstable girl requires a special type of remand home. Even when a period in an institution is the right course for the particular girl, care is not always taken to ensure that the right type of institution is chosen or that she is not placed indiscriminately among other more normal types of resident. Such lack of care is often responsible for unsatisfactory results, for it means that the girl's special condition and needs do not receive proper recognition and treatment. In short, existing methods of handling these girls are often likely to exacerbate rather than improve their tendency to misconduct.

23. The facilities that are available are not always used to the fullest extent. Medical officers of health, for example, are frequently unwilling to certify girls as mentally deficient even when this course would be the most appropriate way of dealing with them. There is also the complaint that there is insufficient co-operation between statutory and voluntary bodies.

24. Many girls could be helped to resolve their own difficulties of adjustment by psychiatric guidance, but the facilities available at out-patient departments or at psychiatric clinics are entirely inadequate and the number of psychiatrists available is far too few.

III. The Remedy

25. In order to deal effectively with these girls there must be, first, a fuller recognition of the general nature and causes of their misbehaviour and of the objects of treatment; secondly, there must be more facilities and skilled staff for the investigation and treatment of individual cases; and, thirdly, more clinics and institutions for the purpose of treatment and control must be provided.

26. Obviously, under the first heading will come the improvement of environment. Overcrowding, bad housing, and malnutrition must be eliminated. The raising of the school age, with the consequent longer period of school discipline, may help, and so should the effective application of the Ministry of Labour's schemes for guiding young people into suitable employment. In the latter schemes the assistance of a psychiatrist or a child guidance clinic may be helpful in finding the right type of employment for girls who appear to be emotionally unstable. Often all that such a girl needs is some activity that will bring variety, colour, and interest into her drab life, and this is just what the unimaginative decisions of officials fail to realize. There are many activities and outlets, whether as paid employment or as leisure time hobbies, that could be found or provided to help these girls to readjust themselves.

27. There are other social means of preventing the development of sexual and social misconduct, such as the strengthening of the ties between home and school, and the encouragement of the work of voluntary societies, and youth organizations such as clubs.

28. There must be more facilities and staff for the investigation of individual cases, apart from inquiries into environment. A full and skilled investigation requires the services of a psychiatrist. The present provision of psychiatrists is quite inadequate for full investigation of all the cases needing inquiry. Psychiatric investigation should take into account the girl's personality, temperament, intellectual capacity, sexual propensity, and the interaction between character and environment. Emphasis needs to be placed on the girl's social capacity rather than on her intelligence quotient. For this purpose the kind of research at present being conducted in Bristol and elsewhere in the assessment and classification of social deficiency should receive every encouragement.

29. Long-term treatment or at least prolonged supervision will be required by most of the girls, and it must be recognized that the efficient handling of a case involves a deliberate search for the best method of treatment for the particular girl concerned. Many more psychiatrists are required for investigations at child guidance clinics, observation centres, and out-patient departments, and for visiting the girls in their schools and institutions.

30. The latter necessity raises an important question of organization, for there will not for a long time be sufficient psychiatrists to provide a psychiatric service for all the schools and institutions to which these girls may be sent. It is suggested, therefore, that in the meantime particular approved schools should be selected for the purpose of receiving emotionally unstable girls in urgent need of treatment, and arrangements should be made for these schools to be visited regularly by psychiatrists who will supervise the progress of the individual girls and also advise the lay staff on matters affecting the treatment and control of the patients. A psychiatrist undertaking this work should hold a part-time appointment only, for it is undesirable from the point of view of his own skill that he should devote himself to this single aspect of psychiatry and from the point of view of the girl that he should be identified with the official control of her life.

31. The psychiatric treatment of emotionally unstable girls is extremely important, for the majority respond to the individual approach of a doctor who understands and sympathizes with their personal difficulties and emotional conflicts. The psychiatrist has the advantage of being an understanding outside person to whom the patient can talk freely with the knowledge that her confidences will be respected and that the doctor is there to consider her personal interests. No one else in her environment can qualify for this role, and yet it is just that relationship that the emotionally unstable adolescent girl needs. The psychiatrist can help her to build up a series of values which are socially acceptable and also acceptable to the girl herself. The chief difficulty he has to overcome is, of course, that the life which she has chosen, with its self-indulgence and emotional gratification, is far more attractive to her than anything he can offer.

32. The lay staff in charge of schools, hostels, or colonies to which this type of girl may be sent should be specially selected and trained. It cannot be expected that such girls will respond to treatment unless the persons in charge of them possess qualities of understanding, sympathy, and patience and have a real love for the girls in their care. People with these qualities are unfortunately few and far between, and at the present time methods and standards of training and preparation for the holding of such posts are entirely inadequate. Persons with a natural flair for this kind of work are needed, but they must also have adequate training, for, from the psychological point of view, it is often the well-meaning but ignorant people who do most harm.

33. Greater facilities are required for dealing with such girls. For girls from school-leaving age there should be greater provision of homes, hostels, and suitable lodgings under supervision. Certification under the Mental Deficiency Acts may be possible and the best course for certain types. Others are often better under the influence of an approved school or an appropriate hostel. For those of compulsory school age the provision of boarding special schools under the Education Act of 1944 is a solution.

34. Facilities required for the treatment of emotionally unstable girls are of several types. The average remand home is quite unable to cope with them in the early days of their control. Observation centres are badly needed for their reception while investigations are being made, by both the psychiatrist and the social worker. The necessity for long-term treatment for the emotionally unstable girl must be recognized. For the most part they are not likely to respond to a short course of discipline or training, and in most cases it is quite hopeless to try to treat them in a psychiatric out-patient department or child guidance clinic. They need a prolonged stay of perhaps two or three years in a suitable school or hostel or institution run on the colony system, where they would receive training and discipline combined with psychiatric treatment. In many ways girls of higher intelligence are more dangerous to the community than girls of a lower intellectual capacity. If they marry and have children they usually make bad wives and bad parents; and, because of their emotional immaturity and instability, they do not develop until very late, if at all, the capacity for maternal love or a sense of parental responsibility. At the present time it is almost impossible to keep girls under control long enough for any constructive treatment to be effective.

35. A most important need is for proper and adequate sex education and the training of adolescents in handling their emotional problems. This, as a matter of principle, should come from the parents, but if they are not capable of dealing satisfactorily with this essential aspect of the child's education it should be the responsibility of the education authority.

IV. Aftercare

36. The period after discharge from an institution or approved school is extremely critical. There are bound to be difficulties of adjustment to normal life. It is essential that these girls should be given every possible help and protection at this stage if they are to avoid a relapse. Facilities for adequate aftercare must therefore be provided. Magistrates should have the power to require that delinquents should place themselves under the care of specially appointed social welfare officers for a period of at least 12 months after discharge.

37. It is felt that the aftercare of girls should start almost as soon as they enter the approved school or institution, and that the aftercare officer should, all the time that the girl is away, be in close contact with the home, using her influence to reform the home while the girl is being reformed. Reconciliations between parents and training the mother in a friendly way can be undertaken during this period. Thus, when the girl leaves, the aftercare officer should already be the friend of both the girl herself and her relatives at home.

38. There is urgent need that more hostels under a hostel warden should be provided in conjunction with approved schools. Many girls would benefit by a short transition period in such a hostel before returning to their own homes. This would enable the girl to prove that she can work steadily and make a right use of her freedom under supervision before making her new start in the wider world.

V. The Limitations of Treatment

39. When all has been done that it is possible to do there will inevitably remain some girls for whom all help and treatment seem useless. In them the defect of character or of social capacity is so fundamental as to hold out little hope of transforming them into satisfactory members of society. They have neither the capacity nor the will to co-operate in anything that is done for them, and the moment they are liberated from control they will go back to their former bad ways.

40. It is important that this limitation of treatment should be recognized, for it is the failure of psychiatry to effect cures in these all but impossible cases that has tended to bring discredit upon psychiatrists and those who believe that the right method of treating these offenders is by methods aiming at reclamation rather than retribution. But the committee believes that when there are sufficient institutions, staffed by properly trained and experienced persons, and when they have had an opportunity to show what they can do after a sufficiently long period of years, it will be seen that the psychiatric approach to the problem is the right one and is successful in the great majority of cases, and that it is in the best interests of the girls themselves and of the community.

FRANCIS AMORY SEPTENNIAL PRIZE

In compliance with the terms of a gift under the will of the late Francis Amory of Beverly, Massachusetts, the American Academy of Arts and Sciences offers a substantial prize for outstanding work addressed to the alleviation or cure of diseases affecting human reproductive organs. The gift provides a fund the income of which may be awarded at seven-year intervals "as a prize and gold medal, or other token of honour or merit," to any individual or individuals for work of "extraordinary or exceptional merit" in this field. In case there has appeared work of a quality to warrant it the next award will be made in 1947. Awards will be made for what in the judgment of the committee on the Amory Fund appears to be the most outstanding contribution or contributions in the field as outlined and as based on published work and recognized accomplishment for the current seven-year period.

No formal applications and no essays or treatises from individuals are solicited, but suggestions will be welcome from any appropriate source that will be of aid to the committee in making a wise selection.

Recommendations may be addressed to the secretary, Amory Fund Committee, American Academy of Arts and Sciences, 28 Newbury Street, Boston, Massachusetts.

STORIES OF ENDOCRINE RESEARCH

THE ADDISON LECTURE

The first Addison Lecture was delivered at Guy's Hospital on Monday, Dec. 2, by Prof. E. C. Dodds, with Lord Cunliffe, the treasurer of the hospital, in the chair. The objects of the lecture, which has been established through a gift to the medical school of an old Guy's student, Dr. Harry Spon, are to commemorate the fundamental contributions to endocrinology made by Thomas Addison at Guy's in the middle of the last century; to indicate the importance with which this rapidly developing branch of medicine is regarded; to stimulate the interest of the student by introducing to him men with whose names and work he is already familiar; and to pay a compliment to certain distinguished endocrinologists by inviting them to deliver the lecture.

Prof. Dodds chose "Stories of Endocrine Research" as his title. Taking endocrinology as an example he reviewed various techniques or "disciplines" of research. He dealt first with the "Addisonian" or "Guy's" method. By careful clinical observation correlated with shrewd analysis of post-mortem findings it was possible for Thomas Addison to describe in 1855 the disease which was subsequently called after him, and to indicate that it was due to destruction of the suprarenal glands. By similar methods Sir William Gull in 1873 was able to describe the syndrome of myxoedema and associate it with the cretinism of infancy due to thyroid failure. These two great Guy's men were rather similar in character, both being forceful men of great personality. In clinical matters they were profoundly wise and almost tediously thorough. Addison, for instance, would remain at the bedside, doggedly determined to trace out the disease to its very source, for a period which constantly wearied the class and his attendant friends. Both men were greatly helped by Benjamin Harrison, the treasurer of Guy's at that time.

Confirmation and Synthesis

The fundamental observations of Addison were confirmed by Brown-Séquard on animals from which the suprarenals were removed. In 1931 Swingle and Pfiffner were able to maintain life in adrenalectomized animals by means of a crude cortical extract, and to-day it was possible to restore to health patients suffering from Addison's disease by using the synthetic hormone desoxycorticosterone.

Gull's observations were confirmed by Ord, who gave the cretinoid condition the name of "myxoedema," and it was reported by Kocher that this state was liable to supervene after complete thyroidectomy. In 1891 George Murray treated a case of myxoedema with an extract of sheep's thyroid; in 1915 thyroxine was isolated in crystalline form by Kendall, and it was synthesized in 1927 by Harington and Barger.

Often the method of clinical observation hung fire, and this was shown in the case of Thomas Willis, who in 1681 described the sweet taste of the urine in diabetes. Little progress was made with this subject for two centuries, until von Mering and Minkowski made the chance discovery that removal of the pancreas produced diabetes. Six more years elapsed before in 1895 it was observed that ligation of the pancreatic duct produced degeneration of the gland but not diabetes. It was this observation that prompted Banting in 1920 to attempt to make an extract of the islet tissue after ligaturing the duct in order to destroy the enzymes which might be antagonistic to the islet hormone. This planned experiment by Banting and Best led to the discovery of insulin.

Incidental Discovery

In sharp contrast was the type of research in which a man set out to discover one thing and found out something else. The isolation of vitamin C by Szent-Györgyi was an example. For he set out to study biological oxidation, which he considered to be a function of the adrenal cortex. Having isolated from it the powerful reducing substance "hexuronic acid," he later showed that it had the antiscorbutic properties of citrous fruit extracts and was, in fact, ascorbic acid.

As his last example of how scientific discoveries were made Prof. Dodds chose the story of the sex hormones. With the effects of castration known for years, and the description by

Allen and Doisy of a simple method of assaying ovarian extract by the vaginal smear technique, the stage was set for the isolation of the oestrogenic hormone. At about this time the fundamental facts of sterol chemistry were being elucidated, and the structure of the cyclo-penteno-phenanthrene ring system was finally elucidated by Rosenheim and King. In 1927 Aschheim and Zondek discovered the urine in pregnancy to be a concentrated source of oestrogenic substances, and from this fluid, with the essential information provided by Windaus and Wieland and by Rosenheim and King, five oestrogenic compounds were isolated almost simultaneously by Butenandt, Doisy, Marrian, and Girard in 1932. From the fact that at least five separate oestrogens had been isolated from this sterol structure it occurred to Dodds to see how specific the molecular structure was for oestrogenic activity. After a while it was found that the phenanthrene structure was not essential, and anol, a simple benzene compound, was found to have an oestrogenic potency which appeared to be high. On repetition of the work, however, it was realized that the activity of the original batch of anol was due to a contaminant. Pursuing the work in collaboration with Sir Robert Robinson, the compound stilboestrol was finally made and found to have a very high degree of oestrogenic potency.

In concluding his lecture Prof. Dodds emphasized that research was not only for heaven-sent geniuses—an impression which was largely due to the invariable scientific practice of writing the paper backwards, which gave the research an appearance of being a carefully thought out, orderly procedure. In fact, however, the research was done by a series of blundering steps in which the worker was rather like someone in a dark room scrambling for the switch and tripping over the furniture. When he had once found the switch and turned on the light he was able to arrange the furniture in an orderly manner.

HEALTH SERVICES IN PALESTINE

Prof. Samson Wright, who visited Palestine in the earlier part of the present year, gave a lecture at Palestine House, London, on Nov. 28 on the health services in a country which he described as straddling between the patriarchal period and the twentieth century. During the twenty-five years of the mandate Palestine has become Westernized in places and has moved forward everywhere, but it still comprises an extraordinary mixture of ancient and modern. Its population is under two millions, including 600,000 Jews and twice as many Arabs. Each of these races has increased roughly by half during the last quarter of a century, but the Arab increase is largely due to high natural fertility and the Jewish increase largely to immigration. The Palestinian budget is over 20 million pounds, but the allocation of the Palestine Government for health services is only some £600,000, with an estimate of £800,000 for the coming year. These figures are much higher than in the earlier years of the mandate, and have risen steeply during the war, but they are still comparatively small. The Government hospital service, according to Prof. Wright, has in the main been directed to the service of the Arab population. In the Government hospital in Jerusalem the overwhelming majority of the patients and a large proportion of the staff are Arab. The Jews have more or less developed their own services, and are spending on them for the current year over two million pounds, less than £200,000 of which is contributed from outside Palestine.

Prof. Wright gave some vital statistics. In 1925 the Jewish death rate was 14 per thousand; it had steadily fallen and was now 7 per thousand. The Arab (Moslem) death rate had fallen during the same period from 29 to 17. Jewish infant mortality had fallen since 1925 from 132 per thousand to 56, and Moslem from about 200 to 100. Intestinal infections have decreased, and there has been a great fall in the incidence of trachoma, which immediately after the war of 1914-18 was some 30%, and now is a small fraction of 1%.

Prof. Wright described the curious form of social health insurance obtaining in Palestine. It is run by the National Federation of Labour, a Jewish trade union organization instituted at the beginning of the mandate. In 1944 the membership was 135,000, and as the arrangements include the breadwinner's family it follows that a substantial proportion of Jewish people

are provided for in this way. Last year £50,000 was paid by the Government to the sick fund of this organization, which has built its own clinics and dispensaries and employs its own doctors. The doctors in this organization are dissatisfied with their salaries. A practitioner of the consultant class receives only about £700 a year, which, taking into account certain deductions that are made and the high cost of living in Palestine, is equivalent to no more than £500 in this country. But Palestine has a surplus of doctors, and if a man resigns there are two ready to step into his shoes. It is said to be impossible to get the Arabs to agree to tax themselves for health services. The most desirable thing for the health of Palestine would be to obtain Arab contributions to health services proportional to those which the Jews are making.

Prof. Wright painted a rather sombre picture of some of the general health and social conditions in Palestine. Overcrowding is rife. In this country one family in a room is something of a scandal; in Palestine it is regarded as a lucky family. There is a good deal of malnutrition, particularly in the towns. Hospital accommodation is very inadequate for certain classes of patients, for example the tuberculous. The most crying need is for accommodation for mental cases. Unless the mentally disordered person is likely to murder his neighbour he is allowed to remain in the family and the community. Prof. Wright had also been distressed to find, even in a small city like Jerusalem (200,000 population), how little contact there was between the British authorities running their hospital and the Jewish authorities running theirs only ten minutes' ride away.

"REMPLOY"

The Disabled Persons' Employment Corporation, Ltd., a non-profit-making organization, was set up by Mr. Ernest Bevin when Minister of Labour and National Service to provide employment in factories (and in homes for the home-bound) for all classes of registered disabled persons who are so severely handicapped as to be unable to obtain employment otherwise. It is establishing factories which are known as "Remploy" factories. The first was opened at Bridgend, Glamorgan, on Nov. 27, 1946, and the second at Salford on Dec. 9. The Corporation anticipates that eight factories will be operating by next April and a further forty in the ensuing twelve months. It is hoped to include the following northern towns: Oldham, Leeds, Sheffield, Wakefield, Bolton, Preston, and perhaps Burnley, Bradford, and Wallasey. Wages are paid during instruction as well as for subsequent employment on productive work—the full trade rate being applicable to competent persons. The factories' products bear the name "Remploy."

Special factories for the tuberculous will be established where needed, and it is hoped that one for post-sanatorium cases will be functioning in twelve to eighteen months' time. Special provision will be made for epileptics, but at the moment the problem is complicated by the reluctance of some of those so disabled to register themselves. The factories will supply raw materials, tools, and instruction to home workers, so that in time a chain of "cottage industries" may be built up.

CARE OF THE ELDERLY

A conference on the care of old people arranged by the National Old People's Welfare Committee, in association with the National Council of Social Service, was held on Nov. 29 and 30 and attended by about 420 delegates.

The Rt. Hon. James Griffiths, Minister of National Insurance, said that increased old age pensions had been paid from the first week in October, when there were 4,100,000 pensioners. About 1,900,000 old folk who were previously receiving pensions at the basic rate of ten shillings or twenty shillings (married couples) a week were now receiving pensions at the twenty-six shilling or forty-two shilling rate. The effect of these higher pension rates was to increase the expenditure on old age pensions from about £127 millions to about £268 millions a year.

Sir Ernest Rock Carling referred to the National Health Service Act and urged that the old people should be considered. In old age the dividing line between health and

sickness was very narrow, and rehabilitation should be studied in order that beds might be freed. Adequate description of the distressing circumstances of old people in many institutions would need the pen of a new Dickens, and tribute should be paid to the staffs who worked so courageously in distressing surroundings. Dr. Marjory Warren gave a challenging address and contrasted the usual dependence of the aged with the Chinese custom of giving to age the greatest respect, and called for "a change of heart." The problem was not one of poverty, as the aged included all classes in the community. People were living longer, houses and domestic help were much more difficult to obtain, and our mode of life had changed, with a greater instability and mobility of the family, faster transport, wireless, and the different position of women. Children should be taught to respect age, and old people should be regarded as the head of families for as long as possible. The question "Are the old worth preserving?" could be answered on ethical, educational, and economic grounds. The broad medical principles were: full medical and nursing care; long-term treatment of sickness in suitable surroundings; homes with specially trained personnel for all types, including the bedridden; research into diseases of the aged and ageing; and social workers to banish want, loneliness, monotony, and boredom. This called for the unification of authorities and societies interested in the problem, and for the segregation of types of old people needing different treatment.

A MEDICAL PLAY

Mr. Warren Chetham Strode will be remembered for his recent successful play *The Guinea Pig*. His new play, *The Gleam*, at the Globe Theatre, is successful, among other things, in demonstrating that whatever else it may do the future National Health Service Act does not make good theatre. The play is well acted and adequately produced. Mr. John Robinson and Mr. Hugh Kelly, as an established and a newly qualified doctor respectively, give performances which are much more convincing than the usual stage presentations of medical men, though there are some minor medical errors.

What the author has attempted to do is to dramatize the future of national planning, particularly as it relates to the National Health Service. There is much discussion of the difficulties and the disadvantages of the new Act. There is a health centre as it might be in 1949. The doctor who is the principal character believes in the principles underlying the scheme but finds his professional freedom sorely curtailed. There are similar conflicts in the background. Mr. Wyndham Goldie hits off extremely well the reaction of a self-made man when the town-planning of which he approves involves the demolition of his own house. Mr. Harry Ross, as a local councillor and transport contractor, believes implicitly in the nationalization of medicine and in town-planning but objects vehemently to the nationalization of transport. The author has given his best lines to the less important characters, and much of the discussion that goes on has an air of unreality about it. His final answer to the problem of reconciling individual medical freedom with chromium-plated health centres and streamlined planning is that the young doctor, who at one stage is bent on abandoning medicine and turning to farming in Kenya, should join the general practitioner he admires in trying to work what is good in the Service and resist what is bad.

Active preparations are being made for the issue of a third edition of the *World List of Scientific Periodicals*. The last edition of this invaluable scientific reference work, issued in 1934 and covering the years 1900-33, is now out of print though still in constant demand. It contains upwards of 33,000 titles of journals and includes the holdings of some 180 libraries in Great Britain and Ireland. The new edition, which is designed to include all the scientific and technical periodicals that appeared during the period 1900-47 as well as the holdings of additional libraries, will therefore be considerably larger. Librarians are being asked to co-operate as before by sending particulars of all those journals on their shelves that do not appear in the second edition or are shown there as having no location in this country, to: The Secretary, World List of Scientific Periodicals, c/o The Zoological Society of London, Regent's Park, London, N.W.8. Further information may be obtained from this office.

Reports of Societies.

LATE RESULTS OF PARTIAL GASTRECTOMY

At a meeting of the Liverpool Medical Institution on Nov. 7, with Mr. J. B. OLDHAM (Vice-President) in the chair, both the surgical and the medical aspects on operation for peptic ulcer were examined.

Mr. KIRK WILSON mentioned the almost insuperable difficulties in continuing the usual follow-up during the war years, but quoted a personal and consecutive series of 148 cases of partial gastrectomies done for simple peptic ulceration in the years 1934-9 inclusive. In the series 104 had a gastric, 40 a duodenal, and four a jejunal ulcer. Three of the jejunal ulcer cases had gastro-colic fistulae, and in four of the gastric ulcer cases a gastro-jejunostomy had to be undone as the first step in the operation. Over 50% of the duodenal ulcer patients were under 40 years of age, while 65% of the gastric patients were over 40. During the same period, of 117 cases of carcinoma of the stomach, 48 were submitted to gastrectomy. In the high gastric ulcer, the size of the crater, the degree of penetration and fixation, and the failure to respond to medical treatment were the main indications for operation. Ulcers of the pyloric antrum and canal were treated surgically without undue delay on account of their tendency to undergo malignant metaplasia. The main indications for operation in duodenal ulcer were repeated perforations and recurrence of symptoms after several courses of intensive medical treatment in hospital. The Polya-Moynihan operation was done for 44 patients, the Hofmeister operation for 45, and the "physiological" for 59. The over-all mortality was 8%. In exactly half of these deaths necropsy showed that the cause of death was pneumonia and that healing had occurred without infection in the peritoneal cavity. One pulmonary embolus was recorded, and in three cases in which permission for a post-mortem examination was unobtainable it was suspected that a leak from the duodenal stump had occurred. In more recent series the mortality and morbidity had been much reduced by (1) more intensive pre-operative preparation to correct minor degrees of anaemia and hypoproteinaemia, and (2) the recent phenomenal advances in anaesthesia. The relaxation obtained with *d*-tubocurarine chloride compared very favourably with that produced by a perfect spinal anaesthetic, and after this drug chest complications had not caused any anxiety. The importance of medical supervision in the more remote post-operative period and the value of a properly organized continuation clinic were emphasized.

Medical Point of View

Dr. ROBERT KEMP said that he hoped there would be no "surgery versus medicine" trend in the discussion, for the surgeon operated only on medical failures and the physician only saw the bad results of surgery. The physician must have clear-cut indications in his own mind, must know the risks and drawbacks of operation, and must follow up the late results. In most complicated ulcers and many gastric ulcers the indications for partial gastrectomy were clear, but in duodenal ulcer it was an individual clinical decision as to when the lesion was beyond permanent help from medical treatment. Apart from the immediate post-operative risks there were those of later stomal ulcer, pulmonary tuberculosis, anaemia, small stomach, and dumping, with lassitude, malnutrition, gastritis in the stump, and the need for further dieting. From a series of 148 consecutive partial gastrectomies done by Mr. Kirk Wilson between 1934 and 1939 71 patients traced in 1946 were reported as 55% excellent results, on full work and full diet, and with no significant symptoms; 28% showed good result, full work, and good health, but needing a modified diet; 17% showed fair result, in that despite dieting they still had some symptoms and lost some time from work. In every patient seen there had been a definite improvement on the pre-operative state. The results in duodenal ulcer cases were particularly good, but despite this it was still the physician's duty to keep his patient to a regime strict enough to obviate the need for surgery. If, however, he failed in this the operation should be done under optimum conditions with full preparation and convalescence in the medical wards.



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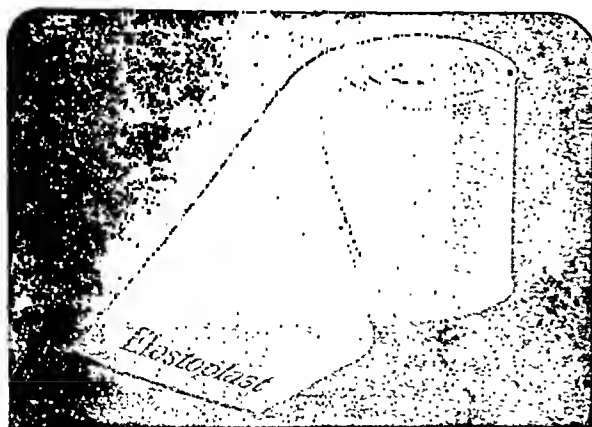
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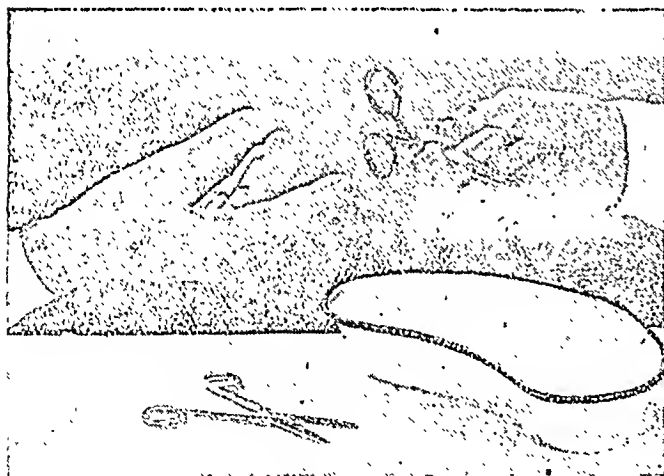
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Analysis of a Further Series

Mr. COSBIE ROSS discussed a series of 160 consecutive gastrectomies. Eight of these patients (5%) died as a result of the operation: three from myocardial failure, three from bar pneumonia, one from pulmonary embolus, and one during the operation. Three patients died at a later date: one from carcinoma of the oesophagus, one from carcinoma developing in the stomach sac, and a third from a perforated stomal ulcer a year after gastrectomy, previous to which he had perforated on two occasions. Of the 55 cases followed up, 47 were extremely grateful, and of the remaining eight, one had advanced phthisis, one had syringomyelia, and six, although improved, had mild dyspeptic symptoms. No one complained of even a moderate degree of pain. The short afferent loop in making the anastomosis was important. Recent experiments had shown that the daily intramuscular injection of 30 mg. of histamine-base in beeswax into laboratory animals caused a torrent of acid secretion, and in gastrectomised dogs always produced a stomal ulcer when a long afferent loop was used (never with a short one); and the anastomosis should be stercolic close to the duodeno-jejunal junction.

Series from University Department of Surgery

Mr. A. CLIFFORD BREWER reported on some 362 partial gastrectomies for duodenal ulceration. One fact was pre-dominant: subtotal gastrectomy, with removal of the whole pylorus and combined with the use of a Hofmeister stomach, yielded excellent results, but results were by no means so good when the pylorus was left behind. A two-stage operation in difficult cases appeared very satisfactory so long as the second stage followed within twelve weeks.

IMMUNIZATION WITH HUMAN BLOOD
DERIVATIVES

Dr. WILLIAM GUNN delivered his presidential address before the Fever Group of the Society of Medical Officers of Health in Nov. 8, dealing with the advances during the last twenty years. He briefly described the various methods of withdrawing, harvesting, and storing plasma and serum. The loss of protective potency of serum with age, appreciable in less than 1 year even when stored at 4°C. and due apparently in large measure to the presence of denaturing enzymes, had been countered by freeze-drying *in vacuo*, whereby further loss was probably averted as in the fourteen-year-old sample exhibited. As preservatives tended to interfere with the drying process, various substances had been tried, with the result that phenol, originally selected as the one of choice, was retained as possessing the best all-round antiseptic action; the time taken in drying was only slightly lengthened provided that the ratio of the total volume to the surface area was kept low. The only real disadvantage incidental to the use of phenol was that it could not be added to serum in stronger concentration than 5% without causing coagulation of the proteins.

Homologous Serum Jaundice

No proved cases of homologous serum jaundice had been encountered in some 20,000 administrations, but the long incubation period and the difficulties of follow-up in a large area such as London had to be considered. In recent years donors had been supervised for four to five months after the withdrawal of blood, but sub- or non-icteric hepatitis remained a possibility which even repeated blood counts and van den Bergh tests might fail to demonstrate. There was insufficient evidence to show that antiseptics, drying, or even heating to 57°C. for 4 hours, as had been done on gamma globulin specially stabilized for this purpose, were effective in neutralizing the causative agent in homologous serum jaundice; probably the complicated physico-chemical processes involved in the separation of human plasma proteins into their constituent fractions alone sufficed.

A strict age- or weight-adjusted dosage (e.g., 0.1 ml. per 1 lb. (0.45 kg.) bodyweight recommended for gamma globulin) did not agree entirely with common experience. At ages 0-1 year

and 3 years upwards the effectiveness of the prophylactic against measles tended to be artificially enhanced compared with the relatively susceptible 1-3 years group, and something over the average dosage was needed if protection was regarded as imperative.

Convalescent Sera

The appropriate dose of convalescent rubella serum which had been collected for purposes of prevention in women in the early months of pregnancy was not yet determined, but probably lay between 10 and 20 ml., depending on the interval between the date of exposure and time of injection. Preliminary trials had shown the protective titre to be rather lower than was usually found in the measles antiserum, possibly because the infection stimulus was less intense. The gamma globulin fraction would naturally be much more effective, approximately twenty-five times more potent, as had been reported in trials of mumps convalescent serum by S. S. Gellis, A. C. McGuinness, and M. Peters (*Amer. J. med. Sci.*, 1945, 210, 661).

PROPHYLAXIS OF ERYTHROBLASTOSIS FOETALIS

At a meeting of the North of England Obstetrical and Gynaecological Society, held at Sheffield on Nov. 1, Dr. C. C. BOWLEY said that the erythroblastotic infant arose once in less than 300 labours, and had a mortality rate of nearly 80% if untreated, while 10% of those infants who did recover were affected by central nervous system lesions or hepato-splenomegaly. Erythroblastosis foetalis should be anticipated by the routine Rh typing of the blood of every pregnant woman, and where the woman was Rh-negative an examination of the blood for the presence of atypical agglutinins should be carried out at the eighth month in primigravidae and at least once before the eighth month in multigravidae. Previous transfusion should be considered as having the same effect as a pregnancy, and all emergency transfusions should be carried out with Rh-negative blood. On the discovery of atypical agglutinins their titre should be determined and re-determined each month until delivery, and monthly titres were needed in every multipara with a definite history of children affected by erythroblastosis foetalis. Vitamin K should be given to the Rh-negative mother before delivery. It was effective if taken orally, combined with the administration of bile salts to break up the fat vehicle and to obtain maximum absorption as little as four hours before delivery; when given to the child it should be in a watery solution and administered by intramuscular injections. Blood transfusion with a fresh Rh-negative red-cell-concentrate should be effected early.

A meeting of the Chelsea Clinical Society was held at the South Kensington Hotel on Oct. 8, the title of Dr. Ronald Jarman's presidential address being "Modern Anaesthesia." Dr. Jarman gave a comprehensive review of the history and latest developments in his specialty, and an interesting discussion followed in which many members joined, these including Dr. Archibald Marston, Dr. Hancock, Mr. Ivor Back, Mr. Michael Smythe, and Dr. Carnac Rivett.

The 44th annual meeting of the Medical and Dental Defence Union of Scotland was held recently in Glasgow, with Prof. T. K. Monro as president. The report of the council showed that during the past year the membership had increased by 279, and the number of members on the register was now 5,742. The financial position continued to be strengthened, notwithstanding the waiving of subscriptions from members in H.M. Forces—a concession which is to continue for the current year. It was stated that cases continue to arise in which the lack of proper records makes the defence of claims more difficult. This is specially noticeable where casual dental patients are concerned. The Union impresses on its members the need for careful records of consultations, treatments, appointments, and telephone calls, together with all information on the progress of cases. In particular, if a certain line of treatment is advised, but rejected by the patient, the fact should be noted. Such records, being contemporary evidence of what transpired, are of great value in the event of a dispute arising at a later date. The Union participates in the work of a joint co-ordinating committee with the two defence societies which have their headquarters in London.

Correspondence

Statistics in the British Zone

SIR,—On behalf of unofficial vital statisticians I thank you for your two articles on conditions in the British Zone in Germany (Nov. 30).

If one averages the death rates of your Table II on page 827 we have 14.3 per 1,000. The rate of mortality in the first six months of a calendar year is higher than in the second six months, so this is (other things equal) an overestimate, but we may take it. As you point out, gross rates of mortality of that order were common enough in England and Wales a generation ago. But then the rate of infant mortality was often higher than that recorded for Germany in the first six months of 1946 (99.5 per 1,000 live births). In 1912, however, the rate of infant mortality in England and Wales was 95 per 1,000 live births and the gross rate of mortality 13.3 per 1,000 living. This, however, cannot properly be compared with the German figure because in 1912 the birth rate in England and Wales was 23.8 per 1,000 while in Germany in 1946 (six months) it was only 14.6. Had the latter been the rate in England and Wales in 1912 the death rate would have been about 12.6 instead of 13.3. It is also possible that in general the age and sex constitution of the German population was more favourable to low mortality than that of England and Wales a generation ago, because the fall in the birth rate in Germany lagged behind that in England and Wales, and so the optimum constitution may have been reached later. I do not know.

On the other hand there are factors which would artificially raise the death rate in Germany. (1) Many men of military age are prisoners of war; their absence may not be compensated by an influx of workers to the Ruhr. (2) The immigration into the British Zone of refugees "in very bad condition." The statistical effects of these can only be guessed. We do have left a terribly wide field for emotional conjecture. Of course a statistician always asks for more data and sometimes forgets how hard it is for overworked officials to collect them. I do not; but I still press for a census of the population by sex and age and for tabulation of deaths by age, sex, and main causes.

We may, I think, safely believe that in the first half of this year the rate of mortality in the British Zone was some 10–15% higher than in England and Wales a generation ago. Death rates are not perfect indicators of human conditions—a low death rate is compatible with great misery—but they are the easiest to measure accurately. Sample surveys of weights are valuable, but need explanation. One weighs all at work in a factory on Jan. 1 and repeats the observation on Feb. 1. The two sets will not generally be all the same people owing to sickness-absence and labour turnover.

I am *not* suggesting that our colleagues in Germany do not know these elementary facts, only that the detail of operations should be published; otherwise partisan criticism is inevitable. We as a profession are the last people in the world to forget Walter Bagehot's saying: "How much of real suffering is there that statistics can never tell." But we do know the value of statistical indices.—I am, etc.,

Loughton,

MAJOR GREENWOOD.

Physiological Rest

SIR,—It is good to find Mr. Norman Capener (Nov. 23, p. 761) giving fresh publicity to the views of Hugh Owen Thomas and Sir Robert Jones, views which often now get lip-service but whose fundamental principles are apt to be obscured by a mass of excrescences. I would ask your courtesy to supplement Mr. Capener's thesis by a few suggestions of modern improvements.

For instance, he illustrates two pieces of apparatus to abduct the shoulder, but omits the very simple device of balancing the wrist on the top of the head by a wristlet fastened to a webbing cap of the type used by footballers. This is adequate in nearly all cases of deltoid paralysis and avoids putting the weight of metal apparatus on hip muscles, which are commonly weakened simultaneously.

Then the rather complicated finger and wrist apparatus which he illustrates can nearly all be replaced by "perspex" (bomber

glass) moulded either to the limb or to a plaster model. Unlike leather apparatus it needs no metal struts, while it is more readily moulded in several planes than is the equally light "vulcanite." The physiological position of thumb and finger in opposition and moderate flexion can be maintained by simple roll of "perspex" about the size of Churchill's cigar. If the long extensors are weak, the roll can be made about 2 in. (5 cm.) in diameter, and these are almost self-retained steadied by a tape round the wrist.

Plaster of Paris, which is recommended for many conditions has numerous drawbacks, one of the chief being its weight and, as the author points out, the ease of its application does not imply that it is easy to apply well; and it is in these days a common source of much human misery. The hand splint illustrated, while maintaining a good posture, cuts out a active function, whereas the "perspex" roll already referred to enables many actions to be carried out by the thumb and fingers, while still maintaining good posture.

Similarly, scoliosis of the type illustrated can be more comfortably supported by a buttress of "perspex" or of compressed celluloid attached to an ordinary ladies' corset; and these have the advantage of filling out the hollow so as to give a better set to the clothes. The Goldthwait spine brace, which is constructed on the same principles as the Taylor brace, has the great advantage that, being made of spring steel, it is more supple, allowing rotary and lateral movements without antero-posterior ones.

For the knee, where movement is to be eliminated but no weight-bearing, as in chronic arthritis, a moulded posterior trough of "perspex" is light and efficient. Where later instability needs control but flexion is desired, the trough for calf and thigh can be separate and joined by a pair of light steel hinges.

One agrees heartily with Mr. Capener's warning against the evils of the bed posture commonly seen in hospitals, but regrets that he did not refer to the extreme value of the prone position with the chest supported on a firm wedge; this allows exercise of the glutei, spine, and lateral abdominal muscles in a shortened position, which builds them up astoundingly in such cases as poliomyelitis and quiescent tuberculosis of the spine. One feels a little nervous at the mention of "regional surgical workshops," for though this is in line with the principles of the National Health Act, there has in each of the great wars been a good deal of standardization under the general supervision of master orthopaedic surgeons. But the great need at present, as stressed not long ago by Professor McMurray in his presidential address to the British Orthopaedic Association, seems to be to induce the younger generation of surgeons to devote time and interest to fitting their appliances to the needs of individual patients and specific types of diseases—e.g., something which may be admirable for a foot-drop of lower-neurone origin may be quite harmful in one in a spastic cerebral palsy.—I am, etc.,

Bath.

M. FORRESTER-BROWN.

The Plebiscite

SIR,—I was disturbed to find in the *Journal* of Nov. 30 letters suggesting, for a variety of reasons, that we should answer "Yes" in the referendum. They seemed to me to be evidence of muddled thinking. There was the point of view expressed that there could be no harm in discussing regulations *without prejudice*. If we discuss them at all we imply acceptance of an Act with which we have expressed our profound disagreement and we know from his own lips that Bevan is not prepared to enter into negotiations with us. We also know into what position our discussions—*without prejudice*—on the matter of "compensation" manoeuvred us. Why, then, should we delude ourselves?

Again, there was the point of view expressed by some that the National Health Service Act is now law, that the Government were given a mandate by the vast majority of the country to make it law, and that, even if we consider it to be a bad law, we should not oppose it but obey it and co-operate with its framer. I have even heard the view expressed that Socrates drank poison at the instance of the laws of Athens, which he obeyed though he thought them evil, and that therefore we should follow his example. Here is an analogy indeed! Are we too to commit suicide? It is more than doubtful if

overnment had any mandate at all from a majority of the people as regards the National Health Service Act. The "vast majority," even yet, are largely ignorant regarding most of its details, and if they were not would probably be horrified at a good many of them.

There are inherent in this Act a definite and deliberate attack on personal liberty, an obvious urge to dominate, oppress, and control—a step not unlike some of those first taken by a man named Adolf Hitler. If we believe that Act to have in it the seeds of future evil—evil not only for ourselves but for our children—for freedom's sake let us say so and stand firmly together. Had there been people in Hitler's Germany who, at the beginning, had had the courage to say, "These things are bad; we must and shall oppose them!" and not, "These things are the law of the land, so we must obey lest we get into trouble," Belsen and Dachau might never have existed and the second world war might never have happened.

In any case our fighting Chairman, Guy Dain, has surely made it clear that there is nothing in the Act which says we must join a service of which we utterly disapprove, and we break no law by not doing so. Let us remember that, and remember too what we have already gained by unity and courage; and let us, for the honour of our profession, retain that courage and unity for the battle which lies ahead of us.—I am, etc.,

A VICTOR RUSSELL,
Chairman, S. Staffs Division, B.M.A.

SIR.—Fears which I expressed in a recent letter to you—that some, possibly many, doctors who replied "Yes" to the question asked in the plebiscite would, if they had understood the report of the question fully, have answered "No"—have proved to be far from groundless. At a recent meeting of my local Division, called to discuss the matter, it was obvious that a number of men had already replied "Yes" under a misapprehension, and it was indeed pathetic to sit there and realize more and more as the meeting went on that if only the plebiscite question had been better worded the replies would have been (I estimate) 95% "No."

The root cause of the trouble appears to have been that so many men have probably not had the leisure in which to read all the discussions and articles which have been published in the past few weeks. When finally the blue paper arrived, thoughtfully accompanied by a 2½d. stamped envelope, they opened it full of enthusiasm, expecting (rightly) a simple question to be answered. The word "negotiate" misled them. And, feeling that all fair-minded men should be at least willing to negotiate, they fell into a trap (unintentionally placed before them) and replied "Yes."

Dr. N. Beattie (Nov. 30, p. 834) makes the good and obvious point when he expresses the opinion that in this plebiscite we should have been asked simply and straightforwardly whether we were willing to work the Act as it now stands on the statute book. Brief notes in block letters explaining that this would mean giving way completely upon certain very important points, already decided by the majority of doctors to be indispensable in an Act, might well have appeared on the form. Is it too late now to publish in a prominent position in the *Journal*, or to circulate to doctors, a request for a reconsideration and a further reply bearing these implications in mind? I suggest that the number of "No" replies would be thereby largely increased.—I am, etc.,

A. W. R. EARDLEY.

Coine.

SIR.—Having taken a more active part in the controversy over the National Health Service than your correspondent, Dr. L. P. Lockhart (Nov. 30, p. 835), I would like to comment on some of his views. Many discussions with members of the public have convinced me that they are only concerned with the formation of a unified service free of doctors' bills. They do not realize that our opposition has never been against this—indeed the contrary is the case—but is directed against the "nationalizing" of the profession, which is necessary for the Government to obtain control of medical certification.

Your correspondent stated that we must not let our "interest" be jeopardized without a struggle, and yet, having looked at the far horizon and seen streams of lava flowing from many political volcanoes, he seems to advocate a jump into our local volcanic stream in order to attempt to direct its flow. I would

suggest that we may be able to do something from outside, but once in the stream we shall be engulfed and helpless.

I agree that the Minister may be different now his Bill is law, and will formulate regulations which will probably be attractive, especially financially. He will then proceed, at a later date, to modify them as conditions make the profession more "ripe for plucking." Mr. Bevan has ignored the views of our representatives from the first, although he tells the public that he has been in "consultation" with us. We are his technical staff upon whom he will rely for the success of his Bill. This does not seem to me to be a democratic procedure but is the action of a Minister who knows no compromise.

Dr. Lockhart asks what we should say if a union held up the work of the country because it did not like an Act. This is of course a likely form of reaction and seems to be the only language the Government will understand. However, I must point out that, should the majority refuse service at a later date under the new Health Act, we shall continue to serve the public, but not under the terms of the Act—a vastly different thing from "holding up the work of the country."

May I refer to the "principles"? These have been formulated by representatives briefed by each Division, and Dr. Lockhart may have a hand in the briefing of his own representative. A reply to the plebiscite of "Yes" will imply that the individual is prepared to throw the principles of the profession overboard if the regulations are sufficiently attractive. This implication is inescapable and to my mind was not made sufficiently clear in the literature sent out with the plebiscite form. Our principles are sound and reasonable and their incorporation in the Act would have left us free and would still have given the people the service they wished. Let us stand by our principles, and our prestige will suffer far less than if we become Mr. Bevan's yes-men.—I am, etc.,

Rotherham.

ALAN TAYLOR

SIR.—The reason why I have answered "No" to the plebiscite form is not from a desire to "slam any doors" but because I consider the National Health Service Act to be another nail in the coffin of the freedom of this country. Under the Act my life, in the long run, would probably be very much easier. I would, in the ultimate future, enjoy the benefits of a fixed—or nearly so—income, regular hours of work, a rota system of night work, locum arrangements for holidays, fewer practice expenses, etc., but, as I have said to many ardent local Socialists, I went into medicine and general practice with my eyes wide open, and if I was not prepared for irregular hours, night work, and being "on duty" for 24 hours a day I would not have taken on the job.

As the Bill is now law, we can only discuss details such as terms of service, which can be altered without consultation and irrevocably at the whim of this or any other Minister, and if we answer "Yes" it means that we tacitly accept the Act except for certain details, and from then on we are powerless in the hands of the Minister.—I am, etc.,

Coventry.

JOHN HALE POWER.

The New Health Service

SIR.—It has been with some dismay that I have recently read in the popular press of the tendency in the ranks of organized Labour for interference in matters strictly medical. While a great number of us do agree and even welcome a medical service that will guarantee equal service to all, irrespective of rank or position, I do think that I speak for the majority when I suggest that the time has come for us as an organized body to call "halt"—resoundingly and meaningfully. To think that an organization like the T.U.C. dares to meddle in our affairs is almost, with due respect to all forms of religion, blasphemy.

I am a member of the Labour Party, but I do not admit that this or any other party has the right to regulate the actions of a humanitarian body, which is concerned solely with the well-being of all people living in these islands. Isn't it about time we simply stated an irrefutable fact? We are the persons who are looking after the health of the people, and we do not care very much about the idea of lay people interfering with our ordinary functions. Why don't we say to the responsible Minister, "We are quite willing to play ball if you are willing to accede to our demands"—not requests? This

would show him quite definitely that we want our own terms, under our own organization, and unless we get our own terms he will have a very pretty Act on the statute book which will mean nothing if he has not a medical backing.

Being a Celt, like the Minister, I would like nothing better than a tussle with him on this question, and if I were guaranteed the support of the medical profession I am sure that I could, like many a delegate in a labour dispute, gain the dispute's (horrid artefact) point. I do think that if a few of the younger members of the profession were allowed to dictate for the rest of us (not arbitrate, please note) we could follow the fashion in labour disputes and get our point at the expense of the ordinary taxpayer.

So far as an ordinary country doctor can see, nothing has so far been done in the ranks of medicine that will assure the Minister of any definite opposition. I personally would be very glad to see an ordinary practitioners' association being formed with the avowed intentions of (a) a reasonable resistance to sterile acceptance of Government proposals (i.e., without full discussion among general practitioners), and (b) making quite sure that we as a profession shall have the last word about the running of any such scheme. Might I here remind readers that the most stringent medical discipline in all the world is maintained in Great Britain, and this same discipline is maintained entirely by the profession. Surely this in itself is enough to guarantee any services run by medical men in this country.

In my humble opinion now is the time for us to unite and tell the Government what we are willing to do, for the good of the population—but only at our own terms. I am of course writing as an ordinary general practitioner, and would suggest that other branches of medicine should formulate their own demands. In this way, and in this way only, can I see satisfaction for the general public and for their servants, the medical men and women of these islands.—I am, etc.,

Llanrwst.

MEURIG W. WILLIAMS.

Profession or Trade?

SIR,—During the past year I have talked with many medical practitioners and read many letters in the *Journal*. I find that many men of the finest type are prepared to enter the new Health Service, even though they disapprove of the Act as it stands, because they consider they should be prepared to make personal sacrifices if there is any hope that the ultimate service to the patient will be improved. Their attitude has developed because they have been "conditioned" by many years of work in which they have always put the needs of the patient before self-interest. While we may doubt whether the ultimate good of the patient will be achieved by the present Act, we must honour the integrity of their opinion.

Nevertheless, events of the past week must have shaken all those who think this way. If the principle of the "closed shop" can already be applied to doctors and nurses, then will it not be applied at a later date to those who enter the Health Service? Coercion of individuals into a political organization of any colour is so abhorrent to our deep-rooted conception of democracy and the freedom of individual thought that the present situation must give us reason to consider with deep concern where acceptance of service will lead us. Let us take heed lest we relinquish that freedom which we can never again regain, and so become enslaved in a political tyranny only too similar in its beginnings to that which brought the world to chaos seven years ago.—I am, etc.,

Kendal.

GEORGE H. EDGEcombe.

SIR,—Servants of our patients or slaves of the State?—that is the question. The present is the time to make a last stand against the Nazi creed that the individual exists for the State. We fought for six years against this pagan ideology and were the only nation with guts enough to declare war while lesser nations thought to negotiate with tyrants and were swept away. To beat the enemy we employed methods of "total" war, but now the devil of totalitarianism refuses to depart. To-day our Parliament, elected by a vast majority, is ordered by Blackpool and Brighton. The Socialists have captured the Labour machine, and to ensure complete subservience they have engineered the "trade" unions into political unions and are

crushing political independence among the workers by means of the "closed shop."

Medicine should be divorced from politics, but we have been thrust into the van of the fight, because a doctor's certificate may provide a loophole for a labouring man to escape work direction to other places. To prevent this possibility doctors are to be brought to heel. That those in power at present do not trust us in this matter is shown by their attitude over the "milk priorities" certificates. Our patients' needs are to be subservient to the State.

How are we being tempted? We are being given an Act which is welcome to most doctors, including myself, as it provides many of those improvements in services for our patients for which the profession, through the B.M.A., has been fighting for years but without avail until the National Government took up the question. The tragedy is that it has fallen to the lot of a party Government to hammer out the Bill. Look at on its own it has enough attractions to tempt some doctors to say "Yes" to negotiation over details. But others with wide vision can see clearly that the Health Act contains within the makings of a prison for our patients and ourselves which linked up with the other pieces of the political jigsaw puzzle and have refused to be tempted at all.

How are we to be coerced? The methods of coercion are clear. Now that the Act has been passed, fifty nurses and doctor at the Willesden Municipal Hospital receive dismissal notices because of refusal to join a trade union. It is reputed as a mistake, which it undoubtedly was, for the Press has not yet been muzzled (in spite of the venomous intolerance a free press shown by some of the speeches for the motion demanding a Royal Commission on the press), yet this pretence unmasking of intentions has been repeated at Walthamstow.

Mr. Bevan has told us that we are not yet "ripe" for plucking. These are ominous words both for our patients and ourselves, for although Parliament makes statute law it delegates the making of regulations to the various Ministers. The Minister of Health is given control of municipal and voluntary hospitals. But will the patients of a doctor who remains outside the Service be easily admitted to a State hospital? And if nursing-homes become State controlled by regulation will they happen to private practice?

What can we do about it? The Bill is law, and the defeatist says, "Let us make the best of it by negotiation." Was this Churchill's answer to the Nazis? Laws are man-made, and men make bad laws they can make new and better ones. When Australian doctors were presented with a similar Bill they believed it bad they refused to work it: it lies dead in the Australian statute book. It may take only a six-week electioneering campaign to make a politician but six years to make a doctor, and Mr. Bevan admits that the Act cannot work without our co-operation. Let him bring forth a Bill worthy of our patients and not a travesty of justice for their enslavement at the turning of our profession into a trade.—I am, etc.,

Derham

E. IVIMY PUDDY.

So Now You Know

SIR,—As a visitor to this country from Australia I have been particularly interested in the development of thought on the subject of a State medical service controlled by politicians. Members of the profession have been divided in their views: some in favour of a State service as being the only means of giving the public the best treatment, others reluctant to let the profession pass into the hands of politicians.

The recent action of the Willesden Borough Council in dismissing the staff of two hospitals for political reasons clarifies the position. In any service which is, or can be, controlled by the Labour Party, of which the ruling body is the Trades Union Council, doctors and nurses—otherwise quite competent in their work—can be sacked for their political views. Such a state of affairs has never existed in medical history except in Nazi Germany.

No matter how much the action of the Willesden Borough Council may be condemned by the Parliamentary Labour Party no matter whether the notices of dismissal are withdrawn in this instance, it is now obvious that the T.U.C. intends to force us to join a union—a body associated in the minds of most of us with the coal face, railway employees, and un

killed labourers, and controlled by the votes of these large nions. Mob rule has no place in medicine. The future is now s clear as it was to Churchill in 1938. And if your Negotiating Committee "flies to Munich" to barter with Bevan, you ave only yourselves to blame for the degradation to which ur profession will be subject.—I am, etc.,

Penn.

JAMES SMIBERT.

Unswerving Support

SIR,—If only we would all sink minor differences and stand ogether we could obtain from the Government any terms we ke within reason. As Mr. Bevan stated, the co-operation of he medical profession is essential to the working of the scheme. No doctor should agree to join unless the right of appeal to he courts of the country is granted. This is, in my opinion, the most vital part of the whole Act.

If any doctor joined the Service and then found conditions ntolerable and wished to retire, he would be permanently revented from practising in the locality where he is known nd has some prospects of making some kind of living, and it ould be almost hopeless for him to try elsewhere. He may ave bought, built, or altered a house to suit his professional equirements. The house may in ordinary times be most un-uitable to anyone but a doctor owing to its size, construction, r situation, and yet he, his widow, children, or even grand-children may render themselves liable to heavy fines and mprisonment if they sell the house to another doctor.

The present danger is apathy and the idea spread by the lay press that just because the Act is law nothing can be done. am ringing up a few of my colleagues who do not attend neetings and drawing attention to these and other dangers in he Act. Emphasis should be laid on the successful fight put up by our fellow-practitioners in both Australia and New Zealand. Some practitioners seem to have been confused by he manner in which the plebiscite question was framed. They ave informed me that they answered "Yes" and they "always believe in discussion and arbitration" but that they would not n any account join the proposed Service on the terms and onditions laid down in the Act.—I am, etc.,

Rainham.

W. U. DESMOND LONGFORD.

The Profession and Trade Unions

SIR,—It must have come as a profound shock to doctors and urses to find that future employment might depend on their eing members of a trade union, which I presume would have to be recognized by the T.U.C. It seems outrageous that our profession, which should be without interference by petty trade union and political controls, should be subjected to this dictatorship and political prejudice. This type of thing gives us a foretaste of what the profession may expect in a National Health Service.

Let us hope that the British Medical Association will give a clear call to the profession to resist with all in its power this flagrant intimidation into trade union membership, and let the Association give all the publicity it can to our fight for principles and freedom. Our work, our service, and our conscience must be governed by our duty to our patients and not by any trade union or political theories and preachings.—I am, etc.,

Newport.

A. B. TAYLOR.

Public Relations

SIR,—Though the individual doctor may be liked, the same can hardly be said of the medical profession as a whole. We do not enjoy a good Press. But now is our chance to correct this anomaly. We shall not, however, win favour by doing what we think the public thinks we ought to do, nor need we harp too long upon the refrain, "We won't let our patients down." The motif behind this pious slogan, though doubtless sincere, may yet be tainted by a tincture of cowardice or sentimentalized by a desire to appear in the guise of Prince Charming.

Surely, Sir, all we really need to do to enlist the support of a strong body of men of good will is to stick up for the interests of medicine itself, and for those ideals which have been evolved by a hundred generations of our predecessors and which are at

present in our keeping to cherish or let go. When old Polonius summed up his advice to his son in the famous words, "This above all: to thine own self be true, And it must follow, as the night the day, Thou canst not then be false to any man." he might have been addressing our profession to-day.—I am, etc.,

Buxted.

W. R. E. HARRISON

Pay of Pathologists and Bacteriologists

SIR,—Nobody will disagree with "Laboratory Doctor's" argument (Nov. 30, p. 836) that pathologists are specialists and deserve an adequate salary, but it opens the wider question of whether specialists should receive a higher remuneration than general practitioners.

(1) I believe that the only inducement to specialize should be a special interest or aptitude in a certain branch of medicine, not the hope to make a lot of money. (2) Perhaps not the modern panel doctor, but certainly the old "family doctor," was a highly specialized person. He was interested and specialized not in diseases but in his patients, whom he knew inside out and had observed from birth into old age. I doubt if "Laboratory Doctor" would be able to take his place to the satisfaction of all concerned. (3) It is very questionable if at present the income of the average specialist is higher than that of the average G.P. In a salaried service the personal prestige will be closely linked with the income. If we agree with the first two points there can be no reason why the specialist should have a higher prestige than the general practitioner, and both should have equal standing and income. Only thus can we assure the proper selection of "specialists in diseases" and "specialists in patients."

I may add that I am a pathologist for the same reason as "Laboratory Doctor."—I am, etc.,

London, N.W.2.

GERHARD BEHR

Rhazes and Avicenna

SIR,—In his paper "The Cough Syrup" (Nov. 16, p. 735) Dr. E. M. Boyd writes: "Arabian physicians, especially Rhazes and Avicenna, are usually credited with introducing syrups. . . ." As they were two of the most distinguished Mohammedan physicians of the Middle Ages (their textbooks, translated into Latin, were used as far west as Montpellier), it is only fair that their native country should have the credit for them—Persia. Rhazes was born 6 miles from Tehran, and the West named him after the town (Ray or Ragae). He lived in Persia most of his life, until indeed he went to take charge of the hospital at Bagdad. Avicenna was born in Central Asia of a Persian father, but worked and died in Persia. They wrote chiefly in Arabic, the scientific language of their day and region, just as Latin was in mediaeval times in Europe, but also philosophical works, and Avicenna one on the pulse, in Persian. (I have a manuscript copy of this.) The Arabs, avid of knowledge and industrious translators of Greek medical and other texts, produced few physicians of note. "Arabian" medicine was largely the work of Persians, Jews, and Syrians.—I am, etc.,

Droitwich.

A. R. NELIGAN.

Seminological Investigations

SIR,—Might one appeal through your columns to pathologists throughout the country to establish a more expert and uniform service for undertaking seminological investigations? The investigation and treatment of female infertility has advanced greatly within the last few years, but many of the excellent gynaecological advances are made ineffective on account of inadequate investigation and treatment of male infecundity. It is now accepted by authorities that in nearly one-half of the barren marriages some infertility is contributed by the male, and in perhaps one-fifth of all cases the causative factor lies exclusively with the husband. The fact that healthy young males who give no history of a genital lesion frequently produce an azoospermic semen or one where the proportion of abnormal sperms is excessively high and their viability too short implies a very serious need not only for adequate diagnosis but for the study of the as yet almost unexplored subject of treatment. If more laboratories would give better service in this work and would agree to make their reports in

a more uniform way it would greatly encourage the clinician in exploring the important matter of therapy.

For the last eighteen months the Family Planning Association has run a laboratory entirely for the purpose of making semio-logical analyses and of studying post-coital cervical mucus. The laboratory is now working beyond capacity, and the physician in charge is willing to accept part-time clinical assistants and a certain number of Grade I technicians for training. Many laboratories may be glad to send an assistant to acquire this experience and thereby contribute to the possibility of advancing a service of urgent national and individual importance.

Any correspondence should be addressed to Dr. H. A. Davidson, F.P.A. Laboratory, 33 Wimpole Street, London, W.1.—I am, etc.,

ALECK BOURNE,
Chairman, Sub-fertility Committee,
Family Planning Association.

Vitamin Deficiency after Oral Penicillin

SIR,—The article in your issue of Oct. 26, p. 611, dealing with nicotinamide deficiency after oral penicillin interested me very much. Some time ago I was talking to a distinguished pathologist who made light of my suggestion that the eating of mouldy bread, often inevitable in prison camps, could be in any way harmful. The article now published would suggest that moulds may indirectly lead to vitamin deficiencies, apart from any direct poisonous action they may develop. It would be interesting to investigate the matter among former prisoners of war, in whom deficiencies were possibly caused in this way.—I am, etc.,

Colchester.

G. C. PETHER.

Acute Enteritis in Subtropical Climates

SIR,—Sea mail to the Mediterranean still takes a matter of weeks and so I have only just read your number for Aug. 17 in which there was an article (p. 225) on "Acute Enteritis in Subtropical Climates" by Dr. Ian MacGregor. I am interested in the aetiology of this disease. It occurs frequently in the Mediterranean, particularly in personnel who have recently joined the station, being labelled "Malta Dog" or "Gypso Fummy."

I would like to add a few more observations. First, it responds readily to treatment with sulphaguanidine; secondly, there is usually a certain amount of malaise associated with it though rarely any pyrexia; and thirdly, there is quite often history of a meal ashore the previous day. Dr. MacGregor suggested that the disease might be due to a lowering of the resistance of the intestinal mucosa by a chill or by the invasion of an unknown virus or group of viruses rendering it vulnerable to the bacterial flora of the bowel. This may well be so, the activity of these organisms being inhibited by the sulphaguanidine. An alternative suggestion is that it may be caused by a hitherto unisolated sulphaguanidine-sensitive organism absorbed from the food. My second two observations suggest some infective element in the aetiology. I would be interested to hear of any other facts that would throw light on this subject.—I am, etc.,

H.M.S. Chequers

J. C. E. PESHALL,
Surgeon Lieutenant, R.N.V.R.

Antenatal Supervision

SIR,—It is very significant to see from Lieut.-Col. R. R. Willcox's paper entitled "Some American Ideas on Venereal Disease Control" (Nov. 30, p. 825) that in New York State every physician in attendance on a pregnant woman must have a blood test done on her for syphilis. As an American put it, "Syphilis is sure bad for babies."

For a considerable time in one's own practice I have taken 10 ml. blood from every expectant mother at her first examination whether she was a "booked" case or referred by a midwife for an antenatal check-up. This has been sufficient for a routine Wassermann, Kahn, G.C.F.T., group, Rh type, and Hb %. Thanks to the co-operation of the local authority and the regional blood transfusion laboratory the only cost in money is the stamps, and the time and trouble involved are negligible.

No one would like the practice employed in New York State—of being officially ordered to do something. Here we prefer

to rely on a professional conscience, guided by advice and practice from our betters. Time and bitter experience have decided that every suspected fracture should be x-rayed and every expectant mother's urine tested for albumin—and that without "regulations." But what is the position generally about routine blood tests for syphilis in expectant mothers? If it is not a rigid routine procedure, where lies the fault? Sinister hints come from our obstetric chiefs that in any future national maternity service only those holding higher obstetric qualifications will be allowed to conduct abnormal labour—worse, the general practitioner may be shut out entirely from all "organized" midwifery. And yet have we had any clear lead from the obstetricians that routine Wassermann and Kahn tests should be done on every pregnant woman? May one go further and ask if it be the regular practice in the great centres of obstetric training? It may just be one of those awkward coincidences which prove nothing, but in the past month I have seen three expectant mothers who have had their previous supervision elsewhere. The first had attended the antenatal department of a large and very efficient provincial non-teaching hospital, the second a municipal clinic run by a very proud Midland city, and the third a world-famous maternity hospital. Yet not one of these women had had any blood investigations, and one had not had her pelvis measured or her blood pressure taken. At least that is her story, and she ought to know.

This, Sir, is a serious and fundamental matter. To protect the unborn baby and to recognize inheritable disease at the earliest opportunity should be the first aim of any medical service. As a profession we are proverbially slow to take up new ideas, and we shall be slower unless our leaders give us a clear lead and do it themselves.—I am, etc.,

Oakham

GORDON PURDY.

Sterilization of Syringes

SIR,—With reference to the letter from Lieut.-Col. R. R. Willcox (Nov. 2, p. 667), I should like to hear some more of the evidence as to inadequacy of spirit sterilization in the reduction of post-arsphenamine jaundice when boiling of syringes after each injection was made compulsory in the Army. I was in charge of a 200-bed V.D. centre for 8 months and could note no diminution in the incidence of jaundice after this rule came in, nor could I note that it was any higher in another centre, where I subsequently worked for 3 months, in which the sterilization rule was not observed. Admittedly many of my patients had had odd injections elsewhere, as we had many out-patients, but there were quite enough wholly treated at the centre to give a definite impression. Jaundice occurred generally during the second "course" and selectively after the third or fourth injection. This is difficult to square with theories of infection. It is also hard to see how a syringe used to inject acriflavine intravenously could transmit living virus (Hughes, Nov. 9, p. 685), or why an injection of penicillin would be more likely to contaminate a syringe than one of T.A.B., tetanus toxoid, or any of the other routine injections.—I am, etc.,

England.

Ex-R.A.M.C.

Double Gastric Ulcer with Perforation and Haemorrhage

SIR,—The article by Mr. M. Kaye on Double Gastric Ulcer with Perforation and Haemorrhage (Nov. 9, p. 695) was of particular interest to me as I had had to deal with similar complications only a few days previously, and this additional case seems worth recording.

A man aged 62 was referred to the out-patients' department of the Lincoln County Hospital on Nov. 6 on account of epigastric pain soon after meals for six months. He also gave a history of vomiting a quantity of "black stuff" on several occasions in the previous week and stated that the motions had been quite black. On examination, he was thin and pale, there was epigastric tenderness, the stomach was dilated, and waves of peristalsis could be seen. Blood examination showed haemoglobin 52%, colour index 1.1, R.B.Cs. 2,440,000 per c.mm. Next morning at 11 a.m. he complained of sudden onset of severe pain in the upper abdomen. When seen again, he was pale and shocked, the pulse was almost imperceptible, and the abdomen was rigid and tender. Morphine was given, a Ryle's tube was passed, and drip-blood transfusion commenced. His condition improved, and the abdomen was opened

about 4 p.m. under cyclopropane and local anaesthesia administered by Dr. Clutton-Brock. A quantity of free gastric contents was found due to perforation of a pre-pyloric ulcer on the anterior aspect of the stomach. There was gross induration and numerous adhesions were present. A two-thirds partial gastrectomy was performed and completed by an anti-colic anastomosis with a Hoffmeister's valve. The specimen showed a second ulcer on the posterior wall eroding the pancreas, which almost certainly accounted for the haemorrhage, the ulcers being of the "kissing" type. The patient was remarkably well on the following day, and has made a straightforward recovery; he is now (Nov. 20) getting up and about. Sections show no evidence of malignancy.

We were fortunate in this case in that the haemorrhage came on before the perforation and was not very severe. In view of his poor condition the operation seemed rather a hazardous undertaking, but one felt that gastrectomy was clearly indicated as only by this means could one deal effectively with the three complicating factors of perforation, haemorrhage, and pyloric obstruction—I am, etc.,

Lincoln.

G. A. BAGOT WALTERS.

Dental Anaesthesia after Coronary Thrombosis

SIR,—I feel I must join issue with your correspondent answering the question under the above heading (Nov. 30, p. 843). Patients who have "recovered" from (I should prefer to say have improved after) coronary thrombosis are among the gravest risks which the anaesthetist is called upon to face. A myocardium which consists to a greater or less but always a serious degree of fibrous tissue replacing the normal muscle, and which must perforce be served by narrowing and increasingly inefficient coronary vessels resulting in inadequate oxygenation, can never be anything like a "normal" risk. Nitrous oxide is a weak anaesthetic which entails a reduction in oxygen supply well below the atmospheric 20% to be effective. To administer this atmosphere deficient in oxygen to a myocardium already likely to be anoxic is to court swift and sudden disaster.

I would suggest two alternative techniques: (1) Thiopentone administered in the operating theatre (where all necessary facilities for resuscitation are conveniently at hand) with the patient sitting as upright as possible on the table. This guards against the inhalation of blood which might set up a laryngeal spasm, serious in its anoxic potentialities. Further, to guard against this complication the dental surgeon should be constrained to extract a few teeth at a time and to guard carefully the haemorrhage with swabs. After the operation the patient should be laid down and rapidly turned on to his side with the head low. He should remain lying down for some hours. (2) Cyclopropane anaesthesia induced direct and taken slowly to the beginning of the third plane. The patient should be sat well up for this and the same precautions observed by the dentist as before. The teeth can be extracted during the recovery period on the lines of the old-fashioned "straight gas." Cyclopropane has the great advantage that oxygen percentage can always be maintained above 20%.

The conduct of these cases is not a fair responsibility for the non-specialist; but if this is inevitable, I would suggest gas-oxygen with not less than 25% oxygen, supplemented with trichlorethylene through the wick vaporizer supplied with all the more recent gas machines, and administered by nasal inhaler if possible in a properly equipped theatre.—I am, etc.,

London, W.1.

F. BARNETT MALLINSON.

Postgraduate Education

SIR,—The letters of Mr. John Stallworthy (Oct. 5, p. 510) and Dr. John H. Anderson (Nov. 23, p. 792) lead me to record my gratitude for the warm welcome which many Service doctors received from the members of the medical profession in Australia. As a medical officer of the British Pacific Fleet I was privileged to receive correspondence tuition which was the gift of the Postgraduate Committee in Medicine of the University of Sydney to the Royal Navy. This tuition was of an original and helpful type well adapted to the conditions of Service life. While visiting Melbourne I received a great deal of assistance from the Dean of the Faculty of Medicine, who provided facilities for study in the University. These are two examples of the friendship and assistance which many of us received wherever we visited in Australia.

I would like to express my appreciation of this hospitality which we received from senior medical colleagues in Australia. Doubtless many other medical officers experienced similar hospitality in this and other Dominions during the war, and hope that the return of peace will not lead to a cessation of this friendly postgraduate training within the British Commonwealth.—I am, etc.,

Glasgow.

J. MACLEAN SMITH

Legal and Medical Insanity

SIR,—I am grateful to Dr. C. J. de Vere Shortt for his observations (Nov. 23, p. 794) on my letter (Oct. 12, p. 555). He states: "There is, to the informed, a great difference between the two forms of insanity" [i.e., medical and legal]. The trouble is, however, that there is usually only one person being defended.—I am, etc.,

Westcliff-on-Sea.

JOHN A. MCCLUSKIE.

Demobilized Specialists

SIR,—I agree very largely with Dr. J. S. McKenzie Pollock's views (Nov. 23, p. 792) on demobilized specialists. It is pertinent to ask what makes a specialist. Is it rank, qualification, or experience?

At best many ex-R.A.M.C. officers are no better than "specialoids." By all means let these be given help to pursue their specialty, but not to the exclusion of their less favoured fellow-officers who are once again in civilian practice and are as keen to serve as they were in the Forces.—I am, etc.,

Edinburgh.

A. WYNN WILLIAMS

Recruitment to I.M.S.

SIR,—Your Educational Number, dated Sept. 14, in an article purporting to give information to prospective candidates for the public services, states (at p. 392) that R.A.M.C. officers have the opportunity to transfer to the I.M.S. This is incorrect for two reasons: (a) The I.M.S. ceased all recruitment to its ranks on the formation of the I.A.M.C. in 1942 and officers of the I.M.S. like myself are now seconded to the I.A.M.C. The I.M.S. therefore may be said to be dying a natural death, and when the last recorded officer dies or retires will itself die. (b) The policy of recruitment to the I.A.M.C. is to recruit only Indian domiciled officers, and so far as I know it is not open to Europeans.

The future of the European officers of the old I.M.S. is not the subject of this letter, and the above is written with the intention of correcting the false impression your article gives the reader. Official information on this subject is presumably available from the Director-General, I.M.S., G.H.Q., India.—I am, etc.,

Cambridge

C. W. A. SEARLE,
T/COL. I.M.S./I.A.M.C.

* * We are obliged to Col. Searle for pointing out the error. Recruitment of Europeans to the I.M.S. has ceased, though the Civil branch still exists. Full information may be obtained from the Secretary, Military Dept., India Office, Central Buildings, Matthew Parker Street, London, S.W.1.—ED., B.M.J.

Work of the Government Lymph Establishment

SIR,—I much regret if in my article "Work of the Government Lymph Establishment, July, 1898, to June, 1946," I may have given the impression that Dr. Blaxall and I were attached to the Government Lymph Establishment during the entire period from 1898 to 1946.

I retired from the directorship of the Government Lymph Establishment in 1930. Dr. Blaxall had died prior to that. Mr. Sutton was on the clerical staff, attaining the position of head clerk towards the end of the war.

From 1930 until his death in 1945 Lt.-Col. W. D. H. Stevenson was the director and Dr. G. G. Butler assistant director. The gigantic output of vaccine lymph was achieved by them, assisted by a very capable and loyal staff who never spared themselves in any way to procure the outstanding results.—I am, etc.,

Ryazab, West Malaya.

H. S. FREMLIN

Obituary

We regret to announce that Wing-Cmdr. THOMAS STANLEY RIPPON, O.B.E., M.S., R.A.F.(ret.), died on Oct. 4 at his home in London after a long illness. He was born at Warrington on Sept. 19, 1883, son of the Rev. Thomas Rippon. He studied medicine at Bristol and the London Hospital, and qualified M.R.C.S., L.R.C.P. in 1911. In the war of 1914-18 he held a commission in the R.A.M.C. for two years in France, and, having transferred to the R.A.F., served in India and Egypt after the armistice. In 1923, with the rank of squadron-leader, he joined the research staff at Northolt aerodrome. During further service overseas he was elected vice-president of the Mesopotamia Branch of the B.M.A., and after retirement from the R.A.F. he became a member of the Naval and Military Committee, and had a seat on the Council for four years. Rippon was for a time president of the Central Medical Board of the R.A.F. In more recent years he worked as assistant physician to the Tavistock Clinic and clinical assistant in the neurological out-patient department of the Royal Northern Hospital, Holloway, and at the Princess Beatrice Hospital, Earl's Court. He was the author of the section on aviation in the *British Encyclopaedia of Medical Practice*, and published papers on temperament and Service flying and on air-sickness.

Dr. RODERICK MARTIN FRASER, of Stornoway, Isle of Lewis, died at the Aberdeen Royal Infirmary on Oct. 8 following a major operation. Born in 1899, educated at his father's school in Stornoway and at the Nicolson Institute, he served with the Black Watch and was badly wounded in 1918. He took up his medical studies at Aberdeen University in 1919, and graduated M.B., Ch.B. in 1924. After a few years of assistantships in medical practices in the Midlands, he returned to his native town, where he became a popular and hard-worked practitioner. Many friends within the profession regret the passing of this hearty, able son of the Highlands, and in particular his fellow-students of Aberdeen University in the post-war years.

Dr. STEPHEN ANDREW CORNELIUS died suddenly on Oct. 23. Of Indian birth, Dr. Cornelius studied at Bombay University and took his B.Sc. in 1908. Subsequently he came to England and studied at University College Hospital, qualifying in 1915. After acting as house-physician at University College Hospital and as a clinical assistant at the Maudsley Hospital, he went to Swindon in 1918 and joined the staff of the G.W.R. Medical Fund Society. In 1921 he left for India, but returned to England five years later and became established in private practice in Swindon. He was honorary anaesthetist to the Swindon Victoria Hospital and a former chairman of the Swindon Division of the British Medical Association. By rare devotion to his fellow men Stephen Cornelius illuminated the profession to which he devoted his life. A man of wide culture and interests, he endeared himself to his many patients and friends by his unremitting labour, and by his manifold acts of kindness and generosity. In him were combined the best qualities of the family physician in the old tradition.

We regret to announce that Dr. SUTTON DUDLEY GILL died on Oct. 28 in his 91st year. The third son of Harry Gill, of Birmingham, he was born on June 21, 1856, and from King Edward's School he studied medicine at Queen's College, qualifying M.R.C.S., L.R.C.P. in 1892. Dr. Gill practised in West Bromwich throughout his long life and took a very active part in its public affairs. He was Mayor of West Bromwich in 1923, and alderman later; for many years he was the chairman of the Maternity and Child Welfare Committee, and in recent years was the "Father" of the town council. He leaves two sons, who are both members of the medical profession.

Dr. WILLIAM FRANKLIN O'REGAN died at Whitechurch, Cardiff, on Nov. 3, aged 63, after a painful illness of many months which he had borne with fortitude and no complaint. He was educated at the Christian Brothers' College, Cork, and took his medical course at Queen's College, Cork. While there he entered fully into the social and athletic activities of the College, was a member of all athletic committees, editor of the students' magazine, and a principal speaker in the debating society. He graduated as M.B., B.Ch., N.U.I. in 1912 and came to England as house-physician to the Salop Infirmary, Shrewsbury. He served in the 1914-18 war, most of the time in India, where he acted as lieutenant-colonel for a period. Returning, he took up practice at Lloyd Square, Islington, and was a foundation member of the Irish University Club in London. He began practice at Whitechurch twelve years ago. Of a

singularly retiring disposition, his courtesy, kindness, and charm of manner endeared him to all his patients, and strict adherence to the rules of his profession gained him the deep respect of his medical colleagues. His hobbies were music and literature. Owing to the illness of one partner and the absence on service of another during this war he was greatly overworked in a very large practice. He is survived by his wife; two daughters. His only son, Flying Officer Brian O'Regan was posted missing after a bombing raid to the Continent. Dr. O'Regan was a member of the B.M.A. and served on local executive committee and Branch Council in recent years.

Dr. JOHN GAWLER MURRAY, who died at Wokingham Nov. 13, was a good country practitioner and popular with patients. On qualifying at Edinburgh in 1897 he first settled in Scarborough, where his father had practised before him and held among other posts that of Admiralty Surgeon's Agent. This involved his going to sea to render assistance to many ships which had been mined by the Germans during the 1914-18 war. Later he joined the R.A.M.C., with the rank of major, and was in charge of the military hospital in Scarborough, where he had to deal with the casualties sustained during the bombardment of that city. After the war he moved to Blakesley, in Northamptonshire, where he set himself up a large practice. He retired to Wokingham early in 1939, and on the outbreak of war was soon in demand as a teacher of first-aid. Dr. Murray took a great interest in his work and had been an instructor at one of the civil defence schools. More recently he helped the local practitioners taking the place of men who were away on service, though he was by then over 75. In fact he worked up to the last and died practically in harness. He was married, and leaves a widow but no family. His passing is regretted by a large circle of friends both at Blakesley and at Wokingham.

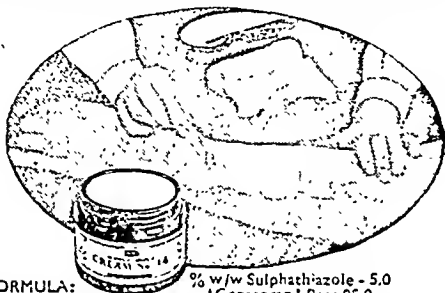
Dr. W. R. CUMMING died at Bexley Heath on Nov. 15 at an early age of 52. A graduate of Glasgow, he took his M.A. in 1919 and the M.B., Ch.B. in 1923. He settled in Bexley Heath in 1929. During his seventeen years there he was an active member of the Dartford Division of the B.M.A. and was chairman in 1936-7. He was an honorary physician of the Bexley Cottage Hospital, in which he took a very great interest. A colleague writes: Always thorough in his work and sound in his judgment, Dr. Cumming was a man of upright character. These qualities made him well liked by his patients and friends and he was a fellow practitioner with whom it was a pleasure to associate. He will be sadly missed by all who knew him. He leaves a widow, a son, and two daughters.

Dr. SYDNEY DAVID SHEARE, who died in London on Nov. 1, qualified from Guy's Hospital in 1944, and after working pathological histology at St. Thomas's Hospital was for a time a voluntary assistant in the department of pathology in the British Postgraduate Medical School. "C.S." writes: The untimely death of Dr. Sydney Sheare is a sad loss. His courage and stoicism in the face of a long illness, of which he knew the result, will long be remembered by those who knew him well. In some ways he was a martyr to medicine as a doctor he proved to be an exceptional patient. Few have fought adversity with such determination and yet achieved success in their work. His warmth of character was equally only by his kindness and generosity, and his ability as a raconteur reflected a truly versatile personality. Deep sympathy is extended to his wife, Dr. Peggy Sheare, and his mother, in their immeasurable loss.

CHARLES WILLIAM DEAN, the doyen of the profession in Lancaster, died on Nov. 15, only a few days after his eighty-sixth birthday. He had been a member of the B.M.A. since 1886. He was born in Lancaster, and spent his whole life there, if one excepts the few years of his medical education in London and Edinburgh. Engaged for the most part in general practice, he yet found time and opportunity to train himself and to excel in general surgery. He became well known over a wide area as an operating surgeon, and enjoyed and deserved the esteem and confidence of his colleagues. He was the first surgeon in Lancaster to remove an appendix—over fifty years ago. In ophthalmic surgery, too, in which he was especially interested, he made a name for himself. From first to last he was connected, as house-surgeon and then as a member of the honorary surgical staff, with the Royal Lancaster Infirmary. In this hospital, which was very dear to his heart, he rendered invaluable service, and was popular with the committee and with the medical and nursing staff. Even during the recent war, when he was well over eighty, he worked in the ophthalmic department there as often as his health and strength would

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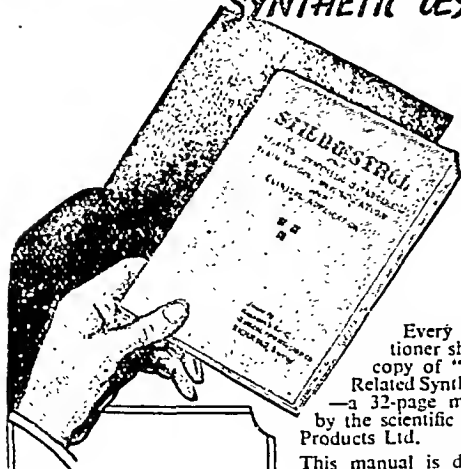
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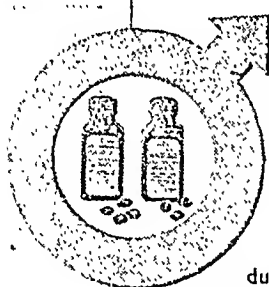
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omit. Charles Dean was neither a ready speaker nor a ready writer, though some of his occasional papers appeared in this journal and in the *Practitioner*. He never took part in public life, but he was keenly interested in music, and in his younger days was no mean performer on the French horn. His taste in literature was wide, and he had more than a superficial knowledge of heraldry. With a retentive memory, which time had not impaired, he had, as he used to say, "a mind stored with useless and irrelevant facts," which was perhaps one of the chief charms of his conversation. Quiet and reserved in manner, somewhat impulsive, always sympathetic, he was my colleague and friend for over forty years, and I can say only that the longer I knew him, and the better I became acquainted with him, the more I came to appreciate his character and to love his personality.—J. A. G.

Surg. Capt. ARTHUR GORDON VALPY FRENCH, R.N. ret., who died at Exmouth on Nov. 21, was born in London in 1883, son of the Rev. C. J. V. French, M.A., and was educated at Terborne School and St. Thomas's Hospital, qualifying (R.C.S., L.R.C.P.) in 1909. He was a medical officer at the R.N. Hospital, Haslar, 1911-14, and at the R.N. Hospital, Embroke Dock, 1919-22, after serving in H.M.S. *Carnarvon*, *Farshah Ney*, and *Vindex*. Later he was fleet medical officer of the Home Fleet, and then in charge of the R.N. Hospital, Malta. On relinquishing his commission he was medical officer to Elders and Fyffe's Shipping Company and served on the staff of the Admiral Superintendent of contract-built ships.

Squad-Ldr. WILLIAM M. HONEYMAN, R.A.F.V.R., who died on Nov. 24, entered St. Andrew's University as first bursar and graduated B.Sc. in 1932, and M.B., Ch.B., with commendation, in 1935. After holding two house appointments, he was awarded a Commonwealth Fellowship and studied at Columbia University and at the Phipps psychiatric clinic in Baltimore. On his return from the U.S.A. he was admitted to the membership of the Royal College of Physicians and became Halley Stewart Research Fellow in the M.R.C. unit at Queen Square. In 1939 he joined the Volunteer Reserve of the R.A.F., and on mobilization was seconded for duty to the psychological department of Cambridge University. There he worked on problems of applied neurology and psychology in aviation medicine right up to the time of his tragically premature death.

Dr. D. Russell Davis writes:

When Honeyman came to the Psychological Laboratory of the University of Cambridge he began to apply his knowledge of neurology and neurophysiology to the problems of normal human activity, particularly, because of his war duties, to that of aircrew. With his high intelligence, keenness, and thoroughness, and his excellent training in the U.S.A. and in Dr. Carmichael's laboratory at the National Hospital, there was every expectation that in due course he would make important scientific contributions in this field. Unhappily, the extension and development of his researches were retarded and radically cut short. He chose as a special study the influence of "after-contraction" upon skilled movements, but during the war he performed all manner of experiments. Probably the nearest was a demonstration of the effects upon their skilled manipulation of offsetting aircraft controls from the middle line of the body, a matter of great theoretical interest as well as of practical importance. His first serious illness was four years ago, and it is certain that this and later illnesses were a source of grave anxiety to him, but very rarely did he show what a heavy burden he was bearing. Although naturally reserved, he was liked and respected by all with whom he came in contact, and he retained his pawky humour, much enjoyed by those who discerned it, even in his last illness.

HENRY ST. GEORGE BOSWELL, a direct lineal descendant of Dr. Johnson's Boswell, was educated at Clifton and the Universities of Aberdeen and Edinburgh. He qualified at Edinburgh in 1882 and then assisted Rutherford Morison at Hartlepool for a year or two before marrying Morison's sister. Later he practised at Saffron Walden, where he was on the staff of the local hospital. In 1900 he went back to the old family practice at Hartlepool and spent the remainder of his working life there, endearing himself to high and low alike and having a wide and intimate circle of youthful friends. He was physician to the Hartlepool Hospital until 1925, when he retired and went to live in Whitby. Six years later he made St. Boswells-on-Tweed his home. In the art of medicine Dr. Boswell was skilled and understanding to an unusual degree, and as a friend and counsellor he helped many through life's trials and difficulties. He died on Nov. 17, and leaves two daughters and a son, Dr. Philip Rutherford Boswell.—E. W. O.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on Nov. 23 the following degrees were conferred:

D.M.—L. J. Russell (in absence).
B.M.—R. Ebsworth Snow, T. A. Madden.

UNIVERSITY OF CAMBRIDGE

Postgraduate Medical School

The governors of Addenbrooke's Hospital, Cambridge, have confirmed arrangements for the institution of a school of clinical research and postgraduate teaching, as set out in a recently issued report of the University General Board, with the University of Cambridge. It will ordinarily be known as the Medical School, and will comprise the Faculties of Medicine and Biology "B." So far the University has constituted the Departments of Experimental Medicine and Radiotherapeutics as part of the scheme; arrangements have also been made for more closely co-ordinating the Departments of Pathology and Biochemistry with the Hospital, with a view to improving the pathological services of Addenbrooke's and increasing the facilities for teaching and research. The academic activities of these departments will in future be amplified by the inclusion of clinical and pathological material from both the Hospital and the East Anglian region.

The Council of the Medical School will consist of the Regius Professor of Physic, who will be the chairman, the heads of departments in the Faculties of Medicine and Biology "B," and four members appointed respectively by the Boards of the Faculties of Biology "B" and Medicine, by the General Board, the General Committee of the Hospital, and the honorary staff of the Hospital. The staffs of the Departments of Pathology and Biochemistry will be increased so that they shall be sufficient to deal with the routine pathological, bacteriological, and biochemical work of Addenbrooke's Hospital. The General Board have therefore agreed to propose the establishment of three new posts, namely, University Morbid Anatomist and Histologist, University Bacteriologist, and University Biochemist. The holders, beside conducting the work arising from the Hospital, may be required to undertake lecturing and demonstrating; and though debarred from private practice they may attend private patients, any fees being paid into a fund administered by agreement between the University and the Hospital. The General Board recommend that the first-named post be filled by Mr. A. M. Barrett, the second by Mr. M. H. Gleeson White and the third by Dr. N. R. Lawrie.

When the postgraduate school is established the Senate of the Council will consider the possibility of setting up a pregraduate school of clinical teaching. It is hoped that Addenbrooke's will be designated a teaching hospital by the Minister of Health under the terms of the National Health Service Act, and in that event a Board of Governors would be appointed on which the University would be represented.

The forthcoming appointment of a university lecturer in pathology is announced in the *University Reporter*. The person appointed will be required to give instruction in bacteriology. Candidates should send their applications to the secretary of the Appointments Committee of the Faculty of Biology "B" at the Department of Pathology, Tennis Court Road, Cambridge, so as to reach him by Feb. 1, 1947. Candidates desiring further information about the duties and conditions of the post should write to Prof. H. R. Dean at the Department of Pathology.

An election to the Pinsent-Darwin studentship in mental pathology will be made in March, 1947. It is of the annual value of not less than £225 and is tenable for three years. The student must engage in original research into any problem having a bearing on mental defects, diseases, or disorders, but may carry on educational or other work concurrently. Applications should be sent before Feb. 23, to the secretary, Pinsent-Darwin Studentship, Psychological Laboratory, Cambridge. Applicants should state their age and qualifications and the general nature of the research they wish to undertake. No testimonials are required, but the names of not more than three referees should be given.

At a Congregation on Nov. 30 the degrees of M.B., B.Chir. were conferred by proxy on M. C. Joseph.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

POSTGRADUATE DIPLOMA IN PSYCHOLOGICAL MEDICINE.—J. F. Donovan and A. S. Ellis (with Mental Diseases Psychiatry) in Part B. Part A: M. R. Cliffe, Margaret T. Collins, D. D. Hoare, A. Karnat, T. McLardy, A. B. I. Platt, C. F. Ryecraft, A. Shapiro, K. R. Stallworthy.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The President of the College received on Dec. 2 a letter informing him that Le Comité de l'Association Française de Chirurgie "a décidé de faire don au fonds pour la reconstruction du Royal College of Surgeons of England d'une somme de 50,000 francs." This gift has been received with most grateful appreciation by the President and Council and will give great pleasure to all the Fellows and Members of the College. The sympathy of their French colleagues and their generous and spontaneous help will be a further bond of union between the surgeons and people of the two countries.

At a meeting of the Council, held on Nov. 29, with Sir Alfred Webb-Johnson, Bt., President, in the chair, Sir Cecil Wakeley, Vice-President, was appointed Bradshaw Lecturer for 1947, and Dr. Frank H. Lahey (Boston, U.S.A.) was appointed to deliver the first Cecil Joll Memorial Lecture in September, 1947.

It was decided to publish a periodical from the College to contain news items and College lectures.

The terms of the Petition and draft Supplemental Charter were approved for submission to the Privy Council.

In regard to the National Health Service the Council passed the following resolution: The Council desires the Negotiating Committee to enter into discussions and negotiations with the Minister on the Regulations authorized by the National Health Service Act.

The Services

The President of the U.S.A. has bestowed the Legion of Merit, Degree of Commander, upon Surgeon Vice-Admiral Sir Sheldon F. Dudley, K.C.B., O.B.E., F.R.S., K.H.P., retired, for service as Medical Director-General of the Navy.

Col. K. S. Master, M.C., K.H.P., I.M.S., has been appointed Colonel Commandant of the I.A.M.C.

The following appointments and mentions in dispatches have been announced in recognition of gallant and distinguished services in the field:

O.B.E. (Military Division).—Licut.-Cols. (Temp.) G. T. M. Hayes, M.C., and P. W. Kent, I.A.M.C.

M.B.E. (Military Division).—Capt. J. I. Rice, R.A.M.C.

Mentioned in Dispatches.—Capt. C. D. Sanders, R.A.M.C.

Majors (Hon. Licut.-Cols.) R. J. C. Hamilton and H. B. Lee, and Major K. W. N. Palmer, R.A.M.C., have been awarded the Efficiency Decoration of the Territorial Army.

The Faculty of Medicine of the University of Oslo adopted in 1939 a scheme for the reorganization of the medical curriculum. The execution of this plan remained in abeyance during the war, and the Faculty of Medicine has now decided to appoint a committee representative of the main interests concerned to reconsider the problem. To aid this committee, the Norwegian Medical Society organized a series of debates at its headquarters in Oslo. As a preliminary to these debates, the views of several authorities were given publicity in the *Tidsskrift for Den Norske Lægeforening* of Nov. 15. In the first paper, the surgeon, Prof. Johan Holst, wrote:

"Like our British colleagues, we should put the development of personality and character as the most important objective of an academic education." More concrete proposals concerned the speeding up of education. The prospective doctor should enter school at the age of 6 instead of 7, and the University at the age of 17, and he should qualify at 23, having studied medicine for six years, of which the last year should have been spent as an intern in hospital. In another paper, Dr. Hans Jacob Ustvedt emphasized the relative shortage of teachers of medical students. At Harvard University there are more teachers than students (673 to 500), while in Sweden there is one teacher to every eight or nine students. Norway has only one teacher to every fifteen students. The first meeting on Nov. 20 was remarkably well attended, and the show of grey heads and bald heads indicated that interest in the problems under discussion was not confined to the younger generation. The first speaker, a medical student, was not alone in complaining of a system which puts a premium on cramming, but it seemed to be easier to denounce it than to find an effective cure for it. A suggestion made by several speakers was that there should be a return to the old system of apprenticeship to certain approved doctors already in practice. On the subject of textbooks Prof. Kreyberg was vehement in his warning against any one book being authorized to the exclusion of others "Let them be in any outlandish language whatsoever, but don't let us have the book which the student learns by heart as he crams it." Norway will shortly have a second university, at Bergen, and to a certain extent this will start with a clean sheet while the old university of Oslo may have more difficulty in making changes.

Medical Notes in Parliament

Milk Priorities

Dr. SANTO JEGGER opened, on Dec. 3, a debate on milk priorities. He said that on Oct. 29 the Minister of Food issued to the medical profession a statement that an excessive amount of milk was being consumed. Compared with the war period the consumption of milk had increased by 400,000 gallons, or 44%, which was inconsistent with the statistics of disease. The official explanation was that certification by the medical profession had become less strict, but in his opinion an increase in minor ailments had a great deal to do with the increase in the consumption of milk. The Minister had appealed to the profession to adopt a more strict and accurate certification of diseases which required priority milk. Most doctors took a great deal of trouble to provide examination and an honest decision on patients who needed priority in milk. Some doctors were not so conscientious. He himself had been present not long ago at a conversation between two doctors, one of whom said: "You give me a certificate giving me priority in milk and eggs, and I'll give you one." The exchange was carried out. A doctor with a wealthy patient did not like to refuse a request for a priority certificate. Dr. Jeger recalled a letter to the *British Medical Journal* which told how a patient had changed her doctor to obtain milk for her cat. He thought that the categories in the schedule setting out reasons for giving priority certificates were too vague. Anaemias, varieties of debility, and psychological or nervous troubles causing loss of weight should be included in it. "Dyspepsia" and "colitis" were vague descriptions. Industrial workers confined to bed should get priority milk in the first ten days of illness and during convalescence. He suggested that there should be a new category of three and a half pints a week instead of doctors having to choose between two and seven pints a week. Doctors should give statements of illness, but the decision on priority should be made in the food office instead of in the doctor's consulting-room. The certificate should be valid for more than one month.

Dr. SUMMERSKILL said the decisions on priority were made by the scientific advisers of the Ministry of Health in co-operation with the advisory committee of the Medical Research Council. The Ministry also took into account publications by people like Prof. Cruickshank. Pathological priority categories took about 4% of the total consumption of milk in this country. The Ministry realized there were loopholes in certification and had decided that a letter should be published in the medical press. It was difficult to get the neurotic and hypochondriac person off the seat in the consulting-room and the general practitioner, a very harassed man, knowing there was a loophole, might do as he was requested. These cases added up to a formidable total. She had not heard of cases of doctors swapping certificates, but she instanced the issue of a certificate for 52 weeks. Such a practice would lead to lax certification. The convalescent industrial worker was covered. So far as minor diseases included in 2a were concerned, there had been no increase in consumption. The question of records must be examined by the medical profession and by the Government. She, when practising, had always felt that the categories were too vague, but the Ministry had to give the doctors some latitude. If the doctors did not observe the warning in the medical press the Ministry's next step would be to revise the Schedule. It would then give special consideration to 2c. It would also look into the position of the old people. The suggested ration of three and a half pints would remove the difficult patient from the chair in the consulting-room. That seemed a little immoral, but these difficulties had to be faced. Gastric ulcers were difficult to deal with as the sufferer might look healthy and the grant of priority milk rouse comment. She did not think it a hardship that patients had to get certificates renewed every month. Lax certification might follow if all certificates were made valid for three months. It would not be practicable for a professional committee of medical men to decide the eligibility of patients for milk. The Ministry would have to leave the general practitioner to decide.

The Willesden Affair

Mr. BOYD-CARPENTER inquired on Dec. 5 what action Mr. Bevan was taking to prevent the breakdown in hospital services threatened as a result of the action of the Willesden Council in directing that all nurses at that hospital who do not join a trade union should be dismissed.

On the same day Mr. BYERS asked how Mr. Bevan proposed to make good the deficiencies of doctors, nurses, and other staff who refused to comply with the demand of local authorities that they should join a trade union on pain of dismissal.

Answering the two questions together, Mr. BEVAN announced that he was sending a circular to local authorities pointing out that their primary duty as health authorities was to maintain the efficiency and smooth running of their health services and to ensure the welfare of the patients for whom they were responsible. All other considerations must be regarded as secondary. He added that while he was anxious that doctors, nurses, and members of similar professions should join a trade union or appropriate professional association, this was a matter which should not be determined by unilateral action of local authorities. He hoped there would be no breakdown of health services.

Mr. BYERS asked whether the Minister's reply could be taken as an assurance that the Government deprecated the irresponsible action of local authorities at a time when the nursing and medical professions were so shortly staffed.

Mr. BEVAN replied that the answer he had given was sufficiently clear. He did not wish to exacerbate feelings and hoped there would not be a repetition of the incident.

Mr. W. J. BROWN said Mr. Bevan's answer would be received with immense satisfaction by everyone who had the welfare of the health services and of the trade unions at heart.

Mr. BYERS, on Dec. 5, also asked Mr. Isaacs whether, in view of the injustice now being caused to individual nurses, teachers, members of certain religious bodies and others, by the enforcement of the "closed shop," it was still the intention of His Majesty's Government to leave this matter to both sides of industry.

Mr. ISAACS said that in so far as the cases to which Mr. Byers referred resulted from unilateral action by individual employers, regarding trade union membership of their employees, such action, whatever form it took, was to be strongly deprecated and was likely to be detrimental to harmonious industrial relations. The Government's view, in general, was that questions regarding terms and conditions of employment should be a matter for settlement between the two sides of industry in accordance with the constitutional machinery of the industry. He was not prepared to say that the Government would set up an inquiry. As a Minister he was using his influence with the organizations concerned to avoid these regrettable incidents.

SCOTTISH HEALTH BILL

In the House of Commons on Tuesday, Dec. 10, Mr. JOSEPH WESTWOOD, Secretary of State for Scotland, moved the Second Reading of the National Health Service (Scotland) Bill.

Mr. Westwood said that despite the progress made as a result of previous legislation there remained a large mass of sickness and defects of various kinds as revealed by the records of medical inspection of school-children, sickness returns of the insured population, and other figures. The Committee on Scottish Health Services reported in 1936 that in Glasgow about 16% of school-children were found to have ailments that could not be classified as minor; in the course of a year over 20% of the insured population were incapacitated for work, and the average time lost among the insured population was more than ten days per annum. Of the men applying for enlistment in the Army 38% were rejected on medical grounds. The vital statistics of Scotland were disquietingly less favourable than those of England and Wales and several other European countries.

With all these facts before them the committee came to the conclusion that changes in the size and distribution of the population, in social and economic conditions, in the habits and outlook of the people, and in the actual causes of death and ill-health required a readjustment of health effort. The first essential, to avoid overlapping, to secure a full return for expenditure, to keep the services in line with changing circumstances, and to secure that emphasis was distributed according to the social value of the varied services, was to integrate the separate services into a national health policy designed to promote the fitness of the people.

General Practitioner Service

Mr. Westwood went on to say that many persons, especially women and children, did not in fact receive adequate and timely attention because those responsible could not afford to pay for the services of a private general practitioner. He quoted the medical officer of health for Dundee who had said: "One of the most important criticisms of the organization as it exists at present is that advice and treatment are not immediately accessible to every individual unless the payment of medical fees is a matter of little or no moment."

These and similar findings had led to the committee's conclusion that as part of a policy for the promotion of the health

of the people it was necessary to secure that so far as possible all members of the community should have available the services of a general medical practitioner. On grounds of administrative expediency as well as on grounds of national policy it had become imperative for the State to frame a policy to meet the needs of at least the dependants of insured persons, and others in similar economic circumstances, and to lay down the lines along which the medical services should develop.

The Bill which was now before the House was drafted and directed towards providing for Scots people a comprehensive health service. It placed for the first time on public authorities central and local, the responsibility for seeing to the provision of all facilities needed for the health of the whole population.

Aims of the New Service

In the first place, it was to be the statutory responsibility of some public authority to provide every necessary form of health care—the family doctor, the specialist, the hospital, rehabilitation and convalescence, dental treatment, the care of sight and hearing, including the provision of artificial aids, special priority services for expectant and nursing mothers, young children, and school-children, and so on. There was to be full provision not only for the treatment of illness but also for the prevention of illness and the promotion of health.

Secondly, the Service or any part of it would be available to every man, woman, and child in the country. Although part of the cost was to be met from insurance funds there would be no insurance qualifications, nor any other kind of test based upon means, residence, or anything else. The new Service was for all practical purposes to be free of charge. This did not mean that it would not be an expensive business to provide the Service, although less expensive than allowing ill-health to continue unchecked. But the cost would be met mainly from the national Exchequer, and partly also from local rates and insurance contributions.

Central responsibility for the new Service as a whole was to rest with the Secretary of State. By his side, to give him expert advice on all aspects of the Service, there was to be a Scottish Health Services Council, with members drawn from all relevant fields of experience. Standing committees of that Council would be set up in connexion with particular parts of the Service.

Regional Boards and Executive Councils

Responsibility for the hospital and allied services was to rest in future with the Secretary of State. For this purpose all existing hospitals, local authority and voluntary, were to be transferred to him. The administration of these services was to be entrusted to a specially created regional and local organization. Five Regional Hospital Boards would act as agents of the Secretary of State, undertaking the general administration of the services in their areas. In turn, to act as agents of the Regional Boards for the control and management of particular hospitals, Boards of Management were to be set up. On these regional boards and boards of management members with all appropriate kinds of experience and local interests would find a place.

For the general practitioner services, Executive Councils were to be established, drawn mainly from local authorities and from representative professional committees in each area. The doctors and dentists would be encouraged to work from health centres, staffed and equipped so as to enable them to carry out their work in the most effective way. Responsibility for providing these centres would, in Scotland, rest in the first place with the Secretary of State. In order to improve the distribution of doctors throughout the country there would be provision for debarring additional doctors from entering the Service in an area already adequately covered. The sale and purchase of medical practices coming within the new Service would be forbidden, and compensation would be paid. Remuneration, while mainly by way of capitation payments, would include a basic salary element, which could be adjusted in accordance with the different needs of particular areas.

For a considerable range of local services, responsibility would rest as at present with the major local authorities, the county councils, and the town councils of the large burghs. In addition to their present maternity and child welfare duties, authorities would have a new duty to secure the provision of a home nursing service, and wide powers to undertake preventive and after-care services, including the provision of domestic help needed on health grounds.

The decisions taken by the Government were taken in the light of a great mass of information about the views and suggestions of the various interests concerned.

There were points of difference between the proposals in the Scottish Bill and those now embodied in the English Act. Conditions in Scotland were different in many important respects from conditions south of the Border. It was necessary.

therefore, to adjust the application of general principles to suit Scotland's particular circumstances and needs.

Health Centres

As regards the general practitioner division of the Service, the only important difference concerns health centres. In Scotland where conditions in different local authority areas vary widely, and the country as a whole is not an unmanageable unit, the early steps in health centre development should be undertaken directly by the Secretary of State. While the Bill enables the Secretary of State's functions in relation to health centres to be delegated to local authorities, he did not intend to exercise that power in the early and experimental years of the Service. The family practitioner's contract, in the health centres, as outside, will be with the Executive Council.

Basic Salary

Although payment by capitation fees should represent the larger part of the doctor's remuneration, there should also be an element of basic salary. This was a method of adjusting remuneration to varying conditions in different parts of the country. Basic salaries by another name had for the last 30 years been an essential feature of the Highlands and Islands Medical Service. It was, too, a means of reducing competition between doctors for patients. Sale and purchase of medical practices coming within the new Service in Scotland would be prohibited. Doctors who suffered loss in consequence of this prohibition would have their share of the £66,000,000 compensation.

In the new Service the family doctor would be able to call in a specialist whenever his opinion was required. The specialist service must be based on the hospitals and would be the responsibility of the hospital boards, but they would make arrangements with the Executive Council to ensure the close association of the specialist and the general practitioner.

Hospital Organization

While everyone accepted the need for a regional hospital system, it was not equally appreciated that no system of this kind was possible so long as there were two different forms of hospital administration and ownership. In Scotland the voluntary hospitals had always had a very prominent place. Their costs in all directions had greatly increased and were still increasing. With any form of National Health Service it would only be right that they should be paid for their treatment of patients who took part in that Service. The payments for service to the State would bulk increasingly large in the revenue of the voluntary hospitals. The State could not go on handing over these large sums of money without having control. In Scotland there were about 250 hospitals belonging to the 55 local authorities and about another 220 voluntary hospitals, practically every one of which had a separate governing body. With this multiplicity of authorities you get overlapping, unnecessary competition, and gaps in the hospital service. The Hospital Surveyors spoke in terms of comprehensive units—large infectious diseases hospitals instead of small ones, the amalgamation of special hospitals for eyes, ears, nose, and throat, or cancer with the general hospitals. There was no possible chance of securing all these developments so long as the general hospital was a voluntary one and infectious diseases were the responsibility of a local authority. To an increasing extent we had to provide services which demand wide areas of up to half a million or a million people. The orthopaedic service was an example. A proper cancer service and the new branches of surgery like plastic and brain surgery needed an organization covering a million or perhaps even two million people.

These proposals were, so he thought, generally acceptable to those who have to work in the hospitals and even to some of the local authority and voluntary hospital people. We should have the same doctors and nurses, the same independent medical schools, many, perhaps, of the same people on the Regional Boards and Boards of Management, the same endowments would be available, even more than they were to-day, for new developments and for research. The maximum of independence and responsibility would be left with the Boards of Management.

Whereas the English Act puts the responsibility for the ambulance service on the local health authorities the Scottish Bill puts it on the Secretary of State. Although the number of hospital beds in Scotland was only about one-tenth of the total for the U.K., Scotland was training about a third of the medical students. Therefore the teaching hospitals bulked very large in the hospital service.

A full debate followed and will be reported in our next issue.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery, Obstetrics and Gynaecology will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, *British Medical Journal*, B.M.A. House, Tavistock Square, London, W.C.1.

The Medical Section of the British Psychological Society will hold an open meeting in the House of the Royal Society of Medicine on Wednesday, Dec. 18, at 8 p.m. The meeting will be devoted to a discussion on "The implications of the National Health Service Act for all professional workers in the field of mental health."

The Thomas Vicary Lecture on "Naval Medicine in the Ages of Elizabeth and James" will be delivered before the Royal College of Surgeons of England (Lincoln's Inn Fields, W.C.) by Dr. E. Ashworth Underwood on Thursday, Dec. 19, at 5 p.m.

The Association of Anaesthetists of Great Britain and Ireland (45, Lincoln's Inn Fields, W.C. Tel.: Chancery 6965) has arranged a dinner-dance, to be held at the Dorchester Hotel on Saturday, Dec. 21, at 7.30 p.m., in connexion with the centenary celebrations in London of the first administration of ether in Great Britain.

On Saturday, December 14, at 2.30 p.m., Sir Wilson Jameson will open a new rehabilitation and occupational therapy centre in the Bromley and District Hospital.

On January 1 the National Vaccine and Serum Institute of China (National Epidemic Prevention Bureau) will open its new biological laboratories. This marks the return of the Institute from wartime headquarters in Kunming to its original home, Temple of Heaven, Peking. A scientific session will follow the opening ceremony.

The American Group Therapy Association will hold its annual meeting at New York City in January, 1947. The programme will include sessions on group therapy in private practice, the parallel treatment of a group of pre-school children with a group of their mothers, and research in group therapy.

On Nov. 27 Mr. George Isaacs (Minister of Labour and National Service) inaugurated at Bridgend the first "remploy" factory established for the employment of the severely disabled who are registered under the Disabled Persons (Employment) Act, 1944, as unable at any time, or for any prolonged period, to undertake employment or to engage in work on their own account otherwise than under "special conditions." It is anticipated that a total of eight such factories will be operating by next April, and a further forty in the ensuing twelve months, and special provision is contemplated for the tuberculous and the epileptics.

Tributes to the memory of Dr. Harold Mason Leete, medical superintendent of the Hull City Hospital and Sanatorium at Cottingham and the Evan Fraser Hospital, were paid when an inscribed plaque was unveiled at the City Hospital. The plaque, provided by the staff, commemorates Dr. Leete's service as medical superintendent from July, 1930, until his death on Feb. 15, 1945. Dr. Nicholas Gebbie, M.O.H. for Hull, presided at the ceremony.

The Ministries of Health and Food advise the public not to eat pork, pork sausage-meat, ham, or any pork product unless it has been thoroughly cooked. In some districts it is customary to eat sausage-meat raw, spread on bread like a meat paste. This is a dangerous practice. The statement issued jointly by the two Ministries continues: "Illness may also arise from eating pork or pork products which have been insufficiently cooked. If pork, pork sausages, and other pork products, including ham not bought already cooked, are thoroughly cooked, there should be no risk."

Dr. Carl Gentz, medical director of the Stockholm Corporation Tuberculosis Bureau, and two of its staff, Mr. Martin Korsner and Mr. Widlund, have arrived in this country to spend a fortnight studying British arrangements for the rehabilitation and aftercare of tuberculosis patients. Their programme, arranged by the British Council, includes visits to the Papworth Settlement, the British Legion's Preston Hall Settlement, the Egham Rehabilitation Centre, Farnborough County Hospital, and workshops, and discussions with experts.

Dr. Abdul Azim Bey, director of the Bilharzia Destruction Section of the Egyptian Ministry of Public Health, is visiting this country for a fortnight on his way back to Egypt from the United States. The British Council has arranged for him to visit institutions and meet experts concerned with tropical medicine in London and in Liverpool. He is one of the leading younger medical research workers in Egypt, and his work has been of special value to the Sudan Medical Service.

The Ministry of Food announces two improvements in the products distributed under the Welfare Foods Service. Potassium diode has been added to Vitamin A and D tablets for expectant mothers. This addition has been made on the recommendation of the Standing Committee on Medical and Nutritional Problems and the Goitre Subcommittee of the Medical Research Council. Each tablet will contain 0.13 mg. potassium iodide in addition to 4,000 U. Vitamin A, 800 I.U. Vitamin D, and 250 mg. B.P. calcium phosphate. Ministry of Food cod-liver oil has now been "cold cured," thus improving the appearance of the oil and removing the tendency for clouding in cold weather. Supplies of these improved products are now being manufactured and will shortly reach the public.

The annual report of the Bristol Hospitals Fund for 1945 has been published. The cover indicates that this Fund has raised 333,188 for voluntary hospitals and ancillary hospital services in its 7 years of its existence—a striking tribute to the value of contributory schemes. A letter from the chairman accompanies the report, and emphasizes the need for the continuance of voluntary contributions and for voluntary effort after the implementation of the National Health Service Act, which cannot happen until 1948 at the earliest. The report states that the new Hospitals Provident Fund, mainly intended for those who require assistance in connexion with the heavy expenses attached to maintenance and treatment in hospital or nursing home private or semi-private beds, was an immediate success.

The offices of the National Council for the Unmarried Mother and Her Child are now at 87, Tottenham Court Road, London, W.1. Tels.: General, Museum 2969; Case Department, Museum 3780.)

Mr. Hugh P. Laird has taken over the secretaryship of the London Hospital Medical College on the retirement of Mr. E. J. Burdon.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* the chief feature of the returns was an increase of 1,046 in the notifications of measles. The other large changes were rises in the incidence of scarlet fever 109 and of whooping-cough 77.

The increase in cases of measles was mainly contributed by the northern counties: Lancashire 413, Northumberland 152, Yorkshire West Riding 106, and Durham 72; the largest decline was Buckinghamshire 66. The largest increase in the notifications of scarlet fever was Lancashire 46. The local trends of whooping-cough fluctuated, with an increase in Lancashire 36 and decreases in Yorkshire West Riding 35 and Warwickshire 33. The chief changes in the notifications of diphtheria were decreases in London 15 and Lancashire 13, and there was an increase of 12 in Staffordshire. There were 7 further cases of paratyphoid in the continuing outbreak in Sheffield C.B. London had 21 and Surrey 11 cases of dysentery.

In *Scotland* rises were reported in the notifications of scarlet fever 65, measles 38, acute primary pneumonia 31, and diphtheria 10. Cases of scarlet fever in Glasgow increased from 107 to 157. The largest local change in the incidence of diphtheria was in the City of Dundee, where the cases increased from 4 to 12.

In *Eire* an increased incidence was recorded for diphtheria 10 and diarrhoea and enteritis 20, while whooping-cough declined by 28 cases. Of the 61 cases of diarrhoea and enteritis 50 were notified in Dublin C.B. An outbreak of typhoid involving 11 persons was reported from the urban and rural districts of Ennis, Co. Clare.

Quarterly Returns for Scotland

The birth rate during the September quarter was 20.9 per 1,000, the largest rate for any third quarter since 1925. The infant mortality rate of 45 per 1,000 registered births was the lowest ever recorded for any quarter in Scotland and was 13 below the average of the five preceding third quarters. The still-birth rate was 30 per 1,000 total births. The maternal mortality rate of 1.7 per 1,000 live births was less than half the average of the preceding five third quarters and was much the lowest rate ever recorded for any quarter in Scotland. The general death rate was 10.8 per 1,000, the lowest since the third quarter of 1939. The death rate from all forms of tuberculosis was 70 per 100,000, and that from respiratory tuberculosis was 56; these rates were, respectively, 3 below and 2 above the average of the five preceding September quarters.

Week Ending November 30

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,383, whooping-cough 1,878, diphtheria 301, measles 6,005, acute pneumonia 745, cerebrospinal fever 47, dysentery 58, acute poliomyelitis 18, paratyphoid 19, typhoid 3.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 23

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	43	4	26	2	—	32	5	17	—	—
Deaths	1	1	1	—	—	—	—	—	—	—
Diphtheria	319	12	107	39	12	654	39	206	84	20
Deaths	5	—	1	—	—	6	—	1	3	1
Dysentery	69	21	28	3	—	223	32	50	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	43	12	2	—	—	40	7	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	61	—	—	—	—	52	—
Deaths	64	10	14	—	1	38	5	11	9	2
Measles*	5,428	215	301	57	47	453	42	81	154	4
Deaths	1	—	1	—	—	1	—	—	—	—
Ophthalmia neonatorum	61	6	23	—	—	68	6	12	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	20	2	—	—	—	10	—	2(B)	—	—
Deaths	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	708	54	12	1	6	579	41	5	4	1
Deaths (from influenza)†	18	3	—	—	—	25	5	1	—	1
Pneumonia, primary	—	—	339	16	—	—	—	181	26	12
Deaths	—	—	45	13	—	—	—	40	11	—
Poliio-encephalitis, acute	—	—	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	16	—	2	16	—	15	2	—	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	3	11	—	—	—	1	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	124	10	9	1	—	132	12	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,402	102	338	37	45	1,911	155	224	34	53
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	—	14	2	7	—	1	4	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	2	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,773	106	205	43	31	1,232	62	61	26	8
Deaths (0-1 year)	11	—	—	—	3	7	—	1	—	—
Infant mortality rate (per 1,000 live births)	397	70	71	—	21	358	51	47	29	11
Deaths (excluding still-births)	4,779	753	632	—	151	4,628	707	605	193	13
Annual death rate (per 1,000 persons living)	—	—	13.9	—	—	—	—	13.7	12.5	—
Live births	8,567	1,359	1,134	—	258	6,488	954	748	341	22
Annual rate per 1,000 persons living	—	—	22.8	—	—	—	—	15.0	22.6	—
Still-births	294	38	48	—	—	188	20	23	—	—
Rate per 1,000 total births (including stillborn)	—	—	41	—	—	—	—	25	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, 16, and 23.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attiology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumshuegh Gardens, Edinburgh

ANY QUESTIONS?

Alkaline and Acid Ash Diets

Q.—*What are the alkaline and acid ash diets?*

A.—Alkaline and acid ash diets are not in general use to-day. The terms refer to diets composed of foods which are either alkaline or acid in reaction. Alkaline foods include milk, vegetables, fruits, beans, potatoes, carrots, beetroots, peas, and raisins. Among acid foods are meat and fish, eggs, bread, wheat-flour, oatmeal, rice, prunes, and plums. Neutral foods are said to be sugar, fresh butter, and fats.

An alkaline ash, or lacto-vegetarian, diet may be given in cases of renal failure; the benefits of this, however, are more likely to be due to its low protein content than to its reaction. Similarly, an acid ash diet may be ordered in diseases in which there is oedema due to depleted plasma proteins; in this instance the value lies in the high protein content of the diet and not in any particular reaction it may have.

Calcaneal Spur

Q.—*A man of 60 has painful heels. X-ray examination shows the presence of calcaneal spurs. Are the spurs the sole cause of the trouble, and what is the treatment?*

A.—Spurs on the under surface of the os calcis are usually caused by a plantar fasciitis—i.e., an inflammatory lesion of infective or toxic origin which may affect tendons, ligaments, or fascia close to their bony attachments. Probably as a result of the hyperaemia, the periosteum proliferates and a spur of bone is formed. This is most commonly seen on the under surface of the os calcis. An organism which commonly produced fasciitis and spurs in the old days was the gonococcus. Recurrent attacks of pain are due to recurrences of the inflammation, aggravated to some extent by the trauma of weight-bearing. Relief is often given by hollowing out the upper surface of the heel of the shoe and replacing it with a spongy rubber inset. Various forms of electrical treatment—e.g., ionization, short-wave diathermy, and so on, sometimes help. It is wise to make certain that the patient has no obvious focus of infection. Operation is rarely indicated unless the spur is so large that it can be palpated, or a callosity forms underneath it. If the operation is done in the acute stage it is often followed by an increased deposit of new bone. In the particular case quoted a thorough search for a possible source of sepsis appears strongly indicated.

Ulcerative Colitis

Q.—*A male patient, aged 26, has suffered from ulcerative colitis for about eight years. I would be grateful for any suggestions as to treatment.*

A.—The aetiology of ulcerative colitis is still uncertain. It has been suggested that it may be due to a specific enterococcus, to a chronic infection with *Sh. flexneri*, to a lack of some factor which is responsible for maintaining the health of the normal colon, or to a neurotic illness. It is probable that the condition should be regarded as a syndrome, different cases having a different aetiology. Every patient should have a careful sigmoidoscopic examination with, if possible, a barium

enema. After eight years there may be strictures of the colon or a potentially malignant polyposis.

Medical treatment should be tried first. If there is an acute flare-up the patient should be in bed. Diet must be highly nutritious and completely free from all roughage. There is no specific remedy and a trial may have to be given to many different ones. Sulphasuxidine retention enemata (2%) with full doses by mouth, supported by penicillin, may be successful in some cases, in others there may be symptomatic improvement only following control of the secondary invading organisms. Local treatment may consist of retention enemata of silver nitrate 0.5%, tannic acid (2 gr. to the ounce—0.13 g. to 28 ml.) or of bismuth subgallate (2 gr.—0.13 g.) in a suspension of mucilage. If diarrhoea is frequent and painful, relief may be obtained from a starch and opium enema. Recently some dramatic responses have been reported after the ingestion of raw pig's intestines. A dried extract is now available; it should be given in doses equivalent to 1/2 lb. (225 g.) of the raw material daily and must be continued for at least one month. Any anaemia should be dealt with by repeated transfusions of fresh blood; in the opinion of many this forms our best method of treatment. Liver extract has no particular value, but if the patient has existed for a long time on a restricted diet several injections of a crude preparation should be given.

Surgery is best kept until medical treatment has failed, but should not be delayed until the patient is moribund. The mortality for any operation in this condition is high—over 30%. A transverse colostomy or an ileostomy is the operation of choice, but in any case the artificial anus should be retained for at least a year, and may have to be kept indefinitely. For strictures or polyposis a colectomy may have to be advised.

Rh Factor and Blocking Test

Q.—*Please define Rh factor, rh, Hr, Rh-positive, and Rh-negative. What is the antigen block principle and how is Rh typing carried out?*

A.—The term "Rh factor" has been used with a variety of shades of meaning. In a general sense it signifies a whole complex system of blood-group antigens and antibodies; in the most restricted sense it means the antigen D, described below. The terms "rh factor" and "Hr factor" have little meaning in the light of the present theory of the Rh system; the rh factor may be equated with the antigen combination cde and the Hr factor with c.

The Rh system of antigens is now regarded as being due to the action of six genes: C, c, D, d, E, and e (disregarding some rare varieties, which, however, fit admirably into an extension of the scheme). Three loci, closely adjacent to one another on a single chromosome, are involved. One locus can be occupied by one of the allelomorphous genes C or c, another by D or d, and the third by E or e. Thus a single chromosome will carry three of these genes (e.g., CDe or cDE) and an individual, having received one such chromosome from each parent, may possess Rh genes of three, four, five, or six kinds. Owing to the closeness of the three loci, crossing over between them is extremely rare and an individual almost invariably passes on intact to each child one or other of the chromosomal combinations received from his or her parents. Each gene gives rise to a corresponding blood-group antigen called by the same letter as the gene. Each antigen is recognizable by means of a single agglutinin called anti-C, anti-c, etc. (except that no agglutinin for d has yet been described). Every person thus has from three to five recognizable red-cell Rh antigens.

There is general agreement upon the scheme described above but some disagreement as to which genotypes shall be called Rh-positive and which Rh-negative. For clinical purposes it is most desirable that all persons possessing the gene and antigen D should be called Rh-positive, and those lacking D Rh-negative. In a more restricted sense, however, only the common genotype cde/cde is regarded as Rh-negative; the rarer types lacking D, such as Cde/cde, must then be called Rh-positive.

Rh typing for clinical purposes is carried out by treating the red cells of the person to be typed with anti-D (common anti-Rh) serum in a small test-tube at 37°C. (98.4°F.) for two hours, and then examining the cells microscopically for agglutination. For a full Rh typing (which allows the geno-

type to be determined absolutely or with a high degree of probability), the cells are tested with each of the five sera already mentioned.

The blocking test depends upon the existence of two forms of anti-D, one which agglutinates and one, the incomplete or blocking antibody, which attaches itself to the antigen on the red cells without agglutinating them but prevents the agglutinating antibody from doing so. Cells known to contain D are incubated with the serum suspected together with a known agglutinating antibody. Failure to agglutinate indicates the presence of incomplete or blocking antibody.

Blockage of Eustachian Tube

Q.—I developed a partial blockage of the Eustachian tube over a year ago. Orthodox treatment has given no relief at all. The partial blockage appears to be at the pharyngeal end of the tube and is most marked on swallowing fluids or on yawning. Hearing is noticeably impaired on the affected side. Investigation has ruled out any serious pathological condition.

A.—The blockage at the pharyngeal opening of the Eustachian tube is probably due to inflammatory swelling of the lymphoid tissue normally found there in greater or lesser amount. Orthodox treatment having failed to relieve the condition, radiotherapy should be worthy of trial. This treatment has been extensively used in the U.S.A., particularly by Crowe, of Baltimore, whose paper will be found in the *Annals of Otorhinolaryngology* (1945, 50, 15). The intention is to irradiate sufficiently to destroy the lymphoid tissue without affecting the mucosa. Radium or radon are preferable to x rays because the effects are more easily localized. The radium or radon container, attached to a straight applicator, is passed along the floor of the nose so that it lies alongside the Eustachian opening. The time of application should be calculated by a radiotherapist, depending on the dose and screening.

Cocaine Solutions

Q.—Is there any simple method by which one could check the amount of cocaine in, say, a 3% solution made up by the local chemist? Sometimes it seems that such a solution is not as strong or as effective as it ought to be.

A.—There is no simple method which the ordinary general practitioner can use to determine the strength of a small amount of cocaine solution. If he is doubtful about a particular solution he should discuss the question with the city analyst or the county analyst. These officials exist (partly) to ensure that solutions of cocaine and of other things are correctly prepared, and they work through the machinery set up by the Food and Drugs Act. The probability that a solution of cocaine is incorrectly dispensed is very small indeed. Its preparation is a simple matter for a pharmacist, who receives a long training in dispensing.

Wilson's Disease

Q.—A boy of 16 died of Wilson's disease—hepato-lenticular degeneration. He had had a severe jaundice in the first fourteen days of life, bronchopneumonia at the age of 4, and glandular fever at the age of 8. What is the probable fate of the two other children in the family, a girl of 19 and a boy of 12?

A.—This case presents an unusual feature. Jaundice within a few days of birth is not a recognized symptom of Wilson's disease. It is, on the other hand, a symptom of haemorrhagic disease of the newborn in which jaundice may be associated with lesions in the corpus striatum, that is, in the same region as Wilson's disease, and these lesions may cause permanent symptoms of striatal disorder. Nothing is known about the causation of Wilson's disease except its familial character. The history in this case suggests two possibilities. (1) That this is not a case of Wilson's disease but of the late results of haemorrhagic disease of the newborn, or (2) that the two disorders, in some cases at any rate, may be nosologically identical. It would therefore be wise to have the blood of the mother and the two remaining children examined for the Rh factor and to discuss the case afresh with the pathologist. Assuming that the case is an example of Wilson's disease, not enough is known about its

causation to estimate the risks of its appearance in siblings, but it would be helpful to examine the cornea in the brother and sister for the Kayser-Fleischer ring, which would indicate the presence of the disorder. A negative finding, however, would not exclude the risk of its subsequent development. The abdomen should be examined for evidence of cirrhosis of the liver. It is doubtful if tests of liver function would be of value.

Mental Deficiency

Q.—Under the Mental Deficiency Acts can a ten-year-old mongolian idiot be taken out of the custody of the parents? The child has attended the village school for the past four years. Now the local education authority proposes to transfer the child to a special school and the parents are opposed to the suggested change.

A.—If a child is certified as a mental defective under the Mental Deficiency Acts of 1913 to 1927, the local authority have power, if in their judgment the circumstances justify the step, to over-ride the parents' wishes and send the child to a special school. The sole criterion is what is best in the interests of the child. Possibly the child was reasonably well suited to the infant class of the village school for the past four years but has now outgrown it. If the parents wrote to the General Secretary of the Provisional National Council for Mental Health, at 39, Queen Anne Street, W.1, they would doubtless receive helpful advice.

INCOME TAX

Car Transactions

F. G. bought a new car in July, 1946, for £581, selling the old car for £225. The written down value of the old car, after deducting the 1946-7 allowance, was £33.

* * The assessment for 1946-7 will not be affected. For 1947 F. G. will be entitled to an initial allowance of 20% of £581 = £116, and a wear and tear allowance of 25% of £581 = £145, £261 in all. Per contra he will have to bring in as chargeable, whether the above claim is made for the new car or not, the "balancing charge" *prima facie* of £225 - £33 = £192. This charge, however, should not exceed the total of the allowances received on the old car; thus, if its original cost to F. G. was, say, £200 and the total allowances have therefore been £200 - £33 = £167, that amount, and not £192, is the amount of the balancing charge.

Travelling Expenses

J. M. is taking up an appointment shortly at a hospital, the journey to which from the residence is "long and difficult by public transport, but quite short by car." What allowance can be claimed if a car is bought for the purpose costing, say, £500?

* * No allowance will apparently be due. The cost of travelling between one's residence and the place where the duties of an office or of employment are performed is not a deductible expense. J. M. is in the position of many thousands of suburban residents who cannot deduct the cost of their season tickets to London in calculating their income-tax liability.

Car Expenses

A1 is medical officer of health for a district council and assistant medical officer of health for a county council. He receives a car allowance of £28 per annum from the latter, but no allowance from the former council. He bought a car in May, 1943, for £65 and received £60 from an insurance company in respect of its loss in Dec., 1943. He then bought a car for £100, which he sold in April, 1946, for £240, replacing it by a car which cost £260. What allowances can be claimed for 1944-5 and 1945-6?

* * It is assumed that A1 can arrive at a reasonably close statement of his running costs, including insurance, licence, etc. The first car, which was disposed of before April, 1944, does not affect the allowances due for the subsequent years. As regards the second car he is entitled to a wear and tear allowance for 1944-5 of £22 and for 1945-6 of £18. On the other hand, if that car was sold on or after April 6, 1946, he will be liable to a "balancing charge," the maximum amount of which will be the total wear-and-tear allowances given in respect of that car—i.e., £22 + £18 = £40. Some restriction of the total of running costs plus wear-and-tear allowances (less of course the £28 received from the county council) may be due if the cars have been used for private purposes.

LETTERS, NOTES, ETC.

Hospital Repairs

Dr. LESLIE HARTLEY writes from Camberley: The Treasurer of St. Thomas's Hospital told us at the old students' dinner that there was a ward at the hospital in which the blitzed windows had not yet been replaced by glass in spite of continual applications for a licence. The result is that the patients are either in semi-darkness or have artificial light. I think Mr. Bevan, the Minister of Health, in association with Mr. Shinwell, the Minister of Fuel, should bring this to the notice of Mr. Bevan, the Minister of Housing, otherwise the public will have little faith that this dual personality will deliver the goods on April 1, 1948, when the new Health Service comes into being.

Midwife and Doctor: Conduct of Labour

Dr. RICHARD A. MANCLARK (Great Bookham) writes: Surely the correct thing for the midwife is to obey the doctor and mention to her supervisor about the doctor's lack of interest in using a mask. New C.M.B. rules might simplify this matter. The attitude of doctors who can apparently decide whether their nasal secretions are harmful or not to the patient without bacteriological help indicates the drastic changes necessary in our education and approach to the art and science of obstetrics.

Case of Clicking Ears

Dr. R. D. ALLISON (Preston) writes: Referring to the case of clicking ears recorded by Dr. Elliott Emanuel (Nov. 2, p. 652): the mentioned soft crackling noise audible to others I can produce at will—bilateral or unilateral, fast or slow. I was unaware that this phenomenon was considered abnormal.

Mr. CHARLES TAIT (Windsor) writes: The correspondence about clicking ears prompts me to mention my personal experience of this phenomenon. This differs from the cases which you have reported in that it is under voluntary control. I have since childhood been able to produce this sound at will, and occasionally spontaneously when swallowing; and this is loud enough to be heard by an observer if he applies his ear to mine. I imagine that this is brought about by the opening of the Eustachian tubes, as has been suggested by Dr. G. A. Moulden (Nov. 23, p. 796).

Car Sickness in Children

Dr. C. R. CROFT (Plymouth) writes: The expert who answers the question on car sickness in children (Nov. 30, p. 842) recommends glucose and glasses. I have no experience of the latter, but glucose, even when easily obtainable, was without particular merit. I venture to recommend the following methods. (1) For short journeys. Boredom, particularly as a reaction after excitement such as a party, is the most precipitating factor. Food has no influence except that a child finds it more satisfactory to discard a good bellyful than a mass of mucus. The following will relieve boredom and prevent sickness: (a) Well-chosen anecdote. This is difficult to sustain and may be relieved by (b) raucous song, or (c) a supply of any food which is strictly not to be eaten yet reasonably accessible. Efforts to chew an apple silently are very effective. (d) A cargo of contraband or loot, calling for a sharp look-out to be kept for policemen. It is pleasant to record that over a follow-up period of seven years no instance of gross juvenile delinquency has been attributed to this form of therapy. (2) For long journeys. Children should be prepared for bed at the usual hour. With the help of luggage and 2-3 cot mattresses a communal bed is prepared in the back of the car, and the children are bedded down there in the proper manner. A start is made when order has been reasonably established, and by 8 p.m. the children will be sleeping soundly, and the parents are free to dine in comfort, the car and contents being left in the hotel yard. On arrival at destination in the early hours the children are carried to bed and will wake up in excellent—if not too hearty—spirits next morning.

The R.N.V.R. Club and Welfare Fund

Lieut. The Hon. W. W. ASTOR, R.N.V.R. (chairman, R.N.V.R. Club) writes: During the war no fewer than 2,700 doctors held commissions in the R.N.V.R. They served with great distinction in all classes of ships and in all parts of the world. Many lost their lives. It may therefore interest members of the medical profession to know that the R.N.V.R. Officers' Commemoration Fund has been opened to commemorate in a practical way the part R.N.V.R. officers played in the war and, in particular, those who lost their lives. The Fund has two objects (1) to purchase and equip the new premises of the R.N.V.R. Club, and (2) to start an adequate welfare fund to help R.N.V.R. officers and their dependants who

may stand in need. The new club will have a memorial tablet, and relatives of officers who were killed may through this fund have officers' names inscribed on it. This club was started during the war, and has grown from nothing to an institution with 10,000 members, and it provides good and cheap meals, accommodation, and amenities, particularly for junior officers. But it must leave its wartime premises, and without help it cannot get into new premises. The administration of the welfare fund is closely integrated with that of King George's Fund for Sailors. We sincerely hope that many members of the medical profession, so many of whom served in the R.N.V.R., will give their support. The money is urgently needed. R.N.V.R. officers themselves have generously supported the fund, but most of them are young, and it is hoped that the outstanding part that they played in the war (when they formed 80% of the officer strength of the Navy) will commend this appeal favourably to their fellow countrymen. Cheques should be sent to Commodore Earl Howe, R.N.V.R. Club, 52, Pall Mall, London. S.W.1.

"The Miasm of Marasmus"

Lieut. M. I. BOSTOCK, R.A.M.C. (M.E.L.F.) writes: It is interesting to speculate whether the diarrhoea of a new type which is discussed in the annotation "The Miasm of Marasmus" (Oct. 5, p. 497) is in any way related to the acute benign gastro-enteritis one frequently sees in young troops in the Middle East—possibly imported into the U.K. by returning troops. During this summer I have been R.M.O. with two units in Egypt and Palestine with a large proportion of very young soldiers (mostly aged 20 or younger), and about 100-120 cases have passed through my hands. Most of these bore a striking similarity. Almost all started abruptly with pyrexia of 100-105° F. (37.8-40.6° C.) and severe frontal headache, frequently a relative bradycardia of under 100; and sometimes mild meningism and widely dilated pupils were seen. Simultaneously or a few hours later symptoms of acute gastro-enteritis appeared, usually but not always with more diarrhoea than vomiting and moderate abdominal colic. The diarrhoea is watery and profuse—mucus occasionally and blood seldom being seen (and then usually the case proves to be a true dysentery). The pyrexia usually abates after 36-48 hours, and the gastroenteritis responds rapidly to 24 hours' starvation and large doses of kaolin and opium and belladonna. The patient is usually on his feet again and feeling perfectly fit 5 or 6 days after the onset of symptoms. These symptoms are not unlike those of preformed enterotoxin food poisoning, but the incidence and epidemiology was much more suggestive of an infective agent—possibly fly-borne—and as those cases that were admitted to hospital rather than unit sick bay seldom if ever had pathogens isolated from their stools, it seemed possible that this condition was a form of virus infection. Cases seemed to occur relatively seldom among older troops or troops with more than a few months' service in the Middle East.

Recurrent Bee Stings

MISS ANN SHERWOOD (Henley) writes: I have just read the "Any Questions" on "Recurrent Bee Stings" (Sept. 28). I was stung a few weeks ago and I too had an experience in some respects similar to that of the farmer. I became flushed all over, arms, legs, body and face, and I had a slight palpitation. My eyes became inflamed and I soon broke out into a profuse perspiration. I became normal after about 15 minutes after I had rested, though I felt slightly shivery.

Correction

We regret that in the leading article "Research in Tropical Medicine," published in the *Journal* of Dec. 7 we erred in attributing to the Liverpool School of Tropical Medicine the discovery of "an entirely new range of chemical substances having therapeutic action on the malarial infection of birds." The credit for this work should have been given to the members of the Imperial Chemical Industries team in Manchester. The members of the Liverpool School made their contribution by applying the new drugs to the treatment of human malaria and the investigation of the pharmacology of these drugs in the human subject.

Disclaimer

Mr. W. GRANT WAUGH (Durham) writes: I shall be very grateful if you will be good enough to publish a disclaimer of the entirely unauthorized use of my name in connexion with the alleged "arthritis cure" in Sunday and daily papers recently. I can assure you that this was not only not authorized or connived at but was made in contravention of a direct promise given me by the papers concerned. Those who know me would, I think, agree that notoriety of this sort is extremely distasteful to me, while the lurid description of the treatment merely gives rise to unjustified hope of "cure" to a very large number of sufferers.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 14 1946

MEDICAL ETIQUETTE AND ETHICS*

BY

N. E. WATERFIELD, M.B., B.S., F.R.C.S.

What is the difference between etiquette and ethics? Medical etiquette might be defined as rules of procedure which govern conduct of members of the profession in their relationship one with another, while ethical rules deal rather with the relationship of members of the profession towards the individual members of the public and also with their responsibility towards the State. These rules when formulated take into consideration not only the immediate consequence of their application but also the ultimate results. A Canadian writer on this subject says it is as impossible to define ethics as it is to define pain, that we can write the rules of ethics but cannot say what ethics are. I think there is much truth in this statement, and although I have not given a definition of ethics I have stated what is the function of ethical rules. These rules are often slightly referred to by the public as medical etiquette, and, in its view, have been drawn up by doctors to protect their own vested interests without reference to the interest of the patients, who are often annoyed at the restrictions these rules sometimes place on the freedom of action of the individual patient or doctor.

Codes of rules regulating the conduct of members of the medical profession date back to the earliest times. It is stated that there was a treatise published in Babylon in 2700 B.C. which dealt with this subject. It defined the personal responsibility of the physician, and fixed various fees for different services and the penalties for neglected practice. Among the ancient Egyptians a physician might be sentenced to death when a patient under treatment died in a manner not recognized as natural by the authorities.

Hippocratic Oath

The Hippocratic Oath is well known to all of you. It still remains a most appropriate code of conduct, and although it dates from 460 B.C. the maxims it contains are quoted to-day; and I believe that in at least one university the Oath is actually administered to the newly graduated. It states that when the physician has doubts about the diagnosis or treatment of a case it is his duty to call in a consultant; that he should not advertise; that he should be reasonable in his charges and if necessary should forgo them altogether; that he should lead a pure and moral life; that he should pay due respect to his teachers; that he should not give poisons or sanction the giving of them; that he should not bring about abortion; that he should not divulge matters which should be kept secret; and that he should not be ostentatious in dress or bearing. You will see from this brief summary how sound was the advice given, and that little modification or addition is needed to-day.

Under the Romans in A.D. 138 there were regulations governing the number of physicians practising, and only those who passed certain tests of their qualifications and character were allowed to practise. In 1224 the Emperor Frederic prescribed a form of instruction for those wishing to practise medicine and regulated the fees a physician might charge. In the Middle Ages the religious orders were for the most part responsible for medical treatment and there were few, if any, independent practitioners.

* Presidential Address delivered at the annual meeting of the Surrey Branch of the B.M.A.

In 1794 Thomas Percival drew up a set of rules which is really a code of medical etiquette rather than a code of ethics. It was published with a view to composing the quarrels of his contemporaries on the hospital staff. It pointed out that there may be two conflicting points of view: one that of the idealist, who lays stress on the interest of humanity as a whole, and the other which stresses the interest of the individual. The code lays down guides as to how these interests can be brought into harmony. One point of topical interest in Percival's code, when the average age of the G.M.C. is so much under discussion, deals with the age at which practitioners should retire from active work. Percival says: "The period of the commencement of senescence, when it becomes incumbent on the physician to decline the offices of his profession, is not easy to ascertain: so nice a point may be left to the moral discretion of the individual. But in the ordinary course of nature bodily and mental vigour must be expected to decay progressively, though perhaps slowly, after the meridian of life is past. As time advances, therefore, a physician should from time to time scrutinize impartially the state of his faculties, that he may determine bona fide the precise degree in which he is qualified to execute the active and multifarious offices of his profession." This is very excellent advice, but I wonder, even if we carry out this scrutiny, how many of us are capable of coming to an impartial decision. Perhaps under the new Health Bill the decision will be made for us by regulations drawn up by the Minister, who, endowed with supreme wisdom, will decide at what age we must retire from practice.

B.M.A. Ethical Committee

The B.M.A. set up an Ethical Committee in 1902 for the guidance of practitioners in their relationship to one another, to their individual patients, and to the State. From that time on it has been responsible for deciding ethical issues according to the ethical standards formulated by the Central Ethical Committee, which, after having been approved by the A.R.M., become binding on members of the B.M.A. Fresh situations are constantly arising. Among those which have occupied the attention of the committee in recent years have been the relationship of medical men to medical auxiliaries and chiropractors, the relationship of industrial medical officers to their colleagues, the responsibility of a medical man who is financially interested in the running of a nursing home or clinic or who acts as a director in a company which deals in drugs or medical appliances, and, just recently, the part medical men may rightly play in connexion with voluntary organizations—the one under immediate consideration being the Marriage Guidance Council.

Confidence and Consent

I have attempted to give you a very short summary of some of the landmarks in the history of medical ethics, and propose to devote the rest of my time to some of the questions which are of more direct interest to those in practice. I think one of the hardest problems to decide is when and what to tell. You will remember the direction on this question given in the Hippocratic Oath: "Whatsoever, in my professional practice or not in connexion with it, I see or hear in the life of man which ought not to be spoken of abroad, I will not reveal as reckoning that all such should be kept secret." The golden rule, of course, is that the confidence of the patient should not be betrayed and that information which has been obtained by the

doctor in the doctor-patient relationship must not be divulged without the patient's consent, either given or implied.

Consent may be implied when the information is given at the request of the patient for certificates or reports in order that he may obtain certain benefits from either the State or any clubs to which he may belong, or in order that he may be excused duty. You will notice the way in which the N.H.I. certificate is worded: "I hereby certify that I examined you on the under-mentioned date." This was originally done with the idea that you were informing the patient himself of the condition found, and it was the patient's own responsibility what he did with the certificate. There is, however, no particular point in having the certificate in this form, and the more ordinary form, "I certify that I examined [name]," is equally suitable provided it is handed to the patient himself. If the patient is an employee, say, of the Post Office or of a firm and presents himself for examination in accordance with instructions received from his employers, his consent to the making of an examination and the forwarding of a report may be implied. The same may be assumed when a person presents himself for a life examination or for a report to enable him to obtain compensation for an accident. But if a patient is under treatment and his employer rings up to inquire about him, no information of any kind which could possibly be considered a breach of confidence should be given without the patient's knowledge and consent, and in some cases it might be advisable to get this consent in writing. For example, if a patient were found to be suffering from T.B. and you thought that the employer should be informed, you would be well advised to get not only oral but written permission. I will give you some of the problems dealing with this matter which have been put to the Ethical Committee in recent years.

When to Give Information

I. The question is occasionally asked whether the police should be informed in the case of a patient being treated for the result of attempted suicide. This is considered a case where professional secrecy should be maintained.

II. Frequently inquiries are received from the police in a case where a dead baby has been found, and all the doctors in the area are circulated as to whether they have, about such and such a date, attended a woman who might possibly be the mother. The advice given by the B.M.A. is that under these circumstances the doctor should not tell, the reason behind this answer being that if it became known that such information would be disclosed, medical advice would not be sought and a double tragedy might result.

In 1914 a conference was held with the Lord Chief Justice, who said that the authorities desired (a) that information should be given by medical men in attendance on a woman who is suffering from the effects of abortion brought about by artificial intervention, and (b) that the circumstances in which it was desired that this communication should be made were subject to the three following limitations: (1) That the medical man was of the opinion, from his own examination of the patient and/or from some communication that she may have made to him, that abortion had been attempted or had been procured by artificial intervention; (2) that he was of the opinion, from his own observation of and/or from a communication made to him by his patient, that such artificial intervention had been attempted by some third party other than the patient herself; and (3) that the medical man was of the opinion that his patient, due to such artificial intervention, was likely to die and that there was no hope of her ultimate recovery. Subsequent to the conference the matter was considered by the Council of the Association and the following resolutions were passed: (1) That the Council is of the opinion that a medical practitioner should not in any circumstances disclose voluntarily information which he has obtained from the patient in the exercise of his professional duties; (2) that the Council is advised that the State has no right to claim that an obligation rests upon a medical practitioner to disclose voluntarily information which he has obtained in the exercise of his professional duties.

It is of course known to all of you that when appearing as a witness in a court of law the doctor is bound to disclose

knowledge in his possession, unless he is prepared to go to prison for contempt of court if he refuses the judge's directions. The privilege of professional secrecy granted to clergy and lawyers is not extended to medical practitioners.

III. A doctor examining for an insurance company asked whether he should accede to the request of the insurance company for information as to how the candidate acquired the disease he was found to be suffering from. He was told that he should give the full nature of the disease but should avoid expressing an opinion as to how it was acquired.

IV. Another interesting case occurred recently in the divorce courts where the issue turned on whether one or other of the parties had contracted venereal disease. Both parties had agreed to the doctor's disclosing the information in his possession, and it was held that there was no reason why he should not have furnished a report.

V. In another case the M.O. of a trading company abroad was asked by the manager whether the illness from which an employee was suffering and which necessitated sick leave was due to alcoholic poisoning, since, if this were so, by the rules of the company, of which the employee was aware, he would not be entitled to a free passage. The reply given was that the certificate should state the true facts of the case.

VI. Advice has been sought whether the doctor should inform the employer in the case of a nursemaid whom the doctor was treating for lues venerea in an infectious form, the patient refusing permission for her employer to be informed. The doctor was told that, if every effort to obtain permission failed and the patient refused to give up her post until she was cured, he would be justified in informing the employer. You will have noticed that the Hippocratic Oath says that such things as ought not to be revealed shall be kept secret. This was considered one of the exceptional cases where information should be given without the patient's consent, and which did not come under the category of something that ought not to be revealed.

What to tell a patient when he is very seriously ill may be a very difficult question to decide, but it is obvious that if a patient demands to know what is your opinion of his case he has a right to know it. There is no doubt that the will to live is a powerful factor in helping the patient to sustain the fight, and any expression that he has little or no chance of getting better should be made most guardedly and in terms which should not remove entirely all hope of recovery, for every one of us must have in mind cases where the seemingly impossible has happened.

Advertising

You will remember that the Hippocratic Oath condemns advertising by members of the profession, but there are methods considered ethical by which the existence of a practitioner can be made known to the public. The first of these is the doctor's plate. This should be of reasonable size and not unduly conspicuous. Forty years or so ago it was quite common to see the words "Physician and Surgeon" and not infrequently "Accoucheur" added as well, and in some poorer districts, where a shop window formed the front of a doctor's waiting-room, it was not unusual for a notice to be displayed which said that teeth were carefully extracted. The more usual and perhaps more dignified custom is to have either the words Dr. So-and-So, or the doctor's name followed by his qualifications. There is no objection to the hours of attendance at a surgery being displayed in small lettering.

Many queries are put from time to time with regard to the plate. Is it permissible to display it at a house the doctor proposes to live in but is not actually occupying, or at a site where a new house is being built for the doctor's occupation? The answer to these queries is that it is not considered an ethical procedure to do so. It is also not permissible to put up a plate where messages are taken in but where no patients are actually seen. The doctor's red lamp has, I think, almost disappeared. Another question sometimes put by practitioners of a specialty is whether they are at liberty to announce their specialty on the door-plate, the plea usually put forward being that they are constantly troubled by people who think they are in general practice. The answer is that it is not done in this

country although it is a common practice on the Continent ; or the proper path to the specialist is via the general practitioner, and a notification on the door-plate might be considered in invitation to a direct approach.

Publications in the lay press should not be used as a form of advertisement. I may perhaps quote the paragraph in the *Handbook* of the B.M.A., which deals with this matter ; it reads :

"From time to time there are discussed in the lay papers topics which have relation both to medical science and policy and to the health and welfare of the public, and it may be legitimate or even advisable that medical practitioners who can speak with authority in the question at issue should contribute to such discussions. But practitioners who take this action ought to make it a condition of publication that laudatory editorial comments or headlines relating either to the contributor's professional status or experience shall not be permitted, that his address or photograph shall not be published, and that there shall be no unnecessary display of his medical qualifications and appointments. There is a special claim that practitioners of established position and authority shall observe these conditions, for their example must necessarily influence the action of their less recognized colleagues. Discussions in the lay press on disputed points of pathology or treatment should be avoided by practitioners: such issues find their appropriate opportunity in the professional societies and the medical journals."

Questions are sometimes asked whether it is permissible for a general practitioner to publish in the press change of address, return from a holiday, or the fact that he has taken a partner. The answer is that none of these announcements is considered suitable for insertion in the lay press, but that the desired information may quite properly be conveyed to the patients in a letter or by a notice displayed in the doctor's surgery. However, I would say that under the special circumstances of the war it was considered desirable to allow announcements of the return of practitioners to be inserted in the lay press by the Local Medical War Committee on their behalf. A similar privilege was asked for on behalf of specialists, but it was considered that the proper place for such announcements was in the medical journals. One other point I should like to make is that it is sometimes obligatory from a legal standpoint that the dissolution of a partnership should be announced publicly ; when this is so, no objection would be taken to an announcement in the press. One other form of publicity which depends on a statutory provision is the exhibition in the post-offices of a list of the practitioners in the area who are doing N.H.I. work.

When a practitioner is appointed as medical officer to an organized body which provides medical care and attention to its members, it is the duty and responsibility of the practitioner to see that there is no improper publicity and no canvassing for members which might contravene the warning notice of the G.M.C. It must be remembered that the public has not the same ethical standard as the profession, so that the practitioner is well advised to be very much on his guard. Another trap for the unwary is that provided by the enterprising newspaper reporter in search of news. A few harmless remarks with reference to an article the writer has contributed to a medical journal made to a reporter of the sensational press may involve the doctor in a very awkward situation. The question of a practitioner's taking part in local politics is a matter for his own decision, but I think it might be said that it is unwise for a practitioner to take part in activities in which strong feelings are likely to be stirred up.

Rules have been laid down for the guidance of specialists who enter a district with the intention of starting to practise their specialty there and who wish to convey this information to their colleagues. The methods by which it is considered ethical to effect this are: (1) By calling on practitioners already established in the area and giving a personal explanation of arrangements and plans; (2) by sending a sealed postal communication to those practitioners who may be expected to be interested, provided such a communication contains no laudatory allusion to himself or his work; (3) by communications on professional subjects presented to the local Division of the B.M.A. or other medical organizations; (4) by sending reprints of his published works to those practitioners who may be expected to be interested.

Canvassing and advertising have both been most severely condemned and called forth the well-known Warning Notice

of the G.M.C. The practices by a registered medical practitioner (a) of advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting his own professional advantage; or, for any such purpose, of procuring or sanctioning or acquiescing in the publication of notices commending or directing attention to the practitioner's professional skill, knowledge, services, or qualifications, or depreciating those of others; or of being associated with or employed by those who procure or sanction such advertising or publication; or (b) of canvassing or employing any agent or canvasser for the purpose of obtaining patients, or of sanctioning or being associated with or employed by those who sanction such employment—are, in the opinion of the Council, contrary to the public interest and discreditable to the profession of medicine, and any registered practitioner who resorts to any such practice renders himself liable, on proof of the facts, to have his name erased from the *Medical Register*.

Consultation

As laid down in the Hippocratic Oath, it is the duty of a doctor when in doubt about the diagnosis or treatment of a case to call in a consultant; but, in addition to this, certain circumstances may arise when it is, to say the least, advisable that a second opinion should be sought and a second doctor share the responsibility with the attending practitioners: for example, when it may appear that the performance of some operation, or the pursuit of some line of treatment, involve considerable risk to the life of the patient or may result in some permanent disability; before any operation for terminating a pregnancy for therapeutic reasons is contemplated; in the case of a drug addict where it is necessary to continue the administration of the drug solely for the relief of the symptoms of addiction; and, lastly, when there is reason to suspect that the patient has been subjected to an illegal operation or is the victim of criminal poisoning. Ordinarily the choice of consultant is in the hands of the attending practitioner, but, should the patient express a desire to call in a particular consultant it is usually wise to accede to the request provided the choice is not an unsuitable one. Consultations are not the formal proceedings they were in the days of the frock-coat, top-hat, and gold-headed cane, the disappearance of which marked the end of an era.

With regard to the actual consultation: when this is carried out in the patient's house, after a preliminary talk in which the patient's doctor gives a history of the case and expresses his own opinion the practitioner precedes the consultant into the patient's room and introduces him. After an examination has been made the doctor follows the consultant out of the room and the consultation is held. Then the consultant gives his opinion to the patient or his representatives. If the practitioner is in disagreement with the view expressed by the consultant, he has the right to put his view before the patient, who should then be asked to make a choice as to which line of treatment he prefers to follow. Should the choice be on the side of the course recommended by the consultant, the practitioner, should he feel unable to co-operate, would be well advised to hand over the case to a colleague.

Sometimes patients are anxious to have what they call an entirely independent opinion. When this is so, it is regarded as ethically correct for a consultant to see the patient without a letter from his doctor, but it is his duty to try to persuade the patient to let him communicate with the patient's doctor. In any event the consultant should not do more than express his opinion of the case. He should not, under any circumstances, accept the patient for treatment. When the patient attends at the consultant's house without the practitioner being present, the consultant will of course communicate his findings to the patient's doctor in writing, and if a second visit is desirable it should be left to the patient's doctor to arrange it. Likewise if another specialist's opinion is considered necessary, the choice of who should be employed should be left to the patient's doctor, who would doubtless fall in with any suggestion the specialist might make.

Recently the Minister of Health sought to establish the position that in the case of a patient diagnosed as or suspected to be suffering from tuberculosis and referred to the divisional medical officer, the latter should have the right to refer the

patient direct to the tuberculosis medical officer. The B.M.A. has strongly contested this view, and a reply has been received from the Minister stating that in those cases where the opinion of a specialist was considered to be desirable for reasons other than to enable the examining medical officer to report whether or not an insured person is incapable of work, no steps would be taken for the specialist's examination before obtaining the consent of the insured person's own doctor. The Ministry is being pressed to agree that *all* references to specialists shall be made only after consultation with the insured person's doctor.

In the event of a patient's being admitted to a nursing home or the pay beds of a hospital under a specialist, he then of course has the right to call in whatever help he requires. The question is not infrequently raised of who has the right to choose the anaesthetist when an operation is to be performed. The answer is that it is the right of the surgeon, as also in the case of dental operations, when the choice belongs to the dentist; it being understood that in both instances the patient's doctor has the right to be present at the operation. The responsibility for the fee of the consultant and of the surgeon rests with the patient's doctor. It may be paid directly by the patient at the time of the consultation or operation or may be collected by the doctor and forwarded to the consultant. In the latter case any account sent to the patient should make perfectly clear how the total is made up. Dichotomy, or fee splitting, between the surgeon and the practitioner is a most serious offence.

I think the two situations which the public most complain about are that medical ethical rules, or etiquette as the public choose to call them, place some restrictions on obtaining independent opinion and treatment from whomever they like, and that they are not at liberty to change their doctor without certain formalities being observed. The first question I have already briefly dealt with when speaking about consultations. The rules governing the other situation are, shortly, that when a practitioner supersedes another in the conduct of a case he must satisfy himself that the other practitioner has been informed that his services are no longer required; and when a practitioner is requested to visit a patient and has reason to believe that another practitioner is in attendance, it is his duty to inform the patient that he cannot attend without the presence or consent of the practitioner actually in charge of the case. If the attending practitioner, after being warned, declines to meet the practitioner invited, and if the patient or his representatives persist in the request, knowing of this refusal, or if the attending practitioner retires from the case, then the practitioner is entitled to take over the care of the case.

In the case of a practitioner acting as medical inspector—for example, for an insurance company in a compensation case—it is his duty to inform the patient's doctor and invite him to be present at the examination, but should the latter fail to respond the medical inspector, with the consent of the patient, can proceed with the examination. No criticism should be made of the treatment adopted and if any modification in the line of treatment is in his opinion necessary he should personally or by letter discuss this with the attending practitioner.

Covering

This is another of the most serious of ethical offences. It means enabling an unqualified person to carry on medical treatment which he would not be able to do unless he had a qualified practitioner behind him who is willing to fulfil certain obligations or render such assistance as he may require to enable him to carry on his work. For example, an unregistered practitioner may run a nursing home and undertake the treatment of patients; but without the assistance of a registered practitioner willing to sign death certificates of any patient who might die while in the home it would be impossible for him to do so. Or an osteopath may carry out manipulations for which an anaesthetic may be required. Here again, without the help of a registered practitioner his activities would be very much curtailed.

A question is sometimes asked as to the responsibility of a doctor who employs an unqualified dispenser. The answer is that under no circumstances can the dispenser make up medicines which contain poisons in any shape or form, but

provided the person works under the close supervision of the doctor she is allowed to dispense other medicines. There is one situation which has recently arisen about which practitioners have to be very much on their guard. This arises from the position created by the enactment making it illegal for a person who is not qualified or registered as a midwife to attend for gain a confinement or during the lying-in period, and the doctor would be held guilty of an offence if he attended a case where such a person assisted him in any way with the nursing of the case.

It may have occurred to you that there are some problems which from time to time are under discussion by the public, such, for example, as euthanasia, contraception, and more recently artificial insemination, about which the medical profession as a body might have been expected to pronounce and formulate rules for the guidance of the profession, but it is generally accepted that these are large moral questions on which an individual member of the profession is at liberty, in the same way as any ordinary member of the public, to form his own opinion and to use his own judgment as to the attitude he shall take towards them. As an aside I should like to say a word on the practitioner's attitude towards the dying. There are two aphorisms which seem to help in defining this. The first is: Thou shalt not kill but need not strive officiously to keep alive; the other: There is no moral obligation to prolong the act of dying.

The title of this address is "Medical Etiquette and Ethics," but I have found in the course of preparing it that it has been very difficult to separate the two subjects, and many points of etiquette have been dealt with when an ethical point has been under discussion. There are, however, two points of etiquette which I should like to stress before finishing. First, the necessity of always sending a communication with the patient sent for consultation, either to the consultant or to a hospital, and of acknowledging any communication received after such a visit; and, secondly, I would mention the custom, which I am afraid is more neglected than it should be, of a practitioner newly entering a district calling on the practitioners living there.

CARE OF CHILDREN

A joint circular from the Home Secretary, the Minister of Health, and the Minister of Education has been sent to local authorities to draw their attention to certain comments and suggestions in the Report of the Care of Children Committee. The Report recognizes that difficulties in recruiting staff and finding suitable accommodation for the children exist. Nevertheless, such faults as lack of co-operation between different departments of the same authority and failure to treat the child "as an individual with his own rights and possessions . . ." also occur, and these do not require legislation for their correction. It is not only the child's physical needs that are important: an atmosphere of affection, security, and personal interest is equally so.

With the object of allowing certain men and women to call themselves Probationer Assistant Nurses until the end of 1948 instead of the end of 1947 as formerly, an amendment has been made to the Nurses (Scotland) No. 2 Regulations, 1945. The title "Probationer Assistant Nurse" is intended to be used only by men and women of 18 or over who are qualifying for admission to the Assistant Nurses' Roll by undergoing a period of whole-time experience—usually two years—in the nursing of the sick in hospitals under the supervision of trained nursing staff. Men and women who satisfy the requirements of the General Nursing Council may obtain admission to the Roll in this way until the end of 1948. To do so, however, they must enter a hospital on or before Jan. 1, 1947. Those who enter a hospital after that date in order to qualify as Enrolled Assistant Nurses will have to undergo systematic training in Assistant Nurse Training Schools and will have to sit for an examination.

The Wheatley Committee has recently announced salaries for Probationer and Enrolled Assistant Nurses.—*Women:* Annual resident salary: Probationer Assistant Nurses, first year £55; second year £65 (emoluments £75); Enrolled Assistant Nurses, £100 rising to £160 (emoluments £100). *Men:* Weekly non-resident salary: Probationer Assistant Nurses, 86s. rising to 98s.; Enrolled Assistant Nurses, 92s. rising to 112s.

THE WILLESSEN AFFAIR

Willesden Council have rescinded their notice to dismiss the doctors and nurses in their employment if they do not join trade union. All the notices have been withdrawn without exception. The General Purposes Committee of the Borough Council met on Dec. 4 and passed the following resolution:

In accordance with the public undertaking given at the Council meeting on Nov. 25 that the resolution relating to employment should not be administered in a harsh and doctrinaire manner, and membership of a trade union affiliated to the T.U.C. is not necessary for the purposes of the resolution, we recommend:

That trade union membership or membership of any association, corporation, college, or body of persons whose functions are for the time being recognized by the Council as including negotiation of rates of salaries or conditions of service of the members thereof be a condition of employment of all persons continuing in or entering service of the Council.

That the following be recognized by the Council: The British Medical Association, the Royal College of Nursing, the Royal British Nurses' Association, and the College of Midwives.

That all employees on whom notice to terminate their contract of service has been served because of failure to comply with the Council's resolution regarding trade union membership be informed of the above amendment to such resolution and be offered re-engagement as from the date of the termination of their previous contract of service on the terms and conditions of such previous contract, together with the conditions set out in the resolution of the Council of Sept. 24, 1946, as amended above.

It is understood that the Council, since passing the above resolution, have withdrawn all their demands and now no longer require their doctors and nurses to be members of any organization whatever, whether a trade union or a professional body. The position of these employees therefore reverts to what was before the unhealthy movement started.

Public outcry against what the *Times* called the Council's defensible doctrine has been widely ventilated in the Press. That it is reflected in Ministerial minds is evident from Mr. Herbert Morrison's remarks at a luncheon of the Institute of Incorporated Practitioners in Advertising on Dec. 5, when, referring to the shortage of nurses in hospitals, he added: "Why one or two local authorities should go messing about with this . . ." Applause drowned the rest of his sentence.

The Minister of Health was equally direct and condemnatory when opening University College Hospital's new nurses' home on Dec. 5. Saying that the foremost preoccupation of municipal and voluntary hospitals must be the welfare of the patients, and not any other preoccupation, be it political, professional, or trade union, Mr. Bevan referred to the Willesden affair and expressed the hope that local authorities throughout Great Britain would see that the spontaneous resentment against what had happened was a warning not to try to repeat it in their places.

This was followed on Dec. 6 by a circular from the Ministry of Health to all local authorities which contains the following paragraph:

The Minister wishes to make it clear to all local authorities that he considers that their primary duty as health authorities is to maintain the efficiency and smooth running of their health services, and to ensure the welfare of the patients for whom they are responsible. All other considerations must, in his view, be regarded as secondary, and he trusts that local authorities will follow this principle in their administration. While the Minister is anxious that doctors, nurses, and members of similar professions should join a trade union or appropriate professional association, he considers that this matter should not be determined by the unilateral action of local authorities.

As a correspondent points out in a letter on this page, the notices of dismissal were reported to be regarded as "premature" by certain Labour members of Willesden Council. It is to be hoped that the Ministerial censure to which they have been subjected will prevent any similar conceptions or misconceptions arising in the future.

Whether membership of the Monumental Masons' Union, as suggested by Dr. R. Dingwall Kennedy in a letter to the *cosman*, would be acceptable if such circumstances should arise again is an interesting speculation. It seems open to the criticism that, in the event of that union calling a strike, the rapidly accumulating dead would not even have the consolation of posterity's record.

Correspondence

The "Closed Shop"

SIR,—The implication in Dr. F. R. Ellis's letter (Nov. 23, p. 138) that the application of the principle of the "closed shop" interferes in some way with the liberty of the subject indicates a lack of knowledge of the practical details of trade unionism.

In fact, the application of the "closed shop" principle in industry is designed to prevent a recalcitrant minority from undermining the security and position which a majority group of workers have built up through trade union action. In this way the liberty of the subject is increased because the security of tenure of his job is increased, and he is no longer likely to have his wages whittled down—as he might have been but for the trade union. In addition, where wages and conditions in industry are the subject of negotiation between a trade union and the management, the negotiating machinery, from which all benefit, has to be paid for. It is not fair that a minority should escape this payment by claiming the right not to belong to a trade union.

As far as medical men employed by local authorities are concerned, membership of a trade union should surely be regarded as an advantage. Should there be any dispute between the employee and the employing authority the trade union can represent the member's interest. Medical men need some assistance of this sort. The B.M.A. is an excellent professional organization, but it cannot undertake trade union activity on behalf of its members in the way that the Confederation of Health Services Employees can do. I am a member of both organizations.

I readily admit that it is possible to conceive of circumstances when the application of the "closed shop" principle is not beneficial. Every principle can be abused. It is necessary to realize, however, that correctly applied the "closed shop" is one of the greatest assets to the trade union movement in ensuring the liberty and true freedom of the ordinary trade unionist.—I am, etc.,

London, S.E.24.

P. W. ROE

SIR,—It has been reported in a local paper that certain members of the Labour Willesden Council consider their dismissal notices to hospital staffs to be "premature."

The new Health Service is to be "controlled" by a series of committees to which a Labour Minister is to appoint every chairman, a certain number of members, and to "approve" the appointment of all other members. It is therefore fortunate that we have at Willesden a foretaste of the attitude which at least a portion of Labour members takes to the medical profession.

I am only sorry this did not happen sooner so that answers to the plebiscite could have been influenced by this warning and threat of possible things to come.—I am, etc.,

Birmingham.

WM. WATSON NEWTON

SIR,—Mr. Bevan has expressed great indignation at the action of the Willesden Council, but I feel that this indignation is partly due to the fact that their action was premature. In other words, they have let the cat out of the bag.—I am, etc.

Camberley.

LESLIE HARTLEY

Medical Unemployment

SIR,—Your correspondent "Another of the Unemployed" (Nov. 23, p. 138) has made sweeping statements which do not apply to all local authorities. I can give you as a contrast the details of a recent appointment of deputy medical officer of health in the county borough of Chester. The official application form requested details of war service, with ample space for such information. Five candidates were selected for interview, all of whom had served in the Forces during the recent war.—I am, etc.,

J. W. LOBBAN,
Medical Officer of Health
Chester County Borough

Association Notices

GROUP OF NON-PROFESSORIAL MEDICAL TEACHERS, LABORATORY AND RESEARCH WORKERS

A meeting of the Group of Non-Professorial Medical Teachers, Laboratory and Research Workers, to which all members of the Group are invited, will be held at B.M.A. House on Thursday, Jan. 2, 1947, at 2 p.m.

Members of the Group are invited to forward to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, suggestions or recommendations for consideration by the meeting.

(Sgd.) CHARLES HILL,

Secretary.

The Katherine Bishop Harman Prize

The Council of the B.M.A. is prepared to consider an award of the Katherine Bishop Harman Prize of the value of £75 in 1947. The purpose of the prize, which was founded in 1926, is to encourage study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best essay submitted in open competition, competitors being left free to select the work they wish to present, provided this falls within the scope of the prize. Any medical practitioner registered in the British Empire is eligible to compete.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1947, but will be offered again in the year next following this decision, and in this event the money value of the prize on the occasion in question will be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be final.

Each essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address. Essays must be forwarded so as to reach the Secretary, to whom all inquiries should be addressed, at B.M.A. House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946.

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

Branch and Division Meetings to be Held

DERBYSHIRE BRANCH.—At Smedley's Hydro, Matlock, Sunday, Dec. 22, 2.30 p.m. Meeting of Branch Council. Agenda: Election of Officers, etc.

NORTH OF ENGLAND BRANCH.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Thursday, Dec. 19, 7.15 p.m. Clinical demonstration by Mr. George Y. Feggetter: Some Genito-urinary Conditions. 3.45 p.m. Address by Dr. C. C. Ungley: Pernicious Anaemia and Subacute Combined Degeneration of the Cord—A survey of 20 years' progress.

PADDINGTON DIVISION.—At Inoculation Department, St. Mary's Hospital, W., Thursday, Dec. 19, 8.30 p.m. Sir Alexander Fleming, F.R.S.: Penicillin in General Practice. Members of other Divisions are invited to attend.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. F. Dudley Hart, at 152, Harley Street, W.1 (Tel.: Welbeck 6919); Mr. J. Stewart Heslop, F.R.C.S., at 8, St. John Street, Manchester, 3 (Tel.: Blackfriars 2166); Dr. John S. Parkinson, at 10, St. John Street, Manchester, 3 (Tel.: Blackfriars 4311); Dr. J. Graham Scott, at 11, Wexford Avenue, Johannesburg, S. Africa; Dr. R. J. Twort, at 11, Park Terrace, Nottingham (Tel.: Nottingham 66486).

Meetings of Branches and Divisions

SALISBURY DIVISION

A successful meeting of the Division was held on Nov. 27. Thirty members and visitors were present, with Dr. A. D. H. Simpson in the chair; Dr. G. D. Kersley, of Bath, was the guest of the Division.

Dr. Kersley addressed the meeting on "The Differential Diagnosis and Treatment of Rheumatoid Arthritis," showing slides of the x-ray appearances in gout, rheumatoid arthritis, and other conditions. During the discussion that followed doubt was expressed as to the amount of progress made in treatment in the last twenty years. The lecturer, in reply, emphasized the change of outlook in the profession itself. Such cases were now regarded as meriting special care and extensive physical and orthopaedic treatment. The institution in the future of establishments for rheumatoid cases on the lines of tuberculosis sanatoria was probable.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

General Meeting of Fellows.—Tues., 5.30 p.m. Ballot for election to the Fellowship.

Section of Pathology.—Tues., 8.15 p.m. Discussion: Thrombosis. Openers: Mr. H. J. B. Atkins: Clinical aspects of thrombosis. Dr. R. H. D. Short: Pathology of primary thrombosis. Dr. Helen Payling Wright: Platelet changes in thrombosis. Prof. H. P. Gilding: Anticoagulants and their mode of action.

Section of Dermatology.—Thurs., 5 p.m. (Cases at 4 p.m.) Paper by Dr. W. J. Hohmann: Erythematous initial tuberculide.

HUNTERIAN SOCIETY.—At Pimm's in the Poultry, Mon., 7.15 p.m. Dinner meeting. Discussion by Dr. Geoffrey Evans: Flatulence.

MEDICAL SOCIETY OF LONDON. 11, Chandos Street, Cavendish Square, W.—Mon., 8.30 p.m. Lloyd Roberts Lecture by Sir James Chadwick, F.R.S.: Atomic Energy and some Applications to Medicine.

WEEKLY POSTGRADUATE DIARY

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, W.C.—Mon. 5 p.m., Dr. A. D. Porter: Vitamin A in Dermatology. Tues. 5 p.m., Dr. H. Corsi: Diseases of the Nails.

APPOINTMENTS

DAVIS, HAROLD, M.B., B.Chir., M.R.C.P., Honorary Physician to Outpatients, Hampstead General and North-West London Hospital, Haverstock Hill, N.W.

LAMA, ADRIAN, M.B., Ch.B., D.O.M.S., Ophthalmic Surgeon to the Peter and Kinross Joint County Council Education Authority and Visiting Ophthalmic Surgeon to the Bridge of Eam Hospital.

RINKEL, L. RONALD J., M.R.C.S., L.R.C.P., Medical Superintendent, Binal Legio Sanatorium, Nayland, near Colchester.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than fast post Monday morning.

BIRTHS

BLACK.—On Nov. 30, 1946, in Leeds, to Stella, wife of George Black, F.R.C.S., a daughter.

BROCK.—On Nov. 27, 1946, at King's College Hospital, to Margaret (née Cave), wife of Dr. Bevis Brock, a son—Christopher.

CLIFT.—On Dec. 1, 1946, to Dorothy (née Newell), M.B., Ch.B., wife of A. J. Clift, F.R.C.S., a son.

DE COVERLEY.—On Sept. 20, 1946, at Maymyo, Burma, to Jeao (née Draz White), M.B., B.S., wife of Roger de Coverley, a second daughter.

DE SOLDERHOFF.—On Dec. 2, 1946, at Ayrshire Central Hospital, to Mollie, wife of Richard de Solderhoff, F.R.C.S.Ed., M.R.C.O.G., a son.

HUTTON.—On Dec. 1, 1946, at Harpendee Auxiliary Hospital, to Dorothy (née Cheshire), wife of Dr. T. B. Hutton, a brother for David—Christopher Thomas.

LOYD OWEN.—On Dec. 8, 1946, at the Lindo Wing, St. Mary's Hospital, W.1, to Helen, wife of Dr. Morus W. Lloyd Owen, 50, Howard Road, Coulsdon, Surrey, a daughter.

ORTON.—On Dec. 1, 1946, to Ena, wife of R. Orton, M.B., Ch.B., D.P.M. Rutherford, Garlands, Carlisle, a daughter.

RIVETT.—On Dec. 8, 1946, at the Willows Nursing Home, Bramley, Leeds, to Elspet (née Strathie), wife of Dr. P. A. H. Rivett, a daughter.

WATSON.—On Nov. 23, 1946, at Royd Lodge, Victoria Road, Bridlington, to Dorothy, wife of Edgar S. Watson, O.B.E., M.B., Ch.B., a son.

WILLIAMS.—On Dec. 9, 1946, at Hampstead, to Joy B. (née Jewsoo), M.B., B.S. of Denis Williams, a daughter.

WRIGHT.—On Dec. 3, 1946, in Nyasaland, to Marjorie (née Wood), wife of Robert Wright, M.B., B.Chir., a son—John Garnett.

Dangerous Drugs Act: Withdrawal of Authority

The Home Office announces that Dr. Halina Sulinska (London, N.W.3) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

A SURVEY OF THE OUTCOME OF 20 CASES OF *H. INFLUENZAE* MENINGITIS RELATED TO BACTERIAL TYPE

BY

K. ZINNEMANN, M.D.

Lecturer in the Department of Pathology and Bacteriology, School of Medicine, Leeds

Considerable progress in the treatment of *H. influenzae* meningitis has been made since Margaret Pittman (1931) showed that most strains isolated from this condition belong to the serological type b—one of six types all characterized by possessing capsules composed of polysaccharides. Early efforts at specific treatment were directed towards producing an effective type-specific *H. influenzae* antiserum (Pittman, 1933; Wilkes-Weiss and Huntington, 1936; Fothergill, 1937). These succeeded in reducing the fatality rate only from 97% without specific treatment (Lindsay, Rice, and Selinger, 1940) to 80–84%. The sera used by Pittman and others were prepared by immunizing horses. In 1936 Horsfall, Goodner, and MacLeod showed that in the case of type-specific pneumococcus serum the therapeutic qualities of rabbit sera are superior to those of horse sera. They explained this finding as most probably due to the smaller size of the antibody molecule in rabbit serum, which diffuses more readily into infected foci and so combines more effectively with the antigen. Excess of horse serum also causes a prozone effect which is not obtained with rabbit serum. These inferior combining qualities of horse antiserum may be responsible for the poor therapeutic results of Pittman, of Wilkes-Weiss and Huntington, and of Fothergill, since there are close analogies in the antigenic structures of pneumococci and *H. influenzae* (Pittman, 1931; Alexander, 1943a).

The introduction of sulphonamide therapy made an effective antibacterial treatment a practical possibility for the first time. The results were reviewed in this country by Mutch (1941) and by J. Gordon, Woodcock, and Zinnemann (1944). In a series of papers Alexander, Heidelberger, and collaborators (1939, 1940, 1942, 1943a, 1943b, 1944), in *in vitro* and mouse experiments as well as in clinical trials, laid the foundations for a rational therapy based on a combination of the most effective sulphonamide—i.e., sulphadiazine—with rabbit anti-*H. influenzae* type b serum. Alexander (1944) thus succeeded in reducing the mortality rate to 22% in a total of 87 patients all treated within 7 years. In a report which was only seen when this survey was going to press Smith, Wilson and Hodes (1946) give an account of 28 cases of *H. influenzae* meningitis treated with the combination of sulphonamides and *H. influenzae* type b rabbit antiserum. The recovery rate was 85.7%.

Experience of this condition is comparatively slight in this country, as cases occur only sporadically over a wide area. From a number of case reports it seemed as if sulphonamide therapy alone might be sufficient (J. Gordon, Woodcock, and Zinnemann, 1944). As reports of more cases accumulated it became evident, however, that this therapy was proving disappointing in many instances. Recently Alexander (1944) pointed out "that the capacity of the sulphonamides to effect complete recovery from type b *H. influenzae* infection is influenced by two factors. First, the infection must be relatively mild. Secondly, the drug must be started early in the course of the infection. It is believed that only under such conditions will sufficient time be afforded to the patient to produce through his own powers sufficient antibody to overcome the disease."

The Emergency Public Health Laboratory Service has now secured a small stock of *H. influenzae* type b specific rabbit antiserum. Thus it is possible to make practical use of the typing of *H. influenzae* strains isolated from meningitis—a pro-

cedure advocated recently in this country (Mutch, 1941; J. Gordon, Woodcock, and Zinnemann, 1944). An outline of the main points of Alexander's (1943b, 1944) routine treatment may therefore be useful.

All material necessary for the isolation of the causative organism and for typing should be collected before, starting specific treatment. The capsule-swelling technique carried out on the organisms in the C.S.F. is the quickest way of establishing the type of *H. influenzae*. To confirm the result typing by agglutination on a slide and/or in tubes should be carried out with the isolated strain. Using the agglutination tests alone will delay the result for 24 to 48 hours.

1. The first dose of sulphonamide—sulphadiazine or sulphamezathine—is given intravenously.

2. A continuous intravenous saline drip is established for 24 hours. The remainder of the daily dose of sulphonamide—i.e., 0.1 g. per kg. body weight in all—should be added to the drip. After the first 24 hours sulphonamide therapy is continued by mouth. The daily dose is 0.1 g. per kg. body weight, and is continued until 7 days after the C.S.F. is first shown to be sterile. Earlier cessation of sulphonamide treatment carries the risk of relapse.

3. The dose of specific serum to be administered is roughly determined by the glucose content of the C.S.F. Alexander (1943b) describes a simple adaptation of Benedict's qualitative method for quick determination of the sugar content of C.S.F. The specific antibody present in the therapeutic serum is given in milligrams of antibody nitrogen. The accompanying Table is a guide to the dosage of antiserum.

Table showing Dosage of *H. Influenzae* type b Rabbit antiserum based on Glucose Content of C.S.F.

Glucose in C.S.F. (mg. per 100 ml.)	Indicated Dose of Antibody Nitrogen (mg.)
<15	100
15–25	75
25–40	50
>40	25

4. The patient's progress is judged to a large extent by the changes in the C.S.F., which is examined daily. If within 24 hours sugar and chlorides have risen, no organisms are seen in direct smears, and the patient's serum causes capsular swelling when diluted 1 in 10 no further serum is required provided the C.S.F. continues to become normal; cultures become and remain sterile; and free antibody as shown by the capsular swelling test persists in the serum in adequate excess. If progress is not satisfactory at the end of 48 hours from the initiation of serum therapy a further dose equivalent to 25 mg. of antibody nitrogen should be given intrathecally.

5. Alexander's last clinical report (1944) is mainly concerned with protracted cases and cases belatedly subjected to specific treatment, which she terms "chronic *H. influenzae* meningitis," though in our view subchronic or subacute *H. influenzae* meningitis would seem to describe the condition more adequately, since the expectation of life can be measured in weeks or months and not in years. In Alexander's report two histories are given in which a striking improvement followed intrathecal introduction of air together with antiserum. She suggests that adhesions blocking the flow of fluid in the cerebrospinal canal are loosened, and she also advocates the injection of heparin intrathecally to prevent clotting.

Observations on Penicillin and Streptomycin Sensitivity

It was emphasized repeatedly in the early investigations of the antibiotic properties of penicillin that *H. influenzae* is an

outstanding example of an organism resistant to this substance. When supplies of penicillin became more ample higher concentrations could be employed and strains of *H. influenzae* were found to be sensitive to these. Straker (1945) reported two such strains, and she thought that smooth strains were more sensitive than respiratory ones. Private communications (K. B. Rogers, J. M. Croll, F. W. Gunz, and C. J. Young) supported the impression that penicillin had its uses in *H. influenzae* meningitis. M. Gordon and Zinnemann (1945), in a survey of the penicillin-sensitivity of a large collection of *H. influenzae* strains, established that this was not an occasional phenomenon; 43 respiratory and 18 meningeal strains were all found to be sensitive to penicillin, most of them in concentrations which allowed a rational use of the drug in conditions due to this organism. Three case reports of successful penicillin treatment, in combination with sulphonamides, of *H. influenzae* meningitis have been published hitherto (Forgacs, Hutchinson, and Rewell, 1945; McIntosh and Drysdale, 1945; Drysdale, McIntosh, and Brodie, 1946).

Quite recently, use of the new antibiotic streptomycin, mostly in combination with sulphonamides, has been reported in 6 cases of *H. influenzae* meningitis (Anderson and Jewell, 1945; Herrell and Nichols, 1945; Cairns, Duthie, and Smith, 1946). So far as can be judged, fairly large doses of streptomycin are required. Hewitt and Pittman (1946) find that cultures of *H. influenzae* show a decreasing sensitivity to antibiotics in the following order: streptomycin, penicillin X, and penicillin. Mouse experiments confirm the *in vitro* findings. The results of further clinical trials have to be awaited before their respective merits can be judged. Hewitt and Pittman's experiments suggest also that a synergistic action may take place when these antibiotic substances are combined with sulphonamides or specific rabbit antiserum.

Below are presented reports of 20 cases of *H. influenzae* meningitis treated in various ways. The survey is the result of inquiries made at a number of laboratories and hospitals from which strains of *H. influenzae* were received in this department for typing. The clinical details are those kindly given to me by the physicians under whose care the patients were placed and the pathologists concerned. These circumstances account for the diverse methods of treatment and dosage used.

Cases treated with Sulphonamides Only

Case 1.—J. M., a boy aged 1 year 5 months. (Under the care of Prof J. C. Spence, Royal Victoria Infirmary, Newcastle-upon-Tyne.) Onset of symptoms 5/1/45. No special treatment at home. On admission on 24/1/45 signs of meningitis. C.S.F. turbid—cell count 13,000 per c.mm., no sugar present; *H. influenzae* type b isolated. Medication started with 2 g. sulphathiazole intravenously; subsequently 0.25–0.5 g. sulphathiazole by mouth 4-hourly for 13 days. Total amount given, 34 g. A clinical relapse was experienced on 31/1/45, when the dose of sulphathiazole was reduced from 3 g. to 1.5 g. per day. The cell count in the C.S.F. rose from 800 per c.mm. to 1,500 per c.mm. during the relapse. After discontinuation of sulphathiazole on 6/2/45 the cell count was still 800 per c.mm. Sulphadiazine therapy was therefore started on 12/2/45 with 0.5 g. 4-hourly for 18 days, and 0.25 g. 4-hourly for another 26 days. The sugar content of C.S.F. was normal from 12/2/45 onwards. After an initial rise to 1,200 on 15/2/45 the cell count in the C.S.F. declined slowly until it reached the figure of 30 cells per c.mm. on 9/3/45, at which level it remained with slow but steady clinical improvement until the child was discharged in normal physical and mental condition on 9/4/45. The total dosage of sulphadiazine given was 97 g.

Case 2.—M. S., a girl aged 3 years. (Under the care of Dr. M. L. Bery, Lincoln.) On 5/11/44 headache; a squint was noticed on the same day. Admitted on 8/11/44 with symptoms of meningitis. T. 101° F. (38.3° C.). Lumbar puncture: C.S.F. under pressure and milky in appearance. Treatment started with 1.5 g. sulphathiazole, then 0.5 g. 4-hourly for 3 days. When 9 g. had been administered the temperature had returned to normal although the pulse remained rapid. Therapy was discontinued and the temperature rose again to 104° F. (40° C.). *H. influenzae* type b isolated 15/11/44. A second course of sulphathiazole was started on 16/11/44, but was discontinued owing to vomiting. The total of sulphathiazole given in the two courses was 13.5 g. From then onwards the child's condition deteriorated slowly. A 3-day course of sulphanilamide amounting to a total of 105 g. was given from 27/11/44 to 30/11/44 with no effect. Death occurred on 1/1/45.

Case 3.—P. E., a girl aged 1 year 10 months. (Under the care of Dr. T. M. Pole, Grantham Hospital.) On 25/5/44 she fell ill

suddenly with violent vomiting of increasing severity. She was given 8 g. sulphanilamide before admission on 26/5/44, when she was stuporous but without neck rigidity, and Kernig 2+. T. 97° F. (36.1° C.). Chest: terminal congestion with generalized loose rales. C.S.F. not under pressure but turbid. A course of sulphapyridine was started at once, but the condition deteriorated rapidly. On 27/5/44 *H. influenzae* type b was isolated. The child died the same day, 24 hours after admission.

Case 4.—R. M., a boy aged 9 months. (Under the care of late Dr. T. D. Semple, Cumberland Infirmary, Carlisle.) Was admitted to hospital on 2/5/44 after having been ill for 3 days with meningitic symptoms for 2 days. Treatment was started with 0.25 g. oral sulphathiazole 4-hourly for 5 days. Then medication was reduced to 3 daily doses for 3 days. As all symptoms had subsided treatment was then discontinued for 5 days. When symptoms recurred medication was started again with 6-hourly at 8-hourly doses of 0.25 g. sulphathiazole. 24/5/44: *H. influenzae* type b isolated. 26/5/44: Administration of sulphadiazine 4-hourly doses of 0.5 g. for 2 days, after which time the treatment had to be discontinued because of failure to pass urine for 16 hours. During the next 3 days meningitic symptoms became more marked and another course of 0.25 g. sulphadiazine 4-hourly was given until swallowing became difficult on 2/6/44. Death occurred on 4/6/44. The total dose of sulphathiazole was 19.5 g. and of sulphadiazine 7 g.

Case 5.—Baby A. S.; no age stated. (Under the care of Dr. M. Lawson, Berwick-on-Tweed.) A week before admission on 13/2/45 the boy developed a left-sided lobar pneumonia and was given sulphapyridine with satisfactory result. On 11/2/45 a renewed rise of temperature, with vomiting. Another course of sulphapyridine was started the same day. On admission to hospital on 13/2/45 there was slight neck rigidity; the fontanelles were bulging. Lumbar puncture 20 ml. of a turbid fluid was withdrawn under pressure. There was an impaired note over the left side of the chest. Sulphapyridine medication was continued together with chloral hydrate, gr. 7 (0.45 g.) at night. On 16/2/45 there were increased signs of meningitis and cerebral irritation, left intern strabismus, extreme neck rigidity, and fits. Pulse rate very rapid. After a slight improvement on 17/2/45 the child died next day. The *H. influenzae* strain isolated from the C.S.F. was subsequently found to be of type b.

Cases treated with Sulphonamides and Penicillin

Case 6.—This boy, M. L., aged 2 years 7 months (under the care of Dr. J. O'Connor, Brumby Isolation Hospital), had been ill with symptoms suggestive of tuberculous meningitis for two weeks. Two days before being admitted to hospital, vomiting, headache, and cough increased; T. 101° F. (38.3° C.), P. 140, R. 36. There was evident neck rigidity on admission on 23/6/45; 1 g. sulphanilamide was given 4-hourly. 29/6/45: No change in condition. Course of sulphanilamide completed; 10,000 units antimeningococcal serum given. 30/6/45: 30,000 units intramuscular penicillin 3-hourly for 5 days. 4/7/45: No change; penicillin discontinued. 5/7/45: 0.25 g. sulphasuxidine 8-hourly. On 7/7/45, C.S.F. withdrawn under pressure. 10 ml. antimeningococcal serum given intrathecally. *H. influenzae* type b reported grown from the specimen of C.S.F. 10/7/45: 0.5 g. sulphathiazole 8-hourly for 3 days. 17/7/45: Very ill; paralysis in left arm, horizontal nystagmus; T. 105° F. (40.6° C.), pulse very rapid, R. 60. 18/7/45: Died at 4 a.m. after preceding hyperpyrexia of 109° F. (42.5° C.). Later investigation showed the strain to be completely inhibited by 0.5 unit penicillin per ml. of medium.

Case 7.—This 5-year-old girl, J. H. (under the care of Dr. L. Cole, Addenbrooke's Hospital, Cambridge, and Mr. D. W. C. Northfield, Chase Farm Hospital, London), had a 3-days history of headache and vomiting before admission to hospital on 14/3/45. There were marked head retraction and an acute infection of the left knee-joint. C.S.F. under pressure 350 mm.; opaque, containing 5,400 polymorphonuclear leucocytes per c.mm. Protein, 80 mg. per 100 ml.; glucose diminished. Pure growth of *H. influenzae*; the colonies of the strain had a rough surface, growth being rather dry. No agglutination with any of the 6 type sera at either 37° C. or 56° C. The strain was diagnosed as belonging to the respirator group of *H. influenzae*. Puncture of the left knee produced thick pus containing Gram-negative bacilli. On culture a heavy growth of *H. influenzae* was obtained. Our investigations showed that the strain was inhibited by 1 unit penicillin per ml. of medium. During the first week in hospital the child was treated with sulphathiazole and penicillin, 30,000 units of the latter being administered 3-hourly by the intramuscular route and 20,000 units per day intrathecally. Sulphathiazole medication was discontinued after 8 days when it was found that the strain was sulphathiazole-resistant. In all, the child had received 93.5 g. sulphathiazole in 8 days. Penicillin therapy was continued until 4/4/45. Great irritability made administration of paraldehyde 2 ml. i.m. necessary. On 4/4/45 the general condition was still very poor; the child was drowsy and unstable, and had marked head retraction. Medication discontinued, the case

being considered as hopeless, although daily lumbar punctures were performed until 14/4/45. Slow improvement set in during April, and by 2/6/45 the general condition was such that the patient was considered fit for discharge. On the evening of that day she suddenly began to vomit. 8/6/45: Sixth-nerve palsy, flaccid limbs, especially on the right side, very drowsy, vomiting, divergent squint. On the following day the left pupil was larger than the right. There were 41,000 white blood cells per c.m.m. On 12/6/45 the child was deeply comatose, with a slow pulse rate and occasional vomiting. A diagnosis of brain abscess was made and she was transferred to Chase Farm Hospital on that day for neurosurgical treatment. Examination revealed the following signs: Comatose. No papilloedema. Bilateral prosis. Absent corneal reflexes. Fluctuating spasticity of right upper and both lower limbs. Bilateral extensor plantar responses. The C.S.F. was cloudy, the pressure too low for measurement; culture sterile. Exploratory tapping revealed a left post-frontal abscess, and 30 ml. of thick pus was aspirated with immediate improvement in her condition. Pure growth of *H. influenzae* was obtained from the pus. Aspiration was repeated on 18/6/45, and on 20/6/45 an osteoplastic craniotomy was performed and the abscess contents evacuated and drained. Considerable temporary improvement followed, but by 7/8/45 she suffered from symptoms of a further collection of pus in the abscess cavity, which was confirmed by re-aspiration. On 11/8/45 further operation was carried out, when the abscess was totally enucleated. It was extending into the temporal and parietal regions and measured 6 cm. in diameter. Gram-negative bacilli were seen in the direct film, and culture yielded *H. influenzae*. Progress after this operation was rapid. The patient started walking on 31/8/45 and was discharged on 5/9/45, walking fairly well but a little unsteady and with a slight limp. Mentally she was alert, bright, and bappy. On re-examination on 12/10/45 she was normal apart from the right arm jerks being slightly brisker than the left.

Case 8.—A boy, M. E., aged 2 years (under the care of Dr. J. F. Gaskell, Addenbrooke's Hospital, Cambridge), started being sick and feverish on 16/10/45. Admitted on 20/10/45 with obvious signs of meningitis. C.S.F. turbid with clots; Gram-negative bacilli in direct film. Growth of *H. influenzae* belonging to Pittman's type b. The strain was completely inhibited by 1 unit penicillin per ml. of medium. Therapy with intramuscular and intrathecal penicillin as well as sulphamezathine was started. *H. influenzae* was isolated from the C.S.F. until 27/10/45. It is stated that from 31/10/45 to 2/11/45 the C.S.F. exerted a bacteriostatic activity in a dilution of 1 in 32. The fluid was still purulent but sterile on 1/11/45. On 4/11/45 the patient died. Post-mortem examination revealed a purulent meningitis and hydrocephalus. A total of 22.5 g. sulphamezathine was given in 8 days, of 600,000 units penicillin intramuscularly in 17 days, and of 258,000 units intrathecally in 6 days.

Case 9.—K. L., a boy aged 3 years (under the care of Dr. L. B. Cole, Addenbrooke's Hospital, Cambridge), started a cough on 20/10/45. On 24/10/45 he complained of aching bones and cold feet. He started vomiting on 25/10/45, and next day had opisthotonos, photophobia, and a squint. He was admitted on 27/10/45 with obvious meningitis and a temperature of 104° F. (40° C.). The C.S.F. was purulent and yielded a heavy growth of *H. influenzae* of type b. The strain was found to be completely inhibited by 1 unit penicillin per ml. of medium. Therapy: Sulphamezathine, penicillin intramuscularly and intrathecally. The reports on findings in the C.S.F. during treatment are as follows. 29/10/45: Bacteriostatic activity, 1 in 2. 30/10/45: Bacteriostatic activity, 1 in 4. 31/10/45: Bacteriostatic activity, 1 in 16. 1/11/45: Bacteriostatic activity, 1 in 32+. 2/11/45: Bacteriostatic activity, 1 in 32; fluid cloudy, Gram-negative bacilli in direct film; culture sterile. 3/11/45: 120 white blood cells per c.m.m. Growth of penicillin-resistant *H. influenzae*. 5/11/45: Culture sterile. Patient discharged well on 14/11/45.

Total sulphamezathine given	..	..	..	15 g. in 3 days
penicillin given I.M.	..	..	..	995,000 units in 10 days
" " I.T.	..	..	..	200,000 " " 8 "

Case 10.—R. M., a boy aged 1 year 4 months. (Under the care of Dr. L. B. Cole, Addenbrooke's Hospital, Cambridge.) On 11/10/45 the child was unwell and drowsy, and vomited once. Admitted to hospital on the same day with obvious meningitis. The C.S.F. on 12/10/45 was cloudy and contained many pus cells and Gram-negative bacilli. The strain isolated was of type b, and was completely inhibited by 2.5 units penicillin per ml. of medium. Two courses of 690,000 units penicillin intramuscularly were necessary, the first from 13/10/45 to 19/10/45, the second from 20/10/45 to 26/10/45. Two courses of sulphamezathine were also given, the first from 12/10/45 to 18/10/45, with a total dose of 20 g., and the second from 22/10/45 to 27/10/45, with a total dose of 16.5 g. As *H. influenzae* could still be isolated from the C.S.F. one intrathecal injection of penicillin was given on each of the following days: 26/10/45 (6,000 units), 28/10/45 (8,000 units), and 30/10/45 (25,000 units). On 1/11/45 the C.S.F. showed no bacteriostatic activity. The child improved rapidly after 30/10/45,

and recovered, developing chickenpox as a complication. Discharged well on 29/11/45.

Case 11.—M. G., a boy aged 1 year 3 months. (Under the care of Dr. G. W. Anderson, Preston Hospital, North Shields.) Three weeks before admission the child had bronchopneumonia, which cleared up satisfactorily. Two weeks later he vomited and was fretful, and symptoms suggestive of tuberculous meningitis set in 2 days before admission on 10/3/45. A total of 6 g. sulphathiazole had been given by the practitioner. The course of sulphathiazole was continued with 4-hourly doses until on 17/3/45 the isolation of *H. influenzae* was reported. The strain was subsequently shown to be of type b and to be completely inhibited by 1 unit penicillin per ml. of medium. On receiving the bacteriological report 50,000 units penicillin were given intrathecally by the cisternal route and the same amount by lumbar puncture, also 20,000 units 3-hourly intramuscularly. In addition he received 4-hourly doses of 0.5 g. of sulphadiazine. On the second day the penicillin content of the C.S.F. was 100 units per ml. and the culture was sterile. This medication was maintained for 7 days with the exception of 1 day when no cisternal puncture was performed and of 2 days when the administration of sulphadiazine had to be stopped because of crystal formation in the urine. By 23/3/45 the general condition had improved; the C.S.F. had been sterile for 6 days although many pus cells were still present. During this time the penicillin content of the C.S.F. was between 50 and 100 units per ml. A total of 15 g. sulphadiazine and 720,000 units penicillin intrathecally and 480,000 units intramuscularly had by then been given. All medication was discontinued, but on 25/3/45 the temperature, which had until then been normal for 5 days, rose again to 100° F. (37.8° C.). After another 2-day course of sulphadiazine a marked improvement was noticeable in the general condition, but the child seemed to be blind. From 28/3/45 to 5/4/45 there appeared to be slow but satisfactory progress, although sight did not return. On 5/4/45 the child died. At necropsy there was a little organizing pus on the tips of the temporal lobes and on the surface under the pons. Cultures from all these accumulations of pus were sterile with the exception of one from a temporal lobe, from which 2 colonies of *H. influenzae* were grown. There was a very marked internal hydrocephalus, with the lateral ventricles grossly enlarged, reducing the cerebral tissue to a thin layer.

Case 12.—The boy, A. C., aged 3 (under the care of Dr. J. Allan, Grantham Hospital), was admitted on 3/11/45, three days after having fallen ill with drowsiness and vomiting. He presented head retraction, flexion and adduction of left leg, Kernig's sign +, convergent squint of the left eye, and twitchings of the face. T. 100° F. (37.8° C.), P. 120, R. 36. Lumbar puncture produced a cloudy fluid under increased pressure. Administration of sulphathiazole 0.75 g. 4-hourly was started. On 7/11/45 the condition had become worse. There were convulsions, biting of the tongue, violent twitchings of limbs, and the C.S.F. was thickly purulent. Fifteen ml. was withdrawn by lumbar puncture and 60,000 units calcium penicillin in 6 ml. were given intrathecally, also 20,000 units intramuscularly, followed by 10,000 units 3-hourly. On the following day another 50,000 units penicillin were given intrathecally. On 10/11/45 there were numerous pus cells, Gram-negative bacilli, and filaments. No acid-fast bacilli present. Pure growth of *H. influenzae*. The strain was subsequently found to belong to type b and to be completely inhibited by 1 unit penicillin per ml. of medium. A further 40,000 units penicillin were given intrathecally on 10/11/45 and 17/11/45. On 18/11/45 the condition had not changed appreciably. Ten ml. of rabbit *H. influenzae* type b antiserum (made in Leeds) was given intramuscularly. Sulphathiazole was discontinued. A blood sample taken next day did not show any noticeable antibody in a dilution of the patient's serum of 1 in 10. A daily dose of 6 g. sulphadiazine was given from 19/11/45 to 30/11/45. Between 20/11/45 and 27/11/45 the leucocyte count varied from 14,000 to 12,950 per c.m.m. No marked change in the general condition. On 30/11/45 the condition was still without change; a cisternal puncture was performed. 10 ml. C.S.F. was withdrawn and 6 ml. of rabbit *H. influenzae* type b antiserum injected, together with 70,000 units calcium penicillin. The C.S.F. showed pus cells and Gram-negative bacilli. A moderate growth of *H. influenzae* type b was obtained on culture. On 4/12/45, when the child was comatose, another cisternal puncture, with subsequent intrathecal injection of 10 ml. rabbit *H. influenzae* type b antiserum and 30,000 units calcium penicillin, was carried out. The withdrawn C.S.F. gave only a scanty growth of *H. influenzae* type b, and it contained numerous pus cells. Henceforth treatment was discontinued. The coma deepened and the child died in the early morning of 6/12/45. A total of 37.75 g. sulphathiazole, of 66 g. sulphadiazine, of 2,160,000 units penicillin intramuscularly and 370,000 units intrathecally had been administered during the course of the illness. At necropsy thick green pus was found in the lateral ventricles. No pus elsewhere on the brain.

Case 13.—According to the history given, A. R., a boy of 1 year 2 months (under the care of Prof. W. C. Vining, General Infirmary at Leeds), had a pneumonia 6 weeks before admission on 17/12/45.

This condition cleared up satisfactorily within a week under sulphonamide therapy. At the end of the week he was allowed to get up, but started vomiting the following day and continued to do so until admitted to hospital. The child presented obvious signs of meningitis; he was very dehydrated, listless, and did not respond. T. 97° F. (36.1° C.), P. 150, R. 20. Lumbar puncture produced a cloudy fluid under pressure. Cell count in C.S.F., 760 per c.mm.; proteins, 200 mg. per 100 ml.; chlorides, 0.64%. Direct film showed pus cells and Gram-negative bacilli, of which some were filament-forming; pure heavy growth of *H. influenzae* type b. Subsequent tests showed the strain to be completely inhibited by 2.5 units penicillin per ml. of medium. On 18/12/45 a course was started of 25,000 units penicillin intrathecally per day and of 16,000 units intramuscularly every 3 hours, supported by 0.5 g. sulphadiazine 4-hourly. 19/12/45: Sugar content of C.S.F., 40 mg. per 100 ml. 20/12/45: Sugar content, 70 mg. per 100 ml. One ml. of C.S.F. contained 32 units penicillin. Only scanty Gram-negative bacilli in film. Culture gave but a small number of colonies of *H. influenzae* type b. 21/12/45: Sugar content of C.S.F., 60 mg. per 100 ml. An occasional Gram-negative bacillus was seen in the direct film, which showed numerous pus cells. Only scanty growth of *H. influenzae* type b was obtained. Agglutinating antibodies against *H. influenzae* type b were present in the undiluted serum, but not in dilution 1 in 10. 22/12/45: No change. Lumbar puncture unsuccessful. C.S.F. from cisternal puncture showed abundant pus cells. No organisms seen. No growth was obtained on culture. Penicillin content more than 1/8 but less than 1/4 unit per ml. On 23/12/45 no intrathecal treatment was given. 24/12/45: Child going downhill. C.S.F. contained pus cells but no organisms; no growth obtained on culture. Penicillin content, 1/4 unit per ml. 25/12/45: C.S.F. sterile; penicillin content, 1/2 unit per ml. On 26/12/45 the child was very weak. Lumbar and cisternal punctures and injection of penicillin by both routes were carried out. Both fluids were sterile on culture and showed only a few pus cells in the direct film. The child died shortly after the cisternal puncture. A total of 24.5 g. sulphadiazine, 992,000 units penicillin intramuscularly and 200,000 units intrathecally was administered within 9 days. At necropsy the brain was under considerable tension. The convolutions were flattened, and over both vertex and base there was a sticky fibrinous exudate of yellowish colour. No growth was obtained from the exudate. Both ventricles were extended and contained clear fluid. The pia mater of the spinal cord showed a fibrinous exudate similar to that on the surface of the brain. Death from cerebral compression.

Case 14.—A detailed account of this case has been given by McIntosh and Drysdale (1945). This girl of 2½ years had *H. influenzae* type b meningitis following closely on a meningococcal meningitis. The type b *H. influenzae* strain was completely inhibited by 0.5 unit and partially inhibited by 0.25 unit penicillin per ml. of medium. Initial symptoms observed were those of an upper respiratory catarrh suggestive of the invasive stage of measles. Two days later obvious meningitis had developed. A 7-days course of 75,000 units penicillin intrathecally and of sulphapyridine by mouth resulted in apparent success, but 2 days later a relapse occurred. A 12-days course of penicillin intrathecally and intramuscularly as well as 7 days' administration of sulphamerazine led to complete restitution. In all, 20 g. sulphapyridine, 22.5 g. sulphamerazine, 325,000 units penicillin intrathecally, and 1,200,000 units intramuscularly were administered.

Case 15.—B A., a girl of 1 year 8 months (under the care of Dr. R. L. Langley, Bradford Children's Hospital), fell suddenly ill on 14/5/45 with vomiting, deliriousness, and temperature. On admission the following day she was semi-comatose, with neck rigidity; Kernig's sign +; abdominal and patellar reflexes absent. Lumbar puncture produced a turbid fluid under normal pressure, which contained 1,200 polymorphonuclear leucocytes, 100 lymphocytes, and 480 red cells per c.mm. The culture grown from the C.S.F. was an *H. influenzae* type b which was completely inhibited by 1 unit and partially by 0.5 unit penicillin per ml. of medium. Treatment consisted of daily lumbar punctures with intrathecal injection of 10,000 units penicillin each time for 4 days, 3-hourly intramuscular injection of penicillin for 7 days, and sulphathiazole by mouth for the first 4 days. On 19/5/45 the C.S.F. was clear for the first time; the temperature still kept moving. The child improved gradually, her temperature being normal from 29/5/45. Recovery was complete. Total amount of penicillin given intrathecally was 40,000 units, intramuscularly 259,000 units; and of sulphathiazole 9.5 g.

Case 16.—M. W., a girl aged 1 year (under the care of Dr. L. Watson, Clayton Hospital, Wakefield), was admitted to hospital on 17/1/46 with the history of a fall off a chair 3 ft. (0.9 m.) high. The fall landed her on the back of her head. She was able to play for about 50 minutes afterwards and then became drowsy. She was admitted to a surgical ward for consultation, and was transferred to a medical ward on 23/1/46, when there were signs of meningitis with neck rigidity and slight stiffness of the back. A lumbar puncture carried out 2 days previously had given the follow-

ing results: fluid under pressure, markedly turbid. Protein, 60 mg. per 100 ml.; chlorides, 750 mg. per 100 ml.; cells, 7,600 per c.mm. The centrifuged deposit showed large numbers of polymorphonuclear leucocytes, some lymphocytes, and numerous Gram-negative bacilli. Culture yielded *H. influenzae*, which subsequently was found to belong to Pittman's type b and to be sensitive to penicillin. Combined penicillin-sulphathiazole therapy was instituted as follows: Thirty thousand units of penicillin 3-hourly intramuscularly and 1 dose of 0.5 g. sulphathiazole followed by 0.25 g. 4-hourly from 23/1/46 to 26/1/46. As there was no marked improvement the dose of penicillin was increased to 50,000 units 3-hourly for a further 8 days and sulphathiazole was continued until 28/1/46. On 29/1/46 another lumbar puncture was carried out and 8,500 units penicillin given intrathecally. The pressure of the C.S.F. was 150 mm. and the fluid was slightly turbid; protein, 70 mg. per 100 ml.; chloride, 735 mg. per ml.; glucose, 17.5 mg. per 100 ml.; abundant lymphocytes, scanty Gram-negative bacilli. No penicillin demonstrable in the C.S.F. On 1/2/46 a 4-days course of sulphamerazine was given, starting with a dose of 1 g., followed by 0.5 g. 6-hourly. Since no improvement was noticeable 50,000 units penicillin were given intrathecally for 4 days, starting on 5/2/46. A sample of serum taken on 6/2/46 was positive for agglutinating antibodies against *H. influenzae* type b, giving a marked agglutination up to dilution 1 in 128. From 11/2/46 to 13/2/46 50,000 units penicillin were again given once daily intrathecally, and from 18/2/46 to 4/3/46 the child received 30,000 units penicillin intramuscularly: 3-hourly intervals, with only an occasional rest for 24 hours. In spite of the intensive penicillin treatment, with occasional and subsidiary sulphonamide therapy, the child died on 7/3/46. A total of 3,040,000 units penicillin intramuscularly and 358,500 units intrathecally, of 7.75 g. sulphathiazole, and of 8.5 g. sulphamerazine was given during the course of the illness.

Case 17.—M. H., a girl aged 4 (under the care of Dr. L. Watson, Clayton Hospital, Wakefield), had a history of upper respiratory infection a week before admission on 8/1/46, and three days later she developed stiffness of back and neck, headache, and some vomiting. On examination she was not very ill, and apart from slight neck rigidity there were no other physical signs. At lumbar puncture the pressure was 240 mm.; the C.S.F. was slightly turbid and contained 45 mg. protein per 100 ml., 700 mg. chlorides per 100 ml., numerous polymorphonuclear leucocytes, and a few lymphocytes as well as some Gram-negative bacilli. Culturing gave numerous colonies of *H. influenzae*. A 4-days course of 15,000 units penicillin intramuscularly at 3-hourly intervals was given, and once to be followed by a 2-days course of 1 g. sulphathiazole 6 times daily. On 14/1/46 3-hourly intramuscular injections of 15,000 units penicillin were given for 4 days, and on 17/1/46 the dose was doubled and continued until 25/1/46. On 18/1/46 the C.S.F. was still turbid and contained 50 mg. protein per 100 ml., 730 mg. chlorides per 100 ml., and 2,300 cells per c.mm., of which 80% were polymorphonuclear leucocytes and 20% lymphocytes. Only two colonies of *H. influenzae* were grown. After withdrawal of the C.S.F. 8,500 units penicillin were injected intrathecally. From 25/1/46 to 6/2/46 the dose of intramuscular penicillin was further increased to 50,000 units 3-hourly. On 29/1/46 lumbar puncture was performed again and 8,500 units penicillin injected intrathecally. The C.S.F. contained pus cells but no organisms and no growth was obtained on culture. The fluid contained 0.16 unit of penicillin per ml. It was at this stage that this laboratory was consulted and as none of the previous cultures had been preserved it was impossible to determine the type of the *H. influenzae* by direct methods. A sample of blood serum was obtained, however, and was tested for the presence of agglutinating antibodies. A marked agglutination of a type b strain of *H. influenzae* was obtained to dilution of 1 in 32 and no agglutination with any of the other 5 types. This indirect method of typing made it reasonably certain that the causative organism was of type b *H. influenzae*. Signs of meningeal irritation passed off after a final 4-day administration of sulphamerazine at 6-hourly intervals, beginning on 1/2/46. The patient was discharged on 8/3/46, after having had a normal temperature for 13 days and having been up and about the ward a week before discharge. A total of 8 g. sulphathiazole, 8.5 g. sulphamerazine, 7,280,000 units penicillin intramuscularly and 17,000 units intrathecally had been given.

Case 18.—A. T., a girl aged 2 years 4 months (under the care of Dr. R. L. Langley, Bradford Children's Hospital), fell ill with vomiting on 2/2/46. On 3/2/46 there was some deterioration; she was listless, pallid, vomited copiously, and had a temperature of 101° F. (38.3° C.). The G.P. started to give her 0.25 g. sulphapyridine at 4-hourly intervals on the same day. During the next few days there was no great change and no marked sign in any direction except missing knee-jerks. On 7/2/46 there were slight neck rigidity, convergent strabismus, and a temperature of 100.8° F. (38.2° C.). On admission to hospital on the same day she was semi-comatose, and showed marked strabismus and neck rigidity; Kernig's sign was positive, knee-jerks and abdominal reflexes were absent. Lumbar puncture produced a turbid fluid under high pressure, and 10,000

units penicillin were injected intrathecally after C.S.F. had been withdrawn. On culture the C.S.F. gave a pure growth of *H. influenzae*, which later was shown to belong to Pittman's type b and to be sensitive to penicillin. An attempt to give the child 1.5 g. sulphapyridine 4-hourly had to be abandoned after 48 hours owing to vomiting. Instead 5,000 units penicillin were given 3-hourly. After an initial fall the temperature rose again on 12/2/46, and for 3 days daily intrathecal injections of 5,000 units penicillin were given. The C.S.F. became clear on 17/2/46 and the temperature went down to normal. Intrathecal penicillin therapy was discontinued for 48 hours, but on 16/2/46 the temperature rose to 103° F. (39.4° C.), and the C.S.F. became turbid again. Recourse was had to 12-hourly intrathecal injections of 5,000 units penicillin. In all 8 such injections were given between 16/2/46 and 3/3/46. Intramuscular administration of penicillin was discontinued between 8/2/46 and 3/3/46 in favour of 0.25 g. sulphathiazole 4 times daily. On 26/2/46 the C.S.F. was free from *H. influenzae*, but on 1/3/46 another relapse occurred. A continuous plasma drip was given. The C.S.F. gave good growth of *H. influenzae*, and antibodies against *H. influenzae* type b were found to be present in undiluted serum but not in a dilution of 1 in 10. After starting renewed administration of 5,000 units penicillin intramuscularly at 4-hourly intervals and 5,000 units penicillin 12-hourly intrathecally on 4/3/46 the C.S.F. rapidly became sterile again, and the general condition improved gradually. The patient was discharged well on 14/46. The total dose of penicillin was 365,000 units intramuscularly and 135,000 units intrathecally. In all 3.5 g. sulphapyridine and 15 g. sulphathiazole were given.

Case 19.—P. C., a 7-months-old boy (under the care of Dr. B. A. Evers, Ham Green Hospital, Bristol), had been ill with infection of the respiratory tract, which did not respond to sulphonamide treatment, two weeks before his admission on 6/11/45. There were no symptoms apart from bronchitis and a temperature between 100° F. (37.8° C.) and 102° F. (38.9° C.), and high pulse and respiratory rates. Administration of 30,000 units penicillin daily for 3 days did not improve the general condition. On 22/11/45 signs of meningitis were noticed, and examination of C.S.F. gave the following results: protein, 55 mg. per 100 ml.; globulin, increased; sugar, 6 mg. per 100 ml.; chlorides, 690 mg. per 100 ml.; 176 red cells and 56 white cells per c.mm., mostly polymorphonuclear leucocytes. Some time later the C.S.F. was clear, and the cell count and chloride level suggested tuberculous meningitis. The child died on 4/12/45. Post-mortem examination revealed a purulent meningitis involving the whole of the meninges. A culture taken post mortem was examined in this laboratory and the strain of *H. influenzae* isolated was found to belong to type b. The strain was completely inhibited by 1 unit penicillin per ml. of medium.

Case 20.—A boy, H. D., aged 1 year 8 months. This case has been reported in great detail in an excellent recent paper by Drysdale, McIntosh, and Brodie (1946). The child had a 3-days history of meningitic symptoms before admission to hospital on 18/12/45. The *H. influenzae* strain isolated from the C.S.F. was of Pittman's type b. It was found to be sensitive to 0.7 unit penicillin per ml. of medium and insensitive to sulphapyridine, sulphamezathine, sulphadiazine, sulphathiazole, and sulphamerazine. Until this insensitivity to sulphonamides had been fully established the child had received 5 g. sulphapyridine, 5.5 g. sulphamezathine, and 12.5 g. sulphathiazole in combination with intramuscular and intrathecal injections of penicillin. Sulphonamide treatment was then discontinued and therapy was carried on with daily intramuscular and intrathecal injections of penicillin. In all the child received 10,337,500 units of penicillin intramuscularly and 1,005,000 units intrathecally within 5 weeks. This intensive penicillin treatment led to complete recovery.

Notable features of this case were: (1) The reappearance of *H. influenzae* in the C.S.F. after intrathecal administration of penicillin had been suspended temporarily. (2) The occurrence of severe convulsion 2 hours after the eleventh intralumbar injection of 50,000 units of penicillin. No cerebral irritation had been noticed on the previous 10 occasions, nor had any symptoms occurred after any of the 7 intrathecal injections of 25,000 units which had preceded the higher dose. (3) Careful penicillin assay in the C.S.F. revealed that with daily intrathecal doses of 50,000 units an average concentration of 1.7 units penicillin per ml. of C.S.F. could be maintained, while with a daily dose of 25,000 units the concentration averaged only 0.6 unit per ml.

Discussion

The first point emerging from this survey is that 20 cases of *H. influenzae* meningitis in children, of which 19 were caused by Pittman's type b, could be collected in a small area within a period of just under two years. It would seem, therefore, that at present the condition is not as rare as the scarcity of case reports in this country would suggest. The second point is the varied nature of the symptoms with which an infection of the meninges with *H. influenzae* may manifest itself. Every

type of meningitis, from the fulminant infection leading to death in 24 to 48 hours to the protracted case typical of tuberculous meningitis, may be met with. In addition difficulties arise in diagnosing meningitis in children under 7 to 8 months of age owing to absence of the usual symptoms of meningitis, and the consequent delay in treatment is responsible for the high case fatality rate in this age group (Alexander, 1943b). Thus it is seen that in this series both the children under 1 year of age (Cases 4 and 19) died, the latter having no symptoms for a considerable time. In view of the protean nature of the symptoms of *H. influenzae* meningitis it is fortunate that the sulphonamides most effective against *H. influenzae*—i.e., sulphadiazine and sulphamezathine—have equally good bacteriostatic properties against most other organisms causing meningitis except the tubercle bacillus. Sulphadiazine and sulphamezathine should be the drugs of choice, therefore, in every case of meningitis, and particularly in children, as soon as a clinical diagnosis is made and C.S.F. has been withdrawn for culture, without waiting for bacteriological confirmation. Simultaneously penicillin should be given, since its bacteriostatic effect on a large number of strains of *H. influenzae* has now been well established. Penicillin sensitivity of *H. influenzae* strains varies to some extent, however, and determination of the sensitivity of any particular strain should be a guide to the concentration of penicillin in the C.S.F. to be aimed at (M. Gordon and Zinnemann, 1945). Penicillin should be administered both systemically and intrathecally to maintain the requisite concentrations in blood and C.S.F. As Alexander (1943b) suggests daily lumbar puncture as an essential part of treatment, the intrathecal injections cause little if any extra burden to the patient. The systemic administration also deals adequately with any possible septicaemia, which is a common accompaniment of the meningitis (Fothergill, 1937)—as Case 7 illustrates. The administration of type b specific *H. influenzae* rabbit antiserum is also indicated if the causative organism is of the b type.

It is necessary to stress the need for continuing medication without interruption until 7 days after the C.S.F. has first become sterile. Cases 1, 2, 4, 11, 14, 18, and 20 illustrate the dangers of suspending treatment too soon after the C.S.F. has become clear. Moreover, there is also the theoretical risk of producing penicillin-resistant strains of *H. influenzae* if the concentration is not maintained until the C.S.F. has remained sterile.

Under the conditions of the survey it was impossible to trace the sources of infection. Alexander (1943a) produced evidence that typable *H. influenzae* strains are harboured in the nasopharynx of children. Straker (1945) confirmed this in a number of children in this country. It is interesting in this connexion to note that in six cases of this series—namely, Nos. 5, 11, 13, 14, 17, and 19—a respiratory infection preceded the onset of meningitis. Possibly, comparative studies in adults and children might contribute to answer the question why *H. influenzae* meningitis is predominantly a disease of childhood.

The fairly wide differences as to choice and dosage of sulphonamides used should be eliminated if the American suggestions are followed (Alexander and Leidy, 1943), though the task remains of determining more accurately the dosage and route of administration of penicillin. Cases 15 and 17 recovered with comparatively small intrathecal doses—the first with 10,000 units administered daily for 4 days, and the second with 8,500 units given intermittently. In Case 20 Drysdale, McIntosh, and Brodie found, however, that 50,000 units intrathecally were required to maintain a concentration of approximately 2 units per ml. at the end of 24 hours, while 25,000 units gave a concentration of only 0.6 unit per ml. of C.S.F. Their results give a lead as to the dosage to be employed intrathecally, considering that the majority of *H. influenzae* type b strains are inhibited by approximately 2 units per ml. In view of possible cerebral reactions to such high intrathecal doses it may be worth while to give the daily dose of 50,000 units in two 12-hourly administrations. A reduction of the daily dose may be the result of such a procedure, as Case 18 suggests, in which complete recovery was the result of thirty 12-hourly intrathecal injections of 5,000 units of penicillin supported by 0.25 g. sulphathiazole 6-hourly.

In Cases 8, 11, 12, and 13 death occurred through internal hydrocephalus, probably due to adhesion or to clots in the C.S.F. Alexander (1944) suggested that this complication might

be overcome by introduction of air and heparin into the cerebrospinal canal, and it may be worth while to try her methods in such desperate cases. It need not be feared that children thus saved might prove to be crippled in one way or another for the rest of their lives. Regarding such consequences Alexander (private communication) states:

"The experience in this country when both sulphadiazine and type-specific rabbit antiserum are used in combination for the treatment of influenza meningitis indicates that any residual damage to the brain is exceedingly rare following recovery. This appears to be true even in very chronic cases of the disease which recover over a long period of time. For example, I know, as a result of my own experience and by talking over the experiences of a number of others, of only one case in which residual damage to the brain followed a child's recovery."

In all, 5 out of 20 cases were treated with sulphonamides alone. Only one of these five recovered. Fifteen cases had combined sulphonamide-penicillin treatment and eight of them recovered. The total number of cases is too small and the methods of treatment varied too much to allow of statistical assessment. The only conclusion to be drawn is that the encouraging recovery rate suggests pushing to the limit the combined sulphonamide-penicillin treatment, perhaps supported by specific antiserum.

The sporadic occurrence of *H. influenzae* meningitis in this country makes it very difficult for any investigator, single-handed, to work out a satisfactory routine treatment. It seems reasonable to suggest that cases of *H. influenzae* meningitis of the non-fulminant type should be concentrated in a number of treatment centres. An adequate method of treatment, as in the case of subacute bacterial endocarditis, might be evolved for the majority of cases, and a substantial number of children's lives might thus be saved.

Summary

A survey of the various methods of treating *H. influenzae* meningitis is presented.

Clinical data are given of 19 cases of *H. influenzae* type b meningitis and of 1 case due to *H. influenzae* of the respiratory group. Of 5 cases treated only with sulphonamides, one recovered. Fifteen cases had combined sulphonamide-penicillin treatment. Eight of these recovered. It is suggested that the combined administration of these drugs should be used more energetically in *H. influenzae* meningitis. In view of the good therapeutic results reported from the U.S.A. specific *H. influenzae* type b rabbit antiserum, which is now available in this country, should also be given.

The establishment of a number of treatment centres to evolve a standard routine method of treatment is advocated.

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INFECTIONS OF THE NERVOUS SYSTEM OCCURRING DURING AN EPIDEMIC OF INFLUENZA B

BY

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Influenza epidemics in the past have on occasion been associated with cases presenting evidence of cerebral or cerebrospinal infection, although the relationship is obscure. During the epidemic of influenza B at the beginning of 1946 nine cases of acute infection of the nervous system, occurring at three separate levels, were observed. Two of these presented signs of brain-stem encephalitis, two of myelitis, and five of generalized polyneuritis akin to the acute toxic polyneuritis of Guillain, Barré, and Strohl (1916).

Brain-stem Group

Case 1.—A girl aged 18 complained of diplopia and right-sided ptosis. She was well until May 14, 1946, when she developed generalized headache and extreme lassitude. She had intense sleepiness, and found it difficult to remain awake. Her neck felt a little stiff. She was bad-tempered, and had one outburst of unreasonable rage. Three days before the onset of her symptoms she had been in close contact with a girl who had a severe attack of influenza. On the 18th her vision became blurred, and she noticed diplopia in all directions. Next day the right lid began to droop, and she experienced discomfort in the right supraorbital region. The headache persisted; there was no polyuria or polydipsia; the appetite was poor; and she still felt very sleepy. She had had diarrhoea of and on for the past nine to ten days. On May 24 she was admitted to the London Hospital under the care of Dr. Russell Brain.

Examination showed the following: Right pupil a little larger and reacting a trifle more sluggishly to light than the left; equal brisk reaction to accommodation; right ptosis; weakness of elevation, adduction, and depression of the right globe; diplopia in all directions; all tendon reflexes depressed; knee-jerks obtained only on reinforcement; equivocal right plantar response. Lumbar puncture on May 25: C.S.F. pressure, 100 mm.; 8 cells, mainly lymphocytes; protein, 20 mg. per 100 ml.; W.R. negative; Lange, 222321000. On the 28th the white cell count was 6,700 per c.mm. (polymorphs 70%, lymphocytes 25.5%, large hyalines 4.5%). June 6: No diplopia; right ptosis; very slight weakness of elevation of right globe; pupils equal, reacting sluggishly to light. On the 8th there were full ocular movements and no diplopia. The tendon reflexes were sluggish and plantar responses flexor. The patient was discharged symptom-free.

Case 2.—A medical man aged 38 complained of headache, photophobia, diplopia, dizziness, and tingling in hands of five days duration. On March 12, 1946, he had a sore throat, cough, and general malaise, but after sulphathiazole for three days he felt fit. About March 26 he developed dizziness and photophobia, followed 24 hours later by tingling in both hands and difficulty in focusing. On the 30th he had diplopia in all directions. The left pupil was larger than the right, and both pupils reacted only sluggishly to light. Next day there was an increase in the severity of all symptoms: tingling now present in feet; headaches more severe, mainly frontal aching pain; movement of eyes painful; diplopia in all directions except to the extreme right. Left ptosis was noticed by the patient on April 1. He felt extremely drowsy, and slept eleven to twelve hours. He was admitted to the London Hospital under the care of Dr. Clifford Wilson. The patient presented a difficult diagnostic problem, as he had suffered from Hand-Schüller-Christian disease since 1932 and had had five injections of "pitressin" daily to control his diabetes insipidus.

He was seen by Dr. George Riddoch on April 2. Examination showed: Pupils moderately dilated, regular, left larger than right; very feeble reaction to light and, on convergence, right more than left; gross paresis of all external ocular movements, left more than right; severe bilateral ptosis. Upper limbs: no weakness, ataxia, or dystonia; tendon reflexes absent. Lower limbs: no weakness, ataxia, or dystonia; knee-jerks just present; ankle-jerks absent; plantar reflexes flexor. There was no cutaneous sensory change. The abdominal reflexes were present and equal. B.P. 190/120. Urine normal. Lumbar puncture: pressure 240 mm.; 4 cells; protein, 30 mg. per 100 ml.; Lange 1222100000; W.R. negative. A radiograph of the skull showed nothing abnormal. The patient was considered to be suffering from an acute infection of the nervous system chiefly affecting the brain-stem. Daily injections of 2 ml. of "hepolon" were advised. On April 3 the left pupil was larger than the right, both fixed to light; sluggish reaction to accommodation; ptosis more severe, left worse than right. The white cell count was 7,250 per c.mm. (polymorphs 69%, lymphocytes 25%, eosinophils

5%, large hyalines 3.5%). On the 5th there were almost complete phthalmooplegia interna and externa; dilated fixed pupils; sensory pangle to cotton-wool and pin-prick below mid-forearm; vibration loss below the clavicles, and he still had marked photophobia. He was seen on the 8th by Dr. Russell Brain, who confirmed the above signs and noted, in addition, weakness of the hip muscles. Signs of recovery in the eyes were observed on the 12th—a little movement of the lids and some pupillary response to light. Vibration sense started to return in right leg on the 15th. On May 7 convergence was returning, the pupils reacted well to light, and the external recti were still weak. On June 1 he still had diplopia in all directions, except on looking upwards and to the right. The right pupil was a little larger than the left, both reacted sluggishly to light and briskly on accommodation. Left eye: defective elevation, abduction, and adduction. Right eye: defective elevation and adduction. He still had slight weakness of dorsiflexion of wrist and fingers, complete areflexia of upper and lower limbs, and weakness of hip flexors, abductors, and adductors. Plantar responses were flexor, and there was no sensory change.

Myelitic Group

Case 3.—A man aged 24 had an attack of influenza on Jan. 4, 1946, with fever, sweating, running nose, and sneezing, but he had no headache or sore throat. A slight cough and aching pain in the frontal region began on Jan. 7, and he was in bed for seven days. At the end of this time both lower limbs were stiff, the right more than the left, and the right lower limb felt numb. There was a little delay in initiating micturition. Past history: Pott's disease from 2 to 9 years of age; tuberculous left knee-joint, with eventual removal of patella, arthrodesis, and osteotomy; well since 1939. His father died of phthisis in 1929. The patient was admitted to the London Hospital under the care of Dr. George Riddoch on Feb. 1.

Examination on the 4th revealed a gibbus, D.7-D.8. C.N.S.: nil abnormal in cranial nerves and upper limbs; left lower limb—gross shortening, arthrodesis at knee, patella absent; bilateral lower-limb spasticity, right greater than left; lower abdominal reflexes absent; right knee-jerk and both ankle-jerks increased; left knee-jerk absent; bilateral extensor plantar responses; vibration sense impaired in both lower limbs; postural sensibility impaired in toes; waxy diminution to pin-prick and cotton-wool below D.6. Lumbar puncture on Feb. 11: pressure 80 mm.; no block; 2 cells; protein, 20 mg. per 100 ml.; W.R. negative; Lange 1121110000. A radiograph of the spine showed old tuberculous kyphosis but no sign of activity. During the following month the power of both lower limbs improved and the sensory changes regressed. On June 4 the lower-limb weakness had improved. There was moderate bilateral spasticity with loss of tickle sensation over the inner aspect of the right knee, relative analgesia below the right knee, and impaired vibratory sense in both feet. Sensory level to dragged pin at D.10.

Case 4.—A married woman aged 29 began to have backache, headache, and muscular aching in mid-February, 1946. Influenza was diagnosed, and she was kept in bed for seven days. On getting up she noticed weakness of both lower limbs and tingling in the toes, which persisted until the time of examination. There was occasional urgency of micturition. Examination on May 1 revealed nothing abnormal in the cranial nerves or upper limbs. There was moderate bilateral spastic weakness of both lower limbs, with extensor plantar responses. There was no sensory change and the abdominal reflexes were absent. On May 29 she was much improved symptomatically—the lower limbs were stronger, but the signs persisted unchanged.

Polynuritic Group

Case 5.—A married woman aged 46 had lassitude and anorexia in mid-December, 1945. On Jan. 24, 1946, she had slight sore throat, pyrexia of 101° F. (38.3° C.), and aching in the lumbar region. The pyrexia continued for 25 days, and on Feb. 17 was followed by photophobia and left facial weakness, which rapidly spread to the right side of the face. At this time she noticed paraesthesia in the left thumb. She was admitted to the London Hospital under the care of Dr. George Riddoch on Feb. 21. The temperature was 98° F. (36.7° C.), pulse 80. She had complete facial diplegia, with loss of taste. There was no other nervous abnormality. Lumbar puncture: pressure 70 mm.; no excess of cells; protein, 120 mg. per 100 ml.; W.R. negative. Next day a blood count showed: Hb, 88%; W.B.C., 7,600 (polymorphs 45%, lymphocytes 48%, basophils 2.5%, large hyalines 5%). On the 23rd she had paraesthesiae along the ulnar border of the left forearm and hand; the left lower limb felt weak; both ankle-jerks were sluggish; and vibration sense was a little impaired in the left big toe. Two days later the frontalis was working—on the left side more than the right. On the 27th all facial muscles responded to faradism. She was treated by galvanism to the face and given 2 ml. of "hepolon," intramuscularly, twice weekly. The signs were unchanged on March 11.

Case 6.—A married woman aged 54 had diarrhoea on March 13, 1946; this lasted for seven days. Her daughter also suffered from

this complaint. The patient was admitted to Haymeads Hospital under the care of Dr. Leiper on the 20th, complaining of backache and vomiting. There were no abnormal physical signs in any system apart from a blood pressure of 200/110. All tendon reflexes were present. Dimness of vision started on the 27th, beginning with a left homonymous defect and progressing within 24 hours to complete blindness. She became drowsy and confused; the left optic disk was blurred; the tendon reflexes were absent, and the plantar responses flexor. Lumbar puncture: pressure 300 mm.; no increase in cells, protein, 288 mg. per 100 ml.; W.R. negative. After a few days the vision began to improve, and she was found to have a left lower homonymous quadrantic field defect. Plantar responses were flexor. She was seen by Dr. Russell Brain on July 3. The blood pressure was 210/95. The disks and fundi were normal. There was no field defect or any abnormality in the cranial nerves. Upper limbs: power good, no dystonia or ataxia; tendon reflexes present and equal; no sensory change to pin-prick, cotton-wool, vibration, or posture. Lower limbs: power good, no dystonia or ataxia; knee- and ankle-jerks absent on reinforcement; plantar responses flexor; no sensory change to pin-prick, cotton-wool, posture, or vibration. Abdominal reflexes present and equal.

Case 7.—This patient, a man aged 46, developed a cough during the first week of March, 1946. There was no pyrexia or sore throat, but he felt tired and ill. A fortnight later he noticed weakness of the lower limbs, which gradually increased, and three days later it involved the hands. Within a week he was unable to walk more than 400 yards or to shave. On April 1 he was admitted to the London Hospital under the care of Dr. George Riddoch.

Examination revealed no abnormalities in the cranial nerves. There was weakness of the whole of the upper limbs, most marked distally, and in the flexors and extensors of the wrist and fingers. The tendon reflexes were depressed. In the lower limbs the power was good in all groups save the dorsi- and plantar-flexors, especially the former. The knee-jerks were sluggish and the ankle-jerks much diminished. There was no sensory change to pin-prick, cotton-wool, posture, or vibration in upper or lower limbs. The abdominal and intercostal muscles were strong. The abdominal reflexes were present. Lumbar puncture on April 6: pressure, 200 mm.; cells less than 1; protein, 20 mg. per 100 ml.; W.R. negative. He was given 2 ml. of "hepolon," intramuscularly, on alternate days, and he slowly recovered. On May 20 the power was greatly improved and he walked unaided.

Case 8.—A Wren aged 19 had a very mild cold early in December, 1945, which lasted for a week. On Dec. 22 she noticed weakness of both shoulders and weakness of flexion of arms on shoulders, which progressed until Jan. 2, 1946. She remained on duty, but on Jan. 12 she had weakness at the hips, and this increased during the next three weeks until she was unable to stand. There were no other symptoms. She was admitted to the London Hospital under the care of Dr. George Riddoch on Feb. 18.

Examination revealed no abnormality of the cranial nerves. There was considerable weakness of all muscles, particularly of the shoulder-girdle muscles. The triceps and the brachioradialis were weaker on the right than on the left. There was slight weakness of the muscles of the forearms and hands, the intercostal and abdominal muscles, the extensors of the trunk, and all hip-girdle muscles, especially the flexors. The flexors and extensors of the knees were somewhat impaired, but the leg and foot muscles were good except for weakness of dorsiflexion on the right due to old peroneal-nerve injury. The abdominal reflexes were brisk and equal. All tendon reflexes were present and equal. There were bilateral flexor plantar responses. No sensory abnormality was noted. Lumbar puncture on Feb. 23: pressure 60 mm.; 1 cell; protein, 20 mg. per 100 ml.; Lange 0111000000; W.R. negative. During the next eight weeks the left lower lobe of the lung collapsed and she had to be placed in a Drinker respirator. Plugs of mucus were sucked out on two occasions, with eventual re-expansion of the lung. Her neurological condition, which had been slowly improving, relapsed as the result of the pulmonary complication. On June 6 she was transferred to another hospital for swimming-bath treatment. She was then as weak as when first seen.

Case 9.—A married woman aged 54 developed a sore throat, cough with greenish sputum, and pyrexia at the end of January, 1946. Three days later the temperature rose to 104° F. (40° C.), the sputum increased, and bronchopneumonia was diagnosed. Sulphathiazole and systemic penicillin were given. On Feb. 16 she was afebrile; rales were heard at both bases. On the 22nd she had weakness in both shoulders, which increased during the following 24 hours. Next day she had tingling in the finger-tips, and the lower limbs felt weak. On the 25th she was seen by Dr. George Riddoch. Moist sounds were heard at both bases. The cranial nerves were normal. There was weakness of all the upper-limb muscles, especially the scapular group, the deltoid, the flexors of the elbow, and, to a less extent, the extensors of the wrists. The supinators were more affected than the pronators, and the extensors of wrist and fingers more than the flexors. There was no weakness of the trunk, but moderate weakness of hip flexors and adductors of thighs was noted. The dorsiflexors

of the feet and toes were weak. Good power remained in the lower-limb muscles. Tendon reflexes were absent in the upper and lower limbs, save a much diminished left knee-jerk. Plantar responses were flexor. Abdominal reflexes were present and equal. There was no sensory change in the upper limbs; vibration was absent in the feet. On March 7 moist sounds were still heard at both bases. The physical signs in the central nervous system were unchanged, apart from diminution to pin-prick below the elbows and mid-calf. The patient was given 2 ml. of "hepolon," intramuscularly, daily. There was increased power in the affected muscles on March 23, and considerable improvement in the power of all affected muscle groups on May 2. The knee-jerks were just present.

Discussion

The brain-stem group is remarkably reminiscent of encephalitis lethargica, although it differs greatly from the haemorrhagic influenzal encephalitis first described by Leichtenstern (1890). Drowsiness, with the rapid development of nuclear midbrain lesions, occurred in both cases. The fleeting abnormal plantar responses in one patient and the weakness of proximal muscles groups, with areflexia and peripheral sensory change, in the other indicate a more widespread attack on the neuraxis. Complete recovery ensued within three weeks in Case 1; and equally striking, although slower, was the improvement in Case 2, following a total ophthalmoplegia interna and externa. Unfortunately, it is a matter for speculation whether the condition can be identified with encephalitis lethargica. Von Economo (1931) considers that the somnolent-ophthalmoplegic type is the true basic form of this disease, and is the type that occurs sporadically. Certainly Case 1 might be regarded as a classical example of this variety.

Signs of a transverse or patchy myelitis affecting the lower thoracic cord occurred in two patients after an influenza-like illness. Recovery was slow, and, again, in the absence of pathological material, it can only be suggested that this group corresponds to the two patients described by Greenfield (1930), in whom histological examination disclosed evidence of an acute disseminated encephalomyelitis.

Of the polyneuritic group, Case 5 conforms to the classical type of acute toxic polyneuritis of Guillain, Barré, and Strohl (1916)—a febrile illness for three weeks being followed by facial diplegia, with an increase in the protein content of the cerebrospinal fluid. In Case 6 the patient, after an attack of diarrhoea, became drowsy and confused, with rapid visual failure of a cerebral type. All tendon reflexes disappeared, and the C.S.F. contained 288 mg. of protein per 100 ml., with no increase in cells. During recovery, which occurred rapidly and completely, a homonymous quadrantic field defect was observed. The tendon reflexes in her lower limbs were still absent three and a half months after the onset of symptoms. Case 7 developed a subacute weakness of the dorsiflexors of the wrists and ankles, without sensory change and with a normal C.S.F., three weeks after the onset of symptoms. Case 8 was in every way similar, a slowly progressive weakness of hip- and shoulder-girdle muscles developing over six weeks and then becoming stationary, with no sensory change and a normal C.S.F., two months after the onset of symptoms. In Case 9 weakness of hip- and shoulder-girdle muscles developed following a 23-day pyrexia, associated with a basal bronchopneumonia. Recovery occurred slowly over the two months she was observed.

This small epidemic of nervous diseases, while of such varied types, appears to be related to some common factor. Whether the prodromal illness was in fact an attack of influenza B is unknown, but the incidence of the cases is related to the peak period of this 1946 epidemic. Certainly, too, it seems that the type of case described above has been unusual during the past few years, as have epidemics of influenza B, sporadic cases of which appeared in England for the first time in 1939. In 1943 only a minor outbreak occurred, but in 1946 the death rate from influenza rose to a higher level than for the two previous years.

Whatever the relationship, however, the three groups seem to be the result of a virus attack on the nervous system, producing either poliomyelitis or myelocystitis. It would appear likely from the known characteristics of the viruses which attack the nervous system that two separate viruses are thus concerned.

Summary

A small epidemic of nervous diseases coinciding with an epidemic of influenza B is described.

It is suggested that a myelinoclastic virus and a poliomyelitic virus are concerned.

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ALLERGIC REACTIONS TO PENICILLIN

BY

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Reports on allergic reactions to penicillin are increasing in number. This is becoming an important problem as more and more patients are receiving penicillin therapy. Evidence is accumulating that the offending agent is the active principle of penicillin. Theoretically, therefore—and actual practice has shown this to be true—reactions may arise with any commercial preparation of the drug. The route of administration has in the majority of cases a bearing on the clinical features and site of the allergic reaction. Local use of penicillin will give rise predominantly to contact or sensitization dermatitis, while parenteral administration is more likely to produce immediate or delayed reactions resembling anaphylaxis.

Review of the Literature

Pyle and Rattner (1944) and Kolodny and Denhoff (1946) reported cases with skin lesions due to penicillin sensitivity. The latter found among dermatological patients treated with parenteral and local penicillin a 25% rate of skin complications as compared with 6% among non-dermatological patients. Especially in cases of fungous infection was contact dermatitis liable to develop, and skin tests were positive to penicillin and to trichophyton. From the study of their cases they concluded that there is no clear-cut relationship between the antigenic substances common to some of the pathogenic fungi (Hyphomycetes) and antigens of *Penicillium notatum* (Ascomycetes), but clinical observations are suggestive. Goldman *et al.* (1946) found 16 instances of contact dermatitis among 350 cases treated with penicillin locally. Vickers (1946) described a case of penicillin sensitization dermatitis; a patch test with penicillin solution was strongly positive. Hellier (1946) stressed the rarity of contact dermatitis due to penicillin as compared with that due to sulphonamides.

More characteristic are the manifestations described since 1943; they are practically always due to intramuscular penicillin and resemble severe urticaria or serum sickness. Lyons (1943), when reporting on penicillin therapy of surgical infections in the U.S. Army, found that there were urticarial reactions not attributable to particular batches of the drug. Of 209 cases 12 (5.7%) had an urticarial reaction, of which he described three types: (a) without fever; (b) with fever to 101° F. (38.3° C.); (c) with fever to 103° F. (39.4° C.) and abdominal cramps. The urticaria appeared as early as the first day or as late as the fourth week. Fever was present only if urticaria was severe, and normally did not exceed 101° F. Skin tests were negative. No precipitins were found in the serum of patients tested during the phase of urticaria, and heterophil agglutinins were not significantly and constantly increased. Crip (1944) reported a case in which a massive generalized urticaria appeared on resumption of a second parenteral course of penicillin. This persisted for six days. He made special laboratory investigations which showed the presence of some immune substances (reagins and precipitins) in the patient's serum. According to Crip the following takes place: First penicillin administration—drug discontinued—second penicillin administration → allergic reaction.

Strazza (1946) had a case of a man aged 23 who six days after a course of parenteral penicillin became very ill, with urticaria, pruritus, restlessness, insomnia, pain in the hands and feet, breathlessness, and oedema of pharynx with dysphagia. He recovered after eight days. Calcium gluconate intravenously was ineffective, and a scratch test was negative. The paper on penicillin allergy by Kolodny and Denhoff (1946) gives, among others, data concerning six cases with urticaria and five cases with a serum-sickness type of reaction. This classification is arbitrary, but clinically useful as it permits the separation of mild from severer reactions. In seven patients the reaction started fourteen days after beginning penicillin therapy; in another it began twenty-three days after. Five patients had swelling of small joints of the extremities, oedema of face, moderate lymphadenopathy, generalized arthralgia, myalgia, and malaise. Recovery was complete in four or five days. Adrenaline gave prompt but transient relief. Haswell and Wilkinson (1946) have written an interesting account of four cases presenting a reaction similar to serum sickness; all the patients gave a history of previous treatment with local penicillin. The reaction occurred from six to twelve days after starting intramuscular injections of penicillin. Skin tests were negative.

Gordon (1946) reviewed the literature on the problem of allergy due to penicillin and added three of his own cases. According to this author the incidence of allergic reaction during the course of treatment is not frequent. A delayed serum-sickness type of reaction occurs even more uncommonly—possibly once in 1,500 or 2,000 cases. Gordon's personal cases developed the reaction from two to seven days after cessation of penicillin therapy. The first manifestation in each was an intense urticaria with severe pruritus. Weal formation spread all over the body, and in two out of three oedema of the eyelids occurred. Pain in the joints was noticed; malaise, mild fever, and tachycardia were also present. Both palms presented an exfoliative dermatitis in the later stages of the reaction. Treatment with adrenaline gave satisfactory results, but its effect was transitory. The patients recovered in seven to ten days.

Below are given a list of authors and the number of their published cases. The list includes Barker, Morris and Downing, Sullens, and Macey and Hays, as quoted in Gordon's paper. With my own nine cases the total of collected case histories amounts to forty seven.

	No. of Cases
Lyons (1943)	12
Criep (1944)	1
Barker (1945)	1
Morris and Downing (1945)	1
Sullens (1945)	1
Macey and Hays (1945)	3
Haswell and Wilkinson (1946)	4
Gordon (1946)	3
Strazza (1946)	1
Kolodny and Denhoff (1946)	11
Total	38

They can be classed as (a) allergic hydrarthrosis; (b) urticaria; (c) simulating serum sickness; (d) anaphylactic-shock-like syndrome. Cases of sensitization dermatitis are included. A summary of the clinical features, with a few illustrative cases, follows.

Allergic Hydrarthrosis

I could find no similar published cases. As already noted, swelling of the small joints with arthralgia is a common finding, but isolated articular involvement of a large joint is rare. Four such cases have been seen. They were all similar in their onset, duration, symptomatology, and benign character, and none of the patients had a history of previous penicillin therapy. Three had been treated for syphilis (two with primary syphilis and one with syphilitic arteritis) and one for multiple lung abscesses. The joint swelling occurred two to five days after starting penicillin; the joint involved in all cases was the right knee. Undoubtedly this was pure coincidence, and I am expecting in the future to find other large joints affected. The knee became swollen and slightly tender, and gradually a large effusion developed. There were no signs of inflammation and the general condition remained unaffected; the temperature was not raised, and the small joints were not involved. No

skin eruption was noticed. Penicillin injections were not discontinued on account of this complication, as it was felt that this was not serious enough to warrant such a drastic step. The effusion gradually lessened, and the joint became normal in eight to ten days. Only symptomatic treatment was given.

Illustrative Case

Case 1.—Male aged 42 years. He had never had penicillin before. He was admitted to St. Charles' Hospital on Aug. 26, 1946, suffering from cerebral thrombosis of syphilitic origin. On the 31st penicillin was started in doses of 50,000 units intramuscularly every three hours. The drug used was a commercial batch of the sodium salt in aqueous solution. On Sept. 5 it was noticed that the right knee was oedematous. It was tender to palpation and fluid was present, but the skin was not hot, shiny, or red. An x-ray photograph taken on the same day showed no bone injury. The hydrarthrosis remained for about ten days and then slowly subsided. Eventually the joint returned to its former healthy state. Penicillin therapy was not stopped till the full dosage was given (5,000,000 units). Treatment was symptomatic and there was no recurrence.

Urticaria

This is a mild form of reaction, also called "immediate" by some authors to differentiate it from the delayed reaction of serum-sickness type. In reality the time of occurrence of both is extremely variable. In one case that I studied the onset of a mild urticaria was delayed for several days after cessation of penicillin, while in another a severe serum-sickness-like reaction made its appearance very early during treatment. The only basis for differentiation lies in the clinical features. Urticaria is mild, transient, and often overlooked, while the severe form of serum sickness has a dramatic onset with constitutional disturbance, often pyrexia, and occasionally collapse. This form needs prompt recognition and appropriate treatment.

The urticaria appears most commonly during penicillin treatment, as does the previously described knee effusion. Only the skin is involved, and the principal lesion consists of a blotchy rash against an erythematous background. The small weals are distributed on the trunk—usually the front of the chest and upper abdomen. Limbs, neck, and scalp may also be affected. Pruritus is always present, and this is the first thing the patient notices. The temperature remains normal and there is no tachycardia. In one only of my cases was there a history of previous penicillin administration.

Illustrative Cases

Case 2.—Soldier aged 23, with a diagnosis of post-basal empyema following pneumonia. He had been treated in December, 1945, with intramuscular injections of penicillin. Admitted to St. Charles' Hospital on March 25, 1946. Penicillin in three-hourly doses of 30,000 units was given from April 2 to 16. On the third day after starting injections the patient complained of itching on the chest and abdomen. A mild urticarial eruption was noted and calamine lotion applied locally. Penicillin was continued and no more notice was taken of the urticaria, which faded out after four to five days. I cannot find in the records any mention of a reaction during the first course of penicillin.

Case 3.—A young doctor aged 30, admitted to St. Charles' Hospital for recurrent boils of neck. He had never had penicillin previously. In July, 1946, was started a course of three-hourly intramuscular injections of sodium penicillin for five days; each injection consisted of 30,000 units. Three days after completion of treatment a mild urticarial rash appeared on scalp, neck, and legs. Intense irritation of the skin and moderate nocturnal dyspnoea were present. Intravenous calcium gluconate 10% solution gave no relief. Recovery took place in five to seven days.

Reaction Simulating Serum Sickness

This reaction is not confined only to the skin, but produces in addition an oedema which at times is considerable, arthralgia, bronchospasm, and a severe general reaction. It may occur during penicillin treatment or several days after cessation. On the average the onset is from five to thirteen days after the first injection. In two of my cases penicillin has been given before, and in both a penicillin patch test was positive.

The onset is rather abrupt, with at times fever of 102° F. (38.9° C.). Giant urticaria affects the skin all over the body. Within twenty-four hours the weal formation is completed; even the face is not spared. The skin irritation is intense, and the patient becomes restless and cannot sleep. Angioneurotic oedema is always present in these cases. Particularly noticeable

is the oedema of face, lips, and eyelids. The hands, feet, and forearms are swollen and painful. The oedema is intense, and is a classic example of pitting oedema. One has only to consider this aspect of the reaction to realize how widespread and intense is the damage to the capillaries; fortunately it is transient and recovery is complete. The urine is clear and contains no albumin. Blood pressure remains within normal limits. In one subject only have I noticed subcutaneous bruising of the palms of both hands, and he complained of tenderness and aching in the affected palms. No exfoliative dermatitis was noted in any of my cases. Arthralgia is not the rule. Usually the small joints of hands and feet are involved.

Illustrative Cases

Case 4.—Male aged 27 years, with no personal history of asthma, urticarial rashes, or migraine. He was treated at St. Charles' Hospital for a septic right index finger, and had 700,000 units of sodium penicillin between Sept. 4 and 8, 1946. At that time no complications had been noted and the patient was discharged. On Sept. 17—i.e., nine days after completing the course of penicillin—he became ill with a temperature of 102° F. (38.9° C.) and generalized urticaria. He was admitted again on the 20th. On examination giant weals were seen on neck, chest, abdomen, and thighs. The areas of skin between the weals were erythematous and slightly raised. The palms showed diffused ecchymotic subcutaneous patches. Severe angioneurotic oedema of feet, legs, dorsum of hands, wrists, face, lips, and left upper eyelid was present, and pitting oedema round ankles and dorsum of feet. The patient complained of intense irritation of the skin and tenseness in both hands. His general condition was poor and he was restless. The heart and lungs were normal, as were also the blood pressure and urine. He was put on strict bed rest, hypodermic injections of adrenaline, ephedrine, and phenobarbitone, with calamine lotion locally. The urticaria cleared after three days. The oedema persisted for a few more days and he was allowed up on Sept. 27. He went home on Oct. 1.

Case 5.—Male aged 23 years. This patient had gonorrhoea in May, 1946, and was treated with 150,000 units of penicillin. He contracted syphilis in the following August. He attended a V.D. clinic for treatment and was put on two daily injections of 120,000 units of penicillin in ethyl oleate. After the tenth injection he developed a giant urticaria, and was admitted to St. Charles' Hospital, complaining of severe pruritus, oedema of lips, and malaise. In view of the seriousness of the general reaction penicillin had to be discontinued. The reaction gradually subsided on adrenaline and phenobarbitone. A penicillin patch test was strongly positive. Calcium gluconate 10% solution given intravenously for four days brought no improvement. He was discharged on Sept. 14.

Case 6.—Male aged 26 years, suffering from a discharging sinus of the left shoulder following gunshot wounds. He gave the following history of previous penicillin treatment and allergic reactions: (1) July, 1944, given nearly 2,000,000 units (make unknown) by intramuscular injections. Developed an urticarial rash during treatment; no details supplied. (2) August, 1945, received intramuscular injections of sodium penicillin for 48 hours (total of 270,000 units). Three days later, while at home, urticaria developed. The patient could give no details of its duration or severity.

On July 25, 1946, this patient underwent an operation for chipping of the humerus at St. Charles' Hospital. On the same day three-hourly parenteral penicillin was started, and this was discontinued on Aug. 1, the total dosage amounting to 1,140,000 units. At 11 p.m. on Aug. 3—i.e., nine days after beginning treatment—large urticarial weals suddenly appeared. The arms and legs were covered with them, and the patient complained of pain in the small joints. The temperature and pulse rate were not raised. There was a distressing skin irritation. Adrenaline hypodermically was given at once. His condition gradually improved after a few days, and he was discharged on the 8th.

The patient was readmitted the next day for a repeat of the penicillin course. This was started at once and three days later a mild urticarial reaction appeared. The penicillin was stopped after 1,620,000 units had been given.

Anaphylactic-shock-like Syndrome

Theoretically this may arise in certain subjects, previously sensitized to penicillin, who receive after an interval multiple parenteral injections, or even a single injection, of the drug. I have personally not seen such an occurrence. The case reported by Strazza (1946) presented what appeared to be anaphylactic shock, but skin lesions were also very prominent. O'Donovan and Klorfajn (1946) produced an anaphylactic-shock-like reaction in a previously penicillin-sensitized patient by giving him a single intramuscular injection of 15,000 units of sodium penicillin. Fifteen to twenty minutes after the

injection the pulse became quick and thready, and a throbbing sensation in the face, breathlessness, restlessness, pallor, cold sweats, and mild rigor occurred. Six hours later an oozing dermatitis of the face appeared. He slowly recovered in two days; a patch test became strongly positive on the third day.

Discussion

The frequency of these reactions to parenteral penicillin has been put at varying figures between 0.56% and 5.7%. The former is probably nearer the truth.

The aetiology is still a debatable subject. Some observers believe the reaction to be due to impurities. Others—and these form a majority—incriminate the active principle of penicillin. Commercial penicillins are doubtless increasingly more refined, but reactions are reported in ever larger numbers. The purest form yet known—the crystalline penicillin—gave in the hands of some workers positive skin tests in sensitized subjects. So long as penicillin remains unsynthesized a categorical answer is impossible. The search for specific serum antibodies has so far given no convincing results. All that is known is that a small number of people are susceptible to penicillin sensitization, and that this susceptibility is greatly enhanced in the presence of skin infections, especially those due to a fungus. Previous penicillin treatment, parenteral or local, can predispose to allergic reactions. We have seen that some of these may be very severe and call for cessation of treatment; attempts at desensitization have been made by some workers. O'Donovan and Klorfajn successfully desensitized one of their patients by repeated oral doses of penicillin.

Skin tests have given variable results; the patch test is easy to perform and is frequently positive. Dr. P. Headon suggested dry powdered penicillin on a square of gauze applied to the skin of the chest or arms. In Case 5 a positive result was obtained two hours after application, the patient complaining of itching in the right hand and swelling of the lips. The test was also positive in Case 4, in which it was performed at the time of recovery; the same patient had a negative intradermal test. Adrenaline hydrochloride hypodermically and ephedrine orally give rapid relief. These drugs should be repeated at frequent intervals in conjunction with small doses of phenobarbitone. "Benadryl," the new anti-histamine drug, may be found useful in the treatment of manifestations of penicillin hypersensitivity, especially in cases with marked urticaria.

What should be done if penicillin is again indicated in a case with a history of extensive urticaria following previous penicillin treatment, with subsequent recovery? Most observers are of the opinion that the drug should not be withheld if it is considered important to the treatment. The patient should be watched, and if an unusually severe reaction occurs cessation of penicillin will have to be considered. No useful purpose is served by changing to another commercial batch. Dr. A. E. Shaw suggested the use of skin tests to discover susceptible individuals, especially among those who have had (a) penicillin once or more previously; (b) a history of allergy, such as asthma, migraine, hay-fever; (c) fungus infection; (d) sensitization eczemas. Unfortunately skin tests are often negative in obviously allergic patients, and I wonder whether a preliminary injection of, say, 15,000 units would produce a clear-cut and mild enough reaction to indicate a penicillin reactor.

Summary

Thirty-eight cases of allergic reactions to penicillin have been collected from the literature and reviewed. Emphasis is laid on the manifestations due to parenteral administration.

Nine personal cases are added, of which 4 presented hydrarthrosis, 2 urticaria, and 3 serum-sickness-like reaction.

A clinical description of various types of reaction is given.

Susceptibility to reactions and the use of skin tests are dealt with. Frequency, aetiology, and treatment are also discussed.

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NEUROMYELITIS IN MUMPS

BY

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the occurrence of nervous complications in mumps points to the fact that the mumps virus possesses potential or even primarily—according to Dopter (1910)—neurotropic propensities. The experimental work of Gordon (1927), in which eningitis was produced in monkeys by intracerebral injection of a filtrate of saliva from mumps patients, lends support to this view.

Systematic lumbar puncture in cases of mumps by French physicians has shown that a meningeal reaction in the form of a lymphocytosis is almost constant. Definite meningeal symptoms are much less frequent, Dopter reporting 9.8% of cases with meningeal symptoms out of a total of 1,705. Typical eningitis is even more rare, Roux recording three examples among 274 cases of mumps. Meningo-encephalitis may also occur, and Howard (1919) reports three cases in which the encephalitis occurred without parotitis during a mumps epidemic.

The above complications seem to occur at the height of the attack of mumps or shortly before or after it. The rarest complication, and one which appears to have a more delayed onset, is neuritis, or neuromyelitis. This may be localized or widespread. The third, sixth, seventh, tenth, and twelfth cranial nerves have all been reported affected, the commonest being the seventh—possibly through mechanical causes rather than virus infection in some cases. Paralysis of the serratus magnus has been reported by Harris and Bethell (1938). Lightwood (1946) recorded a case of a flaccid paresis of the right lower limb occurring eight days after the onset of parotitis. While in these cases are localized, a quadriplegia may develop, and five cases of this are reviewed by Collens and Rabinowitz (1928), their own case being of a man of 29 who developed a flaccid quadriplegia three weeks after the onset of epidemic parotitis, with complete bilateral facial paralysis, loss of the deep reflexes of the limbs and of superficial reflexes, and loss of position and vibration sense in the extremities. The cerebrospinal fluid was normal. Recovery was complete in four months. The four other cases were similar in the development of a quadriplegia: intervals varying from 7 to 21 days after the onset of parotitis. Position sense was lost in the case reported by Pitres and Marchand, and there was associated paralysis of both sixth nerves and left facial and right hypoglossal weakness in a case reported by Revilliod. Recovery was complete in all these cases, though Ford (1937) mentions fatalities due to paralysis of the diaphragm. The following provides another example of the quadriplegic type.

Case Report

A woman aged 37 developed bilateral parotid mumps on May 29, 1946, but ignored the attack so far as was possible, continuing with her housework. A week later she developed pains in the back between the shoulder-blades, which gradually became more severe until she was confined to bed. Two weeks after the onset of parotitis there was a gradually increasing weakness of arms, legs, and trunk until she was unable to sit or even move in bed. At the same time diplopia occurred, but there was no loss of sphincter control. The pain in the back continued all this time, but she had no headache. A week later, on June 19, the patient was admitted to Jersey General Hospital. On examination at this time she was pyrexial and mentally alert though very depressed. She was unable to move her position in bed; the tongue was dry and furred, and the parotid swellings had subsided. The fundi were normal; there was weakness of the third nerve bilaterally, paralysis of the left fifth nerve, complete paralysis of the right facial nerve, and weakness of the right accessory nerve. Cervical rigidity was marked. There was flaccid weakness of both arms with absent biceps jerks and weak triceps and supinator jerks. Position and vibration sense were impaired but other sensation was normal. Abdominal reflexes were absent. There was a paresis of both legs, greater in the left than in the right, with a positive Kernig sign, absent knee- and ankle-jerks, and absent plantar responses. As in the arms, position and vibration sense were impaired. Lumbar puncture was performed and a clear fluid, under 80 mm. pressure, was withdrawn. The Queckenstedt response was normal. The protein content was

20 mg. per 100 ml., there were 5 cells per c.mm., the W.R. and Kahn test were negative, and there was no change in the Lange test.

The patient was treated in the usual way for polyneuritis, including the injection of 50 mg. aneurine hydrochloride daily. The right facial nerve had fully recovered in seven days and the other affected cranial nerves in fourteen days. In five weeks she was able to walk, and in eight weeks returned home, with absent knee- and ankle-jerks as the only residual signs.

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CONSERVATIVE TREATMENT OF ACUTE PERFORATED PEPTIC ULCER*

BY

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The history of the treatment of acute perforated peptic ulcer shows a gradual trend towards conservatism. Four distinct phases in treatment during the last twenty-five years can be recognized.

Stage 1.—Closure of perforation. Thorough peritoneal toilet. Flushing and mopping out of all exudate and foreign bodies. Multiple drainage-tubes.

Stage 2.—Closure of perforation. Limited cleansing and mopping of peritoneum. Removal of obvious foreign bodies. Single supra-pubic drainage for twenty-four hours.

Stage 3.—Closure of perforation. Aspiration of fluid only if obscuring site of ulcer. No drainage.

Stage 4.—Conservative non-operative treatment.

It is a very short but adventurous step from Stage 3 to Stage 4. For many years I had deliberately made no effort to remove the beer and carrots from the peritoneum because the task seemed hopeless, yet not one case of subphrenic abscess resulted. It was pneumonia and cardio-renal failure which were responsible for the fatalities that did occur.

Three further observations seemed to point the way towards greater conservatism. First, all surgeons must have felt on many occasions that surgical intervention had done more harm than good. It was no uncommon experience to find the perforation already sealed off. Operation then merely breaks down the adhesions and attempts to repeat what Nature has already effected. Secondly, during the course of the last 400 gastrectomies for chronic peptic ulcer we have several times noted the presence of sheets of adhesions which indicated that a spontaneous closure of an acute perforation must have occurred in the past. Finally, I can remember more than one obstinate patient who, although threatened with the serious consequences of refusing operation, has nevertheless survived and remained well.

In spite of these reminders that spontaneous recovery can occur it was not until Bedford-Turner (1945) reported a series of six cases treated conservatively that I had the courage to follow his lead. For twelve months I treated every case of acute perforated ulcer conservatively. There was no selection of favourable cases, but unfortunately the series is small. Taken in conjunction with many similar series all over the country, it did provide encouraging evidence in support of a trial for non-operative treatment.

Technique

The technique of treatment was as Bedford-Turner described:

Intravenous morphine, repeated as often as necessary to give complete relief from pain. Stomach wash-out with large-bore tube if a recent meal has been taken. Intermittent suction half-hourly through a Ryle tube passed via the nose. No drinks allowed for

* Part of a lecture delivered to the Leeds and West Riding Medico-Chirurgical Society, Feb. 15, 1946.

In York the incidence of acute perforation has fallen 44% during the last two and a half years, but the mortality of those who do perforate remains disappointingly high—22%.

A patient who has perforated more than once needs prophylactic gastrectomy. It must be very radical (at least 90%).

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INOCULATION EXPERIMENTS AGAINST TYPHUS IN AFGHANISTAN

BY

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Mild and severe typhus can be seen outside Kabul throughout the year. During the summer cases are only sporadic, but they become more frequent in the autumn; in winter the disease reaches its maximum incidence, with a further exacerbation when the snow begins to melt. There are no marked differences in clinical characteristics in different seasons of the year, but cases with severe haemorrhagic eruptions and, on the other hand, those without exanthemata diagnosable only by serological examinations, are observed. In the hospital of the central prison, Kabul, in one year out of 249 cases of typhus 213 persons recovered and 36 (14.4%) died.

When sera of doubtful typhoid or typhus cases are sent from the hospitals or the city to the Bacteriological Institute here, agglutination tests are done in six rows of tubes with six different types of microbes—i.e., *Salm. typhi*, *Salm. paratyphi* A and B, and *Proteus* OX 19, OX 2, OX K. One hundred and twenty-three sera positive for one, two, or three types of microbes gave Weil-Felix reactions (W.F.R.) for *Proteus* OX 19 (116 sera positive and 7 negative), for OX 2 (73 positive and 50 negative), and for OX K (33 positive and 90 negative). If the result of agglutination with OX 19 was negative, but positive with OX 2 or OX K or both, it was a sign that the sera were from cases occurring during the month of May or the autumn. Thus although the patients were suffering from typhus, their sera in 5.7% of cases gave a negative W.F.R. with OX 19 but positive results with one or both of the other types. The Weil-Felix test must be done here with all the three strains of *Proteus*, as doubt will be created in cases with negative serological results to one strain.

In May, 1937, severe typhus broke out in the region of Aybak, but the physicians there thought it was plague because pasteurillae had been found in patients' sputa. The disease was very severe, but exanthemata were seen in only a few persons, on the medial side of the thigh. My assistant was sent with all necessary equipment, and after making bacteriological and serological examinations, and experimental inoculations of material brought from the patients, he established that they were not plague cases. The W.F.R. was done with nine types of *Proteus* from the Lister Institute, London, results being positive with the OX 2 type but negative with all the others. This and further observations led me to the conclusion that different strains of *Proteus* were necessary for the diagnosis of the typhus of this region. The literature to date does not show OX 2 of *Proteus* as an independent agglutinin but as a coagglutinin, while in the Institute of Bacteriology at Kabul it has been found that free OX 2 agglutinin exists in the serum of typhus patients.

Blood Vaccine

In the winter of 1941 typhus was observed in and around Kabul. Prophylactic inoculation was possible only in Allied armies. In some institutions hygienic measures were taken to arrest the disease, and I inoculated with my vaccine those who had not yet been infected. The Government also permitted me to make experiments on the prisoners. The blood used in the preparation of the vaccine was taken in the second week from otherwise healthy patients who had rashes before the tenth day of the disease, and had high fever, positive Weil-Felix and negative Kahn reactions. It was put into sterile

bottles, defibrinated, and then filtered through sterile gauze into cylindrical bottles, after addition of 0.5% carbolic acid (10 ml. of 5% solution acid in isotonic saline to 100 ml. blood and kept one hour at 56° C. in a waterbath. I sometimes use 0.5 ml. of 5% formaldehyde in isotonic saline to 100 ml. blood instead of carbolic acid. After checking its sterility aerobically and anaerobically, this vaccine was kept in a refrigerator and warmed to blood-heat before use. It was inoculated three times subcutaneously into the abdominal wall 5 to 10 cm. from the navel, not more than once a week, the first dose being 2 ml., the second and third doses 4 ml. Four or five hours after the inoculation the patient began to feel unwell, the area of inoculation was hypersensitive to the touch and bluish in colour; but after about four days these signs disappeared.

In the prison at Kabul in 1942, 196 persons were inoculated in the spring and 368 in the autumn; other people who feared an infection or who found a louse on their bodies also came to the Institute of Bacteriology, Kabul, and were inoculated with my vaccine. Among the 196 prisoners not one case of infection was noted for six months. Between the sixth and seventh months 9 persons caught typhus; in 7 the disease had an uneventful course, but 2 died. Of the latter one was of the other was weak and suffered from consumption. Of the batch of 368, 13 caught the disease; 11 of these recovered and 2 died. As the vaccine could not be prepared for more than 80 persons at a time only those who so wished and who had not previously had typhus were inoculated. Although all the prisoners lived together, out of 13 cases only two feeble treatment patients died; but in the months of December and January when the disease was very serious among the untreated, 110 cases 89 recovered and 21 died. The result established the prophylactic efficacy of my vaccine, and these experiments showed that it could protect susceptible persons against the disease for 5 to 6 months. This experiment was made as a gesture of good will at a time when no better vaccine was available in the prison and in cases where there was no other way of giving active immunity.

American (Cox Type) Vaccine

In 1943 it occurred to me to try American vaccine, obtained through the Legation, and experimental inoculations were given as follows: May 7, 124 persons in the detention houses, 15 persons in the general prison; June 12, 100 persons in the women's prison; July 31, 150 policemen and 353 police soldiers in all, 922 persons. In the first week of September 691 soldiers of the First Division, and in the first week of October 85 soldiers of the Second Division—in all 1,542 persons—were inoculated (three inoculations, each of 1 ml. subcutaneously, at intervals of one week). Because the vaccine in the general prison was not sufficient, only those who consented, and among the soldiers only those recommended by the Surgeon Major were treated with the preparation of the Bacteriological Institute. All the other persons living together with the inoculated remained under control. Among the inoculated persons in the detention houses and the women's prison not one case of typhus was recorded during the first six months. In the central prison of the inoculated 2 fell ill but recovered; and of the uninoculated 15 caught the disease, 12 recovering and 3 dying. Among the inoculated policemen and armed police not one case was noted, but of the uninoculated 5 fell ill; 4 of these recovered and 1 died. In March, 1944, the American Legation again sent some vaccines, and 214 soldiers of the First Division, 23 of the Second Division, and 207 of the independent armed police troops—in all 658 persons—were inoculated. During one year after these inoculations not one case was noted among those protected, but among the unprotected in the First Division 23 caught the disease, 18 recovering and 5 dying; in the Second Division 11 fell ill, 10 recovering and 1 dying. Among the independent companies of the police soldiers 30 persons caught the disease; 27 of these recovered and 3 died. The result of these experiments—not one case occurring among the protected persons, but 9 deaths out of 64 unprotected—established the efficacy of the vaccine.

Summary

It has been established that in the typhus cases seen in and around Kabul, carrying a mortality of 14.4%, the sera taken from the

patients contain three types of agglutinin to *Proteus* in different proportions. One of them is the main type and the others exist as coagglutinins. In this region it has been found necessary to make the Weil-Felix test with all the three types of *Proteus*.

The vaccine prepared here has been efficacious.

In 1943, 3,122 persons—police soldiers, policemen, and prisoners—were inoculated with American typhus vaccine (Cox type), but, because sufficient vaccine was not available, controls were not inoculated, but remained in the same area. Although during that year the outbreak was not serious, cases and deaths were recorded among the uninoculated; among the inoculated, however, only mild cases were recorded, with no deaths.

Medical Memoranda

Two Unusual Clinical Manifestations of the Primary Phase of Syphilis

It has often been pointed out that many, if not the majority, of chancres do not conform to the textbook type. The following rather unusual cases which have recently occurred in one of H.M. ships show several points of interest.

CASE 1

This patient first attended on May 8, 1946, complaining of some soreness of the penis. He admitted having had intercourse eight days previously. On examination he was found to be suffering from a mild balanitis associated with a phimosis. The inflamed area was dressed with gauze soaked in eusol twice daily. All inflammation had subsided within 48 hours. A blood Wassermann was reported on as negative. Subsequently he was admitted to hospital, where circumcision was performed on May 15.

The patient next attended on June 21 complaining of a lump in the groin. He denied any further intercourse. The circumcision scar was found to be slightly oedematous and there was a moderate bilateral inguinal adenitis. The blood Wassermann reaction was reported as doubtful. On June 25 the surface of the scar was eroded and there was a distinct surrounding induration. Repeated dark-ground examinations were negative. On June 30 he complained of severe pain in the penis. The original scar had now developed into a deep craggy fissure encircling the glans, there was gross oedema and reddening of the whole penis, and the adenitis had increased. Dark-ground illumination revealed *Treponema pallidum* in large numbers, and the Wassermann reaction was now strongly positive.

CASE 2

This patient first attended on June 6, 1946, complaining of a lump in his right axilla and some upper abdominal aching. He denied having had intercourse during the preceding thirteen months. On examination a scab 1 mm. in diameter was found over the third right metacarpo-phalangeal joint; it was painless and showed no signs of any inflammatory changes. The right epitrochlear gland was enlarged to the size of a thrush's egg, painless, and of the consistency of rubber. The right axillary glands were also much enlarged, discrete, and painless. There was some tenderness over the splenic area.

The patient was observed at daily intervals. On June 12 the Paul-Bunnell and Wassermann reactions were reported on as negative. On June 14 there was some reddening and pain, associated with slight surrounding oedema, over the scab on his knuckle. Pus-forming organisms were present, and within one week ulceration had taken place. There was now a round lesion 1.5 cm in diameter with an ulcerated centre and indurated edge. Unfortunately syphilis was not reconsidered at this time, and dark-ground examinations were not carried out. The ulcer healed within three weeks and a thin papery scar remained. The adenitis persisted, however, and on further direct questioning the patient recalled that the original abrasion of his knuckle was caused through striking another rating on the teeth about ten days before first attending. The latter had been under my care for gonorrhoea and his blood Wassermann reaction had been negative, nor had he shown any clinical signs of syphilis. The Kahn reaction of both these patients was strongly positive.

COMMENT

Case 1 is of interest in that the site of inoculation was almost certainly removed at circumcision, yet the primary phase still developed in the circumcision scar. Case 2 is unusual in that the adenitis developed eight days before the chancre, thus throwing me off the scent. Burke states that about 50% of chancres are correctly diagnosed in the absence of any apparent associated adenitis; if the satellite bubo does appear it usually becomes evident about ten days after the chancre. Further, the case is a lesson that any sore on the hand of slow evolution should be repeatedly examined under dark-ground illumination.

I wish to express my thanks to the Medical Director-General of the Navy for permission to publish this paper.

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Reviews

A SWISS TEXTBOOK OF GYNAECOLOGY

Lehrbuch der Gynäkologie. By Prof. Dr. Hans Guggisberg. (Pp. 717; 354 illustrations. 72 Swiss francs.) Basel: Verlag von S. Karger. 1946.

This textbook is an excellent publication and reflects great credit on Switzerland. The publishers have been able to use exceptionally good paper and the print is of high quality. The coloured photographs are remarkable and most of the illustrations are well reproduced. The photomicrographs are perhaps not up to modern standards; many are over-exposed and some show failure to centre the illumination.

As in most Continental textbooks of gynaecology, much attention is paid to hygiene, constitution, and physiology, but less emphasis is placed upon the purely clinical side than is customary in this country; sixty pages are devoted to the chapter on affections of the urinary system, while only some nine pages are given to endometriosis. "Chocolate cysts" receive scant attention and there is little discussion of the conflicting theories. The treatment of prolapse is not dealt with in sufficient detail, and in this country we should regard the contribution as unsatisfactory in spite of the magnificent illustrations. The sections on carcinoma of the cervix and carcinoma of the body of the uterus are particularly good. Cervicitis is not described in adequate detail and too much emphasis is placed upon the chemical treatment of chronic cases. There is the usual difficulty in finding satisfactory illustrations of cervical erosions.

Apart from these minor criticisms the work contained in the book must be praised. The chapter by Prof. Neuweiler on gynaecological diagnosis is of exceptional merit and well worth careful study. Guggisberg's own contributions are well written and clearly expressed. It is a great pleasure to see again such an excellent specimen of a Continental textbook. The standard of comparison should be the British textbooks published before the war, and it must be admitted that such high quality was rarely, if ever, obtained in this country. In 696 pages there are over 350 illustrations, and the number of coloured plates is more than the average British publisher would allow. This new Swiss textbook should be able to compete with those of Stoeckel and Schröder.

PRODUCTION AND CONTROL OF MILK

Milk Production and Control. By Wm. Clunie Harvey, M.D., D.P.H., and Harry Hill, F.R.San.I. Second edition. (Pp. 512; 211 illustrations 3fs. 6d.) London: H. K. Lewis and Co. 1946.

Those who are familiar with the first edition of this book are aware of the wide field it attempts to cover. Even though it is restricted to liquid milk and avoids all consideration of milk products, it has nevertheless a long tale to tell. Broadly, it deals with the production of the milk on the farm, its transport to the dairy, its processing, and its final distribution. Special chapters are devoted to the nutritional value of milk, milk designations, milk legislation, and laboratory methods of control. In the new edition are included many of the changes that have occurred in the handling of milk during the last nine years. Not all the information has been brought up to date, but the authors may well plead that complete revision of any serious work in wartime was a major operation.

Though the book, in general, is on a high level, there are parts of it which in a future edition should be either omitted or edited by someone with specialized knowledge. This applies particularly to the chapter on laboratory control and to many of the bacteriological statements. Is it wise, for instance, to describe the method of isolation of pathogenic organisms from milk in a way that would have been adequate in 1910 but which now bears little relation to procedure in a modern laboratory? Why is there no mention of actinobacillosis, which is a much commoner disease in cows than actinomycosis? Why is it stated that the methylene blue is an all-or-nothing test, when the readings are taken every half-hour up to $\frac{4}{5}$ or $\frac{5}{5}$ hours? The same misleading comment could be made on the plate count. Several other criticisms might be put forward, but it

would be unfair to stress the shortcomings of this book. Taken as a whole, it is reliable and accurate and provides a very useful conspectus of the liquid milk problem, which no other recent book has attempted to give.

SILICOSIS

La Silicosis Pulmonar. By Dr. Hugo Dooner. (Pp. 195; illustrated. No price given.) Santiago de Chile: Empresa Editora Zig-Zag, S.A.

The author was at one time medical officer to a copper mine in Chile and later worked in a department of industrial hygiene in Santiago. In his book he first reviews the literature on silicosis and then discusses various forms of apparatus used for counting dust particles, paying particular attention to the impinger of Greenburg and Smith. He considers that certain individuals have a predisposition to the disease, especially those of a lymphatic type, with a tendency to fibrosis and keloid formation. He likewise mentions the view of von Bernath that certain persons become sensitized to silica.

A good deal of space is devoted to a review of the existing literature. In the mine at Potrerillos he used his own classification of three groups. In the first there was little or no physical incapacity and little or no fibrosis; people exhibiting these changes were examined annually. In the second group there was greater disability and more fibrosis; a change of work with monthly examination was indicated. In the third group there was marked fibrosis and gross incapacity, and those so afflicted were given life pensions. The cases classified in this way had no demonstrable tuberculosis.

The author has also made use of the classification of Pendergrass and Pancoast, modified slightly to suit local requirements. Cases with tuberculosis superadded appear at the end of this grouping. He finds that as a preventive measure the use of masks is of little value, since workers will not trouble to wear them. In conclusion he reviews the legal position in Chile with regard to compensation and quotes an extensive bibliography. This book is an elementary review of silicosis and contributes little new or original to our knowledge of the subject. It is written in Spanish.

INSIGHT AND ADJUSTMENT

Insight and Personality Adjustment. A Study of the Psychological Effects of War. By Therese Benedek, M.D. (Pp. 307. \$4.00.) New-York: The Ronald Press Company, 15, East 26th Street.

This is an important and topical book which should be a help and inspiration to everyone who has to deal with the readjustment of society after the war. Although written of Americans and for Americans its vision and humanity are applicable with equal force to our own social problems.

The first part deals along analytic lines with the psychological development of the individual and especially with the place of love in the integration of the personality. The stresses and conflicts involved in family relationships are dealt with and this leads up to the psychodynamics of separation. The second part deals with the soldier and his reactions to enlistment, army service, and demobilization, and his adjustments on his return to civil life. The third part is concerned with the family in war and traces the reactions of everyone to the four phases of service enumerated above; the relationships of the soldier with his mother, his father, his siblings, and his wife, both while he is away and after he comes back, are most sympathetically discussed. Parenthood during war as it affects both the mother and father, and the reaction of the soldier to his children, and especially to the child he may never have seen, are competently described. The fourth part discusses the sexual and social difficulties of the adolescent of either sex in time of war and shows how employment and the opportunity, indeed the necessity, to earn her livelihood has modified the outlook of the woman. The special problems of the woman who volunteered for service with the Forces is particularly well portrayed, and finally the outlook for the future in the age-long struggle between the sexes is discussed. A final note on the responsibility put upon humanity by the sudden ending of the war through the agency of the atomic bomb closes a thoughtful, wise, and well-informed book which ought to be procurable in this country.

ARTIFICIAL PNEUMOPERITONEUM

Pneumoperitoneum Treatment. By Andrew Ladislau Banyai, M.D. (Pp. 74 illustrations. 33s.) London: Henry Kimpton, 1946.

Artificial pneumoperitoneum, generally combined with paralysis, is at present enjoying a considerable vogue in the treatment of pulmonary tuberculosis, though as yet it is sharply divided about the indications for it and the results to be expected. Physicians interested in pulmonary tuberculosis will therefore be grateful to Dr. Banyai for bringing to them information from many sources about this procedure. His book contains a historical review and an account of the technique, of the physiological and morbid anatomical changes of the complications of artificial pneumoperitoneum. He discusses its therapeutic application not only in pulmonary tuberculosis but also in tuberculous peritonitis and enteric variety of abdominal disorders, including such diverse conditions as haemorrhage from the digestive tract and tuberculous salpingitis, and various broncho-pulmonary affections, including pulmonary abscess, asthma, bronchiectasis, and emphysema.

The material is derived from his own extensive experience and from copious references to the literature. The approach to the subject is rather over-enthusiastic and in places unbalanced. For the expert who will read with informed scepticism the faults will detract little from the value of the book as a source of information on this specialized subject; the general practitioner will be likely to obtain an over-favourable view of the results to be expected from the insufflation of air into the peritoneum.

Notes on Books

Dr. WILFRID SHELDON'S *Diseases of Infancy and Childhood* (J. and A. Churchill; 30s.) now appears in a fifth edition ten years after its first issue. Extensive revision has been taken, especially in view of the introduction of penicillin. Illustrations and a lot of new matter have been introduced and there has been a consequential slight increase in size.

The Care of Young Babies, by Dr. JOHN GIBBENS, has been revised for a second edition, after several reprints have been necessary since its first appearance. It is still an excellent book to the subject, essentially intended for mothers, but it might be studied by medical practitioners. The book is published by J. and A. Churchill at 5s.

Only four years have been sufficient to exhaust the second edition of the classical textbook *Practical Handbook of Pathology of the Skin*, by Dr. J. M. H. MACLEOD and Dr. I. MUENDE (H. K. Lewis and Co.; 50s.). This is largely owing to the fact that the American medical public proved to be as keenly interested as British workers in dermatology. Very little change has taken place in the preparation of the third edition, though the authors state that they have corrected a few errors and amplified descriptions. It remains the best, if not the only, handbook of dermatological pathology written in English, and we can only more warmly recommend it to the dermatologists for whom it is primarily intended.

For the ninth edition of *The Diabetic A B C* (H. K. Lewis and Co.; 4s.), Dr. R. D. LAWRENCE has included a post-war diet at the end of the book to replace the wartime Supplement. The Diabetic Association (9, Manchester Square, London, W.1) played a great part in arrangements to help diabetics during the war, and Dr. Lawrence in his preface urges every one of them to join it.

He Conquered Death, by MARGARET M. SHAW (Macmillan; 8s. 6d.), is a short biography of Sir Frederick Banting, narrated in the form of fireside talks; it will appeal to children aged 13 to 16. Some photographs of Banting are included, and reproductions of several of his oil paintings. In contrast to so much modern children's literature this book is pleasantly free from sentimentalism and the bitter belief that science is not subject to human values. Banting's retiring and virtuous life is described clearly and without sentimentality, both as an example to others and as a fine achievement in itself.

The quarterly *Journal of the History of Medicine and Allied Sciences* is printed in the U.S.A. for Henry Schuman, of New York, and published in this country by William Heinemann Medical Books Ltd.; price 12s. 6d. The longest articles in No. 3 of Vol. 1, July, 1946, are on the influence of the concept of monomania in French medico-legal psychiatry from 1825 to 1840, by Raymond Saussure, and a third instalment of Madge E. Pickard's study of the historical backgrounds of government and science in the U.S.A.

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NO

The Council of the British Medical Association met last week to be informed of the results of the plebiscite up to date, and to decide as a result of this information what report it should make to a Special Meeting of the Representative Body which will be held on Jan. 28. The R.B., being the policy-making body of the B.M.A., will then decide the course of action to be taken in the light of the Council's recommendation. The decision of the R.B., it is assumed, will be referred to the Negotiating Committee, as will the decisions of the other medical organizations forming this committee. Should the ultimate outcome be a united refusal to negotiate with the Minister on the Regulations of the National Health Service Act, then the Negotiating Committee will have no *raison d'être*, and it is possible that a new Committee under another designation will be formed. Some such step would seem to be essential so that the unity of the profession may be preserved as it has been all through the prolonged discussions and disputes since the days when Mr. Ernest Brown was Minister of Health. The paramount need of the profession at this moment is unity.

The Minister of Health has not taken into account the strong individualism which is characteristic of British medicine and responsible for its finest achievements. His enthusiasm for collectivism and centralized power has led him to misread the psychology of the practising doctor and to challenge certain fundamentals of his work. He is trying, in fact, to apply the principle of nationalization to the most individual of relationships between employer and employee—in this case the employer being the patient and the employee being the doctor. The medical profession has been warned by Mr. Bevan's phrase about the doctors not being ripe for plucking, by Mr. Greenwood's statement in the Second Reading debate that the Labour Party's policy of nationalization was unchanged, by the Lord Chancellor's revealing remarks in the Lords debate on the Third Reading which linked certification with basic salary. That the fears of the doctors are not groundless was shown in a startling fashion by the inept decision of the borough of Willesden to turn nurses and doctors out of hospital if they did not join trade unions against their will. The hasty retreat of the Willesden councillors and the repentant messages issued by Mr. Bevan and Mr. Isaacs have deceived no one. It is just that the moment is not yet ripe.

The medical profession has never been opposed to a comprehensive health service, and in the last Government it was reaching agreement with Mr. Willink on the principles of such a service because it was dealing with a Minister prepared to discuss points of difference and to negotiate so that the best interests of the public could be

served through a health service manned by doctors willing to co-operate in a great task. Mr. Bevan broke the concord between the medical profession and the department of which he became the new head. He refused to negotiate.

It was within this framework of ideas that the Representative Body this year decided, on seeing the final Act, to take a plebiscite of the whole profession, members and non-members of the B.M.A., on whether the organized medical profession should enter into discussions with the Minister on the Regulations under the Act; that the voters have answered as they have done; that the Council of the B.M.A. met last Wednesday to examine the results of the votes and to forward to the Special Meeting of the Representative Body on Jan. 28 this resolution:

"That the Negotiating Committee be advised that in view of the results of the plebiscite the Minister be informed that, because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into discussions with the Minister on the Regulations to be made under that Act."

We may summarize the up-to-date figures of the plebiscite thus. They are given in tabular form elsewhere in this issue. Of all civilian doctors to whom voting papers were sent, 37% voted Yes, 44% voted No, and 19% did not reply. Of the first 4 Groups to whom voting papers were sent—that is, consultants and specialists, general practitioner principals, general practitioner assistants, and whole-time voluntary hospital workers—37% voted Yes, 55% voted No, and 8% did not reply. If we take Groups 2 and 3—namely, all general practitioners, both principals and assistants—32% voted Yes, 56% voted No, and 12% did not reply. It is quite clear that the first 4 Groups contain those who are directly affected by the Health Service Act. They are doctors now practising freely as individuals not employed by any local or central Government authority. If for the first 4 Groups the non-voters are added to the Yes voters (giving 45%) there is still an absolute majority voting No. If among general practitioners the non-voters are added to the Yes voters (giving 44%) there is an absolute majority voting No. Of all civilian doctors, if the non-voters are added to the Yes voters then there is not an absolute majority for No. Finally, of the total of those who voted, 64% in Groups 2 and 3—namely, general practitioners—voted No and 36% Yes; of Groups 1-4—general practitioners, consultants and specialists, voluntary hospital workers—59% voted No and 41% Yes; of all civilian doctors who voted, 54% said No and 46% said Yes.

The significance of these figures was discussed at length and with full awareness of the gravity of the situation at the meeting of the Council last week. The Council was forced to conclude that it had no mandate to negotiate. Though the overall majority of those voting was small in favour of No, this No could not by any stretch of the imagination be interpreted as Yes. But when the Council came to examine the figures of those who would be most vitally affected by the new Health Service Act the proportion of those voting No was considered to be a sufficient majority to justify the Council's recommending the Representative Body not to negotiate with the Minister of Health on the Regulations under the Act.

The British Medical Association, the Negotiating Committee, and the Minister of Health are now for the first time fully informed of the considered opinion of the medical profession on the Act and its implications. In the recent past the Minister and various medical publicists have referred to a mythical large proportion of those favouring the Government's health scheme. These matters are now put beyond guessing through a plebiscite which has been answered by over 80% of the medical profession in this country—a truly remarkable poll. No one could or should underestimate the gravity of the situation the poll has revealed. No one, least of all doctors themselves, can be otherwise than gravely disturbed by this profound division between the Minister and those upon whom he must rely to operate the National Health Service Act. The general public and its representatives in Parliament cannot fail to be dismayed when they see on the eve of the putting into force of the National Health Service Act that its provisions are such as to conflict with the principles laid down by the Negotiating Committee, representative of all sections of medical life. Both people and Parliament must surely believe that there is something radically wrong in this Act if the majority of those who are asked to work in it declare by a vote that its provisions are such as to convince the majority of British doctors that the Act is against the public good. For this is what the vote means.

In framing his Act Mr. Aneurin Bevan refused to negotiate with the medical profession. This was a one-man decision. The medical profession now contemplates refusing to negotiate with the Minister. This is a decision reached by more than 20,000 doctors—those saying No. The one decision is dictatorial: the second is democratic in the real meaning of the word. It but remains to be pointed out that if the Minister proceeds with his Regulations and fixes an appointed day those doctors who wish to work in it will do so and those who wish to remain outside it will do so. We believe that unless some radical change is made between now and the appointed day the numbers of those deciding upon the latter course will increase. It is for the Minister to find a way out of this impasse.

DEFECTIVE COLOUR VISION IN INDUSTRY

Defective colour vision, more commonly and less accurately called colour-blindness, affects probably 8% of the male population. The incidence in women is very much lower. Though defects in colour vision may result from pathological lesions in the eye, they are generally an inherited abnormality transmitted to their sons by the daughters of affected men, these women being themselves unaffected. Colour defects occasionally arise in girls who are the daughters of affected men and of women who though unaffected are carriers. Any condition with such a high incidence in the male population cannot be a matter of indifference, and defective colour vision may be a considerable handicap in particular jobs. A valuable study of this aspect is the *Report on Defective Colour Vision in Industry* compiled by a committee of the Colour Group of the Physical Society. This report was presented by the chairman of the committee, Dr. J. H. Shaxby, to a meeting

of the Group on Thursday, Dec. 19. Though much of the comprehensive document is not new to the medical reader it is none the less welcome for its explicit account of the types of colour defect met with clinically, and for its appraisal of the many different methods used in detecting such defects. In a subject smothered with theoretical speculations it is particularly gratifying to find a straightforward factual statement. That colour defect is a matter of importance in the Services and on the railways is, of course, well known, and in these occupations tests of variable stringency have been applied for many years to ensure that colour defectives are not employed to the danger of themselves and of others on tasks requiring the recognition of colour signals. It is not generally appreciated, however, how great a part is played by colour in industry.

Problems of colour are less likely to arise in the manufacture of cottons than of woollens, mainly because the difficulties are deferred to the dyeing, printing, or merchandizing stages in the case of cottons, whereas with woollen goods a high standard of colour vision and colour discrimination is necessary in a large proportion of the workers in the dyeing office where colour matching is done. Moreover a large number of operatives require to be able to distinguish between different yarns, which may show only very slight colour differences. One firm of cotton and woollen dyers considered that at least 50% of their employees needed good colour vision to do their work efficiently, though other firms put the proportion at no more than 10 to 20%. The matching of stockings in pairs is apparently a fairly complicated process and employees must pay attention to five points, one of them being slight differences in shade. The observation of the head of one firm that there was a close relation between poor work and tired feet is interesting. Rapid discrimination of fine shades and differences requires physical efficiency no less than mental alertness and an adequate colour sense. One shop assistant explained that he used to astonish customers who asked for ties or socks of a particular colour, but he had since learned to shuffle out a mixed batch without comment, thus successfully camouflaging his colour defect.

Good colour vision is necessary in many departments of the electrical industries because coloured wires and coloured diagrams are often used. Sometimes the degree of discrimination involved is such that even those whose colour vision is normal may find it difficult. A colour defective tested at a particular works was as often wrong as right in matching a series of samples. This man worked by trial and error and used subsidiary clues such as the thickness of the wires. In illuminating engineering the growing practice of using discharge lamps, of which the light is concentrated either in a few lines of the spectrum or in relatively narrow bands, has given trouble to employees lacking normal colour vision. Slight contamination of lamp parts may result in a temporary change in the colour of part of the electric discharge, and this may readily escape the colour-defective engineer.

In printing and photo-engraving the proportion of operatives concerned with colour varies from 30 to 70% in different firms. Fine colour discrimination is particularly important in the manufacture of printing ink, and one firm

found that two of their colour matchers who had passed the age of 65 were no longer reliable. Colour discrimination does, of course, tend to become less accurate with increasing age.

Colour is important in mining because of the signals used. This applies still more to the oil industry, where dangerous temperatures, critical levels, and the like are often indicated by coloured signals. Good colour vision is probably not essential for most chemists, but it is of importance in industrial chemists working on paint or dyeing. In analytical chemistry colour defects are of less significance since the development of various automatic electrical methods which have replaced titrations involving fine end-points. Histology, bacteriology, and pathology are singled out as medical activities in which the colour defective is at a disadvantage.

In most industries methods of testing for colour defects are somewhat primitive or totally lacking. The general view seems to be that men will find their own level, and those men who have difficulty in a particular branch of the industry will automatically gravitate to another department in which their defective colour vision does not matter. Even where fine colour discrimination is essential, tests are the exception rather than the rule. The comment made by the director of one firm, "We depend very largely upon Bill," exemplifies the general attitude. It seems to be usual to rely upon the sound judgment of a particular workman for critical processes. That this is not altogether satisfactory is obvious, and the report rightly stresses that much could be gained in efficiency, in the personal happiness of employees, by adequate prevocational tests. One obvious place for such testing is the school, and from a preliminary investigation it would appear that group-testing could be undertaken by using an epidiascope to project test cards. The School Medical Services are already hard pressed, but this suggestion, no less than the alternative suggestion for testing entrants into particular industries, deserves consideration. The frequency of colour defect would justify the labour involved, and the mass of useful information incidentally obtained would be of advantage in the study of colour vision. There might also be brought to light information which would allow us to check the observation that "even some Royal Academicians are stated to have been colour-blind." It would be interesting to know whether this was an ophthalmological or an aesthetic judgment.

THE CHRISTMAS PUDDING

We have been deprived of many good things for the last seven years, and one of the most to be lamented is the Christmas pudding—now unknown to young children (lower age groups is perhaps more appropriate to these austere times) except as a name attached to an otherwise barely recognizable article sponsored by the Ministry of Food or as one of those cream-capped Himalayan mounds still depicted on Christmas cards. The time may not be far off when only scholars and their like, who retain childhood's power of confusing the symbol with reality and bringing it to life, will understand what was meant by a "groaning board."

Libraries will be combed for dusty cookery books; an egg-stained page will evoke the same thrill as do De Quincey's manuscripts stained here and there with circles of laudanum where he put down his tumbler. A particularly fine recipe will be hailed as evidence of an art now lost, like that of colouring mediæval cathedral glass. The following recipe indicates how rewarding such a pursuit might be:

Constituent	Quantity	Approximate Calorie Equivalent
Suet	6 lb. (2.8 kg.)	20,000
Flour	4 lb. (1.8 kg.)	6,648
Demerara sugar	2 lb. (0.9 kg.)	3,646
Raisins	6 lb. (2.8 kg.)	7,314
Currants	6 lb. (2.8 kg.)	7,236
Sultanas	2 lb. (0.9 kg.)	2,470
Candied peel	1½ lb. (0.7 kg.)	1,873
Chopped almonds	½ lb. (0.1 kg.)	680
Eggs	48	3,984
Grated peel of 3 lemons		
Brandy	1 bottle	3,500
Port	1 bottle	1,400
	Total	58,756

To compound fifty-five thousand calories (allowing for wastage in cooking) in a single pudding seems almost inconceivable in an age when we more readily concentrate them in a bomb. The present daily calorie intake per head is, on the average, about 2,750, or one-twentieth of the pudding—a portion that might well be eaten in a single large helping. But who cares about the calorie-content of such a creation? Its sustenance is of the spirit, not of the body. The mind is enriched and tranquil after such a meal, free to dream peacefully of those sunlit lands far over the blue, untaxable sea where grapes turn to wizened raisins in a day and the orange ripens. And what more appropriate to the season's international concord than the pudding's constituents?—brandy from France, the West Indies' sugar, almonds from Italy, lemons from the Levant, and Portugal's wine. From hurrying to gain "the poor benefit of a bewildering minute" life slows after such a dinner to a human pace. For just as our hearts quicken at the expense of diastole, our hastened lives have lost much relaxation and leisure. It is the function of Christmas puddings to restore this indispensable refreshment.

If we stress the cultural qualities of the Christmas pudding rather than the nutritional it is because they are more likely to be overlooked. The metabolic implications of such a mountain of food are too obvious and those of the palate too tantalizing to dwell, to dilate upon further. We turn, rather, to the question of whether scarcity of food will cause us to revert to a more primitive state. Preoccupation with food, the mark of primitive societies, is certainly characteristic of our own to-day. It was once a common practice all over the world for the tribe to kill its king if the food supply failed; we threaten Governments nowadays. In time of dearth the Mexican Indians propitiated the gods with human sacrifices; we dispatch Ministers. The ritualistic dances and prayers of former times have given way to queueing and form-filling, petitions through trade union channels, and certificates from doctors; and the passion that introduces the topic of food into every conversation once filled the caves of Southern France with paintings of bison and deer. The old charms and formulae have come back to us in a new guise.

Dr. Johnson would to-day find ample evidence for his declaration that "human life is everywhere a state in

which much is to be endured and little to be enjoyed." Our reduced Christmas pudding is as much a sign of the times as is our swollen Civil Service. Circumstance forces restrictions upon us; perhaps we shall in time become conditioned, like the rats, to finding our way quickly through the maze. More fearful, however, than the shrivelling of our pudding is the speculation whether it may at some time be forbidden altogether—a calamity that did occur once. In 1644 a Puritan Government prohibited the observance of Christmas by Act of Parliament. This must be a tempting precedent to our modern Puritans, and we shall watch developments closely. Meanwhile the season is here; the shops have been emptied and the stockings filled; and doctors will soon be dealing with the wish-bones, beads, sixpences, and tin soldiers that children cram down their throats whether there is a pudding to follow or not. A merry Christmas!

CONSERVATIVE TREATMENT OF PERFORATED ULCER

For more than half a century the management of perforated peptic ulcer has epitomized all that is dramatic in modern surgery. The *mise-en-scène* is familiar to all: the patient lying in his agony in the receiving-room, his face pale and drawn, and his very speech hampered by the certainty of increasing his suffering; the surgeon calm and confident (for here is usually a diagnosis beyond doubt); and, in the background, the imminent presence of death. The action moves to the theatre and then to the ward, where in a few days the patient, happy and comfortable and out of immediate danger, extols the skill of his surgeon. It is the surgeon's apotheosis. The fact that some of the very few patients who refuse operation recover and that some of the operated cases die has not seemed to detract from the general truth of this picture. Is this fantasy? When we try to ascertain the exact facts of the situation they appear to throw such doubts on its validity that some surgeons have recently abandoned the operative treatment of perforated ulcer in favour of conservatism. The evidence for such a revolutionary step will be weighed by all thoughtful surgeons, and their verdict will soon be forthcoming.

Most experienced surgeons would give their operative mortality for all cases of perforated ulcer at between 5% and 10%—a figure supported by Morley's recent report¹ of a mortality rate of 8% and by Houston's² figures for 1943 and 1944—8.2% and 6.3% respectively. A mortality of below 10% is satisfactory in the present conditions, but we must face the fact that the general mortality for the whole country is possibly in excess of 20%. Thus Hedley Visick, in the current issue of the *Journal*, gives the operative mortality at York as 22%, and Houston's figures for 1939–42 are not far below this. It must also be remembered that surgeons rarely publicize high mortality rates. What has been said of the surgery applies *a fortiori* to the anaesthetic, and the experienced anaesthetist approaches these cases with respect. The post-operative chest morbidity rate of perforated ulcer was given by King³ as 66%—by far the highest rate for all abdominal operations in his series—and many of the deaths are the result of these complications. There can be little doubt that a greater use of derivatives of curare for these cases and a wider distribution of specialist anaesthetists will improve the mortality and morbidity rates considerably.

Recently Bedford-Turner,⁴ Hermon Taylor,⁵ and Hedley Visick have advocated a conservative regime in these cases. Hermon Taylor has treated the greatest number—twenty-eight—with four deaths, and a mortality rate of 14%. He considers that one of these deaths could have been avoided by early operation and that six of the patients who recovered under conservative treatment would "have stood little chance with operation." From the notes it appears that the rest were cases of early perforation and would probably have recovered after operative treatment. The import of these figures is that under surgical management 9 of the 28 patients might be expected to die instead of the four who actually died under Taylor's regime. A mortality of 14% is certainly better than one of 32%, but on Taylor's admission the figures rest largely on the "clinical judgment and report of his house-surgeons; and, in any event, a mortality rate of 14% does not offer reasonable grounds for abandoning a routine which has repeatedly given recovery rates over 90%. Similar criticisms can be applied to Hedley Visick's figures, and it is interesting that the three patients who died were all under 60, and that the perforations had occurred less than twelve hours before death.

It is instructive to compare the theory of the conservative school with more orthodox opinion. Visick states that it is unnecessary to remove the peritoneal fluid and extravasated particulate matter: from this statement there will be little dissent. A great part of the fluid content of the peritoneal cavity is an exudate from the endothelial surface which dilutes the irritating misplaced gastric contents. Gross particulate matter is rarely found, and indeed, as perforation rarely exceeds a few millimetres in diameter it is not to be expected. Few surgeons do more than aspirate the contents of Rutherford Morison's pouch as a reserve drainage for the very late cases. Those who operate seek to close the perforation, believing that the peritoneum can take care of itself if further soiling is prevented. The fact that perforated ulcers can close spontaneously has been known to observant surgeons for many years, but to argue from this that any given case is likely to do so is surely a logical error and may have dangerous implications.

At the present time the results of operative treatment in the best hands are so much better than those advanced by the advocates of conservatism that most surgeons would endorse Prof. Morley's opinion that non-operative treatment should be reserved for the poor-risk cases only. An improvement in the national mortality from this disease is more likely to result from earlier diagnosis and admission to hospital. One implication of great importance which emerges from this work is the use of gastric aspiration in cases of perforated ulcer if, for any reason, operation is to be deferred. If this alone is absorbed into routine surgical practice the protagonists of conservatism will have rendered a useful service.

BACTERIAL CHEMISTRY

Medical practitioners, having been introduced during their laboratory training to the hitherto unexplained distinction between Gram-positive and Gram-negative bacteria, cannot but be impressed by the discovery, due to Dr. H. Henrici-Olsen, the Birmingham City bacteriologist, and Prof. M. Staey, the University of Birmingham, that this empirical division has a chemical basis. The staining quality, characteristic of the Gram-positive bacterium, was found in 1943 to be associated with the presence of magnesium ribonucleate within the organism, whereas Gram-negative bacteria w

¹ *British Medical Journal*, 1946, 2, 871.

² *Ibid.*, 1946, 2, 221.

³ *Surg. Gynec. Obstet.*, 1933, 56, 43.

⁴ *British Medical Journal*, 1945, 1, 457.

⁵ *Lancet*, 1946, 2, 441.

characterized by the absence of this substance. That there could be some such distinction was scarcely surprising in view of the well-known significance of this test in relation to, for example, penicillin sensitivity. It was, indeed, largely on this account that Dr. Henry and Prof. Stacey undertook their recent investigation, as is made clear in their communication on the subject to the Royal Society.¹ Their main investigation was carried out on *Cl. welchii* and mast cells; but confirmatory evidence was also obtained from certain anaerobic bacteria; aerobic spores, including *anthracis*; and certain strains of streptococci. In each case the first step was to obtain an extract from the organism by suspension in 2% bile salt in normal saline. After extraction in this way the cytoskeletons of the organisms were found to have suffered a reduction in weight, and, except for a few obstinate individuals, to show a Gram-negative instead of the usual positive reaction. Further, it was found that the extracts which had been obtained after fractional separation could be reabsorbed by the cells from which they had been taken, after the latter had been treated with a reducing agent. Cytoskeletons so treated gave the original positive reaction to the Gram test, though looking, as Prof. Stacy expressed in his Tilden Lecture before the Chemical Society, "as if they had knocked about a bit." Further fractional separation of the bile salt extracts led to the isolation of magnesium ribonucleate, which was identified both by a characteristic absorption band at 2,600 Å., and by its degradation products. In addition, it was shown that magnesium ribonucleate prepared from commercial sources was equally effective in restoring the Gram-positive reaction to cells which had been thus treated. Finally, normally Gram-positive organisms were subcultured in a medium deficient in magnesium, and without further treatment were found to give a negative reaction.

It would seem therefore that a convincing, as well as an elegant, demonstration has been provided; and that Christian Gram, whose test was first mentioned in 1883, must be credited with a criterion of greater biological significance than could have been realized at the time. Prof. Stacey's laboratory has been responsible, in addition, for much detailed work on the complex polysaccharides associated with bacteria—long-chain and branched-chain structures based on a variety of ring formations, one of which has not previously been associated with any form of life. No less remarkable, in another direction, has been the achievement of Avery in New York, quoted by Stacy in his Tilden Lecture, in transforming Type 2 pneumonia anti-serum into Type 3 by laboratory methods. With the protein, polysaccharide, lipid, and nucleic acid components of bacteria available for investigation, either separately or sometimes as it appears in combination, the scope for bacterial chemistry is anything but limited; and from the beginnings already made an ample harvest may well be expected.

RADIO-COBALT

Much new information about the artificial radioactive isotopes which have been produced as by-products from atomic energy research has lately been released. In addition it has been stated, on the authority of Dr. J. D. Cockroft, Director of the Ministry of Supply's experimental station, that the first of the "piles" to be built in this country will be operating within "the next few months." It may be assumed that the "pile" will be a small one, intended in the first instance for the production of such of these new isotopes as may be required for research and in clinical use. The research use will probably in the long

run be the more important, for the possibilities both in physiological and chemical research which will result from the availability of radioactive "tracer" atoms of a large number of chemical elements, including carbon, will be very far-reaching indeed and can scarcely be exhausted inside a generation. In the case of some elements the most convenient isotopes for research are those produced in a "pile"; in the case of others those produced by "cyclotrons," of which the most powerful in this country—that at the University of Birmingham—should be ready for operation within a similar period.

For clinical medicine, however, the most immediate consequence will be the production of radio-cobalt as a substitute and supplement for radium. This, Dr. Cockroft indicated, will be among the early functions which the Harwell Station will be in a position to undertake. The radioactive isotope of cobalt is Co^{60} . It is prepared by the neutron bombardment of normal cobalt, Co^{59} . This is done by placing a specimen of normal cobalt in a "pile," and leaving it there for some months. The half-life of Co^{60} has been quoted as 5.3 years. The beta-radiation produced is "soft"; the gamma-radiation has been stated to be of two frequencies corresponding with x rays of 1.1 and 1.3 million volts. For radium the top figure corresponds to about 2 and the filtered average 0.8 million volts. Though experience will be necessary to assess the clinical significance of this relatively small difference, there can be little doubt that the claim of the physicists to have produced an effective substitute for radium must be substantially accepted. Moreover, the way will be opened to a considerable increase in the scale of use should this be found desirable. A comparatively small "pile" in Canada is stated to have produced, in six months' operation, the equivalent of 100 curies of radium as an incidental item in the course of research. It was presumably on account of this outlook for increased availability that powers have been taken to concentrate the distribution of all radioactive substances through a single channel.

Of even greater interest scientifically, if not to clinical medicine, is the fact that U^{233} , the new isotope of uranium which is formed from thorium, is the parent of a hitherto unknown radioactive series, which includes a new isotope of radium— Ra^{225} . The three existing radioactive series are those which take their names respectively from uranium, actinium, and thorium. The new series is comparable with the other three but differs from them in the fact that bismuth rather than lead is the end-product. Ra^{225} is not the only isotope of radium which has been artificially produced. All, however, have relatively short half-lives. Moreover, the quality of the radiation produced is a property of the particular isotope concerned, rather than of the chemical element. There is accordingly no more reason why the radiation produced by any of these radium isotopes should resemble in properties that from normal radium; and, in fact, as already indicated, it is Co^{60} rather than these new radium isotopes which most closely imitates the radiation from natural radium.

"CERTIFICATES REASONABLY REQUIRED"

A correspondent informs us that a few mornings ago a patient called at his surgery to ask for a medical certificate. On being asked what kind of medical certificate was required and for what purpose, he explained that he wished to buy a tricycle as a Christmas present for his small boy. The child wanted a tricycle, and the good father had at last managed to find a shop which had one in stock. He had approached the shop assistant and had been informed that he could have the tricycle only on production of a medical certificate.

Medical certificates, apart from those needed for matters medical, are officially required for priority supplies of milk, eggs, and soap; for special adjustments of food rations; surgical corsets; extra fuel for invalids; and extra petrol for invalids. Every general practitioner must have signed hundreds of certificates for articles of this kind and as many more for articles which are not officially in short supply. There seems to have been a tendency on the part of retailers to ask for medical certificates in the hope of diminishing to manageable proportions the number of people anxious to obtain such articles as vacuum flasks. Insurance practitioners have long been reconciled to the certificates required for the purposes of National Health Insurance. Form R.M.50 has become all too familiar, and wartime shortages which have continued into the uneasy peace have made necessary, at least to the patient, many other certificates, all of which make additional demands on the time and energy of the overworked practitioner. Olive oil, liquid paraffin, and glucose can rarely be obtained without a written recommendation from a doctor. Certificates are required for children who are absent from school and for children who wish to return to school. A healthy young woman who is likely to be pregnant for nine months must have a certificate to that effect every three months. There is still an astonishing variety of certificates designed to bring home from abroad husbands and sons who, in the opinion of their womenfolk, have been away too long. Those medical officers who served on Compassionate Boards in theatres overseas will recall the type of certificate which ran: "Mrs. X is suffering from alarm and despondency which is not likely to be relieved until her husband returns home."

Familiarity with the certificates required by Orders, by Regulations, and by various enactments seems to have inflamed a desire for more and more certificates which are not officially required but which are in the patient's view just as essential. There is a growing burden of certification which weighs most heavily on the general practitioner. The big majority of practitioners are conscientious, and the more conscientious they are the more time they must devote to certification, a great deal of which seems to be unnecessary. Some of them may already have noted with foreboding Clause 33, subsection 2(d), of the National Health Act. This lays down that under the arrangements for general medical services regulations shall include provision "for the issue to patients or their personal representatives by medical practitioners providing such services as aforesaid of certificates reasonably required by them under or for the purposes of any enactment." The interpretation of "reasonably required" may well be strict. But on the other hand it may continue to be interpreted so widely as to make a medical certificate a prerequisite for even the simplest Christmas shopping.

MR. HYND CHOOSES

The British zone in Germany has been short of food, and we commented on this in the *Journal* of Nov. 30. It is also short of intellectual food, and a few weeks ago Sir Ernest Graham-Little asked Mr. J. Hynd whether it was his responsibility to choose those British newspapers allowed to circulate in Germany. He also put the pertinent question to Mr. Hynd whether politics had any influence on the selection. Mr. Hynd replied, "No," and said that newspapers and periodicals could be sent through newsagents or dealers by post to individuals in the British zone or the British sector of Berlin. He added, too, that he was responsible "for selecting the British newspapers and periodicals supplied at public expense to certain German politicians, officials, and editors." Mr. Hynd then gave a list of newspapers and periodicals which he had selected for display

at information centres in the British zone and the British sector of Berlin. Among the 27 selected are only two which seem to have any bearing on science—namely, the *Geographical Magazine* and the *Lancet*. We find ourselves excluded in the good company of *Nature*.

HYPERTENSIVE RETINITIS IN ADRENAL TUMOUR

The study of retinal lesions in the hypertensive diseases has greatly helped the classifying of these affections. Though all the hypertensive retinopathies have retinal arteriosclerosis in common, the vascular changes vary considerably, and the retinal changes are sometimes pathognomonic. Thus the appearance in diabetic retinitis is distinct from that of renal retinitis, which, however, is barely distinguishable from the retinitis of malignant hypertension. Essential hypertension displays a milder picture, and the changes seen in such apparently transitory affections as toxæmia of pregnancy appear to be capable of spontaneous resolution. Apart from this solitary example of recovery—solitary, if the retinitis of trench nephritis is excluded—the prognosis in the retinopathies of vascular disease is not good either for visual function, as in diabetic retinitis, or for life, as in the retinitis of malignant hypertension and chronic nephritis. Essential hypertension occupies a place midway between these two. The changes are usually progressive and reflect a worsening of the general affection, though occasionally there is considerable recovery. Surgery has helped in a few cases in which an underlying factor could be removed—for example, intermittent obstruction of the ureter—or in such cases as those in which operations on the sympathetic nerves have been successful in checking the advance of the hypertension. None the less, the presence of retinal lesions in a hypertensive affection must be regarded as a serious complication and frequently of grave prognostic significance.

In a case report of retinopathy in a patient with adrenal medullary tumour (pheochromocytoma) Rodin¹ shows that the successful removal of the tumour led to the resolution of a marked retinal lesion. The retinopathy was in many respects similar to that seen in malignant hypertension, though not so severe. Within fourteen weeks after operation there was considerable improvement, and within twenty-six weeks the improvement was quite striking. Three and a half years after removal of the tumour the retina was normal.

The retinal lesions in adrenal medullary tumour are presumably the reflection of the permanent or paroxysmal hypertension seen in the course of the disease, and, as the hypertension itself is probably due to the liberation of large amounts of adrenaline or an adrenaline-like pressor substance by the tumour, it is not altogether unexpected that surgical treatment should check and even reverse both the hypertension and the retinopathy. Though this tumour is rare the possibility that it may be the exciting factor in cases of hypertension, particularly in young patients, is worth bearing in mind.

Prof. F. C. Bartlett, C.B.E., F.R.S., will deliver the Oliver-Sharpey Lectures on Tuesday, Jan. 21, and Thursday, Jan. 23, at 5 p.m., at the Royal College of Physicians. His subject is "The Measurement of Human Skill."

The date for receiving Plebiscite Forms has been extended to Jan. 6, in order to give those in the Services especially a chance to vote. The final count will be announced shortly after that date.

¹ *Arch. Ophthalm., Chicago*, 1945, 34, 402.

MEDICINE IN DACHAU*

BY

HENRI ROSENCHER, M.D.

Of 293,000 French people deported to Germany 42,000 came back, and 65% of these were found to be in bad health on their arrival in France. In this article, the medical aspects of life in a concentration camp are described, the facts being taken from Dachau, where I spent 8 months. The subject is considered under four headings—hygiene, morbidity factors, medical organization, and the pathology of the internee, the part played by starvation and overcrowding being emphasized, with a final note on the commonest sequelae of life in the camp as shown by a follow-up of 1,000 cases in the Department of the Seine.

Hygiene

At first glance Dachau would appear to be a model camp. The visitor (assuming that his entry were possible) would be impressed by the football ground, the clothing stores full of garments, the fine shower-baths with their modern heating installation, the spotless kitchens, and the charming lay-out of the buildings with flower-beds and an avenue of poplars. The *Revier* (sick-bay) would seem amazingly clean and tidy. It included rooms for eye and E.N.T. clinics, a physiotherapy room with the most modern apparatus (even an electrocardiograph), a big dressing-station, two magnificent operating theatres with a sterilization room, an x-ray department, a dental clinic, a well-fitted laboratory, a well-stocked dispensary, and beautiful parquet floors to the wards. If, further, the medical routine of the camp were described—the bath and disinfection on entry, the initial medical examination complete with radiography, the insistence on daily hygiene, the regular routine examinations and the formidable total of medical personnel in the camp—the visitor could not but marvel at the German genius for organization.

But the inmate saw a very different aspect. On arrival he was stripped of all he possessed, shaved all over, and conscientiously rubbed with a carbolic solution so strong that it frequently caused severe burns. The shower might be boiling or ice-cold, and was followed by many hours of waiting, naked, hungry, and cold, for an issue of camp clothing. The entire operation was repeated almost monthly, when all clothing was sent for an alleged disinfection in an apparatus the maximum temperature of which was admirably suited to the further development of the nit, and which often failed to kill the adult louse. This operation was in any case useless, since only sections of a room were done at a time, and it never included the infested mattresses. Its only result was to cause the death by exposure of the less hardy prisoners (100 deaths on one occasion, when a party remained naked for 36 hours in the month of February).

The daily toilet of the prisoners, although in theory obligatory, was hampered by total absence of soap, a time limit of 30 seconds per person per tap, and the fact that the wash-room was also a mortuary, necessitating much manoeuvring over and among corpses. The scrupulous cleansing of barrack-rooms each day did not prevent the bedding from swarming with fleas, lice, and bugs.

Factors Influencing Morbidity

As a killer, cold proved of great service to the S.S. Thus at Natzweiler, three-quarters of the Russians died after standing naked in the snow for 24 hours after a hot shower. The twice-daily roll-calls in the snow (the all-time record at Dachau was a roll-call lasting 60 hours), the snow-clearing parties, and the medical inspections to determine fitness for work, when the candidates waited naked out of doors for the S.S. doctor to look at their hands (sole criterion of fitness), all helped in the work of extermination. It is unnecessary to mention the inadequacy of clothing and bedding. To the cold was added *fatigue*. In the closed (non-working) blocks, 16 hours a day was often spent standing outside, while in the open (working) blocks the long hours of toil and roll-calls left only four hours a night for sleep.

The overcrowding of barracks left an average of 0.5 to 0.75 cubic metre of air per man, not to mention the presence of the corpses, which remained there perhaps for a week and were sometimes reinforced at the rate of 50 per night per block. And all this was added to a background of continuous *hunger*. Table I shows the food distributed in the closed blocks in a period of relative abundance—September, 1944. The calorie values may

TABLE I.—A Week's Rations in September, 1944

	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.	Total Amount	Calcs. per g.	Total Calcs.
Midday soup (litres)	1	1	1	1	1	1	1	7 × 150 g.	1	1,050
Evening soup (litres)	1	1	1	1	1	1	1	3 × 75 g.	1	225
Bread (g.)	300	300	300	300	300	300	300	2,100 g.	2	4,200
Potatoes (g.)	150	150	150	150	150	150	150	1,050 g.	1	1,050
Margarine (g.)	..	..	..	50	..	20	..	70 g.	1	70
Sausage (g.)	..	50	..	..	..	..	70	120 g.	1	120
Jam	..	..	..	..	70	..	..	50 g.	2	100
Sugar	..	..	..	..	..	..	..	50 g.	4	200
Cheese	..	..	..	..	..	..	50	50 g.	0.5	25

Total weekly calories, 7,120; total daily calories, 1,017.

seem low for individual products, but it must be remembered that, for example, the margarine had only 10% of fat, and the cheese was pure casein. The workers in the open blocks had a daily supplement of 260 to 290 calories. In March, 1945, there was a sharp drop in the rations, as shown in Table II.

TABLE II.—A Week's Rations in April, 1945

	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.	Total Amount	Calcs. per g.	Total Calcs.
Midday soup (litres)	1	1	1	1	1	1	1	7 × 250 g.	1	1,750
Evening soup (litres)	1	1	1	1	1	1	1	3 × 100 g.	1	300
Bread (g.)	120	120	120	120	120	120	120	840 g.	2	1,680

Total weekly calories, 3,730; total daily calories, 533.

Medical Organization

There were at first no doctors in concentration camps. One could either be alive and at work or dead and in the crematorium. When the *Revier* was first instituted medicine and surgery were practised by persons of doubtful antecedents among the inmates. In June, 1944, internee doctors were attached to blocks. They worked in open blocks, closed blocks, or the *Revier*. In the open blocks, the doctor collected his sick each evening and marched them over to the German *Oberpfleger* (head nurse) at the *Revier*. The *Oberpfleger* decided their fate. Sometimes he sent them to have a paper dressing put on their wounds; sometimes he gave them a mysterious pill and sometimes a thimbleful of wonderful elixir of life. Those with large and dirty ulcers got one to three days off work. A few rare individuals, whose axillary temperature reached 102° F. (38.9° C.), were placed in hospital. Thus the internee doctor in these blocks enjoyed a sinecure. Not so his colleague in the closed blocks. He found himself with large numbers of sick on his hands; he had to dance attendance on the German carpenter, who conducted the sick parade in the block and who amused himself by freely changing diagnoses and treatments, and he had to engage in never-ending disputes with Germans of all grades to procure the tiniest concession for his patients. For the doctor working in the *Revier* the greatest annoyance was the German orderly, who reigned supreme there. The orderly arranged everything; the doctor was his unwelcome assistant, whose most important task was to keep a chart recording the pulse rate, the diagnosis, and the presence of any gold teeth (for reference after the patient's death). The giving of diets or drugs depended on the favour of the internee orderlies, who conducted a black market in everything.

The lack of sufficient drugs made it necessary to treat only the moderately sick, since the more serious would die anyway and the slightly sick would recover.

Pathology of the Internee

Among the many factors influencing mortality in Dachau—starvation, overcrowding, thirst, fatigue, cold, ill treatment—only the first two will be considered at length here.

* An abridged translation from the French.

(a) Starvation

The chief dietary deficiencies were in calories, proteins, mineral salts, and vitamins. The first manifestation of starvation was *loss of weight*—the disappearance of fat leading to the scaphoid abdomen and the sunken orbits of the internee; later came muscle atrophy, the deltoids going first, then the quadriceps and the thigh adductors, so that one could introduce both fists between the adducted thighs, next the gastrocnemii, and lastly the glutei. The skin became dry, hard, wrinkled, and an earthy grey in colour. The hair fell out and the nails became dull, ridged, and brittle.

Parallel with the loss in weight went a progressive cardiac insufficiency. The pulse grew weaker and slower, with lowered tension and smaller amplitude. This bradycardia was interrupted by extreme and prolonged tachycardia on the slightest exertion. On screening, the heart-beats seemed of poor amplitude and the cardiac shadow enormous, clear-cut against the unusually transparent ribs. From the neuromuscular standpoint, reflexes and tonus were diminished; and the slow, clumsy movements of the patient conjured up the memory of a slow-motion film. Eventually came the stage of the living mummy, known in the camp as a "musulman."

But this state of affairs remained for a long time reversible by improved feeding, and even the extreme cases were often an "unconscionable time a-dying," while newcomers to the camp were galloping to their grave. However, the general rule was that after a loss of weight of 50% the changes became irreversible, and the "musulman" died quite suddenly, in his sleep or perhaps at roll-call. The findings at necropsy were atrophied viscera, a small, flabby heart, a pale liver, a dilated stomach with smooth mucosa, and an intestinal wall the thickness of cigarette paper.

To complicate this picture in 80% of cases there was *oedema* and then *diarrhoea*. Oedema was often the first sign of serious trouble. It appeared quite suddenly in ankles and face, and indicated a grave metabolic upset. Frequently the onset was heralded by a spell of nocturnal frequency of micturition. (Such a spell was usually followed within a week or two by oedema, by diarrhoea, or by an aggravation of general weakness.) Usually the oedema increased, involving successively the dorsum of the feet, the legs, the thighs, and the lumbar region, the soft, pale, swollen lower half of the body contrasting with the emaciated thorax and arms. There was a similarity between the face of a victim and that of a myxoedematous subject, a similarity heightened by the bradycardia, hypothermia, apathy, loss of hair, and condition of the skin. But, unlike myxoedema, this oedema pitted and was very labile. A few days of rest in bed made it disappear (with accompanying polyuria), only to reappear on exertion. Withholding fluids had no effect on it.

In time, in addition to the oedema there was pleural effusion, ascites, or acute oedema of the lung. The patient died of cardiac failure or of intercurrent infection, especially pulmonary. Cardiac insufficiency was first thought to be responsible for this oedema, but digitalis was without effect. A renal origin was negated by the absence of urinary abnormalities and by the normal blood urea and lowered blood pressure. The oedema was apparently due to protein lack, its incidence diminishing in times of better feeding and rising sharply when rations were cut. Laboratory tests showed a lowered serum globulin, with increase in the ratio of albumin to globulin.

Diarrhoea often completed the picture of starvation. The stools were liquid, pale yellow, scarcely faeculent, increasing in frequency up to 20–30 a day, and often accompanied by a constant desire to defaecate. The patient also passed mucomembranous material. Within a couple of days his oedema disappeared and his body became skin and bone. His corpse-like face, with dull cornea, dilated pupil, and wide-open mouth, and his flexed, immobile, icy body, from which came a rare superficial respiration, bore mute testimony to his misery. The end usually came within two days.

Besides these cases there was a type of *primary diarrhoea* occurring in patients still in good general condition, which swept through whole blocks, was accompanied by no other symptoms—no rise in temperature, no pathogens in the stools—and failed to respond to all drug treatment, including emetine, sulphonamides, and pentavalent arsenicals. It was at first

thought that normal saprophytic bacteria had become pathogenic. Simple dieting for 48 hours would arrest the complaint at its onset, but a relapse was easily provoked by fatigue, cold, or too speedy return to a normal diet. Cases in a later stage were irreversible and patients died in a state of collapse. This "epidemic" appeared at the same time as the increase in cases of oedema due to the cut in rations, and would seem also to have been a direct result of protein deficiency. Intravenous infusions of normal saline or of hypertonic salt solution (up to 60 ml. of 30% solution daily) given to combat dehydration were useless. After the liberation subjects were given intravenous atropine solution (0.25–0.5 mg.) and were cured completely after three injections. A third form of diarrhoea appeared during an epidemic of *typhus* at Dachau, the co-existence of these types complicating the picture considerably. Often a case which had been regarded merely as obstinate diarrhoea was found to give a positive Weil-Felix reaction. Such cases, which were regarded as an enteric form of typhus, at one time caused many deaths in Block 21, only 300 of a total of 1,600 internees remaining alive there.

Another important manifestation of starvation was *hypoglycaemia*. No one ever saw an acute hypoglycaemic reaction, but in the cachectic cases many symptoms and signs (psychic disturbances, torpor, somnolence, bradypnoea, etc.) recalled the onset of hypoglycaemic coma. The results of blood sugar and C.S.F. sugar examinations (made after the subjects were liberated) in 39 cases of psychosis with cachexia showed on the average:

Blood sugar: 58.8 mg. per 100 ml. (normal, 75–125 mg.).

Sugar in C.S.F.: 62.2 mg. (normal, 50–80 mg.).

Ratio $\frac{\text{sugar in C.S.F.}}{\text{blood sugar}} = 1.095$ (normal 0.52–0.66).

In acute hypoglycaemia the onset of convulsions with a blood sugar lower than 45 mg. per 100 ml. may be explained by the simultaneous fall in C.S.F. sugar to 15–25 mg., whereas in the chronic cases described here no convulsions occurred because some mechanism unknown maintained the level of sugar in the cerebrospinal fluid.

Psychic disturbances were not lacking among the internees. Apart from a general weakening of intellect, growing apathy, and melancholia, cases of hallucination and delirium occurred. In one type of psychosis the prognosis was especially bad; the patient's entire waking hours were devoted to thinking of and searching for food; when he was given his food he played with it interminably, but was incapable of swallowing the least morsel. The commonest *nervous symptoms* were due to a polyneuritis presumably caused by vitamin B deficiency. One patient woke in the morning with bilateral extensor paralysis of the wrists, another had peroneal palsy, and a third became suddenly completely paralysed in both legs but recovered fully after treatment with vitamin B. Nevertheless, vitamin deficiency seemed to play a very secondary part in the camp illnesses. No case of scurvy was found; osteopathies were not frequent, though dental caries was rampant. Xerophthalmia was never seen, but lack of vitamin A may have contributed to the numerous skin affections. Amenorrhoea was common in females, as was a total loss of sexual desire in the males. Azospermia has been found in several patients since their repatriation. *Skin infections* of all grades, from sycosis barbae to phagedaena, were frequent. Furuncles were often seen, and were very slow in healing; carbuncles were remarkable for their extent and indolence, and the lack of accompanying fever. Giant pemphigus occurred often on the hands. Large abscesses formed and tracked along muscles and tendons, but caused little pain, no local heat, and no temperature rise: all these lesions were slow in cicatrizing.

Lung affections were common, starvation and cold both helping to produce them. Of deaths in winter 40% were due to pneumonia (case mortality 25%). Pneumococcal empyema was a frequent complication, with a mortality of 75%. The most interesting pulmonary affection was *tuberculosis*, 40% of necropsies showing tuberculous lesions and 15% of returned internees having some radiological evidence of the disease. Its incidence was much more closely related to diet than to overcrowding, some favoured internees in Block 16, with a dietary far above the average, being practically free from it. All the clinical types were to be seen. Acute forms appeared as

caseating pneumonia during periods of extreme cold and as miliary tuberculosis under the spur of typhus, but the characteristic form at Dachau developed slowly, was usually bilateral, and radiologically had a floccular appearance. So slowly did it develop among the really cachectic that they did not appear to die any sooner than those with simple cachexia. Pleural effusions were very common, and some were even cured, *mirabile dictu!* On the whole it was surprising that not more than an average of 20% of the internees in each block died from tuberculosis.

(b) Overcrowding

In the closed blocks at Dachau 400 men occupied a room of some 200 cubic metres capacity. In such a place all the normal acts of life become a source of misery, and to the doctor who must look for, examine, and treat the many sick in this chaos the adequate exercise of his profession becomes impossible. Morbidity and mortality were seen to vary with the degree of overcrowding. (With 525 in one block, mortality was 3.4% a month; with 1,350 in it, the monthly mortality rose to 10%.) An early result of overcrowding was the appearance of *scabies*, often with secondary infection. *Erysipelas* of the face was also widespread; there were frequent relapses due to poor hygiene measures, but the prognosis was fairly good. Treatment was by sulphanilamide.

The most important epidemic disease in the camp was *typhus*. At Dachau this disease had an average incubation period of 14 days. After a pseudo-influenzal period of invasion of 2 days the characteristic picture appeared. The diagnostic signs were: (a) intense headache, with tinnitus and deafness; (b) ataxia, accompanied by a pathognomonic drunken gait; (c) a conjunctival hyperaemia, which appeared before the fever; (d) a temperature of 102–104° F. (38.9–40° C.), with a very rapid pulse. In addition, intense lumbago was usual. On examination a mild splenomegaly and signs of congestion at the bases of the lungs were practically constant. An interesting sign, diagnostic even in convalescents, was the appearance of rapid localized contraction on pinching the biceps. The rash, discrete and dark red, appeared on the fifth or sixth day on the trunk and the anterior aspect of the arms. This state of affairs lasted 12 to 14 days, with anorexia, photophobia, and oliguria. The temperature oscillated between 102° and 104° F. with an almost regular drop every third or fourth day. Half of the deaths were due to circulatory failure, lowered blood pressure (average 90/50) and tachycardia being usual. In patients recovering, the fall in temperature might be by crisis or by lysis. Convalescence was very prolonged, with asthenia and signs of cardiac weakness. At any stage of the illness complications might occur; these comprised three clinical types: (a) gastro-intestinal, with diarrhoea as the chief symptom (20% of fatal cases); (b) pulmonary, with bronchopneumonia, pleural effusion, or a miliary spread of pre-existing tuberculosis; (c) nervous—the most interesting form. Apart from the headache and photophobia indicating meningeal complications, and the ataxia of cerebellar origin, other signs of involvement of the nervous system were psychic disturbances, hallucinations, delirium, convulsions, mania, opisthotonos—all of grave prognostic import and often the only features of the case apart from extremely high fever. In convalescence, even 10 to 15 days after defervescence, palsies and paraesthesiae appeared and the intellect was usually weakened. Among complications, otitis media, mastoiditis, parotitis, and phlebitis may be mentioned; but the constant myocardial involvement which left the patient incapable of effort for long periods afterwards must be particularly stressed. It was observed that the epidemic, which at first had a case mortality of 80%, gradually became attenuated and finally left behind a trail of mild cases, among which even the cachectic recovered.

The western Europeans were much more severely attacked than the Slavs, and men in good condition underwent more rapid and severe forms of illness than did the cachectic. The main factor determining survival was age—the older the subject the less his chance. Although lice were universal, 20% of the inmates never showed clinical signs of the disease (? ambulant cases, ? naturally immune). Most of the patients had no treatment; the lucky few who were placed in hospital did well on intravenous glucose-saline and cardiac tonics. Towards the end

of the epidemic an attempt was made to treat early cases with transfusions (200–250 ml.) of convalescent blood. The method appeared efficacious, but its correct evaluation was almost impossible.

It is unnecessary to dwell on the brutalities practised at Dachau, or on the alleged experiments carried out there, which cost the lives of hundreds of internees and were almost totally without scientific value. But it can be stated that the epidemic of typhus, which began on Dec. 17, 1944, with one case, was due entirely to the wilful negligence of the S.S. medical personnel, who encouraged its spread by distributing contacts freely about the camp.

Medical Sequelae of Dachau

Of the returned internees, 65% were found to be ill, in contrast with 7.7% of prisoners of war. Moreover, 30% were still ill in March, 1946, ten months after their liberation. The most important sequel was lung impairment, which was found in 25.8% of returned internees. Pulmonary tuberculosis occurred in 16.7%. Cardiac impairment was present in 3%, of whom one-quarter died within a year. Digestive disturbances were still present in 2.1% in March, 1946, but in general were not severe. After liberation a number of internees developed gastric ulcers—an almost unknown disease at Dachau.

Avitaminoses were rare and disappeared rapidly, but cachexia and oedema were troublesome and slow to disappear, as was the tendency of the skin to infection. Almost all the internees maintained a sympathetic hyperactivity (e.g., sweating on the slightest exertion) for at least six months after their return; concentration was difficult, memory was impaired, and there was irritability and instability.

JOINT TUBERCULOSIS COUNCIL

At the last meeting of the Joint Tuberculosis Council tribute was paid to the late Dr. George Jessel, who was vice-chairman at the time of his death. Dr. James Boyd, Chief Medical Officer, Ministry of Health and Local Government of Northern Ireland, attended as observer on behalf of his Ministry, and was cordially welcomed. The Council adopted a report prepared by a committee on the re-definition of terms used in tuberculosis work. The report suggested the abolition of the present system of recording cases, and suggested new classifications. New definitions of "quiescent," "arrested," and other terms were also suggested. The report was forwarded to the Minister of Health with a request that its recommendations be carried into effect.

Attention was drawn to the anomaly created by a recent ruling that where family allowances under the Government scheme are received by persons who are entitled to financial assistance under Memorandum 266/T, the 266/T allowances must be reduced by the amount of family allowance received, and the Council authorized a deputation to express to the Ministry the strong view that family allowances should have no effect upon allowances granted to tuberculous persons as such. The question of bread rationing and its effects, if any, upon tuberculous persons in and out of sanatoria was referred to the Council's committee on nutrition. Arising out of resolutions adopted at a previous meeting expressing alarm at the probable effect of the National Health Service Bill on the tuberculosis service, it was reported that a deputation representing the Joint Tuberculosis Council and the N.A.P.T. had met Sir Wilson Jameson. Sir Wilson on that occasion said that there was no intention to detach preventive work from curative work. He had also given assurances on other points. The report of the interview was accepted without prejudice to any future action which the J.T.C. might consider necessary in relation to the Bill. The standardization of the forms of record used by local authorities in connexion with their tuberculosis services was discussed, and a committee was asked to consider the present situation and, if possible, to suggest standard forms for universal use.

Arising out of a resolution of the Tuberculosis Association, the Council appointed a special committee to consider the establishment of a Bureau of Tuberculosis Statistics. The new committee was empowered to explore the possibilities of collecting tuberculosis morbidity statistics, to plan statistical inquiries into selected problems, and to advise—or arrange for expert advice to be afforded—on the collection of data. The committee was made as representative as possible, its membership including a tuberculosis officer, a sanatorium superintendent, a thoracic surgeon, an orthopaedic surgeon, a paediatrician, a radiologist, a bacteriologist, and a medical officer of health. The Council decided to approach the Nuffield Foundation for assistance in the project.

RESULTS OF THE PLEBISCITE

Table I shows the returns received up to midday, Dec. 16. The classification is according to the professional group and the number of years since qualification.

Table I.—Those Qualified 0-14 Years

Category	Description of Category	0-7 Years						8-14 Years					
		England and Wales		Scotland and Ireland		Total		England and Wales		Scotland and Ireland		Total	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Consultant or specialist	71	74	20	11	91	85	426	295	55	43	481	338
2	General practitioner principal ..	327	528	67	112	394	640	813	1,454	114	180	927	1,634
3	General practitioner assistant ..	428	634	103	141	531	775	231	314	28	48	259	362
4	Whole-time vol. hospital	1,319	1,082	198	212	1,517	1,294	387	184	71	42	458	226
5	Whole-time local auth. gen. hosp.	514	351	76	46	590	397	239	82	20	9	259	91
6	Whole-time local auth. spec. hosp.	234	126	51	32	285	158	176	70	26	14	202	84
7	Whole-time public health service ..	119	51	21	13	140	64	237	120	37	23	274	143
8	Whole-time government service ..	90	37	26	15	116	52	94	29	21	9	115	38
9	Whole-time teacher	63	30	19	11	82	41	59	30	18	3	77	233
10	Whole-time research	90	25	12	11	102	36	48	11	6	1	54	12
11	Whole-time non-govern. post ..	29	25	3	4	32	29	40	39	7	6	47	45
12	Medically qualified dental surg. ..	6	22	—	3	6	25	12	22	5	9	17	31
13	Retired	10	17	6	5	16	22	26	25	4	3	30	28
14	Unclassified	502	340	127	98	629	438	209	172	41	30	250	202
	Totals	3,802	3,342	729	714	4,531	4,056	2,997	2,847	453	420	3,450	3,467

Table I (continued).—Those Qualified 15 Years and Over

Category	Description of Category	15-21 Years						22 Years and Over						No Age			
		England and Wales		Scotland and Ireland		Total		England and Wales		Scotland and Ireland		Total		England and Wales		Scotland and Ireland	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Consultant or specialist	463	511	41	72	504	583	917	1,218	100	209	1,017	1,427	28	32	7	4
2	General practitioner principal ..	1,192	2,261	173	250	1,365	2,511	2,327	4,502	373	609	2,700	5,111	77	90	6	17
3	General practitioner assistant ..	75	95	12	10	87	105	71	120	12	18	83	138	9	12	3	5
4	Whole-time vol. hospital	49	22	5	4	54	26	43	28	9	10	52	38	23	19	6	7
5	Whole-time local auth. gen. hosp.	95	30	3	4	98	34	83	33	2	1	85	34	15	8	—	—
6	Whole-time local auth. spec. hosp.	129	38	18	4	147	42	163	65	16	7	179	72	7	4	6	2
7	Whole-time public health service ..	276	152	44	27	320	179	456	327	64	41	520	368	33	9	5	1
8	Whole-time government service ..	73	31	14	4	87	35	170	116	30	13	200	129	9	3	5	1
9	Whole-time teacher	52	15	10	12	62	27	61	32	21	12	82	44	6	2	2	1
10	Whole-time research	16	3	2	1	18	4	32	25	3	1	35	26	4	1	—	—
11	Whole-time non-govern. post ..	60	54	—	4	60	58	76	78	9	12	85	90	6	1	—	—
12	Medically qualified dental surg. ..	14	34	3	2	17	36	28	80	5	24	33	104	5	—	—	—
13	Retired	42	42	8	14	50	56	1,027	1,625	122	232	1,149	1,857	26	44	14	9
14	Unclassified	98	94	9	16	107	110	166	274	23	41	189	315	17	20	2	5
	Totals	2,634	3,382	342	424	2,976	3,806	5,620	8,523	789	1,230	6,409	9,753	265	247	57	55

Table II.—Civilian Practitioners: Results up to Dec. 16

Category	Description of Category	England and Wales		Scotland		Ireland		Category Totals		Total Replies Received
		Yes	No	Yes	No	Yes	No	Yes	No	
1	Consultant or specialist	1,905	2,130	200	283	23	56	2,128	2,469	4,597
2	General practitioner principal ..	4,736	8,855	585	970	148	198	5,469	10,003	15,472
3	General practitioner assistant ..	814	1,175	135	189	23	33	972	1,397	2,369
4	Whole-time vol. hospital	1,821	1,335	248	239	41	36	2,110	1,610	3,720
5	Whole-time local auth. gen. hosp.	946	504	94	48	11	12	1,051	564	1,615
6	Whole-time local auth. spec. hosp.	709	303	95	53	22	6	825	362	1,188
7	Whole-time public health service ..	1,121	659	146	90	21	15	1,283	764	2,052
8	Whole-time government service ..	436	216	85	38	11	4	532	258	790
9	Whole-time teacher	241	109	66	35	4	6	311	150	461
10	Whole-time research	190	65	23	11	1	3	214	79	293
11	Whole-time non-govern. post ..	211	197	18	22	1	5	230	224	454
12	Medically qualified dental surg. ..	65	160	13	36	—	2	78	198	276
13	Retired	1,131	1,753	139	241	15	23	1,285	2,016	3,301
14	Unclassified	992	900	170	172	32	18	1,194	1,090	2,284
	Totals	15,318	18,341	2,017	2,426	353	417	17,638	21,184	38,872

Further Analysis

In Categories 1 to 14 of those to whom voting papers have been sent up to 12 noon on Monday, Dec. 16, 81% have replied; 37% have voted Yes; 44% have voted No; and 19% have not replied. Of those who have voted 46% have voted Yes and 54% have voted No.

Tables I and II do not include voters in the Services.

Up to Dec. 16 the proportion of Service practitioners who have sent in their voting papers is approximately 34%. Of those who have voted 56% have voted Yes and 44% have voted No.

In England and Wales only, of those in Groups 1 to 14 to whom voting papers were sent, 83% have replied: 38% voted Yes; 45% voted No; and 17% have not replied. That is, of those voting 46% voted Yes and 54% No. Categories 1 to 4

include consultants and specialists, general practitioners, whether principals or assistants, and whole-time voluntary hospital staff. In Great Britain of those to whom voting papers were sent 92% have replied: 37% voted Yes; 55% voted No; and 8% have not replied. Of those who have voted, 41% voted Yes and 59% No. In England and Wales only, 93% of Categories 1 to 4 have replied: 38% voted Yes; 55% voted No; and 7% have not replied. Again, of those who have voted 41% voted Yes and 59% No. Of general practitioners, principals and assistants, in Great Britain, 88% have replied: 32% voted Yes; 56% voted No; and 12% have not replied. In England and Wales only, 90% replied: 32% voted Yes; 58% voted No; and 10% have not replied. In each case of those who have voted 36% voted Yes and 64% No. A final report on the plebiscite, embodying civilian and Service figures, will be made soon after Jan. 6.

COUNCIL'S DECISION ON THE HEALTH ACT

STATEMENT BY DR. DAIN

The following statement was issued to the Press on Dec. 12 by the Chairman of Council, Dr. H. Guy Dain.

As everyone knows, the medical profession has stated plainly through its Negotiating Committee that the National Health Service Act as passed is in conflict with the principles of the profession. That was the position before the plebiscite was taken. The question posed to the profession by the plebiscite was "Shall we or shall we not enter into any discussions on the framework to be created within the limitations of that Act?" The results of the plebiscite are now known. The Council of the British Medical Association met yesterday to examine the results. The question it plainly had to consider was whether there was a majority and, if so, whether it was a sufficient majority to justify not entering into discussions with the Minister. The Council's answer to both these questions is in the affirmative. It decided to call a Special Meeting of the Representative Body on Jan. 28 next to consider the results of the plebiscite and to approve the following resolution:

Resolved.—That the Negotiating Committee be advised that in view of the results of the plebiscite the Minister be informed that because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into discussions with the Minister on the Regulations to be made under that Act.

This followed a discussion on the result of the plebiscite, which was presented in such detail as to enable the attitude of every branch of the profession to be assessed.

It was at once apparent that of the doctors mainly concerned—i.e., the general practitioners, 64% had voted against negotiating. As was to be expected, this situation was reversed in the case of men already in whole-time salaried appointments, though the large proportion of those actually in Government service voting against negotiation was regarded as significant.

The poll of civilian doctors was just over 80%, an extraordinary response comparing more than favourably, for example, with the poll at the last two General Elections. Of this, 54% were "No" and 46% "Yes." The Service poll was inevitably small, on account of distance and difficulty of tracing units, only 32% replies being received to date. Of these 56.3% voted "Yes" and 43.7% voted "No."

An examination of the analysis shows a consistent picture all the way through. In the general practitioner group the young doctors effectively support the majority against negotiation. There is no question of age overweighting the decision.

The B.M.A. is a democratic body and in the light of these figures the Council has no mandate to negotiate.

The position therefore is that the B.M.A. is not empowered to accept any invitation that may be given by the Minister to the medical profession to join him in discussing the regulations to be made under the National Health Service Act. He may have many offers of help, but none from the main body representing the profession.

It is important to remember that the National Health Service Act is not a Conscription Act and that a decision not to join the Service is not disloyalty to the country. Whatever the ultimate outcome the doctors will be loyal to their calling and to their patients, to whom, as always, they owe their first duty.

STATEMENT BY THE MINISTER PLEA FOR "WISER COUNSELS"

After the announcement of the result of the plebiscite the following statement was issued by the Ministry of Health on Dec. 12:

"The Minister has learnt that the B.M.A. are placing the results of the plebiscite before a Special Representative Meeting with a recommendation that the profession should refuse to discuss with him the steps to be taken to bring the National Health Service Act into operation. He hopes that before any final decision is taken accepting this recommendation, wiser counsels will have prevailed; and he feels sure that the medical profession will take no steps which would make it difficult for them to take part in the comprehensive Health Service which the people of this country so ardently desire.

"Meanwhile, the Minister has a clear duty to carry out the instructions of Parliament as expressed in the Act, and he can no longer postpone the consultations which are a necessary preliminary to the setting up of the administrative machinery. He is, therefore, proceeding to consult all the many other interests which will be concerned in the National Health Service. He is also considering what ought to be done—and this is a matter to which he attaches great importance—to give the medical profession the opportunity of assisting to shape, and of playing its part in, the new Service."

CLASSIFYING CAUSES OF DEATH MEDICAL ADVISORY COMMITTEE

The Registrar-General announces that in connexion with the revision in 1948 of the International List of Causes of Death, the Minister of Health has appointed a Medical Advisory Committee "to consider from the medical point of view and to advise upon the alterations to be suggested by H.M. Government in the United Kingdom at the forthcoming revision of the International List of Causes of Death."

Sir Ernest Rock-Carling, F.R.C.S., Dean of Westminster Hospital Medical School, is chairman of the committee, of which the following are members: A. W. M. Ellis, D.M., F.R.C.P., Regius Professor of Medicine, Oxford University; Charles F. Harris, M.D., F.R.C.P., Dean of the Medical College, St. Bartholomew's Hospital; Aubrey J. Lewis, M.D., F.R.C.P., Professor of Psychiatry, London University; A. H. T. Robb-Smith, M.D., Nuffield Reader in Pathology, Oxford University; Eardley Holland, M.D., F.R.C.P., F.R.C.S., late President, Royal College of Obstetricians and Gynaecologists; N. Hamilton Fairley, M.D., F.R.C.P., F.R.S., Wellcome Professor of Tropical Medicine, London University; A. Bradford Hill, D.Sc., Ph.D., Professor of Medical Statistics, London University; Percy Stocks, M.D., D.P.H., Medical Statistician, General Register Office and Ministry of Health; Melville Mackenzie, M.D., D.P.H., Principal Medical Officer, Ministry of Health; Sydney Smith, M.D., F.R.C.P.Ed., Regius Professor of Forensic Medicine, Edinburgh University; W. W. D. Thomson, M.D., F.R.C.P., Professor of Medicine, Queen's University, Belfast. The secretary of the committee is Mr. L. M. Feery, of the General Register Office.

Recognition of the importance to medical research of internationally comparable statistics of causes of death inspired the formulation of the present classification, which was first adopted by the International Institute of Statistics in 1893, and which has been revised on five occasions by an International Conference convened decennially since 1900 by the French Government. The main achievements of the conference have been to revise the terminology of the International List of Causes of Death in accordance with scientific developments, and to initiate the agreement relating to statistics of causes of death signed in 1934 on behalf of over 20 Governments, which undertook to compile and publish their statistics according to the agreed International List. Provision has now been made for the next revision of the International List of Causes of Death (which is due to be made in 1948) and the establishment of an international nomenclature of diseases to be carried out under the auspices of the World Health Organization.

Health identity cards will be issued to all French babies born in 1947 and thereafter, and will follow their owners throughout their lives. Free medical examinations will keep them up to date.

THE TEACHING OF DERMATOLOGY

The treatment of skin conditions forms so large a part of general and hospital practice and is of such importance to industry, where many of these conditions are acquired, that the Royal College of Physicians of London last year appointed a committee to consider the education both of undergraduates and of postgraduates in this subject and the establishment of a comprehensive dermatological service. The committee, of which Lord Moran was chairman and Dr. Henry MacCormac vice-chairman, issued an interim report last January dealing mainly with the latter part of its terms of reference. Its final report is concerned with the subject of teaching.

The committee suggests ways in which the study of dermatology might be integrated within a planned medical training, beginning in the preliminary year with some reference to the common parasites as part of the study in biology. In physiology the importance of the skin in the preservation of health should be emphasized. In the introductory course recommended by the Goodenough Committee to illustrate principles of general medicine, surgery, and pathology, lesions of the skin, which are so directly observable, should provide a suitable medium. During the period of systematic instruction in general medicine, introductory instruction in the principles of dermatology should be given as part of the course. It is recommended that the student's appointment in dermatology should cover a period of three months, with attendance at least twice a week as clinical clerk to in-patients and out-patients. A departmental examination in dermatology should be held before the final. A sufficient proportion of beds for dermatological cases should be allocated: 5% of the total beds in a teaching centre is suggested.

Training the Consultant

The proposed dermatological institute in London would be an important step towards the development of postgraduate dermatological education of the desired standard, and one which, in the view of the committee, should be followed in other regions. There are three groups for which provision for instruction in dermatology should be made: (1) intending consultants in the subject, (2) intending dermatological specialists, and (3) practitioners attending refresher courses. For consultants in dermatology the committee recommends a period of five years' study after registration, this training to include: an appointment in the department of general medicine for a year, and in the pathological and bacteriological departments for a year; the study of actinotherapy, radiotherapy, venereal diseases, fevers, and industrial medicine; clinical work as an assistant or registrar in the dermatological department of the teaching institution; and a period of study abroad. For dermatological specialists a short-term policy would be to fill vacancies in the non-teaching hospitals with graduates who for a reasonable time have been practising the specialty and have held hospital appointments in dermatological departments. The long-term policy should be the provision of properly trained dermatologists to staff all the hospital regions.

It is considered that graduates who wish to be recognized as consultants in dermatology should be required to obtain a university degree and a diploma or degree comparable to the M.R.C.P. Some universities have already instituted an M.D. in dermatology. It is not thought desirable at present to recommend the establishment of a diploma in dermatology, but it is recommended that the Royal College should set up a dermatological board for the recognition of hospitals at which postgraduate training could be undertaken, for the laying down of standards of training, and for advice on the suitability of candidates for appointment to hospital staffs.

Future Needs

In its earlier interim report the committee discussed the number of dermatologists likely to be required in a National Health Service. It endorses the conclusion given in a memorandum which was laid before it by Sir Archibald Gray that 180 whole-time dermatologists in charge of clinics would be needed in Great Britain. This is on the basis of four per million population. If, as was suggested in the recent Hospital Survey of the London Region, a general hospital of 600-700 beds for acute cases (or of 950-1,000 if chronic and infectious

cases are included) is required for a population of 125,000, it would mean 360 such hospitals, so that there would be one dermatologist to every two hospitals. In addition the teaching hospitals would each require another two dermatologists of consultant status, making a further fifty. At present there are believed to be 85 part-time dermatologists of consulting-rank in active work in Great Britain, and some twenty or thirty doctors in charge of skin clinics who are either general physicians or general practitioners. If all these were put on a whole-time basis the number available would be 115. This number therefore will have to be doubled to meet the requirements of a comprehensive dermatological scheme. If some of these dermatologists in charge of departments or clinics continued in private practice—which the committee does not exclude—a further increase would be necessary in proportion to the number undertaking only part-time employment.

Nova et Vetera

"OLLIER" OR "THIERSCH" SKIN GRAFTS

French authors attribute the free split-skin graft to Ollier, of Lyons, and reproach English and American surgeons for erroneously describing this particular variety of graft as the Thiersch graft. It is of interest to read Ollier's original communication.

Ollier's Communication

At a meeting on April 2, 1872, Dr. Ollier, of Lyons, reported on autoplasmic skin grafts and subperiosteal resection of the scapulo-humeral articulation. The following is a literal translation of the communication:

Autoplasmic Skin Grafts.—In place of grafting small portions of epidermis, 2, 3, or 4 mm. in diameter, as Reverdin did, Ollier grafts large strips, 4, 6, or 8 cm. square or larger, which comprise not only the superficial layers of the skin but also the whole thickness of the dermis. His aim is not to create multiple centres of epidermization but to replace the epidermic pellicule of ordinary scars by a membrane with the essential elements of normal skin in regard to both structure and function.

The scar obtained by sowing little shreds of epidermis on the surface of a wound does not differ from ordinary scar tissue. Epidermization of the granulations is more or less hastened, but the process is the same. It operates by transforming, step by step, the most superficial layer of the fleshy granulations into epidermis. Ollier considers that the connective tissue of the dermis plays the principal part in skin grafts, and, to show that the connective tissue is able to graft itself, he cites a case in which 20 days ago he grafted periosteum on to the surface of a healing ulcer. He spread over the granulations a strip of periosteum, 6 cm. square, taken from a leg he had just amputated. This is the first time he has transplanted periosteum in man under those conditions, and he is not yet able to say what the result will be as regards the osteogenic properties of the transplant. Ollier has not been able to study the late changes of these dermo-epidermic grafts. He has been using strips, which include part of the dermis, for two years, but his experiences with the large grafts of whole thickness skin are still too recent to enable him to describe the late results.

He has employed the dermo-epidermic grafts to maintain separation of the fingers after an operation for syndactyly caused by an extensive burn of the hand. He has also used them to cure old scars, interrupting, by means of the transplanted tissue, the continuity of the scar tissue. A year later the graft was recognizable by its greater suppleness and by its colour, which stood out against the violet base of the scar. It seemed to him, however, that the results would be more complete and lasting if the whole thickness of the dermis were transplanted, as is his present practice.

In order to oppose cicatricial retraction by means of a skin graft one must not rest content with applying the strip to the excoriated or revived scar, but the infiltrated tissue must be excised and the dermis grafted on to the underlying sound tissues as soon as the layer of granulations has formed. The infiltrated tissues must not be covered, they must be replaced: then only will the graft be a truly autoplasmic proceeding, which will be applicable when a sliding autoplasty cannot be used because of the extent or position of the scar.

Ollier procures his skin grafts either from the patient himself or from limbs amputated after injury in healthy subjects. When taken from the patient the part may be congealed by a freezing mixture.

Ollier has, in the past, been able to obtain bony tissue with flaps of periosteum from animals which had died less than twenty-four

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VITAMIN B₁ deficiency Small herpetiform vesicles may appear under the tongue or on the palate. They clear up quickly on vitamin B₁ treatment.

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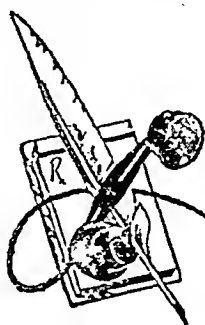
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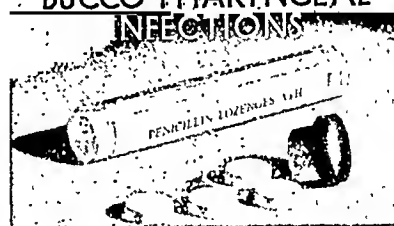
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hours previously and which had been kept at several degrees below zero. Without being able, at present, to establish the extreme limits of vitality of pieces of skin, he believes that the conditions are approximately analogous with those determined for periosteal grafts.

To ensure success of the grafts the region operated on must be immobilized by means of a silicate bandage, or by any other means which will completely prevent any movement of the region and any shifting of the graft on the wound. The silica dressing has not only the advantage of securing immobilization but also maintains the graft in a constant environment as regards temperature and humidity. This favours adhesion.

The coloured plates exhibited at the meeting show the appearance of the grafts, their size, and the modifications they effect on the composition of the scar. One of the plates shows that the portions of skin (detached after being congealed by means of a freezing mixture) forty-five days after grafting are completely different in colour from the violet base of the remainder of the scar which had been formed by the ordinary healing process.

Thiersch's Paper

Let us next consider Thiersch's (1874) original paper, "Concerning the Detailed Changes when Skin is Grafted on to Granulations." It is too long to reproduce *in extenso*, but the following extracts, which give its substance, support the contention of French authors that Ollier discovered the method and that the only contribution made by Thiersch was the suggestion that the granulations should be shaved down before applying the grafts.

Thiersch speaks of having used Reverdin's method with success, and goes on to record that he had recently used one of the various modifications for experimental grafting of a leg ulcer before amputation. "Squares of whole skin, 1 cm. across, separating the fatty layer with great care," were grafted at intervals during three weeks, the last 18 hours before operation. After amputation, sections of the grafted area were cut, and he concluded that successful anastomosis between the capillaries of the bed and the graft were already established after 18 hours, because he was able to inject the capillaries of the graft through the vessels of the granulating area. He goes on to say, "Good material to cover the granulating area can always be found at the edge. One takes, with a razor, thin flat slices and transfers them to anywhere on the area. The gaps caused at the edge close in two to three days." He points out that Reverdin's method of grafting on to granulations may fail, and suggests that the superficial layer of granulations should be shaved down to leave the deeper layer which consists of fine connective tissue with a horizontal network of vessels, so that the skin may be implanted on to this firm deeper layer. "My investigations are not complete and it may be necessary to wait longer than just till bleeding has ceased; perhaps a few hours should elapse, during which time, under the protection of a Lister dressing, the first stages of an inflammatory reaction have set in. By this method it may perhaps become possible to attain the desired permanency of skin cover."

It therefore seems obvious that Ollier initiated the split-skin strip graft, and his name rather than that of Thiersch should be associated with it. It further appears that Ollier used, and Thiersch was experimenting with, *whole thickness skin grafts* some years before Wolfe (1875), Surgeon to the Glasgow Ophthalmic Institution, employed this method, though the latter is generally regarded as the discoverer of this particular variety of graft.

Ollier's method of freezing the skin before cutting the graft, and of preserving the graft by freezing it, is of particular interest in view of recent articles (Matthews, 1945; Strumia and Hodge, 1945; Webster, 1944) recommending this method of storing skin grafts.

T. B. M.

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Lieut.-Col. Ernest Browning Lathbury, R.A.M.C. (ret.), who died on Sept. 6, left £8,751 gross, with net personalty £8,710. He left his share in the goodwill of his practice to his two partners.

Reports of Soc

L.C.C. HOSPITAL EXPERIENCE

Hospital usage of penicillin was discussed at L.C.C. Service Medical Society on Nov. 13 with DALEY presiding.

Clinical Pathological Experiences

Dr. J. M. ALSTON said that there was a renewed interest at present in giving the drug by direct local application to lesions available for such procedure. It had been shown that several objections hitherto urged against local use were not valid. The drug was not destroyed when instilled in liquid form into a wound or placed upon it in powder form. Local concentration was, of course, much more lasting after local application than after intramuscular injection, while blood-stream titres were equivalent. The injection or local application of two doses of 100,000 to 200,000 units daily was the aim, and many patients maintained an effective blood concentration for eight hours or more after the larger dose. Penicillin had been least successful in curing chronic infections such as those of bones, cranial sinuses, and skin, and even with this most powerful drug available there was something which the body must do for itself in chronic infections.

Medical Aspects of Penicillin Therapy

Dr. B. A. YOUNG discussed experience gained since April, 1945, in the treatment of 129 cases—including 53 pneumonias, 10 empyemata, 13 carbuncles, and 11 meningitides. Of the pneumonia patients (half of them being over 40 years of age) there was recovery in 38, improvement in 4, no change in 3, and death in 8 (4 were moribund on admission). Up to April, 1946, the usual adult dose was 30,000 units initially by intramuscular injection followed by 15,000 3-hourly doses (120,000 units in 24 hours), but during the past six months the initial dose had been 60,000 units followed by 30,000 units 4-hourly (180,000 units in 24 hours), and now the monthly hospital consumption was between 150 and 200 million units. In cases with a very bad prognosis the dose had been increased to 60,000 units 4-hourly (360,000 units in 24 hours). There was now a growing tendency towards increased dosage at longer intervals, and experiments were being made with doses of 250,000 units, soluble in 1 ml. water, at 8- to 12-hour intervals. Intermittent high blood penicillin levels produced by large infrequent doses were considered in most cases to be as efficient as the constant but lower titres produced by continuous or more frequent penicillin administration.

In the 10 cases of empyema there were 8 recoveries and 2 deaths (one aged 80 and the other complicated by pulmonary tuberculosis). Treatment had been by administration of systemic penicillin in doses of 30,000 to 60,000 units 4-hourly, with repeated aspiration of the fluid and intrapleural injection of 60,000 to 120,000 units of penicillin in 20 to 50 ml. of distilled water on alternate days. In carbuncle 13 cases had been treated, with recovery in all, and the infection responded readily to moderate doses.

The 11 cases of meningitis showed 7 recoveries and 4 deaths. Among these cases were the three of Dr. B. Gottlieb's of *Haemophilus influenzae* meningitis, in which the prognosis is extremely grave: the organism is now recognized as only relatively insensitive to penicillin. The three very young subjects had, in addition to systemic dosage, heroic intrathecal doses of very pure penicillin up to 50,000 units per dose, and complete cure was obtained in two cases. In the third, however, although the cerebrospinal fluid became sterile after the seventh intrathecal injection the organism later reappeared and, despite 27 intrathecal injections, the patient died after nearly three months of continuous treatment. No convincing evidence of the value of systemic penicillin in cases of acute haemorrhagic nephritis had been obtained. The problem which the physician frequently faced in treating meningitis was to decide on the line of action to be taken if a turbid cerebrospinal fluid was withdrawn and no expert bacteriological opinion was immediately available. The introduction of penicillin into the cerebrospinal fluid was not without risk and in meningococcal meningitis

to be unnecessary. The risks were very slight, however, the precautions were taken of using pure penicillin of concentration of 1,660 units per mg. for intrathecal injection of making up each dose separately in a sealed ampoule.

Surgical Conditions

Mr. J. JEMSON stressed certain points in the treatment of acute haematogenous osteomyelitis. A positive blood culture might be the only confirmatory evidence of the clinical diagnosis, and an early case, treated adequately, might never reveal radiologically any bone changes. Incision of abscesses or drilling of bone should not be undertaken until the patient had been safeguarded by at least 24 hours' intensive penicillin therapy—400,000 units in 24 hours. Incisions could be safely closed, or closed around a small tube which was used for local therapy, after operative evacuation of pus with cleaning and dusting of the cavity with penicillin powder, and they healed satisfactorily. Between the sixth and ninth weeks decalcification of the bone was maximal, and it might be necessary to guard against a pathological fracture. A severe case of actinomycosis, with sinuses of the chest and abdominal walls, was treated by large doses of penicillin after all other treatments had failed, and the patient had become emaciated and developed an enlarged liver and spleen. One million units was given daily for thirty-five days, and after six weeks' rest, during which time the patient's condition deteriorated a little, a further course was given of one million units daily for 21 days, and a final course of three million units daily for seven days. The patient improved, all sinuses healed, liver and spleen were palpable, but he later returned because the sinuses had reopened.

Experiences in Other Hospitals

Mr. E. T. BAILEY'S experience in the chronic recurrences of osteomyelitis, which were so frequently met with, was that the infections were not likely to respond to penicillin, even in high dosage, but he had been impressed by the results of local treatment with penicillin.

Mr. G. C. DORLING remarked on the absence of reference to penicillin continuous drip. Some casualties from Normandy had refused to have the three-hourly injections, and continuous drip, which was a painless procedure, was used. In acute osteomyelitis his practice had been to give rest in a padded plaster and systemic penicillin. The temperature usually dropped within two or three days and rose again on the fifth to the seventh day, when he took the plaster off; if there was a periosteal abscess it was opened and incised, dusted with penicillin, and sutured.

Mr. IAIN MATHESON described a case of early osteomyelitis of the fibula in a girl aged 9, which showed that penicillin alone was not curative in these conditions, but it might possibly be better to withhold operation on osteomyelitis of the bones of the foot.

Dr. M. TOOHEY considered that a less good result was obtained with $1\frac{1}{2}$ million units in 24 hours than with three injections of 300,000 units each day, a total dosage of 900,000. Newborn babies with minor skin infections had shown a dramatic response to oral penicillin. There was blood concentration in babies up to therapeutic level with oral penicillin after about 10,000 units 3-hourly in the feeds. Dr. W. WHEATON mentioned unsuccessful treatment of subacute bacterial endocarditis with penicillin doses of a million units a day up to a total, in one case, of nearly 200 million units. Dr. H. LEVY discussed eight cases of erysipeloid, an occupational disease of fishmongers and pork butchers which incapacitated the workers up to three weeks, but those who had had injections of penicillin in beeswax were able to resume their work within one week.

Voluntary self-help by wage earners in the form of payments for hospital services has not, according to the annual report of the Hospital Saving Association, been diminished by the preparations for the National Health Service, for the total sum paid is greater than ever. The distribution to London voluntary hospitals for 1945-6 is £s. for each in-patient day. Since the war the incidence of treatment has risen, partly as a result of more beds becoming available, and if this trend continues the daily rate of contribution to the hospitals will fall, since the H.S.A. donation is fixed. Nearly £14,000,000 has been distributed for hospital services by the H.S.A. in the 24 years of its existence.

Correspondence

Surgeons Up in Arms

SIR,—The *Daily Telegraph*, dated Dec. 2, says: "Surgeons and Health Act.—The Council of the Royal College of Surgeons have asked the negotiating committee to enter into negotiations with the Minister of Health on the regulations authorized by the National Health Service Act." At a special meeting of Fellows and Members held at the Royal College of Surgeons on Nov. 29 (*Journal*, Dec. 7, p. 869), the President, Sir Alfred Webb-Johnson, in refusing to allow certain resolutions to be put regretting the above decision, gave as his reason that "this is a meeting called at short notice for the expression of views. Any formal resolution should have been circulated with the notice." In this very feeble way he side-tracked the wish of the meeting for a vote. The reason for this manoeuvre was obvious, for he had also rather weakly complained: "Is there no contrary view?" Well, Sir, there is no doubt that if a resolution had been put it would have been passed by an overwhelming majority against the Council's recommendation.

Later, under pressure, the President promised to send a notice to the Press stating that "it was generally agreed that the College should act in conformity with the general feelings of the profession in regard to the question of negotiations. . . ." No mention of this was made in the extract from the reputable daily paper that I quote above. The President added that the Council had told the Negotiating Committee what the College recommended concerning negotiation. What a travesty of the facts! The Fellows, who elect the Council, have never been given an opportunity to vote on this vital matter for obvious reasons.

However, our general practitioner colleagues can take heart, for at a very large meeting of consultants held in Birmingham on Nov. 27, where we were allowed to vote, only five voted for negotiating.—I am, etc.,

Leominster.

GEOFFREY HOUSDEN.

The Plebiscite

SIR,—I have just read Dr. H. B. O. Cardew's letter (Dec. 7, p. 873), and would hasten to question several points. Dr. Cardew states that the Government have " . . . a clear mandate from the electorate to pass the National Health Service Act." This is only a half-truth. (Remember Nazi propaganda—based on a half-truth but filled out and exaggerated with untruth?) The electorate did not give any "clear mandate" on the actual terms of the Health Act; it was not drawn up at the time of the election.

Now I should like to ask Dr. Cardew some further questions. Did the electorate also give a clear mandate for the control of foreign radio transmissions reaching this country? This has been announced and will shortly be put into effect, allowing us to hear only what the Government wishes us to hear. Did the electorate expect the Government to waste sixty-three million pounds of public money in supplying temporary aluminium huts when permanent houses were promised? Did the electorate expect the Government to immediately award themselves a greatly increased salary as soon as they were in power? Did the electorate expect the Government to re-establish postal censorship on outgoing letters from this country—a thing that has just been announced? Did the electorate ever intend the enormous increase of indirect taxation which is announced to meet the cost of this "free" Health Service? I presume that Dr. Cardew will answer, "Certainly they did." Any thinking man will then be able to value Dr. Cardew's opinion for what it is worth.

The great trouble is that the great majority of the electorate are totally incapable of giving any intelligent mandate to anybody on their own account. They are the 80% of the population who, sheep-like, will follow whichever 10% of the population makes the greatest noise—follow without giving any real thought to the implications underlying that thought.

My answer to the plebiscite is definitely "No," and I trust that the profession will show itself to believe still in the essential principles of the freedom of all men.—I am, etc.,

Tarbert.

A. KENNETH YOUNG.

SIR.—Letters in your columns from the "Yes"-men make interesting reading. The thanks of the whole profession are due to the Willesden Council, who have done more to effect unity in our ranks by disclosing at the psychological moment the intentions of the political party which, greatly to its own surprise, finds itself in office towards the doctors. If, as Dr. G. A. van Someren has stated (Dec. 7, p. 873), we say that we "decline to accept service under the Government scheme," that is the end of the scheme. It is as simple as that. What is the use of saying that we are prepared to negotiate still further, when Mr. Bevan himself said that he would decline to negotiate?

Dr. H. B. O. Cardew (p. 873) is anxious that doctors should not indulge in what he terms "political diatribes," although the whole National Health Act is a purely political matter which has been and still is untruthfully claimed to be a "free medical service." The 1944 "plebiscite" was such a confusing document that a very big proportion of those who voted could not be certain whether they were voting for or against the Act. Moreover, there are many of us who think that even the B.M.A. Council and the "Negotiating" Committee are at long last beginning to see the red light, and that the result of the 1944 vote does not represent the opinion of the profession as a whole. Even at that late period it was astounding to find how badly informed on the vital issues many doctors were.

The letter of Dr. Lennox Johnston (p. 874), socialist propaganda though it attempts to be, might have been useful in the days before the profession was alive to its danger. To-day it cuts no ice. I and many others are content to be "doctors even before we are citizens," for I can think of no higher degree of civic virtue than that practised by the doctor who honestly does his job. Moreover, I deny that the Socialist Government was "freely elected to power." Nobody was more surprised at their victory than the Socialists themselves, who owed their success very largely to the men and their wives who clamoured for early demobilization, and not because they had been promised a "free medical service"—a promise which was beyond their power to implement. In any case it is dishonest to call it "free."

For almost the first time in its history there is at last some semblance of solidarity in the ranks of the profession, thanks to Mr. Bevan and the "closed shop." Let us at all costs remain united and avoid obscuring the issue in a fog of words.—I am, etc.,

Brookwood.

H. M. STANLEY TURNER.

The Warning of Willesden

SIR.—I have been back in England just over a year after serving during the whole of the recent war, which, I understood, was to save the world from tyranny in whatever form and wherever it was found and to ensure that all persons should be able to live in peace and freedom—freedom of thought, speech, and action. The National Health Service Act has good as well as bad features. One result of its adoption by the profession is, in my opinion, alone enough to call upon every medical man and woman who values our heritage of freedom to refuse to co-operate in working the measure in its present form. This result would be the complete surrender of all independence in professional matters with consequent enslavement by the Minister of Health. Recent events at Willesden should be a warning.

This curtailment of personal liberty and freedom is appearing in many industries and professions in this country. In the name of all those things for which most of us fought—and for which many of our compatriots gave their all, their very lives—let the medical profession be the first to make a definite and united stand against this bid of bureaucracy further to extend its slimy, inefficient, clumsy, and cruel tentacles.—I am, etc.,

London, S.W.7.

R. F. GUYMER.

The B.M.A. and Public Relations

SIR.—Whatever the result of the plebiscite may be there is, I hope, no doubt that a fight is in store. To win this fight we must have the support of the lay public, and to gain that we need a radical change in our Public Relations Department.

Example being better than precept, the following will make the point clear.

We consistently refer to a "Health Act" when it is merely a "Treatment Act"—and an extravagant one. We have allowed control of certification without emphasizing that a certificate is "an expression of opinion" which we are prepared to substantiate in a court of Common Law (and to our peers). Even a Glasgow docker will pause if it is rammed home that his own doctor's opinion about his case is to be controlled from London.

A most able reply to our vilification about milk appeared in the *Journal* and a perfectly fatuous bleat about "proof in the Press, instead of vice versa."

No real attention has been drawn to our having appeal to the Courts. Some reference to *Magna Carta* needed, and even to Habeas Corpus, for we shall be from earning our living as effectually as if imprisoned.

No real emphasis has been placed on the hard fact of fighting our own battle we are fighting for the freedom of every individual in the land. A good title would be "Doctor Battle of Britain."

Finally we must prove that we are not obstructionists—improvement and progress, but are averse to mere mass movement and change for the sake of change.

I hope most sincerely that the B.M.A. will remember what every G.P. knows: that to get a layman to understand you must talk to him in his own language, and as we have to convert the working-class millions a spot of tub-thumping should not be beneath our dignity if in so doing we preserve English freedom.—I am, etc.,

Cromer.

A. HENRY GREGSON.

The Association and the Journal

SIR.—A correspondent suggests (Dec. 7, p. 873) that some doctors only join the British Medical Association because this is the cheapest and most convenient way of securing the *British Medical Journal*. I should have thought that there must be many others who do not join the British Medical Association because part of the subscription is for a journal which they do not want.

In any case would it not be advisable, both to take away from the Labour Government any excuse for suggesting that some members of the British Medical Association only join to obtain the *British Medical Journal* and to satisfy those who do not become members because they do not wish to contribute to the *British Medical Journal*, to institute, as well as the inclusive subscription for membership of the British Medical Association and for the *British Medical Journal*, separate subscriptions for each for those who do not wish both?—I am, etc.,

Allyth.

JOHN SLEIGH.

Remuneration under the Act

SIR.—I have read much in your correspondence columns concerning the freedom of the profession, etc., under the national health scheme, but little about the patient and the financial aspect. Many patients are going to lose an important right—the right to pay the doctor of their choice.

Concerning the financial aspect, we have recently seen almost 100% of the panel practitioners rising in righteous wrath over the 2s. increase and demanding the application of the Spens Report or their resignation would follow. With some alacrity the Minister agreed to this demand, but so that such unanimity cannot easily occur again he will leave the form and amount of remuneration under the scheme extremely vague. If he intended to pay us all £5,000 a year I am sure the number of voices raised against the scheme would indeed be crying in a vast wilderness.—I am, etc.,

Worborough Dale.

DENIS W. MAYMAN.

National Health Service Act

SIR,—Whereas most of us formerly favoured a national medical service, many of us now reject the scheme which has been offered in its place. The Act is a political instrument, and the Minister's insistence on appropriating the goodwill value of practices indicates his desire for absolute power over the profession and thus over the citizens whom they serve.

Secondly, according to a recent issue of the *Journal*, the Minister rejected a suggestion that a learned judge should have power to reinstate a dismissed member of the proposed Service, justifying this by an analogy which ought not to deceive a child by its logic. So he rejects criticism and learned guidance. The really competent do not surround themselves with a screen of unassailable authority. Thirdly, the prime cause of medical progress is research (I call to mind radium, radiography, sulphonamides, penicillin), which calls for hard unspectacular exertions, and instead of back-room research we are offered the brilliant footlights of mere reorganization.

I am not impressed by the benefits which it is claimed would accrue from the proposed scheme, such as security for young doctors who never asked for it, an equal deal for all classes, abolition of alleged exploitation, rotas, holidays, closer collaboration of doctors, etc. These benefits have been strewn riotously all up the garden path to obscure the fundamental philosophy of the Act, which is, for better or for worse, the annihilation of the doctor's independence.—I am, etc.,

Leeds.

LIONEL SUMMERFIELD.

SIR,—So much has been written in your columns concerning the National Health Service and the plebiscite that one would have thought the profession must be familiar now with most aspects of these matters. Nevertheless, it appears to me to be necessary to answer three of the letters in last week's *British Medical Journal*.

Dr. H. B. O. Cardew (Dec. 7, p. 873).—It is a favourite saying, but quite incorrect, that there is a clear mandate from the electorate to pass this particular National Health Service Act. There is a mandate for a National Health Service, and with that everybody agrees. The details of the present Act were not published to the electorate before the general election. In order to produce an efficient service it is not necessary to hedge the doctors about with a hundred and one distasteful conditions.

Dr. Lennox Johnston (p. 874).—There is no moral obligation as citizens to co-operate in putting into effect Acts passed without taking into account the views of those most closely concerned. The suggestion that the profession should take its "medicine" in a sporting spirit reminds one of the first whiff of the anaesthetic—"Now, now, this isn't going to hurt a bit."

Dr. B. Halley Stewart (p. 874).—The Act is law, and the Minister himself has no power to alter it or negotiate about anything that is specifically contained in the Act. Your correspondent assumes that the deputation would tell the Minister in unmistakable terms what it thinks of the Act. The Minister can have only one reply—to show them the door.

I should like to add that I consider myself as without undue bias and sympathize with some of the aims of the present Government. Nevertheless the actual methods whereby they are putting these aims into practice has placed a severe strain on one's good will.—I am, etc.,

London, E.14.

M. GODFREY.

The Act and Ophthalmic Treatment

SIR,—Ophthalmologists have good reason to feel disturbed by the letter from Dr. Leslie Hartley concerning the Act and ophthalmic treatment (Dec. 7, p. 873). There is a real danger inherent in unbalanced planning as exemplified in the constitution of key hospitals. No case has been made out that the patient is to benefit, and scant tribute is paid to the many ophthalmic surgeons who have been performing really good work at the periphery.

Planners—and medical planners are no exception—are notorious in their portrayal of the perfect State which will evolve as the result of their efforts, but we should not let this

blind us to the danger implicit in an ever-swelling bureaucracy and a concentration of authority in the privileged hierarchy.—I am, etc.,

Windsor.

CHARLES TAIT.

The Hogben Test

SIR,—I willingly take the opportunity of conceding that my letter (Oct. 12, p. 554) was in error in one detail, in that Shapiro did not come to work with me in London until after Dr. Zwarenstein's 1933 visit. I do so the more willingly because he was assisting Dr. Zwarenstein as a not yet qualified medical student during the period to which the preceding paragraph of my letter referred, and may therefore have been less conversant than his senior with other relevant facts correctly stated therein.

In so far as my letter involved any reference to himself or to his laboratory, I submitted it to Prof. Crew for his approval. For a reason stated below, the fact that Dr. Zwarenstein does not now recall the several conversations in which I acquainted him with pregnancy urine tests carried out in my own laboratory by Bellerby has little bearing on the issue raised in my letter. In any case Dr. Zwarenstein was in and out of my laboratory for some months while the tests were still in progress and could scarcely fail to be aware of what was going on.

I do not think that the alleged independence of the work Zwarenstein continued at my instigation and with my encouragement after I left South Africa is an issue which would have occasioned dispute if the South African Press had not boosted the use of *Xenopus* for pregnancy diagnosis as an indigenous South African discovery. This was why a former Capetown colleague, prompted by its local publicity and a forgivable zeal for the credit of South African science, brought it before the attention of readers of this *Journal* (1939, 1, 1258). That he then had the last word was the outcome of a personal letter in which he admitted intervening without full knowledge of the facts and expressed the hope that I should be satisfied with a face-saving gesture on his part. I did not care to embarrass a friend by protracting the controversy to comment on one remark which is of special relevance to the dispute. Since circumstances have changed, I can now do so.

My discovery of ovulation induced by anterior lobe extract with gonadotrophic activity was an unforeseen by-product of work on chromatic behaviour suggesting the possible identity of the w-substance of Hogben and Slome with the gonadotrophic hormone, hence also its equivalence to the gonadotrophic autacoid in the urine of pregnant women. If this view were correct the latter would evoke both ovulation and the white background reaction, either of which would then serve as an indication of its presence in urine. If it were (as it is) incorrect the gonadotrophic component of urine from pregnant subjects should evoke ovulation without evoking the white background reaction.

Prof. Gunn's final pronouncement (*British Medical Journal*, 1939, 2, 580), after correcting statements made in all good faith in his earlier one, includes the following:

"Prof. Hogben refers to pregnancy tests which, on leaving Capetown, he had entrusted to Drs. Ariel Goldberg and David Slome. I am informed by Dr. Goldberg and by Dr. Zwarenstein, who actively assisted in these experiments [*italics inserted*], that numerous tests were carried out during January and February, 1931, in the physiology department. The observations were made, however, not on ovulation in *Xenopus* but on colour changes in the skin."

That Prof. Gunn made in all good faith the last remark here printed in *italics* [*inserted*] is beyond question, since he freely admitted that he had no first-hand knowledge of the circumstances attendant on the discovery that *Xenopus* ovulates overtly in response to the gonadotrophic hormone. Seemingly neither Dr. Goldberg nor Dr. Zwarenstein disclosed the fact that they never reported the results of such tests for my comment. If this was because their samples failed to evoke ovulation as well as to evoke the more delayed full w-response, the so-called captivity effect (i.e., defective care of the test animal) furnishes a sufficient explanation of their failure. Seemingly the outcome convinced Dr. Zwarenstein that *Xenopus* does not respond by ovulation to pregnancy urine. What is clear is: (a) that he did not resume experiments on the effect of the latter until he had disclosed his belief that *Xenopus* undergoes ovarian regression in captivity, and then by recourse to freshly caught

ids; (b) the publication of the belief stated—one that he is not explicitly withdrawn—necessarily delayed publication parallel tests in my London laboratory.—I am, etc.,

University of Birmingham.

LANCELOT HOGBEN.

SIR,—I deeply regret the tone of the letter from Drs. H. A. Spiro and H. Zwarenstein (Nov. 16, p. 752). Since 1930 I have been very closely associated with Prof. Hogben and leagues in work on *Xenopus laevis* and well recall Dr. Zwarenstein's sojourn in London when Dr. Bellerby and myself were engaged on the work concerning husbandry technique which was necessary before *Xenopus* could be reduced as a reliable test animal for general use.

It is beyond question that the test arose from Hogben's discovery in 1929 that *Xenopus* ovulates in response to pituitary extracts. Under Hogben's leadership a thorough exploration of the implications of this discovery took place between 1930 and 1939, when the general applicability and reliability of the test were fully established. Prof. Crew, himself entirely familiar with the whole of the research in this field, very properly termed it the Hogben test.—I am, etc.,

University of Aberdeen.

F. W. LANDGREBE.

* * This correspondence is now closed.—ED., B.M.J.

Milk Priorities

SIR,—The medical profession have been asked to co-operate in the fairer distribution of milk supplies. In my work at infant welfare centres I have been struck by the fact that proprietary milk foods are not on the milk ration and can be bought at chemist's or welfare centre on presentation of a baby's ration book. The mother of a baby entirely fed on such a food can, if she wishes, get one pint (568 ml.) of liquid milk daily from the baby's ration book and one pint on her own.

While it might be admitted that this mother needed an extra allowance to make up for the extra strain of pregnancy and lactation, it can hardly be necessary for her to have two pints, or indeed one pint, for longer than a month or so unless she is in some other condition which will qualify her for it separately. Under present arrangements a family may get two extra pints of milk daily where the baby is fed on a proprietary food. I have also known cases where a proprietary food has been bought ostensibly for the baby but actually used for making cakes—a thing which would not happen if the former were on the milk ration.

National Dried Milk, on the other hand, is supplied by the local office instead of liquid milk. I suggest that this arrangement be extended to all dried milks specially prepared for babies. It should not be difficult to issue cards in place of the present rationing slips, which could be used anywhere to obtain these foods. Such a scheme need not, of course, include foods which are added to liquid milk.—I am, etc.,

Birmingham.

ELEANOR M. SAWDON.

SIR,—Surely in this question of milk certificates Dr. J. G. McDowell (Nov. 30, p. 834) is flogging the wrong horse. We have got to face the unpleasant fact that there is not enough milk being produced (in spite of the remarkable efforts of dairy farmers in the face of negligible imports of cattle food, which, I believe, is linked with the world shortage of fats) to supply the increased demand of the population. Dr. McDowell, as a preventive medicine specialist, can judge better than most of whether or not it is wise to stint the general population for the benefit of invalids.

Incidentally, did the Minister of Food slander the medical practitioner? From what I remember of the report of his speech he merely made a statement of fact—that the milk going to priority consumers had risen about 50% in 18 months, and in view of the shortage of milk he asked doctors to review their milk certificates and place a stricter criterion on the necessity for extra milk. And, Heaven knows, it is easy enough to give certificates under II (a) or (c) for the majority of one's patients without putting too great a strain on—I was going to say one's conscience—but perhaps one's interpretation of the regulations would be better.—I am, etc.,

Langport.

M. J. INGRAM.

Milk and Medicine

SIR,—Any doctor with a busy practice who has an inclination towards the State control of medicine should ponder over the recent dictatorial action of the Food Minister in cancelling all milk permits on Nov. 30. The result has been that for the last week I, like most G.P.s, have been inundated with applications for renewal of milk certificates, with all the consequent waste of time this entails.

Medicine is rapidly deteriorating into form filling—a grim warning of things to come unless we decide to unite and fight against control from doctrinaire politicians.—I am, etc.,

Croydon.

GLYN JAMES

Dicoumarol for Coronary Thrombosis

SIR,—In "Any Questions?" (Dec. 7, p. 882) there is a note on dicoumarol for coronary thrombosis. The advice given is "... 300 mg. dicoumarol are administered orally in one dose. This dose is repeated daily until the prothrombin time is 30 seconds. Doses of 100 or 200 mg. are given daily when the prothrombin time is between 30 and 35 seconds; above this level the dosage should be discontinued owing to the risk of haemorrhage."

The prothrombin time after a dose of 300 mg. dicoumarol does not begin to alter for 48 to 72 hours; it is possible to seriously overdose a patient by giving 300 mg. daily until the prothrombin time increases to 30 seconds. A much safer procedure would be to give 300 mg. daily for two days then stop altogether; it will be found that the prothrombin time will begin to rise about two days after the second dose and will continue to rise for three or four days, then will gradually decline, the base-line of prothrombin time being reached in approximately ten days after the first 300 mg. dose. When, by daily prothrombin time estimations, which are essential, it is found that the maximum time has been reached and the "days are shortening," a further small dose of dicoumarol may be given. Often 50 mg. is enough to increase the prothrombin time to the maximum after 24 hours; the patient at this stage reacts much more quickly. Still being guided by a daily prothrombin time estimation, further single doses of 50 mg. or 100 mg. may be given at irregular intervals; at this stage a daily dose is seldom necessary.

If for some reason the course of dicoumarol is stopped for some weeks or months, and then it is desired to resume it again, dosage must be very cautious. The patient may react rather violently and with unusual rapidity to doses as small as 50 mg.—probably 25 mg. is safer. It is true that little has been written on this subject in England, but the drug is being used and is very effective and only dangerous when the rather marked time lag between dose and effect is neglected or prothrombin times are not used as a guide. It is necessary to standardize the technique for prothrombin estimations and not to vary the method as results are all relative.—I am, etc.,

Epping.

FRANK MARSH.

Colonial Medical Service

SIR,—In my early years in West Africa I encouraged qualified friends, who had thoughts of going abroad, to join this Service, of which I am still a member. Recently I have been a less active propagandist. This month a report by a Commission on the Civil Services in West Africa has been published. If its recommendations regarding salary and service conditions for medical officers are accepted, and if the implications of these conditions are made known to intending recruits, I doubt if any sensible young medicals will sign on the dotted line.

Before the 1935 reorganization of service conditions administrative and most technical officers began at £400 or £450 per annum, and rose to either £920 or £960 per annum plus a non-pensionable seniority allowance of £72. The medical officer began at £660, reached £960 plus £72 in ten years, and, after a three years' halt, went on to receive £1,150 plus £100 at seventeen years. In 1935 the maximum of all these salary scales was consolidated at £1,000. The medical officer, apart from dropping £250 on his maximum, was now to do three years' probation without an increment and to take thirteen years to reach £1,000. From his third year onwards his salary

was £132 less than that of his predecessors in the corresponding year of their service. Further, private practice, formerly a right, now became a privilege, and pensions were very much reduced. Officers then in the Service fought these new conditions and managed to force the Colonial Office to raise the medical officer's maximum to £1,200. With the addition of private practice, which, with luck, can average many hundreds a year, this was fairly reasonable at the time. The value of private practice can be gauged from the fact that Governments, never generous, offered to health officers and others an allowance that averaged over £130 per annum in lieu of such practice. Health officers accepted this allowance, although it was much less than the average private practice, because their opportunities for promotion to executive posts, with considerably higher salaries and pensions, were much better.

Since 1940 the cost of living has risen enormously in West Africa, even more than in Britain. No relief was given to European staff until 1944, when quite inadequate allowances were given to junior officers only. On the other hand junior African staff was granted higher salary scales, and all African staff was given a cost-of-living allowance which in some cases is as high as 75%.

Early this year the Commission was appointed to report on salaries, etc. In the opening paragraphs of its report the Commission remarks that many of the officers giving evidence were suffering from strain and ill-health directly due to war conditions, and that many were very pressed for money. Later paragraphs refer to the effect on salaries of supply and demand, of wage levels and conditions of employment in Britain, of the responsibilities attached to different posts, and, with special reference to doctors, of the shortage of professional men in the Empire. The report then goes on to recommend increases for all grades, African and European, with the solitary exception of new European medical officers who join after the recommendations take effect.

For administrative and other officers initial salaries are to be raised to £510, and the maximum to £1,200. Medical officers at present in the Service, whose salaries range from £660 to £1,200, are to have from £880 to £1,400. But a medical officer who joins next year will begin, according to his postgraduate experience, at a salary of between £680 and £860; his maximum is to be £1,200, the same as at present. The £880-£1,400 scale is obviously in the nature of a bribe to keep the present incumbents reasonably happy. It seems fair to assume that the members of the Commission thought that the laws of supply and demand, U.K. wage levels, and professional responsibilities must not operate in the case of medical men; yet they must have known of the existing recruiting difficulties. It should be noted that the medical officer's maximum of £1,200 per annum is composed of £900 "basic" pay plus £300 "expatriation" pay—an indication that the Commission considers the income of the medical man in Britain, at age 36 to 40, to be £900 per annum.

Another recommendation is that private practice be abolished. Members of the Service suggested this themselves, and most will accept it, *provided* adequate compensation is granted. The Commission suggests £100 per annum additional pensionable emolument. This will appeal neither to the man who has habitually made five to ten times that amount nor to the health officer who is no longer to have the monopoly of high executive posts.

So far I have considered medical officers' salaries. The senior medical officer, who now usually has lucrative private practice, is to jump from £1,400 per annum to £1,435; all other departmental officers now on £1,400 will quietly proceed to £1,600. The senior medical officer may get £100 in lieu of his private work; on the other hand he may be regarded as an executive officer and have no such compensation. We will then have the anomaly of a medical officer on £1,400 plus £100 being asked to accept promotion to £1,435 only. A similar anomaly existed for years on the health side; medical officers of health on a total income of £1,350 had to accept £1,200 on promotion.

These recommendations, together with the 1935 attempt to reduce medical officers' salaries, reflect Colonial Office policy, which seems to be that professional and technical men in the Colonies must not receive higher salaries than administrative officers. It is recognized that the latter have, in Britain, much poorer prospects than medical or veterinary men, possibly even

poorer than agriculture and forestry graduates. The Commission's recommendation for large salary increases for junior African staff and for greatly increased African pensions will result in inflation and high taxation, which will nullify the £150-£200 per annum increases given to most Europeans. How much more will they affect the medical officer who is to have no real increase?

I think, Sir, that it should be made known to prospective recruits that these proposals, if implemented, will give them no higher income than under present conditions and will almost certainly lower their standards of living. Should the recommendations be accepted, I have no doubt that you will be asked by members of the B.M.A. in West Africa to refuse to publish the Colonial Office advertisements in so far as they refer to West Africa.—I am, etc.,

WEST AFRICA.

Medical Future of the Colonies

SIR,—With reference to the letter by "Still Another West Coaster" (July 13, p. 64), I would like to emphasize a few points. The excessive amount of office work entails handing over a large proportion of patients to a dispenser whose diagnoses are not worth the paper written on; returns of diseases are thus rendered almost valueless. The public do not pay a medical officer in the neighbourhood of £1,000 per annum to waste time doing office work within the compass of an intelligent child of twelve. Government should entrust such work almost entirely to African subordinates and make them pay the penalties of any dereliction of duty. To save a few pounds Government are prepared to sacrifice an incalculable sum in medical efficiency. The loss of clinical education thus caused must react on a medical officer, and after a dozen years or so, when he should be a very competent tropical practitioner, he is fortunate if he is no worse than when he first arrived in the country. This loss of clinical knowledge is bad enough for the medical officer, but who can gauge the possible loss to humanity?

The health department is grossly understaffed, so that a large proportion of its work descends on the already well-loaded back of the medical officer. Sanitation is of immense importance, but medical officers still have their thousands of sick and maimed who are not prepared to wait for a sanitary millennium. It seems to be ingrained in the minds of administrators that volume of correspondence and efficiency go hand in hand. But the hall-mark of efficiency is to ensure that a minimum of hindrance is offered to the practical side. Administrators have their difficulties, not the least of which is lack of funds. But Governments must be plainly told that if they want an efficient medical service, then they must pay for it. Medical administrators, practically always drawn from the health department, are not enough in contact with a medical officer's work to appreciate his difficulties. It would be better if they consulted with him more and became better acquainted with the practical side of medicine. Medical officers, in addition, have no means of collective consultation: we seldom see each other.

I wish to emphasize that I am not a disgruntled officer and am fully satisfied with my treatment both by Government and my department, and these few candid criticisms are offered solely in the hope that they may contribute to the advancement of the Service.—I am, etc.,

"WEST COAST M.O."

Anaesthetic Inhibition of Transfusion Reaction

SIR,—On reading the letter from Dr. P. H. Moore (Sept. 7, p. 340) I recalled a case which came to my notice several years ago which seems to bear out the idea that anaesthesia will often control severe reactions, allergic or otherwise. The case was that of a young man suffering from a severe septicaemia who was given several blood transfusions. After one of them he developed a reaction which threatened to be fatal. Cyclopropane was administered, and his condition returned to what it had been before the transfusion. Immediately after discontinuing the anaesthetic the reaction returned in all its former severity, and the procedure had to be repeated several times before the danger was over.—I am, etc.,

Montreal.

I. J. PATTON.

Generalized Vaccinia

SIR.—In view of the rarity of the above condition it occurred to me that a brief account of a typical case might be of value. A girl aged 13 was unsuccessfully vaccinated in infancy. As a preliminary to entering the nursing profession she was required to be vaccinated or revaccinated. This operation was duly performed on Nov. 16 with a single insertion of fresh lymph.

On Nov. 20 the dry dressing was changed, and at that time there was a typical clean vesicle of about 1/2 in. (1.25 cm.) in diameter without any surrounding inflammation whatever. Two days later the girl complained of vague abdominal pains, and he was treated with aperients; but the arm commenced to pain, and ached continuously. By Nov. 24 temperature started to rise, and an axillary gland became enlarged. The temperature was 100.6° F. (38.1° C.) and the patient felt definitely ill. Aspirin 10 gr. (0.65 g.) given at night caused a rapid fall of temperature accompanied by profuse sweating and prostration in the small hours of the next morning. On Nov. 25 the temperature rose again to 102° F. (38.9° C.); this day papules were observed on the back and shoulders, one small one on the abdomen. From a crop of 6 or 8 the number increased on the following days until there were 30 or 40. Many of these papules became vesicles and a few pustules, but all with an indefinite abortive appearance.

Having seen many cases of chicken-pox and smallpox I can state with some confidence that these spots were like neither those of chicken-pox nor of smallpox; this because each papule did not change into a true vesicle nor vesicle to pustule, but aborted in an indeterminable condition—i.e., papulo-vesicle and vesicle-pustule. There was one papule at the back of the ear and another on the forehead.

Meanwhile the vaccination remained perfectly clean and uninfected, though the vesicle enlarged to 1 in. (2.5 cm.) in diameter. On the night of Nov. 25–26 the temperature, which by the latter day was 103.6° F. (39.8° C.), was again brought down, with sweating and prostration. But on the 27th the temperature fell to 99° F. (37.2° C.) and was normal next day. The axillary gland subsided and spots commenced to disappear.

On Nov. 26, when the temperature was at its highest point, the patient complained of a headache which caused me some perturbation in view of certain sequelae of vaccination of many years ago. But reflexes were normal, though the headache was severe enough to cause photophobia. The girl was languid and listless, and remained so until Nov. 27, when her whole appearance changed from dullness and lethargy to alertness and normality. She was allowed up on the 30th, but is still without appetite and looks very pulled down, as if she had had a long illness.—I am, etc.,

Guilford.

J. A. BELAM.

The Cough Syrup

SIR.—Dr. Eldon M. Boyd's paper on "The Cough Syrup" (Nov. 16, p. 735) raises once again the question of the effectiveness of "expectorant" drugs commonly prescribed by the medical practitioner. Disregarding for the moment the subject of the value of faucial demulcents in chronic bronchitis, I should like to draw attention to Dr. Boyd's statement "... expectorant drugs added to the syrup ... increase the output of respiratory tract fluid. ..." It is important to realize that the author's evidence for this assertion is based upon experiments performed on "lightly anaesthetized or decerebrate animals." Dr. Boyd has published a series of papers on this subject in recent years, but to examine the warrant for his conclusions, which are so important to the practising doctor, it will perhaps suffice to quote only one of his publications.

Perry and Boyd (1941) demonstrated an increase in the respiratory tract fluid of animals when the doses of the expectorant drugs were as follows: powdered ipecacuanha *B.P.* 1 g. per kg. of body weight; thymol 1 g. per kg. of body weight; ammonium carbonate 0.5 g. per kg. of body weight. It will be seen therefore that a rabbit weighing 2.5 kg. received about 40 gr. of powdered ipecacuanha or 20 gr. of ammonium carbonate. Such quantities would cause immediate vomiting if they were administered to a normal man. Furthermore, if allowance is made for the small size of the

stomach in the rabbit and cat compared with the stomach of a man, it is obvious that an extraordinarily high concentration of the drugs must have been produced in the fasting region of these animals. Rodents, including the rabbit, are of this peculiar in that they cannot vomit even when fully conscious. It would, however, be interesting to witness the behaviour of a normal cat (neither lightly anaesthetized nor decerebrate) on receiving 40 gr. (2.5 g.) of powdered ipecacuanha on an empty stomach. Adopting the author's weight basis of dosage, it is also instructive to note that for a man weighing 70 kg. the corresponding amount would be about 1,200 gr. (75 g.), or six hundred times the official maximum expectorant dose. Dr. Boyd himself, in his recent paper, points out that the dose of syrup of squill *B.P.* which failed to produce an increase in respiratory tract fluid was equivalent to a draught of one quart (1,140 ml.) for a man of average weight.

Now, Sir, it is not denied that ipecacuanha, ammonium chloride, ammonium carbonate, and other "reflex expectorants" can affect the respiratory tract in man if they are given in emetic doses. A simple clinical demonstration is provided by giving a tablespoonful (14 ml.) of ipecacuanha wine to a child with non-diphtheritic croupy bronchitis. Not only does he vomit but he also coughs up a large amount of mucus, thereby effecting demonstrable changes in the physical signs in his lungs and obtaining a considerable measure of relief from his respiratory distress. It is remarkable that pharmacologists working on laboratory animals should have found it necessary to devise experiments to instruct us on this matter; and it is indeed ironical that the chief conclusion to be drawn from their painstaking work is that the animals selected are much less suitable for the purpose than man himself.

A few years ago I published (1939, 1940, 1941) a series of papers on the action of potassium iodide and the common "reflex expectorants" on the output of sputum in patients suffering from chronic bronchitis. No significant effect could be demonstrated from the administration of sub-emetic doses of ipecacuanha, ammonium chloride, ammonium carbonate, or the iodides. In the light of my observations on the validity of observations carried out on laboratory animals, it will be surmised that I am bound to accept any conclusions from such work with the greatest reserve. Nevertheless, it is noteworthy that Perry and Boyd (1941) record an attempt to make their dosages comparable with those with which we are familiar in clinical practice and state: "Using a dose of ammonium chloride corresponding on a body-weight basis to that of Alstead, we also could detect no increased output of respiratory tract fluid."

I am not in a position to state categorically that sub-emetic doses of "reflex expectorants" have no action whatever in chronic bronchitis, but I am convinced that they do not increase the output of sputum. Those who make other claims for these drugs as commonly prescribed may reasonably be asked to produce evidence for their opinions. Finally, it seems to me that an unfounded belief in the value of "expectorants" has had the unfortunate result of distracting attention from other and more valuable measures in the general management and drug therapy of this incurable disease.—I am, etc.,

Glasgow.

STANLEY ALSTEAD.

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Air-borne Infection

SIR.—Your leading article on the control of air-borne infection (Nov. 30, p. 820) repeats the statement made a few days previously to the Royal Society of Medicine that it is more difficult to supply clean, safe air than to supply clean, safe milk or water. May I suggest, with great respect if rather bluntly, first, that the statement is not true. There is no building in the country that is not surrounded by an unlimited supply of safe, clean air which can be obtained by opening the window; but there is none at all where clean water or milk can be obtained so easily. Secondly, I would suggest that what the Section of Epidemiology really meant was that it is much more difficult to supply disinfected air than to supply disinfected water or milk.

If the most important problems of the age in hygiene cinema. The hygienic objection to the cinema is not the sn or even the rubbish that is so often shown on the screen, the poisonous stench in the auditorium in so many cases. Such foul air cannot conceivably be healthy, and it is as certain as anything can be that it spreads disease. It seems to me to be of no more than academic interest whether the disease is spread in this instance by bacteria or viruses, or by whatever it may be that makes the air stink. The difficulties of disinfecting the air in cinemas are obviously overwhelming, and even if it could be done there would still be the difficulty of removing the poisons and the smell. It would be very much easier to remove the foul air and replace it from the unlimited supply of safe, clean air outside. Air-conditioning schemes all break down because the designers will persist in trying to do too much; they try to improve on the perfectly safe, clean fresh air outside the building. All that is required is fresh air and reasonable warmth.—I am, etc.,

Wetherby.

R. L. KITCHING.

York.

Juvenile Delinquency

SIR,—On Nov. 16 at the Inter-Clinic Conference held in London papers were read by Miss Hamilton and Miss Clare Britton which summarized their experiences in the management of hostels for difficult children, and the suggestions which they made were both provocative and of extreme value. The concern which is generally felt throughout the country over the present rate of delinquency, particularly among the young, and the measures about to be debated in the House on this matter make it, I feel, essential that due regard shall be paid to the full implications of any "institutional treatment" which may be considered.

To some of us who are intimately concerned with the investigation of delinquency it is already apparent that gross personality deviation is not infrequently accompanied by cerebral cortical disturbance of varying degree. In a paper read before the Electro-encephalographic Society I indicated that of a group of 63 cases referred for examination from courts of summary jurisdiction 36.5% on complete investigation might properly be considered to suffer from epilepsy, or "epileptic equivalents." During the discussion which followed this paper other members of the meeting were apparently even more prepared than I to accept this view. In another paper read before the Royal Medico-Psychological Association I quoted Prof. D. K. Henderson when he asked in the case of psychopathic personalities for "an indeterminate sentence, discharge depending not upon the expiration of time but upon the proper establishment of adequate social patterns."

Since it may come about that the value of treatment in a controlled environment for the delinquent child and the persistent offender may be recognized, may I perhaps emphasize that the composition of the "controlled environment" will be of the very greatest importance. In no single respect will this be more so than in the selection of the permanent resident staff—i.e., masters, matrons, etc. However we may look at it, the environment is of itself of considerable therapeutic importance. To those who may be charged with the duty of providing such institutions this single factor may well prove to be a major difficulty. May we hope, Sir, that the experience which some of us have gained during these latter years may be available and utilized by administrators, and in particular that the experience of workers such as Miss Hamilton and Miss Britton may not be overlooked.—I am, etc.,

Taunton.

R. SESSIONS HODGE.

"Benadryl" and Exudative Pulmonary Tuberculosis

SIR,—As I have no opportunity (being in the Service) of dealing with cases of tuberculosis, I should like to put forward a suggestion to be tried by others who are dealing with the problem of the chemotherapy of pulmonary tuberculosis.

In view of the known activity of "benadryl" (β -dimethylaminoethyl benzhydryl ether hydrochloride) in blocking various types of antigen-antibody reactions, I think it would be of interest to know what effect, if any, "benadryl" has on an early exudative pulmonary focus. If there was a response to this "anti-allergic" agent, in that it removed the reactive oedema of the pulmonary lesion, then perhaps it is reason-

able to assume that the vascular supply and drainage of the affected area would be improved, and the access of chemotherapeutic remedies to the lesion facilitated, with removal of various catabolic substances. This effect could be followed by repeated x-ray examinations. I would assume too, that the drug could be administered in order to be able to assess correctly the real extent of the damaged pulmonary tissue after all the surrounding oedema had been removed.

I do not wish to suggest, of course, that "benadryl" has any influence whatsoever upon the course or treatment of pulmonary tuberculosis, but only that it may have some possible use as an adjunct in its investigation and treatment. The idea outlined should not be lightheartedly dismissed, since there may be an element of value in it; and, accordingly, should at least be put to trial before becoming just one more addition to the vast heap of antiquated empirical remedies for tuberculosis.—I am, etc.,

LEON RADCLIFFE,
Lieut., R.A.M.C.

Antimalarial Drugs

SIR,—I have read with interest Dr. Ryan MacMahon's report (Nov. 30, p. 844) to Dr. Hamilton's letter. There are two important factors which must be taken into consideration when evaluating antimalarial drugs: (1) the strain of species and (2) the degree of immunity of the patient, whether natural or acquired.

It has been proved beyond all doubt that there are geographical strains within a species, and they vary in clinical virulence. For example, the amount of quinine required to control attacks of Rome and Sardinian strains of malignant tertian malaria was found to be eight times as much as was necessary to control attacks caused by two Indian strains, two from West Africa, one from Tanganyika, and two from Rumania. These studies were made on primary cases which had not previously suffered from malaria. The following table may be of interest.

	Total of Quinine, in gr. (and g.) during a Primary Attack	Total of Quinine, in gr. (and g.) during the Whole of the Course	Average per Case during Primary Attack, in gr. (and g.)	Average per Case during Whole Course, in gr. (and g.)
Indian and other strains. No. of cases treated: 19	772 (50.2)	2,233 (145.1)	40 (2.6)	117 (7.6)
Rome and Sardinian strains. No. of cases treated: 13	4,343 (282.4)	21,894 (1423.1)	335 (21.8)	1,650 (109.2)

This does not mean that there are no tropical strains which are as virulent as the Rome and Sardinian strains, but it does show that there are degrees of virulence and resistance to some antimalarial drugs within strains of the same species of plasmodia. Also the amount of antimalarial drugs necessary to cure a primary attack is much more than is necessary to cure relapses or reinfections by the same strain of parasite. This is especially so if the patient has had several days of fever in a primary attack before treatment is given. Successive relapses usually respond to smaller quantities of antimalarial drugs than does the primary attack—due, one imagines, to the increase of acquired immunity built up as the result of previous attacks. This may be the reason why some people believe that drugs, especially synthetic drugs such as mepacrine, vary in their efficacy.

Any who are interested may like to look up an article of this subject in the *Proceedings of the Royal Society of Medicine* (June, 1932), "A study of induced malignant tertian malaria," by James, Nicol, and Shute.—I am, etc.,

P. G. SHUTE,
Assistant Malarialogist,
Ministry of Health.

The Report of the Standing Committee on the Rehabilitation and Resettlement of Disabled Persons has recently been published (H.M. Stationery Office, price 4d.). Measures required to deal with cases of heart disease, tuberculosis, deafness, and psychoneurosis, and the facilities available for vocational training and industrial rehabilitation, are described. There is a classificatory table of disabled persons registered on Aug. 19, 1946.

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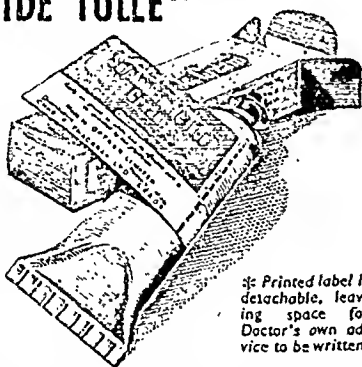
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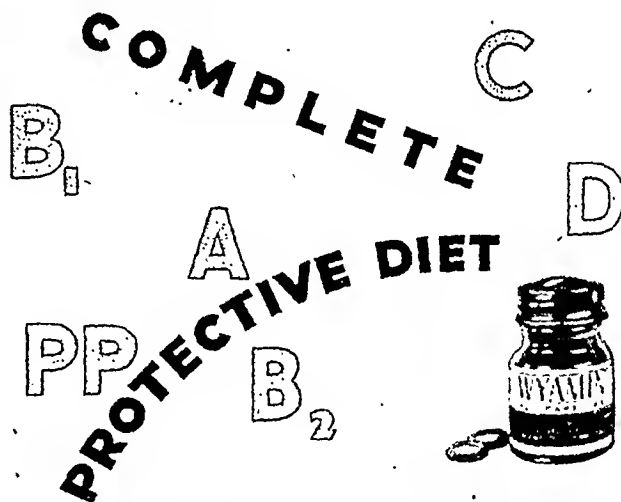
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Obituary

SIR WILLIAM J. COLLINS, K.C.V.O., M.D., F.R.C.S.

*Former Vice-Chancellor of London University,
Consulting Surgeon, Royal Eye Hospital*

We regret to announce the death of Sir William J. Collins on Dec. 12, at his home at Regent's Park. Some men fail to reach the goal expected of them because they lack one talent short of ten, but others just miss the glittering prizes because nature has been too prodigal in their endowment. Nowadays if Leonardo da Vinci returned he might find it advisable to be either a painter or an engineer, one or the other. Sir William Collins had such exceptional gifts that they might have carried him to a supreme position in almost anything he undertook—in law, medicine, politics, university administration, municipal government. He took his M.D. when he was only twenty-three, and his F.R.C.S. when he was twenty-five. He was a senator of his university within eight years of leaving it as a student. He was chairman of the London County Council before he was out of his thirties. The promise was so abundant, yet somehow the harvest, while plentiful in diverse achievement, did not quite fulfil the expectations of those who had watched the splendid ripening of his gifts.

When William Job Collins was a student at St. Bartholomew's in the 'eighties he was thought to be heading for great eminence in surgery, but actually he reached no higher than a moderate position in ophthalmology. When he entered Parliament after two unsuccessful attempts, one of them as candidate for his own University of London, having behind him already a noteworthy career in local government and in front of him the splendid reign of power of his (Liberal) party following the General Election of 1906, many people centred great hopes around the new Member for West St. Pancras. They saw in him a possible future Prime Minister—the first medical man to hold the supreme position in the Government of this country. But he never received even minor Government office and spent only five years in the House of Commons, and one year more at a later period when he was returned for Derby at the end of the war of 1914–18. He made no shining success in politics—perhaps he was too high-minded to be a successful politician. He once declared after his five years in Parliament that the medical profession was suspect in the House of Commons, where the prevailing feeling was that the profession was "out for fees."

There may have been something in his make-up—perhaps the Huguenot strain (he was a member of the Huguenot family of Garnault) which made lesser people feel inferior and therefore antagonistic. Or another explanation of the enigma of William Job Collins may be that his qualities were suited for the chair rather than for the Bench, even the Front Bench. He was a chairman sent from heaven. He had all the qualities a chairman ought to have—urbanity, firmness, grasp of detail, an eye to the main issue, the ability to come to the point and bring others there, and again and always urbanity. His first great experience of the chair was in the London County Council in 1897. A few years later he was chairman of the London Education Committee. He presided over the Sanitary Inspectors Association, over the Chadwick Trust, over the Central Council for District Nursing, over the Medico-Legal Society, over innumerable bodies having an educational and reforming purpose. He was always being made chairman of select committees, dealing with such subjects as agricultural wages, the minimum wage for miners, accidents to railway servants, and always he justified the choice. With Collins in the chair everybody was confident that the work would proceed to some useful conclusion. He had in him the making of a great diplomat. As Government plenipotentiary at three International Opium Conferences at The Hague in 1911–12, 1913, and 1914 he did extraordinarily good work, for which he received the special thanks of the British Government. It was on this subject of opium and the control of narcotic drugs generally that he served the *British Medical Journal* for many years as an occasional contributor. His writings, again, reveal how widely he spread himself. In addition to two books on ophthalmology

he wrote biographies of Spinoza, Sir Samuel Romilly, and Edwin Chadwick, thus exercising three of his great interests—philosophy, law reform, and sociology. He also wrote many essays on ethics and law, on alcohol and drug addiction, on physics and metaphysics, on evolution and specificity in disease, and when the war of 1914 broke out he produced a volume on the *Aetiology of the European Conflagration*.

Sir William Collins's professional work seems to take a minor place by the side of all this public service. He was surgeon and later consulting surgeon to the Royal Eye Hospital and the Western Ophthalmic Hospital, and ophthalmic surgeon to the Hampstead and North-Western Hospital. In 1918 he received the Doyné medal in ophthalmology. The various work for the profession and for the public with which at one time or another he was associated almost defies chronicle. For prolonged service his membership of the Royal Commission on Vaccination which sat from 1889 to 1896 and the Royal Commission on Vivisection which sat from 1906 to 1911 is outstanding. He was a member of the Council of the King's Hospital Fund. In this connexion one characteristic example of his individuality may be noted. In 1919 he refused to sign a report of that body stating that hospital officers should make arrangements for their own pensions by resorting to profit-earning insurance companies. Collins in a dissentient memorandum demanded more generous treatment of hospital officers by the bodies employing them, and earned thereby the warm gratitude of hospital staffs. For nearly thirty years he was honorary secretary of the League of Mercy; he was a member of the City Churches Commission and of the Treasury Committee on University Colleges. During the war of 1914–18 he was commissioner for the Red Cross in France. One distinction which he took to himself was that of having been a pioneer in the advocacy of motor ambulances, which he first proposed as early as 1902. London's fine ambulance service owes not a little to his early initiative. Another matter which interested him greatly was the reform of death certification, on which subject he led three deputations to three successive Lord Chancellors.

A man who was great in many respects, but greatest of all perhaps as a citizen, has passed away. A stimulating biography of William Job Collins might be written, and we hope it will be, if only to show that the gods can be too generous to mortals.

Dr. W. G. AITCHISON ROBERTSON, formerly of Edinburgh, and author of books on medical jurisprudence and toxicology and on public health, died at Bournemouth on Nov. 18. He had a distinguished career at Edinburgh University, where he graduated M.B., C.M. in 1887, M.D. with gold medal for his thesis in 1890, and D.Sc. in Public Health in 1892. He was elected a Fellow of the Royal College of Physicians of Edinburgh in 1891 and received the Parkin prize in 1901. In the early part of his career at Edinburgh he was resident physician at the Royal Maternity and Simpson Memorial Hospital, and physician to the Royal Public Dispensary. He was called to the Bar as a member of Lincoln's Inn and became lecturer in medical jurisprudence and public health in the School of Medicine of the Royal College of Surgeons of Edinburgh. Aitchison Robertson was examiner in medical jurisprudence for the Scottish triple qualification and in bacteriology and laboratory work for the Edinburgh D.P.H.; he also examined for the Universities of Glasgow and St. Andrews. His *Manual of Public Health* reached a fourth edition in 1921, and his *Manual of Medical Jurisprudence and Toxicology* a fifth edition in 1925; he also wrote *Aids to Public Health* (third edition, 1933), and *Aids to Forensic Medicine and Toxicology* (eleventh edition, 1938). Two other small books by him, *Medical Conduct and Practice* and *Student's Guide to Vaccination*, appeared in 1921 and 1922. The Royal Society of Edinburgh elected him a Fellow and his university gave him the degree of D.Litt.

Dr. ISABEL MARGARET MACGILLIVRAY was killed in a motor-accident in Germany on Nov. 19. A daughter of the late Charles Watson MacGillivray, M.D., F.R.C.S.Ed., she studied medicine at Edinburgh University and graduated M.B., Ch.B. with honours in 1924, taking the M.R.C.P.Ed. two years later. She had been resident medical officer to the Manchester Babies Hospital, house-physician to the Royal Hospital for Sick Children, Edinburgh, and assistant in the department of pathology of Edinburgh University, and also clinical assistant at the Vienna University Kinderklinik. At the time of her death she was engaged on statistical work for the Government on the subject of nutrition in Germany.

Medical Notes in Parliament

SCOTTISH HEALTH BILL

In the House of Commons on Dec. 10 Mr. JOSEPH WESTWOOD, Secretary of State for Scotland, moved the Second Reading of the National Health Service (Scotland) Bill. His opening remarks were recorded in last week's issue of the *Journal* (p. 925).

Mr. Westwood concluded by pointing out that the Boards of Management, whether of teaching or non-teaching hospitals, would in the first place retain the endowments of their particular hospital. The method of reviewing and adjusting the application of endowments followed the precedent of the Educational Endowments Act of 1928. By clause 76 they sought to delete from the Nurses (Scotland) Act of 1943 the provision which made it impossible for anyone starting on a course of training after Aug. 4, 1948, to qualify for admission to the Scottish Roll of Assistant Nurses.

Mr. J. S. C. REID said there was general agreement that the time had come for a great extension of health services in Scotland. The first principle of the Bill should have been to keep Government control to a minimum. But the Bill put far too much power into the hands of the Secretary of State for Scotland and left far too little scope for initiative and responsibility to those who were to run the services. There was also far too little scope for variety in organization; centralization was bound to lead to rigidity. He moved the rejection of the Bill.

Conciliation and Agitation

Mr. McLEAN WATSON said, so far as members on the Government side of the House were concerned, if public money had to be expended there must be public control. He agreed with Mr. Reid that there was too much of the Secretary of State in the Bill and too little of the local authorities. He thought that Mr. Westwood had gone too far to conciliate the professional classes—the doctors, dentists, pharmacists, and others. He had given them far more say than he ought to have done in the various committees which would have to work this scheme. An attempt might be made in the Committee Stage to secure less control by the Secretary of State and more control by the local authorities, the county councils, and the town councils, which up to now had been the local health authorities. He thought that the agitation which had been carried on by the doctors and others had induced Mr. Westwood to grant those professional classes representation on the various bodies to be set up in a larger proportion than was justified. The responsibility for saying whether a place was overstaffed or understaffed with doctors and for sending doctors where they would be most required rested with a chairman and five members of a medical practices committee. Three members of that committee were definitely to be doctors, but he failed to find in the Bill an indication of who the two others were to be.

He welcomed the general principle of the Bill, but said that when the House was considering the regions for hospital management Mr. Westwood should ensure more harmony among the various authorities which were brought in than had been secured under the Local Government Act of 1929, otherwise conflict would start between the county councils and the large burghs which would be brought into the regions for the control of the hospitals. It was of great importance to the people of Scotland that the measure should be brought into operation as soon as possible, although it would call for considerable increases in rates.

Training of Medical Students

Sir JOHN G. KERR said that the Bill, except in detail, was a replica of the English Bill. It was the product of diligent artificers working in the murky recesses of a Whitehall office. Some of the brightest stars in medical history had shone from the universities and voluntary hospitals of Scotland. These great leaders in medicine and surgery were the teachers of the doctors to come. The success of any Parliamentary enactment was tremendously influenced by the character of the men who had to carry its provisions into effect, and Scotland had at present the very finest material coming into the science of medicine.

What about training? The leaders of the profession at present gave that training in the voluntary hospitals because even in an honorary post they would have the opportunity to inspire the students and would be paid back indirectly by forming a clientele of practitioners who would come back to consult them later on. The type of man who went to a university and later into the profession was not the type of person who was interested in a salaried service where promotion went merely by seniority. He was a young man who had a good

idea of his own capacity and would only go into a profession in which he thought there was a fine future. Although he had spoken of the great voluntary hospitals the House must not forget that all over the country a large amount of modest research was done by the ordinary country practitioner. He perhaps with the aid of his cottage hospital, was doing work of the greatest importance. If the Bill was passed into law it would become one of the greatest disasters to the health of the people.

Miss HERBISON said that services under the Bill would be available to everyone without limitation and would prove of inestimable benefit. It had been found that dependants often refrained from calling in the doctor when his services were most necessary because they did not know where the money would come from. She had spoken to many medical students and gathered that the majority of them welcomed the Bill. They realized that through it they would have security immediately they finished their medical studies. As a member of the Miners' Welfare Commission she received every week appeal from miners who were said by their own doctors to have pneumoconiosis. The Royal Infirmary in Edinburgh had x-rayed them and the doctors said they were suffering from the disease. Yet when they went before the Manchester Board they were told they had not got it. There should be some definite work of research in relation to that disease and its relation to nystagmus.

Extreme Dislike

Col. ELLIOT said that if Miss Herbison deceived Mr. Westwood into the idea that the doctors were wholeheartedly in favour of the Bill she would encourage him to build on wrong foundations. He would not find that the medical students who they graduated were any more in favour of the Bill than the practitioners, who by an overwhelming vote had shown their extreme dislike of its provisions. If, however, Mr. Westwood was willing to accept a decision in Committee on the doctor's right of appeal, this Bill would be a much better Bill than it trailed at the heels of the English Bill. He asked Mr. Westwood or Mr. Buchanan to explain why the Hetherington Report had been thrown overboard. No single medical association and no county town or burgh had asked for the hospital proposals in the Bill. The Hetherington Report said there should be grants to the voluntary hospitals, which should be left under the control of the voluntary hospitals board. The Report said no difficulty about combining that with a system of public control. Mr. Westwood had referred to the Highlands and Islands system. All accepted that. It was small but well adapted to the circumstances. To carry on that service the Government had not found it necessary to nationalize a single hospital. The hospitals in the Highlands and Islands were left under local control. Miss Herbison had referred to defects in the provision for investigation of pneumoconiosis and other miners' ailments but she was complaining against action which was carried out by public bodies. Under a public body there would be research but the orthodox interpretation of research was often wrong. That was the danger of frozen systems such as the Government was planting on medical education and medical practice in Scotland. Mr. Westwood's attitude was that if it was difficult to fit the hospitals into the scheme, so much the worse for the hospitals; he was saying, "let the scheme go through we will jam the hospitals into it."

Mr. WESTWOOD intervened to say that in his consultation he had reached complete agreement with universities, doctors, and local authorities, and that so far as his hospital proposal was concerned the only objectors had been the representative of voluntary hospitals.

Dr. MORGAN said that although Col. Elliot pretended the unorthodoxy was found in the voluntary hospitals these had become the home and basis of orthodox medicine.

Col. ELLIOT asked whether trade union M.P.s would be happy if their unions were to be overridden by a body of which the members were chosen by the Secretary of State, who would not always be a Socialist. He read the seventh schedule of the Bill to show that this applied to the Scottish medical practice committee. He said the proposals in the Bill enforced a rigid system which would be to the disadvantage of the patient and would militate against the prosperity of Scottish schools of medicine.

Deductive and Inductive Research

Dr. MORGAN said the speech of Col. Elliot was frivolous and facetious. He was particularly glad that the Secretary of State for Scotland would have medical research in his own hands. Dr. Morgan had been afraid that Scottish research would fall under the patronage of the English Medical Research Council. In that council orthodoxy could be seen in excess. The rebels had not a chance of expressing his views or of getting into the inner counsels of medical research. He remarked that

Scotsmen tended to conduct research on deductive rather than on inductive lines, whereas in Great Britain now the great tendency in medical research was to do inductive research and to base theories and practical diagnosis on facts. Medical research in Great Britain had practically not touched upon the problems of immunity and why certain people were protected against certain diseases and others were not. He felt the Bill was a good Bill. Many assistants under contract to doctors were now in doubt because doctors would be compensated for the goodwill of their practices. Would the assistant be allowed to remain in that district and practise?

Mr. THORNTON-KEMSLEY said the Opposition accepted the desirability of regional organization and agreed that Scotland was more suited for it than was England because of the disposition of the teaching hospitals. There could be no adequate justification for placing these in a position inferior to that granted under the English Bill in regard to administration and the conservation of their endowments. The rules and regulations made by the Secretary of State or by the Regional Hospital Boards would subject the day-to-day actions of the Boards of Management to a remote and impersonal control which was unwarranted. In no instance under the Bill was revision made for the election by people in the locality of representatives to represent them on the Boards.

He urged that existing facilities for the treatment of private patients, particularly in mental institutions and in nursing-homes run by organizations such as the Officers' Association, should not be interfered with as little as possible. The feeling of the doctor or the care and welfare of his patient without outside interference might disappear altogether for lack of the stimulus of vigorous private practice. The hazard of competition with the State medical service might make it unlikely that many doctors would take the risk of remaining outside the scheme. If that occurred throughout Scotland the vast majority of doctors would owe their first allegiance to the State instead of to the patient.

Mr. CARMICHAEL, while welcoming the introduction of the Bill, criticized the provisions for boards. During recent years in Scotland the tendency had been to hamper or cripple the local authority. He, from the number of problems he had to face, had to be guided largely by the permanent officials. The medical profession under the Bill would, in the long run, have more say in the developments of the medical service in Scotland than they had had in the past, but there would be too many committees working under the guidance of the Secretary of State. Under the Bill the Secretary of State had power to refuse to publish any reports of these committees. There was no permanent link to ensure a constant movement forward in unison of the hospital board and the regional board, and the link with the local authority which was responsible for attempting to check tuberculosis in the home was not very sound. How would regional boards be able to check mismanagement by a medical superintendent who had not the courage to handle his staff or by matrons who could be very hard to the patients and to the staff?

The Mental Hospitals

Major NIALL MACPHERSON doubted whether local authority representatives would be in a majority on the boards of management for local hospitals. Had the Government so little confidence in the good sense of the people as to assume that Mr. Westwood alone could provide hospital and specialist services? Could not a scheme for voluntary co-operation between hospitals have been worked out which would have commanded support? It would have been possible to follow one of the schemes drafted by the British Hospitals Association. Only because the hospitals had seen the English Bill driven through the House of Commons had they come to the conclusion that they had better give way. That was not their real view. Mental hospitals so far had not been mentioned in the debate. There were more beds in mental hospitals in Scotland than in general hospitals. The independence of these mental hospitals should be maintained. He instanced the Crichton Royal Hospital, about 58% of whose patients were private patients; only 35% of those private patients came from Scotland. It was essential in the mental hospitals to allow the patients to choose where they would go. Control of the medical profession from the disciplinary point of view should be in the hands of the profession. It should be for the citizens, through the local authority, to say whether medical services were adequately manned. That was the way the Highlands and Islands scheme worked.

Multiplicity of Mentions

Col. GOMME-DUNCAN said the Secretary of State was mentioned in the Bill no fewer than 279 times as taking some form of power or authority. This was a travesty of democratic

government. The tribunal set up by Clause 41 to deal with complaints against doctors or dentists was a glaring example of the immense powers of the Secretary of State. He appointed the chairman and members, and any appeal from the tribunal was to the Secretary of State. He could not see why medical officers should be denied the fundamental right of appeal to an independent court of law. The tribunal would have what was tantamount to the power to strike a doctor or a dentist from the roll of his profession. A tribunal with such a power should be strengthened considerably on the professional side.

Mr. MALCOLM MACMILLAN said he felt justifiable pride in the Highlands and Islands medical service, but that service did not measure up to the requirements of to-day. Two years ago he had met representatives of all the doctors in the Western Isles. They were unanimous for the improvement and extension of those services and for the principle of a national health service. They were most anxious that the State should be in control of the national service and not the local authorities or some mixed control.

Sir THOMAS MOORE said the Bill followed slavishly the many objectionable characteristics of the English Act. Mr. Westwood must be prepared to accept a large number of amendments before Scotland would accept the measure. His friends did not believe that regional boards could adequately replace the local management boards nor that individual endowments should be handed over to an impersonal endowments commission.

Mr. RANKIN said the House was faced with a clear-cut issue of whether the Government was to allow a system of *laissez-faire* in the practice and organization of medicine to continue or whether it was to introduce a planned system. The medical profession had nothing to fear under the Bill. He remembered when nearly every doctor in Glasgow lived over his consulting-room. After the passage of the Act of 1911 these doctors acquired suburban homes with motor-cars and retained only their consulting-rooms in Glasgow. He asked why the British Medical Association refused to publish the figures of the vote which it recently took on the attitude of doctors to the scheme (see p. 957). He criticized the Bill because it separated the health services of the country into compartments and left co-ordination to co-operation between individual units.

Mr. JOHN HENDERSON said that as a manager of the Victoria Infirmary in Glasgow he had been amazed at the work which these voluntary institutions did. On the appointed day the staffs and boards of management of 220 voluntary hospitals were going to be sacked overnight.

Cmdr. GALBRAITH said the medical profession had pressed for years for a greatly extended medical service, and many of the constructive proposals in the Bill came from them. The opposition of that profession arose from the feeling that the best had not been made of a great opportunity. Under the Bill no longer could the doctor serve of right in a part of the country where he knew the people and would give his best service. He could be prevented by the Medical Practices Committee from serving in partnership with those with whom he desired to serve. The Bill was purely a bureaucratic scheme and left the machine entirely under official control.

Government Reply

Replying to the debate Mr. BUCHANAN said the discussion had been well conducted and thoughtful. He noted that both sides of the House favoured a comprehensive national health service. The clash arose over the form of the change. The Government had been charged with creating a body which was less democratic than the present system, but he doubted whether there was such a thing as a voluntary hospital. Most of these hospitals had received grants from the State. Under the system planned by Mr. Willink these grants would have gone up to nearly 70%. Where then was the voluntary principle? The voluntary hospitals had the right to dismiss any doctor. He agreed that the hospitals of Glasgow had great records, but no man should say that even they were voluntary. Every man in every Glasgow shipyard and factory had to suffer a deduction from his wages each week for the hospitals. In actual practice no man dared refuse. The hospitals had ceased to be voluntary because of compulsory deductions and State grants, and the doctors connected with the voluntary institution could be dismissed any day without even an appeal to the Secretary of State. The men elected to these boards would never dismiss unless they had a sound case.

As for the teaching hospitals, the trouble started when one tried to define them. The Royal and Western Hospitals of Glasgow had been quoted. He referred also to two other great hospitals, Stobhill and Mearns Kirk Hospital for tuberculosis treatment; there was none better in the country for treating patients or teaching. Who was to say that even in country hospitals there was no capacity for teaching? The Government contended that to leave out 230 hospitals from this great new

experiment—almost half the total—would make a sham of the whole scheme. It must not do what was done in the days of the old poor law by leaving out the best and taking only the worst. The teaching hospitals had been given a status which in most respects would meet their requirements. The Bill said that some endowments might have ceased to have the effect that the donors wished. In the new plan the Government could say to a hospital which now in part treated cancer and in part ear, nose, and throat diseases that it preferred in the interests of a" to have the work concentrated in one hospital instead of being spread over three or four. In that case there was nothing wrong with a neutral body and endowment commission transferring endowments given to a hospital for that purpose.

Salary and Capitation Fee

The idea that a doctor would not perform his duty because he received a salary was not fair to the profession. Love of the profession and love of the work would not be dimmed either by a salary or by a capitation fee. He wanted to see the sale of practices abolished. It had not always redounded to the credit of the medical profession, and he knew instances where practitioners who wished to settle in Scotland had been unable to afford the money to do so. One of the most disgraceful things he had known had been to see young doctors begging the money with which to set up practices and frequently finding, after they had paid for them, that the practices were not what they had thought they were. On this question the Government took the stand that a salary and a capitation fee were the best way of securing freedom for doctors.

Mr. Carmichael had criticized the Government for not giving sufficient power to local government, but Mr. Carmichael had also asked that there should be some form of workers' control. The doctors were the workers in this case, and they must be given some rights. The doctors had been consulted, and on the whole they did not desire the local authorities' set-up. The words of the Bill since its introduction last session had been altered so as to provide that people would have the choice of going from one place to another for a dentist. The Government wished in the field of health to make every resource available to the humblest sections of the community. It was not a question of doctrine, but a genuine theory that the sick ought to be cared for as never before. Mr. Westwood had met the doctors and had compromised. Mr. Buchanan hoped to continue to compromise.

The amendment proposed by Mr. Reid was rejected by 273 to 123 and the Bill was read a second time. It was then committed to a Standing Committee, and the money resolution attached to it was passed through committee of the whole house.

Diphtheria Immunization.—Returns from all but a few local authorities in England and Wales for the year 1945 show there were 4,410 notified cases of diphtheria and 33 deaths among immunized children under 15 compared with 8,780 cases and 558 deaths among children not immunized.

Hospital Libraries.—Mr. BEVAN said on Nov. 28 that he hoped to see library facilities developed in all hospitals within the National Health Service as and when possible. Details would have to be worked out at a later stage by the Regional Hospital Boards and Hospital Management Committees.

Mass Radiography.—Mr. BEVAN told Dr. Comyns on Nov. 28 that mass radiography units had been allotted to the county councils of London, Middlesex, Surrey, and Essex. The first two began mass radiography at the end of 1943, Surrey County Council at the end of 1944, and Essex County Council early in 1945. A further allocation of apparatus to selected authorities prepared to operate it, including West Ham Borough Council, was to begin soon.

Willesden General Hospital.—Mr. HARDY inquired on Nov. 28 whether Mr. Bevan knew that the committee of the Willesden General Hospital, a voluntary hospital, refused to set up a consultative committee in defiance of his advice to all hospital authorities. Mr. BEVAN said he was drawing the attention of the hospital authority to the recommendation he had already made that there should be a nurses' representative council in every hospital. He was inquiring into the diet of nurses at this hospital as he was anxious that nurses should be well fed.

Tied House.—An application from the L.C.C. for approval for the erection of a doctor's house on a vacant site at St. Helier Estate, Morden, is under consideration.

Free Choice.—On Dec. 5 Mr. BEVAN told Mr. Carson that when the new Health Service came into operation, all non-contributory old age pensioners would have the same free choice of doctor as everyone else.

Birth and Adoption Certificates.—Mr. BEVAN hopes to introduce this session a short Bill making it possible, as in Scotland, to issue shortened birth certificates and also shortened extracts from the Adopted Children Register which will contain no reference to parentage or adoption.

Universities and Colleges

UNIVERSITY OF WALES

The following candidates at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

M.B., B.Ch.—*Pharmacology*: N. V. Chivers, P. R. C. Davies, B. H. Evans, Ruth E. Lewis, N. J. Morgan, C. L. Perry, E. Thomas. *Pathology and Bacteriology*: Mary Smith. *Hygiene*: D. R. Bowen, *Elizabeth B. Butler, Joan P. Ciantar, A. C. Coulthard, A. J. Dark, G. C. Davies, H. B. Davies, Janet Dean-Jones, J. A. Emanuel, G. S. Foster, T. Griffiths, H. Harrop-Griffiths, C. Havard, C. H. L. Howells, T. R. Hunt, D. W. James, Beryl H. Jones, H. E. Jones, Margaret E. B. Jones, Margaret O. Jones, W. R. King, J. G. Leopold, J. B. R. Lewis, *L. T. Lewis, Margaret I. Morgan, Vivien J. Parker, F. I. Powell, L. T. Rees, G. G. Richmond, Mary Smith, S. Solomon. *Medicine*: Clare G. M. Dillon, R. L. H. Jones, Goronwy Owen.

* With distinction.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following medical degrees were conferred on Dec. 4:

M.D.—M. O'C. Drury, L. Li. Griffiths, R. J. S. Wilson.
M.Ch.—H. A. Daniels.
M.B., B.Ch., B.A.O.—J. R. Bannister, D. S. N. Darling, Daphne M. N. M. Dooley, M. E. Eppel, R. Esler, J. P. R. Farrell, E. M. H. Forster, D. S. Kearon, P. J. MacCarthy, Esther M. McMillan, Eileen Moriarty, D. T. Li. Nash, S. J. Poets, B. Redmond, D. L. Robinson, D. Anton-Stephens.
L.M.D., L.Cit., and L. Oaster. Sc.—I. Citron.

Medico-Legal

LEUKAEMIA AND WAR SERVICE

A driver in the Royal Army Service Corps was one of those whose duties took them to Belsen Camp soon after it was discovered. He stayed there a few days, and seven days later he fell ill with an acute type of leukaemia. He was flown to England but died in about four weeks. His widow claimed a pension. Before 1944, she would have had to prove that the death had been attributable to war service, but by the Royal Warrant which came into force at the end of 1943 claimants are in a much stronger position, for the Minister must now prove that the prescribed conditions have not been fulfilled—i.e., that the death must have been due to or hastened by a wound, injury, or disease attributable to war service, or the aggravation by war service of a pre-existing trouble. The claimant is given the benefit of all reasonable doubt. Moreover, as leukaemia was not noted in any medical report made on the driver at the beginning of his service, the widow had a presumption in her favour that it was attributable to his service. The Minister and the Pensions Appeal Tribunal both found against her and she took the case to the High Court.

Mr. Justice Denning's judgment (for a report of which we are indebted to the British Legion) shows how heavily the scales are weighted in favour of the claimant in a Service pension case. The Medical Services Division of the Ministry had stated that leukaemia was a condition in which there was an overgrowth of the white cells of the blood; there was no evidence that the disease was caused by any known organism; the changes which occurred were generally regarded as neoplastic, affecting the white-blood-cell-forming tissues; and the disease ran a characteristic course which in the acute type was rapidly fatal. This, said the judge, told the court nothing about the cause. The Division concluded that leukaemia was not a condition of which the onset or progress could be regarded as affected by conditions of service, including those which the widow alleged. If, said the judge, the earlier part of this opinion had contained material sufficient to warrant such a conclusion, he would have been unable to interfere with that evidence, but he found nothing to do so in any way. Considering that the disease had shown itself after the man had stayed in Belsen Camp, and in view of the strong presumption created by the absence of any mention of it in an initial medical report, the medical evidence against the claim must be particularly cogent in order to defeat it, and must establish clearly that all external causes could be excluded. This it had not done. He therefore reversed the finding of the tribunal and granted the pension.

Sir James Berry, F.R.C.S., who died on March 17, left £38,746 gross, with net personality £38,514. He left one-sixth of the ultimate residue of his estate to be divided between the Royal Free Hospital, Royal College of Surgeons, Royal Society of Medicine, Medical Society of London, the Commons, Open Spaces and Footpaths Preservation Society, the Geological Society, the Bucks Archaeological and Architectural Society, and the Society of Antiquaries.

No. 48

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital statistics in the British Isles during the week ended Nov. 30.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	47	5	11	3	—	45	1	17	5	1
Deaths	—	—	1	—	—	—	—	2	—	—
Diphtheria	301	24	85	42	10	676	33	221	89	18
Deaths	—	—	—	—	—	10	—	—	5	—
Dysentery	58	17	36	—	—	231	21	68	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	49	13	6	—	—	56	17	9
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	64	6	9	49	1	39	2	14	48	—
Deaths	—	—	—	—	—	—	—	—	9	—
Measles*	6,005	221	331	45	106	501	43	109	168	—
Deaths	2	—	—	—	—	—	—	1	1	—
Phthalmia neonatorum	61	2	10	—	1	64	5	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	19	1	2(B)	—	—	6	—	3(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	745	64	11	2	6	746	41	5	2	7
Deaths (from influenza)	20	3	—	—	—	30	7	1	1	—
Pneumonia, primary ..	—	41	319	33	8	—	33	238	44	4
Deaths	—	—	—	—	—	—	—	—	12	—
Poliomyelitis, acute ..	1	—	—	—	—	5	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	18	—	—	16	—	20	1	—	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	3	10	—	—	—	4	21	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia† ..	130	5	10	1	—	142	7	12	1	—
Deaths	—	—	—	—	—	1	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,383	108	309	33	53	1,879	163	314	17	42
Deaths	—	—	—	—	—	2	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	—	9	1	12	1	1	5	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	1,878	109	253	56	28	1,384	79	42	41	3
Deaths	8	—	1	—	1	9	—	2	—	—
Deaths (0-1 year) ..	418	67	80	—	11	344	38	54	36	10
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	4,763	778	662	133	4,703	739	613	199	107	—
Annual death rate (per 1,000 persons living) ..	—	—	14.6	—	—	—	13.9	12.8	—	—
Live births	9,609	1,433	1,139	247	6,561	895	808	370	217	—
Annual rate per 1,000 persons living ..	—	—	22.9	—	—	—	16.2	23.9	—	—
Stillbirths	294	29	39	—	209	20	29	—	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	33	—	—	—	35	—	—	—

*Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary fever for England and Wales, London administrative county, and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, 16, 23, and 30.

EPIDEMIOLOGICAL NOTES

Epidemic Gastro-enteritis

Up to Dec. 15, Leicester City General Hospital had reported the deaths of 15 infants among 36 cases of gastro-enteritis. Cases first appeared in two nurseries about Sept. 6. An explosive spread began on Dec. 4 and involved an additional emergency nursery; all three nurseries (45 beds) have now been closed. The cases have begun about the fifth day of life and have not responded to penicillin or sulphonamides; deaths have occurred in the second week of infection. There have been associated mild symptoms in mothers and in the nursing staff. No pathogens have been isolated, but the investigating bacteriologist is said to be satisfied that the infection has not arisen from milk.

The Cowley Road Hospital at Oxford has had since July 75 cases of gastro-enteritis, with no deaths, all restricted to one 36-bedded block. The attack rate was July 19%, August 38%, September 26%, and October 76%; about 10% of mothers developed symptoms after returning home. The infection was first noticed in the mothers and only subsequently observed in babies. Almost all the staff of this block have been attacked. Wards have been closed for fourteen days from Dec. 7, and so far no causative organism has been isolated. One mother was transferred to cubicle-isolation under rigid conditions in another hospital; four out of a staff of seven specially trained in barrier nursing became affected.

Preston has had 18 (6 recent) deaths out of about 200 babies born in the wards in the last six months; 21 mothers and babies were sent home when the wards were closed on Dec. 14.

Reports of 4 further deaths from Windsor and Glasgow may or may not be significant. Earlier in the year Leeds City Hospital had 15 deaths and the maternity wards there were closed for three weeks.

Discussion of Table

In England and Wales the only large changes in the notifications of infectious diseases were increases in measles 577 and whooping-cough 105. Small decreases were recorded for scarlet fever 19, diphtheria 18, and dysentery 11.

The largest of the local rises in the incidence of measles were Durham 191, Lancashire 116, Warwickshire 69, and Surrey 32, while the biggest decrease was Yorkshire West Riding 90. The trends of whooping-cough fluctuated, and the most important increases in notifications were Essex 31 and Surrey 23. The only change of any size in the returns for scarlet fever was an increase of 23 in Middlesex. A small decrease in cases of diphtheria was recorded in most areas, the only exception being London, where the cases rose from 12 to 24. The largest centre of London also had 17 cases of dysentery.

In Scotland increases were recorded in the notifications of whooping-cough 48 and measles 30, and decreases were reported for scarlet fever 29, diphtheria 22, and acute primary pneumonia 20.

In Eire the chief features of the returns were decreases in diarrhoea and enteritis 12, and measles 12, and an increase in the cases of whooping-cough 13. The incidence of poliomyelitis remains unchanged with 16 notifications.

In Northern Ireland a large increase was recorded in the outbreak of measles in Belfast C.B.; the cases increasing from 47 to 106. Scarlet fever was slightly more prevalent in the country, the notifications increasing by 8.

Week Ending December 7

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,277, whooping-cough 1,783, diphtheria 313, measles 6,466, acute pneumonia 677, cerebrospinal fever 40, dysentery 76, acute poliomyelitis 14, paratyphoid 6, typhoid 7.

From January, 1947, a new two-monthly *Nutrition Bulletin* is being published in printed form by the Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1. The subscription rate is fixed at 3s. per annum. The *Bulletin* will deal not with the basic principles of nutrition but with the theory and practice of the application of these principles to social betterment. It will, in brief, be concerned with the growth of the various nutrition services, the principles underlying public instruction, the food habits of the community, and the place of diet in the national health. The advisory editorial group which will direct the policy of the new publication will carry on the bulletin service established by the Children's Nutrition Council.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery, Obstetrics and Gynaecology will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, *British Medical Journal*, B.M.A. House, Tavistock Square, London, W.C.1.

A lecture to commemorate the centenary of the first public administration of ether in Europe will be delivered by Dr. Massey Dawkins, at University College Hospital Medical School, Gower Street, W.C., on Saturday, Dec. 21, at 4.45 p.m.

A series of six lectures on "The Applications of Atomic Physics in Medicine" will be given by Prof. W. V. Mayneord at the British Institute of Radiology, 32, Welbeck Street, London, W., on Wednesdays at 5 p.m., from Jan. 1 to Feb. 5, both dates inclusive.

At a special meeting of general practitioners of the East Ham area held on Dec. 4, 1946, under the presidency of Dr. J. Stanley Thomas, J.P., a presentation of an illuminated scroll was made by Dr. R. V. Brews, J.P., to Mr. F. J. Ashford, the Clerk of the East Ham Insurance Committee. The scroll, which was signed by every general practitioner in the area, reads: "... to commemorate his 25 years' service and as a tribute not only to his administrative ability, but to his invaluable help and kindness to the whole profession."

Sir Drummond Shiels, M.B., who was Parliamentary Under-Secretary for India in 1929 and for the Colonies in 1930-1, has been appointed a member of the Council to further the economic and social development of the Colonial Empire.

The Empire Rheumatism Council recently held a dinner in honour of European delegates to the International League against Rheumatism, Lord Horder being in the chair. Among those present were the following members of the medical profession. Prof. Jarlov (Copenhagen); Chief Physician Edstrom (Lund); Dr. Kalbak (Copenhagen); Dr. Loring Swaim (Boston); Dr. B. Schlesinger; Dr. W. S. C. Copeman; Dr. E. R. A. Merewether; Mr. A. G. Timbrell Fisher; Dr. F. D. Howitt; Dr. Oswald Savage.

Because of the increased demands upon Members made by the present Parliament, Sir Ernest Graham-Little, Independent M.P. for London University, has resigned the chairmanship of the University External Council, which he has held continuously for nearly 25 years.

There are to be two medical consultants for the Highland area of Scotland. Dr. Thomas Scott, Inverness, has already been appointed, and on Dec. 4 a panel under the chairmanship of Prof. R. S. Aitken, University of Aberdeen, selected the following list from which the second will be chosen on Jan. 7: Drs. C. R. Greig, Stanley Alstead, John R. Forbes, J. Gibson Graham, R. D. C. Johnstone, Donald R. Macdonald.

A picture library has been established by the British Red Cross for the purpose of lending reproductions of the finest pictures, both old and modern, to patients confined for a long time to hospital or sanatorium. Hospitals pay an annual subscription at the rate of 1d. per picture per week. Inquiries should be addressed to the organizing secretary, B.R.C.S. Picture Library Scheme, 14, Grosvenor Crescent, London, S.W.1.

From all parts of Scotland and from the Shetlands some 90 delegates went to Edinburgh on Dec. 6 to discuss health education in schools at a conference sponsored by the Scottish Council—the first of its kind to be held. The delegates represented medical officers of health, education bodies, and the central government departments involved. Many local meetings in various Scottish towns have recently attracted large and enthusiastic audiences. By health education is meant teaching school-children "the principles and art of healthy living" to equip them to cope with the strain of daily life. The Council has appointed a full-time medical lecturer to help in the counties, where problems of health education require a different approach from that used in the cities.

Bradford Primary Education Committee has decided to purchase Langley, Baildon, for the treatment and education of rheumatic children. The house will provide accommodation for 35 children.

Dr. William Langham Garner, of Bournemouth, who died on March 16, left £24,165. He left £2,000 to Guy's Hospital to help "sufferers from cancer."

After 36 years of distinguished service in the United States Public Health Service, Dr. Lewis Ryers Thompson, Assistant Surgeon General in the Bureau of State Services, has retired. He has been succeeded by Dr. Hermann E. Hilleboe, who has been Chief of the Tuberculosis Control Division since its inception in 1944.

The British Legion Convalescent Home at Churchill Court, Sevenoaks, Kent, which has accommodation for fifty ex-Service men and women of the 1939-45 war, is intended for those in need of (a) convalescent treatment for two or three weeks to enable them to recover from a severe illness; or (b) a fortnight's holiday to prevent a breakdown in health. Applications for admission are made through the local British Legion Service Committee, or by application to the British Legion and United Services Fund Benevolent Department, Pall Mall, London, S.W.1.

The Thistle Foundation, whose purpose is the medical treatment and psychological rehabilitation of Scotland's most gravely disabled men, is not affected by the National Health Service Act. Its president, Mr. Tudsbury, C.B.E., explained at the recent annual general meeting that it was essentially a housing scheme and not a hospital. Contributions had suffered somewhat since the introduction of the Bill. The total amount now surpasses £382,000, and donations come in from all parts of the world.

A team of workers connected with the medical and public health services of Ceylon has arrived in this country, under a scheme arranged between the Ceylon Government and the National Association for the Prevention of Tuberculosis, to study the latest methods of tuberculosis control and of the treatment and after-care of tuberculous patients in Great Britain. The team consists of one doctor, Dr. J. R. Wilson, who has already specialized in tuberculosis; one health officer, Mr. W. Clement Fernando, who will be in charge of a training centre for sanitary inspectors, social workers and teachers on his return and is especially interested in the social welfare side; and two nurses. The Singhalese team is expected to make a stay of about six months, and will be given opportunities of visiting and working in various institutions, clinics, and centres connected with tuberculosis work, and of meeting specialists in the different spheres of that work.

The future of King Edward's Hospital Fund for London was referred to by Lord Catto at a meeting of the Fund's General Council on Dec. 10. The Fund would be in a similar position to that of the Rockefeller Trust, and would be used for the "support, benefit, or extension of the hospitals of London." With the disappearance of the distinction between voluntary and publicly provided hospitals both types would come within the scope of the Fund. The improvement of hospital catering, provision of special mattresses, and the establishment of a recovery home for diabetics are among the purposes to which the Fund has recently been put. Total disbursements for hospitals during the year were £364,000, and in addition grants amounting to £7,500 were made from the radioltherapy fund.

The first number of the *Journal of General Microbiology* of the newly founded Society for General Microbiology, whose president is Sir Alexander Fleming, will appear in January, 1947, under the editorship of Drs. B. C. J. G. Knight, and A. A. Miles. Prof. W. B. Briely and Drs. T. Gibson, A. T. R. Mattick, Kenneth Smith, A. W. Stableforth, and D. D. Woods will be associate editors. There will at first be three numbers a year; the subscription is 50s. Papers for publication should be sent to Dr. A. A. Miles, National Institute for Medical Research, Hampstead, London, N.W.3; other communications to the Cambridge University Press, Bentley House, 200, Euston Road, London, N.W.1.

The first annual report of the Liverpool Cancer Control Organization describes its development since 1939, and the activities of its first year as an incorporated body. The Organization was founded to acquire the radium previously held by several different institutions in Liverpool and to provide a complete cancer service on a regional basis. As an independent corporation it provides a unified administration which transcends local authority boundaries. It contracts with local authorities to carry out their obligations under the Cancer Act and makes arrangements with the various institutions which can provide appropriate services. Although much of the work of the Organization will presumably be taken over by the National Health Service, the governing body believes that it has constructed a service and an administration which should fit well into the new pattern, and that it has provided an interesting and instructive experiment in a new type of hospital administration. The Organization, it is thought, may well have a useful future in independent non-official activities, including research.

Since the calling up of women for enlistment in the Women's Auxiliary Forces has ceased the regulations requiring information to be supplied about the tuberculosis history of women called before medical boards have been revoked by the Public Health (Tuberculosis) Regulations, 1946.

Alfred Beuthin Danby, F.R.C.S., F.R.C.O.G., of Kidderminster, late obstetric surgeon to Birmingham Maternity Hospital and past president of the Midland Obstetrical Society, left £16,508. Matthew Clayton-Mitchell, F.R.C.S., of Norfolk, Senior Medical Officer of the Gambia, British West Africa, left £10,167. Sir Arthur Lisle Ambrose Webb, K.B.E., C.B., C.M.G., late R.A.M.C., of Balcombe, Sussex, secretary and treasurer of Queen Mary's (Roehampton) Hospital 1933-42, left £7,737.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Antology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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R.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh

ANY QUESTIONS?

Threadworms in Infants

Q.—*What is the best method of dealing with threadworms in an infant aged 2 years?*

A.—The best drug to date is gentian violet. It is given in enteric-coated capsules, the dose being 1/6 gr. (11 mg.) per year of apparent age, each day for about a week. A second similar course is given after one week's rest. The child in question could have two capsules, one after breakfast and one after supper, each containing 1/6 gr. It is a good plan to apply a little ung. hydrarg. ammon. dil. round the anus at night, keep the nails short, and let the child wear pyjamas or knickers to prevent scratching. If a relapse occurs, it may be worth while having other members of the household examined (by anal swabs); one of them may be a symptomless carrier.

Dinitrophenol

Q.—*Is it ever permissible or advisable to give dinitrophenol for the reduction of obesity?*

A.—Dinitrophenol is a dangerous drug which should never be used. It causes cataract in a proportion of patients. This is an absolute contraindication.

Coombs' Test

Q.—*How is Coombs' test for haemolytic disease of the newborn performed? Where can I obtain the anti-human-globulin serum required for the test?*

A.—For the performance of the direct Coombs' test a few drops of blood taken from the newborn infant, from the cord or from a heel-prick, are dropped into citrate. The cells are suspended in enough saline to give a suspension of 1% or less and are centrifuged. This washing with saline is repeated twice more and the cells are then again suspended in saline to give approximately a 5% suspension. A drop of this is mixed on a tile or slide with a drop of suitably diluted anti-human-globulin serum, allowed to stand for a minute, and then rocked extremely slowly. In positive cases obvious macroscopic agglutination usually appears in a minute or two, and in any case within ten minutes. It is wise to put up two controls, one using saline in place of antiserum and the other using normal human red cells in place of the baby's cells. The appropriate dilution for a given batch of antiserum will have been determined previously by titration. A positive result means that antibody globulin, presumably maternal, is present on the surface of the child's cells. In newborn infants, using a reliable serum, the test appears to be pathognomonic of haemolytic disease. It is very convenient for determining rapidly whether a given child ought to be transfused, but it does not indicate whether the antibody concerned is in fact common anti-Rh (anti-D). This should be ascertained, preferably before birth, by testing the mother's cells and serum, and blood of appropriate type (Rh-negative or other) should be made available for transfusion.

The indirect Coombs' test may be used for detecting minute traces of maternal antibody. The maternal serum is incubated with an equal amount of 2% suspension of Group O Rh-positive (preferably R₁R₂) cells for half an hour. The cells are then washed and tested as described above. Agglutination

shows that antibody is present in the maternal serum. Anti-human-globulin serum for these tests is not yet generally available but will probably be so in a few months' time. Regional blood transfusion officers are kept informed of the supply position.

De-sterilization

Q.—*A patient has had four Caesarean sections, producing five healthy children. She was sterilized after the birth of twins four years ago. She now wishes to have another baby, and is to undergo an operation to make this possible. What are the chances of her becoming pregnant?*

A.—The chances of the operation being successful depend very much on what type of sterilization procedure was carried out previously. If the continuity of the tubes was not destroyed and the abdominal ostia were merely buried extra-peritoneally, it may be possible to restore the anatomy to normal. If the technique employed was resection of the intramural parts of the tubes and the cornua of the uterus, then reimplantation of the outer ends of the tubes would offer a reasonable chance of success. If, however, the middle portions of the tubes have been removed then it will be extremely difficult to restore their continuity and a successful result is only a remote possibility. In general, the chances of success should be somewhat higher than those attending similar plastic operations on tubes obstructed by previous infections because the operation will be on healthy rather than diseased tissue.

Chemoprophylaxis of Rheumatic Disease

Q.—*American workers claim that the daily use of sulphamides over long periods by young people who have had one or more attacks of rheumatic fever will reduce the chances of recurrence, and therefore the risk of crippling heart disease. Are these claims upheld by British workers?*

A.—A Medical Research Council committee has been engaged on a repetition of American work on this subject but has not yet published its findings. As regards the rationale of the treatment, Dr. Cruickshank, who has recently visited the U.S.A., has pointed out (*Monthly Bulletin of the Ministry of Health*, July, 1946, p. 146) that numerous studies indicate that rheumatic fever follows an attack of streptococcal tonsillitis or pharyngitis usually after an interval of ten days to three weeks. "Only a small proportion of those initially infected develop rheumatic fever, but these susceptible individuals, once affected, are prone to recurrent attacks if they are again infected by the haemolytic streptococcus. It therefore seemed worth while to prevent, if possible, rheumatic subjects from acquiring the secondary streptococcal infection which reactivates the rheumatic disease. . . . While any patient who has had one attack of rheumatic fever might be considered suitable for chemoprophylaxis, a fair proportion of children do not develop cardiac complications. Prophylactic use of the drug might therefore be limited to children who have already had two attacks and to those who have had one attack accompanied by rheumatic carditis. Sulphadiazine, sulphamezathine, or sulphanilamide are the drugs of choice."

Tonicity of Penicillin Solutions

Q.—*To minimize the discomfort of injection the solution used should be isotonic. A solution of 100,000 units of penicillin in 5 ml. of water is hypertonic, and in saline solution will be even more irritating to the tissues. Why, then, is normal saline solution used to dissolve penicillin for intramuscular injections?*

A.—The tonicity of a penicillin solution depends not only on its concentration but on the impurities in the penicillin. What would be true of one sample would therefore not necessarily apply to another. In so far as isotonicity is important it would be helpful if manufacturers stated for each batch the concentration of it in solution which is isotonic; the amount of sodium chloride needed to render a weak solution isotonic could then be added. It is true that the concentrated solutions now used for giving large doses intramuscularly in a small volume are usually hypertonic; such solutions should therefore be made in distilled water and not in saline. Many users have always done this and still do so.

Lövset's Manœuvre for Breech Delivery

Q.—Is Lövset's manœuvre for breech delivery recommended? If so, will you please describe it.

A.—This manœuvre is concerned with the delivery of the shoulders and arms and was described by Jörgen Lövset, of Bergen (*J. Obstet. Gynaec. Brit. Emp.*, 1937, 44, 696). It is based on the fact that, owing to the inclination of the pelvic inlet, the posterior shoulder enters the pelvic cavity before the anterior—i.e., when the trunk of the child is delivered so far that the inferior angle of the scapula is visible, the posterior shoulder is below the sacral promontory whereas the anterior one is still behind or above the pubis (Fig. 1). At this stage in the delivery, and with the patient in the lithotomy position, Lövset advises rotation of the trunk of the baby through 180 degrees, the back passing anteriorly (Fig. 2). This brings the posterior shoulder to the front, but on a lower plane so that it appears below the pubic arch

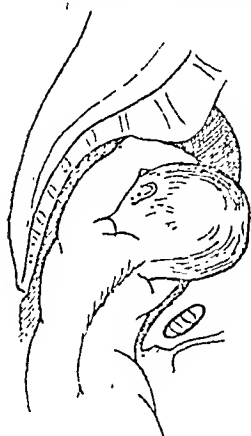


FIG. 1

(Fig. 3). From this position it either delivers itself spontaneously or it can be lifted out by one finger placed in the bend of the elbow. The body of the child is now rotated 180 degrees in the opposite direction, thus bringing the other arm to the anterior position again. This also appears at a lower level and can be lifted out from beneath the symphysis. If the rotation is carried out before the posterior shoulder is below the sacral promontory, the manœuvre will not succeed. It is easier to perform when the child is well-developed and firm than when it is small and under-developed. It is applicable no matter whether the foetal arms are flexed, extended, or in the nuchal position.

The advantages claimed for the method are that it avoids fracture of the foetal humerus and that it is easier and more efficient than the traditional methods of bringing down the arms. On the other hand it involves risk of fracture of the clavicle and of damaging the abdominal viscera unless care is taken to grip the foetus by the pelvic girdle. If the shoulders are tightly wedged the vertebral column is exposed to an extreme rotatory strain. The method is not widely used in this country although it has some enthusiastic advocates. It is unnecessary when the arms are flexed, but if they are extended it is a useful method to have "up one's sleeve." If applied correctly it may succeed when other methods have failed.



FIG. 3

Mineral Oil Dermatitis

Q.—A young adult male developed oedema of both hands and wrists, with urticaria of the face and neck, after working with diesel and other oils. Can you suggest treatment, and should he seek other work? Does strong sunlight make the exposed skin more sensitive to these oils?

A.—If this condition can be definitely attributed to contact with mineral oil, the man will be well advised to avoid further exposure. The part played by sunlight in the aetiology of the

condition is uncertain. The immediate treatment would be that appropriate for an acute dermatitis. Attempts at desensitization have proved disappointing.

Bovine Tuberculosis

Q.—How many deaths each year are due to bovine tuberculosis? Is it more common in the towns or in the country? To what extent is milk pasteurized in the towns as compared with country districts?

A.—There are no exact statistics relating to either bovine tuberculosis or the pasteurization of milk. Typing demands considerable time and skill and is not done as a routine, so our knowledge of deaths from tuberculosis of bovine origin are based on the findings of relatively small series. Using the ratios found in these series the deaths from bovine tuberculosis are estimated to be 1,500–2,000 per annum. There is a decided geographical distribution of this disease, low in the South and high in the North. The number of persons suffering from tuberculosis of bovine origin is unknown. In London and some of the other large cities practically all the milk is heat-treated while in country districts the milk is mainly raw, but between these extremes there is a considerable variation.

LETTERS, NOTES, ETC.**Aneurysm of Superficial Temporal Artery**

Mr. CHARLES MACLAY, F.R.C.S., writes from Glasgow: A man aged 23 was admitted to hospital in July, 1946. He had complained for six months of pain in front of the left ear, and of a noise in the head, synchronous with the pulse. Also he had a slight watery discharge from the left ear. On examination there was found in front of the left ear a swelling about the size of a marble, which exhibited expansile pulsation, a well-marked thrill on palpation, and a loud systolic bruit on auscultation. This swelling also bulged into the anterior wall of the external auditory meatus. The past history was that in May, 1945, this patient was wounded in the left side of his scalp by fragments of 88 mm. shell and was operated upon, but did not know if any foreign body was removed. At that time he experienced pain in front of the left ear; this lasted two weeks and then disappeared. X-ray examination showed several minute foreign bodies in the scalp but none in the immediate vicinity of the swelling. At operation, an aneurysm of the left superficial temporal artery was found. This was dissected free and removed entire. The wound healed satisfactorily, and symptoms were completely relieved.

Old and New

Dr. A. HENRY GREGSON (Cromer) writes: May I plead for greater care in claiming "new" techniques. One might remember that the "dorsal slab" for Colles's fracture was the standard treatment in the army of Napoleon I, that the mould off cheese was a common application for septic wounds in remote parts of England ninety years ago, and that the head-suspension plaster jacket for sciatica due to scoliosis is a very slight adaptation of treatment used 2000 B.C., there being a stone carving showing this method in existence.

Artificial Limbs for Women

Mr. A. W. SHAW (Rochampton House, S.W.15) writes: I would refer to Mr. C. R. Howard's communication (Nov. 16, p. 760) regarding the points in the design of the modern artificial limb referred to by your correspondent, "L. S. S. W." (Sept. 21, p. 438). Mr. C. R. Howard has, in my view, answered each point in a very satisfactory manner, but apparently he is not aware of the method employed at Rochampton in regard to the obviation of the glitter of the enamel. It is the custom at Rochampton to supply a matt finish enamel which prevents the glitter. You may decide to mention this point in view of the considerable publicity that has already been given to the subject.

Lumbar Puncture

Dr. ANDREW J. NAIRN (Burnside, Lanarkshire) writes: In obese subjects where spinal analgesia is the method of choice, it may be very difficult, if not impossible, to palpate the spine of the fourth lumbar vertebra. The iliac crest is quite readily found, but unless the correct interspace is accurately localized it will be practically impossible to locate the theca. Defining the mid-line is the difficulty. If, however, a line is drawn with iodine at right angles to the iliac crest, and another line prolonging towards the head the sulcus formed by the meeting of the two buttocks, these lines will meet over the fourth lumbar spine (if the patient is in the correct position). Thus the mid-line is accurately defined, and it is a simple matter thereafter to locate the required interspace (usually between lumbar 3 and 4) and to administer the injection.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 21 1946

British Medical Association PROCEEDINGS OF COUNCIL

Additional Meeting: Wednesday, December 11, 1946

An extra meeting of the Council was held on Dec. 11 at 12 noon. Dr. H. Guy Dain was in the chair, and there was a full attendance.

Deaths of former members of Council were reported—namely, Dr. Arnold Lyndon, Dr. T. S. Rippon, and Sir Edward Newbury Thornton (South Africa)—and the chairman was authorized to forward letters of condolence to the respective families.

Results of the Plebiscite

A statement of the figures of the plebiscite was placed before the Council. The chairman commented upon the high proportion of practitioners who had sent in returns—81.4% of the members of the profession other than those in the Services. He said that it was higher than the percentage attained in most elections, parliamentary or other. It was now for the Council to consider what action should be taken in the light of the returns.

The Council then proceeded to a detailed examination of the analyses up-to-date figures, and a debate took place on the inferences to be drawn from them and the action to be taken. On the motion of Dr. R. W. Cockshut, seconded from various parts of the Council, the following resolution was carried:

That the Negotiating Committee be advised that in view of the results of the plebiscite the Minister be informed that because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into discussions with the Minister on the Regulations to be made under that Act.

It was further agreed that this should be a recommendation to the Representative Body, and that a Special Representative Meeting should be called for Tuesday, Jan. 28, 1947.

Again on the motion of Dr. Cockshut a hearty vote of thanks was accorded to the staff for the efficiency and expedition with which the work on the plebiscite had been organized and carried through.

On the assumption that the Representative Body would approve the recommendation set out above it was agreed to appoint a small executive whose principal work it would be to organize and hold together the profession during the coming months, and also to consider, with the best professional advice obtainable, the legal bearings of any action contemplated—a body which could act quickly in the possibly changing phases of the dispute which lay ahead.

It was decided that this executive should consist of the following: the officers of the Association; the chairmen of the Insurance Acts, General Practice, and Consultants and Specialists Committees (Dr. E. A. Gregg, Dr. S. Wand, and Mr. A. M. A. Moore), the chairman of the Panel Conference (Dr. J. A. Brown), Mr. Lawrence Abel, Dr. R. W. Cockshut, Dr. W. E. Dornan, Mr. A. S. Gough, Dr. Frank Gray, Mr. R. L. Newell, Dr. J. A. Pridham, and Dr. N. E. Waterfield.

Areas of Regional Boards

The proposed areas of the Regional Hospital Boards were considered. The chairman said that he had been asked whether, having decided not to enter into negotiations, the Council could fittingly offer criticism of any proposed arrangements, but in his view these suggested geographical boundaries might well

be considered both centrally and locally. Dr. Talbot Rogers also said that this matter should not be allowed to go by default. The regions had been delimited, not with regard to natural hospital areas as these were understood but to university centres, and it was open to consideration whether some of them were the most suitable for hospital administration. The area proposed for Bristol, for example, was very cumbersome, and to make the whole of Wales one region did not seem to be administratively very happy. Further, were 14 regions enough for England and Wales?

Mr. Abel pointed out the undue shortness of the time allowed for criticism (the Minister expected to receive any observations from the Association and other bodies within one month of the issue of the provisional proposals), and it was agreed to bring this point to the attention of the Ministry.

Attention was drawn to the question of membership of regional boards as well as of any councils or committees set up under the Act. The advice of the Association was that no member should accept a place on these bodies pending the decision of the Special Representative Meeting. It was pointed out that this was one of the problems, perhaps involving legal issues, which the Executive Committee just set up would have to consider at the outset.

Reform of G.M.C. Procedure

Mr. Dickson Wright presented a report for the General Medical Council Committee. He said that the Committee had spent a considerable time discussing the penal powers of the G.M.C. and had sent observers to a conference on the subject between G.M.C. representatives and the defence societies. A number of recommendations (30 in all) had been formulated on the basis of a joint statement prepared by the three defence societies. The G.M.C. had prepared a draft Medical Bill of 13 clauses the purpose of which would be to strengthen its position in dealing with penal cases by giving it the power to subpoena witnesses and to take evidence on oath.

Dr. J. W. Bone, a member of the G.M.C., gave the Council a summary of the draft Bill. Apart from the provisions relating to penal procedure, it was proposed that the Council should take power to visit medical schools to inspect teaching and not merely examinations as at present; also that the Goodenough Committee's recommendation be implemented, that one year's residence at hospital should be required of newly qualified practitioners. The Bill proposed to increase the number of direct representatives, at present standing at six, to nine; the recommendation of the B.M.A. Committee was that they be increased to fourteen. Dr. Bone added that there was very little that was controversial in the Bill, but if the B.M.A. Committee proceeded with all its recommendations controversial issues would be raised and there would be no effect at all except a destructive one so far as the Bill was concerned. They had been told that if this was not an agreed Bill there would be no chance even of its introduction into the House of Commons. He suggested that the present recommendations be sent to the G.M.C. and that a conference might be arranged with a view to reaching agreement on these matters.

Dr. J. B. W. Rowe suggested a joint discussion between the B.M.A. Committee and the committee of the G.M.C. which had prepared the Bill, with a view to reaching agreement as to

the points which were non-controversial, and that the points which were controversial should be extracted from the present recommendations and brought back to the Council for further discussion.

This course was agreed to, and the recommendations were approved as a basis for further discussion.

The "Closed Shop"

Dr. J. B. Miller took the chair of the Council while Dr. Dain, as chairman of the special committee in charge of the subject, presented a report on the "closed shop" issue. He said that the committee had started with a unanimous expression of opposition to any restriction being placed on members of the profession as to joining any organization. This was a simple matter so far as those local authorities were concerned which required membership of a trade union, whether affiliated or not to the T.U.C. But difficulties arose when the resolution of the authority required membership of a trade union or professional organization, for a position might arise in which the Association would have to advise its own members not to apply for or accept an appointment which required the applicant to be a member of the B.M.A., and if such a member nevertheless accepted the appointment the ethical rules might have to be invoked with a view to his expulsion. The course of events at Willesden had to some extent changed the situation. An advertisement for a medical officer of health for Willesden which imposed the trade union condition had been refused for insertion in the *Journal*, but since that action was taken the nurses at Willesden had fought the first round of the battle and had gained the position that professional officers of that local authority should not be required to join an association of any kind. He understood that the Willesden Council had now removed its restriction.

The Secretary said that he had been in touch with the Royal College of Nursing throughout the Willesden discussion. In the result the Willesden Council, notwithstanding the recommendation of its general purposes committee, decided to drop the whole thing. The reason for its alteration of position was partly a communication from the Minister of Health to local authorities in which he stated that these matters should not be determined by the unilateral action of local authorities. Willesden had brought the issue right home.

Dr. Cockshut pointed out that Edmonton had appointed two assistant medical officers, and had required membership of a trade union. Should not their resignation be required? Dr. Waterfield said that there had been no "Important Notice," and these people had had no warning at the time, so that it would be better not to take retrospective action. The Council agreed that any action should relate to future cases and should not be retrospective.

The following was approved as a statement of policy to be recommended to the Representative Body for adoption:

(1) The B.M.A., representing the great majority of doctors and enjoying a membership of over 54,000, is the negotiating body for the medical profession, recognized as such by the Ministry of Health and the associations of local authorities.

(2) In the view of the Association it is undesirable on principle that any practitioner should be required to join any body, B.M.A. or other. The Association prefers that its membership should remain voluntary, the strength of the Association remaining an expression of the profession's confidence in its representative body.

(3) Where an authority imposes upon its officers or candidates for office a requirement of a membership of a particular body or bodies, B.M.A. or other (but excluding a medical defence society), the Association should protest to such authority and afford financial help to any practitioner who suffers as a result of accepting the advice of the Association. All advertisements for whole-time public health medical officer appointments of such authorities, submitted by such authorities for publication in the *British Medical Journal*, shall be rejected, and the profession advised not to make applications for such posts. The medical press should be asked to co-operate.

It was agreed that it was necessary to exclude from the operation of any such resolution requirements on the part of authorities that applicants should be members of a defence society; also that the Department of Health for Scotland should be coupled with the Ministry of Health in the first paragraph of the resolution.

Miscellaneous Business

On the recommendation of the Consultants and Specialists Committee approval was given to proposals for increases in the maximum fees payable under Part II of the Second Schedule of the Pensions Appeal Tribunals (England and Wales) Rules, 1943. The increases were from two guineas to three guineas for attendance of a medical witness before a tribunal and from five shillings to one guinea for medical certificates and reports obtained by the appellant.

Authority was given to the Psychological Medicine Group Committee to co-opt three additional members in order to make the committee representative of the various branches of psychiatry; and also to have at least one observer from the committee, to attend meetings of the Committee on Psychiatry and Law.

A letter was read from the British Association for the Welfare of Spastics asking the B.M.A. to appoint a representative to attend a meeting for the purpose of constituting the council of that Association on a more widely representative basis. It was left to the Orthopaedic Group Committee to nominate a representative. Incidentally some members of the Council criticized the word "spastics" as a description of sufferers from cerebral palsy.

The Society of Medical Officers of Health invited the Council to nominate a few general practitioner members to continue a discussion with representative members of the Society on the future relation between the public health service and the general practitioner in regard to the care of children from birth to school-leaving age under the new National Health Service scheme. The Council accepted the invitation and appointed for this purpose Dr. F. Gray, Dr. J. A. Pridham, Dr. H. H. G. Sutherland, and Dr. J. G. Thwaites.

The Council accepted a recommendation of the Dominions Committee that a special committee be appointed to consider and report on the question of contact with and co-operation between the profession in the Dominions and in this country, and between the Dominions themselves. The choice of personnel of the committee was left to the next meeting.

Mr. Lawrence Abel was appointed to represent the Association at a conference to be called by the British Standards Institution at the request of the British Hospitals Association on the question of forming an advisory committee to recommend the preparation of British standards for articles of hospital equipment in common use.

The Secretary read a letter from the Food Rationing (Special Diets) Committee of the Medical Research Council in reply to the protest which the B.M.A. Council had made at its last meeting concerning the statement of the Committee that the medical profession was not maintaining a high standard of accuracy in its priority milk certification. The letter, which recalled the history and constitution of the committee and stated that its functions were purely advisory, was described by the chairman as not a very useful communication, but he said that there was no need to carry the controversy further, and it was to be hoped that the points made by the Council had gone home and that there would be no repetition of such statements.

It was announced that an invitation had been received from the Cambridge and Huntingdon Branch to hold the Annual Meeting of the Association at Cambridge in 1948. It was recalled that the first provincial meeting held after the 1914-18 war was at Cambridge in 1920 and was highly successful. The Branch was thanked for its invitation, which was accepted, subject to agreement concerning the date, to be considered at the next meeting of Council.

The Council concluded its business at 6 p.m.

TUBERCULOSIS ALLOWANCES

A circular from the Ministry of Health on tuberculosis allowances for dependent children authorizes increased rates as follows: for dependants aged 11 and under 16, 10s. 6d.; aged 5 and under 11, 9s.; aged under 5, 7s. 6d. The new scale applies from Dec. 16, 1946, and replaces that set out in para. 42 of Memorandum 266T so far as it relates to dependants under 16.

PAYMENT OF VISITING STAFFS OF VOLUNTARY HOSPITALS

THE GRIMSBY SCHEME

As was reported in the Proceedings of Council published in the *Supplement* of Nov. 23, the Council decided on Nov. 6 to recommend that, without prejudice to future arrangements under the National Health Service, the visiting specialist staffs of voluntary hospitals should during the interim period be paid salaries assessed on the basis of five guineas for a session of two hours. Before this decision was taken a carefully worked out scheme of payment had already been produced by the chairman of the Medical Staff Committee of the Grimsby and District General Hospital and had been approved by both the Medical Staff Committee and the Management Committee. Details of the scheme will be of interest to other hospitals which are considering the same problem.

The basis of the Grimsby scheme is the five guineas rate of payment for a session of approximately two hours, but for various reasons a rigid application of this method was considered impracticable. It would have resulted, for example, in disparities between the amounts received by different individuals, which in the special local circumstances were thought to be excessive. The scheme eventually adopted, and accepted as equitable by all concerned, is shown in the following table.

No. of Sessions	Payment per Session	Annual Salary
1½	1 at 5 guineas	£355
2	" 3 "	£436
3	" 5 "	£709
4	" 5 "	£872
6	" 5 "	£1,193

The approximate number of sessions each week which the various members of the staff consider necessary for the efficient performance of the work in their departments have been ascertained. They vary as shown above, and payment has been arranged provisionally on this basis. It has been agreed that each member of the staff will submit a monthly record of sessions actually undertaken to the chairman of the Medical Staff Committee, who at the end of three months will negotiate with the Management Committee any alterations in the provisional scheme which may prove to be necessary.

The sessional remuneration will cover out-patient clinics, theatre lists, ward rounds, and any other services rendered by the visiting staff, time spent on pay-bed cases (including operations on private cases) being excluded. The staff have agreed to forgo any remuneration for attending the hospital for emergency work and any charge for expenses of travel to the hospital. It has been agreed also that all moneys directed to the medical staff fund for allocation to the visiting staff will be absorbed in the general staff fund, as the staff will now be paid from the general funds of the hospital.

The tenure of office of the visiting staff will not be affected in any way by this new scheme, the adoption of which is without prejudice to future arrangements under a national health service.

RECRUITMENT OF SPECIALISTS

An Appeal for Women Volunteers

The Minister of Health has transmitted to the Central Medical War Committee a recommendation of the Medical Priority Committee, with which he is in full agreement, that the possibility of obtaining volunteer women specialists in certain categories for service in the Forces should be explored.

There is at present a need for gynaecologists for work among the families of Service men overseas, particularly in the B.A.O.R. Both the Army and the Royal Air Force can employ women qualified in this specialty, and also women anaesthetists, pathologists, and radiologists. The Central Medical War Committee is experiencing great difficulty in securing a sufficient number of male specialist recruits to meet the requirements of the Services and accelerate the release

of specialist officers at present serving, whose demobilization is lagging far behind that of medical officers generally. The Committee appeals for women volunteers, not above the age of 40, in the four specialist categories mentioned above. The period of service for recruits joining the Forces in 1947 will be two years, except that volunteer specialists above the age of 30 may, if they so wish, be required to serve for 18 months only. Offers of service should be addressed to the Secretary of the Committee at B.M.A. House, Tavistock Square, W.C.1, or, in Scotland, to the Secretary of the Scottish Central Medical War Committee at 7, Drumsheugh Gardens, Edinburgh.

THE NATIONAL HEALTH SERVICE ACT AND THE NON-TEACHING VOLUNTARY HOSPITALS

The letter printed below has been addressed to the Secretary of the Negotiating Committee by the Association of the Honorary Staffs of the Major (Non-Undergraduate Teaching) Voluntary Hospitals of England and Wales.

45, Lincoln's Inn Fields,
London, W.C.2.
Dec. 9, 1946

DEAR DR. HILL,

With reference to the referendum of the medical profession which is now being taken as to whether we should negotiate with the Minister on the regulations to be issued under the National Health Service Act, I am writing to inform you that the Council of this Association has reaffirmed the following resolution which has already been endorsed by the great majority of the honorary staffs of our constituent hospitals:

"That on matters affecting the principles of the medical profession as a whole the closest liaison and unity of action shall be maintained with the British Medical Association."

We shall be happy if you will give as much publicity to this in the medical and lay press as you think fit.

Yours sincerely,
(Sgd.) H. J. MCCURRICH,
President.

Correspondence

Assistants under the Act

SIR,—“Ex-Service Assistant” (Nov. 30, p. 142) voices a question which is troubling many demobilized medical officers to-day, a question which is not even remotely referred to in the Act. May I urge that the Minister be asked to elucidate this point as soon as possible?—I am, etc.,

London, S.W.7.

JOHN H. SWAN.

SIR,—There is one aspect of the new medical Act to which I would like to call attention. At present I am an assistant doctor. The situation of assistant doctors, often to some extent at the mercy of their chiefs, is not always an enviable one—not necessarily through any fault of the chiefs or of the assistant—but at present the assistant can almost always, unless he is unfortunate, look forward to buying a practice in a few years. In my own case I would have amassed the necessary funds in a year or two. But under the Act assistant doctors are to have no status whatsoever, and their plight will be more unfortunate than at present in that in a few years they will not necessarily have the prospect of becoming practitioners and having their status altered.

In the Act it is stated: “Only medical practitioners who are engaged in medical practice, otherwise than as paid assistants, are of right to provide general medical services under the Act.” No provision whatever is made for assistants such as myself, who in a few years were looking forward to being in full practice. Surely something could have been said in the Act about promotion in a few years for the man in service as assistant at the present time?—I am, etc.,

ASSISTANT DOCTOR

Staffing of Hospitals

SIR,—At a recent Rotary luncheon the speaker was a member of a teaching hospital staff. Towards the close of his talk he explained to the lay audience why the National Health Service Bill proposed differentiation between teaching and other hospitals. I understood there were two main headings: (1) That the additional facilities available enabled diagnosis of patients to be made with greater accuracy. (2) That in the appointment of medical staff the widest choice was available, so that those chosen were on a higher plane than the staff of other hospitals. If this be the general attitude of the staff of teaching hospitals, it is clear that the different treatment to be accorded to them will encourage a split among consultants when dealing with the Ministry, and, further, these reasons are tantamount to saying that if anyone is ill then only by going to a teaching hospital will he receive the best treatment. I was called upon to thank the speaker for his address, and in so doing was compelled to criticize this attitude of superiority, pointing out that selection of staff to fill vacancies only occurred at irregular intervals and that many first-class consultants were serving on the staffs of other hospitals. The staffs of teaching hospitals may seem to be placed in a privileged position under the Act, but this type of argument for lay audiences is grossly unfair to their colleagues on the staff of other hospitals.—I am, etc.,

London, S.E.10.

W. SMITH.

Association Notices

SPECIAL REPRESENTATIVE MEETING

Notice is hereby given that on the requisition of the Council a Special Representative Meeting of the British Medical Association will be held in the Great Hall, B.M.A. House, London, W.C.1, on Tuesday, Jan. 28, 1947, at 10 a.m. The business of the meeting is to consider the results of the plebiscite on the National Health Service Act and the following recommendation of the Council:

"Resolved: That the Negotiating Committee be advised that in view of the results of the plebiscite the Minister be informed that because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into discussions with the Minister on the Regulations to be made under that Act."

By order of the Chairman of the
Representative Body,

CHARLES HILL,
Secretary.

B.M.A. House,
Tavistock Square,
London, W.C.1.
Dec. 12, 1946.

GROUP OF NON-PROFESSORIAL MEDICAL TEACHERS, LABORATORY AND RESEARCH WORKERS

A meeting of the Group of Non-Professorial Medical Teachers, Laboratory and Research Workers, to which all members of the Group are invited, will be held at B.M.A. House on Thursday Jan. 2, 1947, at 2 p.m.

Members of the Group are invited to forward to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, suggestions or recommendations for consideration by the meeting.

(Sgd.) CHARLES HILL,
Secretary.

Sir Charles Hastings Clinical Prize

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition. The following are the regulations governing the award.

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice: it includes a money award of the value of fifty guineas.

2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and high order of excellence will be required. If no essay entered is of sufficient merit no award will be made. It is to be noted that candidates in their entries should confine their attention to their own observations in practice rather than to comments on previously published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, the interpretations, and their conclusions.

4. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946. The prize will be awarded at the Annual General Meeting of the Association to be held in 1947.

5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work. A prizewinner in any year is not eligible for a second award of the prize.

6. If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay the decision of the Council on any such point shall be final.

7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8. The writer of the essay to whom the prize is awarded may, at the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal* or for presentation to the appropriate Section of the Annual Meeting of the Association.

9. Inquiries relative to the prize should be addressed to the Secretary.

Meetings of Branches and Divisions

COVENTRY DIVISION

An extraordinary meeting of the Division was held in the gymnasium of the Coventry and Warwickshire Hospital on Nov. 2. All practitioners in the district were invited and more than eight attended.

An address on the plebiscite was given by Dr. S. A. Brown, of Birmingham. He explained the implications of an affirmative and negative vote. It was decided that no vote of members present should be taken as it was considered that the completion of the voting paper must be an individual and uncoerced effort of each doctor.

SUNDERLAND DIVISION

The annual address to the Sunderland Division was given by S. Stanford Cade at the Royal Infirmary, Sunderland, on Nov. 2. The lecture, "Present-day Therapy in Malignant Disease," which was illustrated by lantern slides, was of very great interest. In the evening the annual dinner was held and was well attended by members. The guests of the Division included the Marquess of Londonderry, Sir Stanford Cade, Mr. Weldon Watts (member of the B.M.A. Council), and the Mayor of Sunderland. As a reflection of the serious situation in which the profession now finds itself speeches stressed the need for opposition to any loss of professional freedom.

APPOINTMENTS

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Physician, Out-patients, G. H. NEWNS, M.D., M.R.C.P., Surgeon, G. H. MACNAB, F.R.C.S., Plastic Surgeon, D. N. MATTHEWS, M.D., M.Ch., F.R.C.S., Surgeon to Ear, Nose, and Throat Department, H. S. SHARP, F.R.C.S.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, E.—Honorary Assistant Surgeon, J. THOMPSON FAIRB, M.S., F.R.C.S., Honorary Anaesthetist, T. MARY WYNTER, M.D., D.A., F. H. BLACKBURN, M.B., B.S., D.A., F. C. EIDERIDGE, B.M., B.Ch., D.A., I. G. BRADDON, M.R.C.S., L.R.C.P., D.A., M. GARDEN, M.R.C.S., L.R.C.P., D.A.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

GIBBS.—On Oct. 12, 1946, at Mackenzie, British Guiana, to Juanita (née Bozer), wife of Dr. Donald S. Gibbs, a son—Robin Christopher.

THORNEY.—On Dec. 10, 1946, at St. Mary's High Street, Manchester, to Madge M. (née Gillatt) and Roland Thorney, 44, New Hall Lane, Bolton, a son.

FITCHAM.—On Dec. 10, 1946, at Sunderland, to Marjorie (née Furre), wife of Dr. Thubron, a son.

WARD-MCQUAID.—On Dec. 2, 1946, at Animan, Transjordan, to Betty (née Conway), wife of Major Neil Ward-McQuaid, R.A.M.C., a daughter.

DEATHS

NEILGAN.—On Dec. 8, 1946, suddenly, at the Queen Elizabeth Hospital, Birmingham, Dr. A. R. Neilgan, M.D. (Lond.), of 9, Corbett Avenue, Droitwich.

TUBERCULOSIS IN INDUSTRY*

BY

FREDERICK HEAF, M.D., F.R.C.P.

Tuberculosis is a disease full of uncertainties. Our inability to determine accurately the degree of disablement, the possibility of infection in those who have apparently recovered, and the uncertain prognosis of any case cause endless problems to those studying its relation to industry. To the employer, responsible for the welfare of his staff, who has to measure efficiency in terms of costings and production, infection and reduced working capacity are two features of the disease that cause him to look upon the employment of the tuberculous with anxiety. On the other hand there is a natural desire to assist such disabled persons to obtain suitable work with a living wage; we do not wish to penalize anybody because he has tuberculosis.

Much harm can be caused by exaggerating the infectivity of the disease and the relationship to tuberculosis of the fumes and dusts of certain industries. An occupation itself rarely causes tuberculosis, though it may be a predisposing factor; but before we can come to any conclusion we must refer to the present knowledge of the pathogenesis of tuberculosis.

Pathogenesis of Tuberculosis

The majority of persons over the age of 30 have received and recovered from their primary contact with the tubercle bacillus; but the age when the primary infection is received is rising. This is seen from the recent work on skin-testing certain classes (Table I).

TABLE I.—Percentage of Negative Skin Reactors

Authority	Class	No.	Ages	Percentage Negative
Daniels (1944)	Nurses	3,764	All	19.2
Jess (1943)	Nurses	73,000	School	20.4
Jess (1943)	Students		15-19	78.2
Anderson (1943)	Nurses		20-24	76.4
			25-29	51.2
			30-34	30.2
			35-39	17.2
Profit Survey (1944)	Naval boys		15-16	40.0
	London boys		15-16	12.0
	Nurses (voluntary hospital)		16-30	11.5
	Nurses (municipal hospital)		16-30	17.8
	Medical students		Male	16.3
			Female	11.2

The healed primary complex, consisting of the focus at the site of infection and the lymphatic gland into which it drains, appears to confer a certain degree of immunity but at the same time may harbour virulent organisms which, if resistance is lowered, may cause reactivation of the lesion and, eventually, lesions of the reinfection type in other parts of the lung. Whether an exogenous reinfection causes an endogenous exacerbation or is itself the cause of the lesion does not concern us; but in all those occupations in which there is no reason to suppose that the individual is exposed to recurrent infection the chief cause of the development of a secondary lesion is lowered resistance. Where resistance is maintained at a high level by adequate nourishment, rest, and good environment, as in sanatoria or village settlements, constant contact

with highly infectious cases fails to produce active tuberculosis in the large majority of the staff.

Incidence and Mortality

Not only is primary contact with the bacillus occurring later, but the age group showing the highest incidence of tuberculosis is also rising, particularly in males. In Figs. 1 and 2 the distribution of fatal cases according to age groups is shown for the years 1937-9 and 1940-1 for the county of Middlesex, for males and females (E. Lewis-Fanning, 1943). The increase in the higher age groups for males is clearly indicated.

Furthermore, when we work out (Parliamentary report, 1943) the percentage increase or decrease of the 1942 tuberculosis figures compared with those of 1938 for the various age groups the increase in all ages over 10 becomes apparent (Fig. 3).

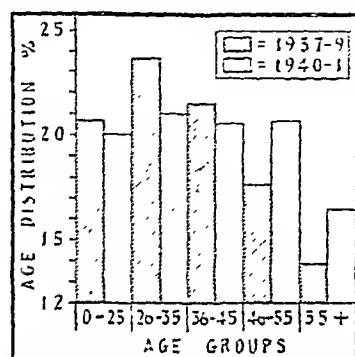


FIG. 1.—Pulmonary tuberculosis. Males. Distribution of fatal cases according to age groups. (*British Medical Journal*, 1943, 2, 684.)

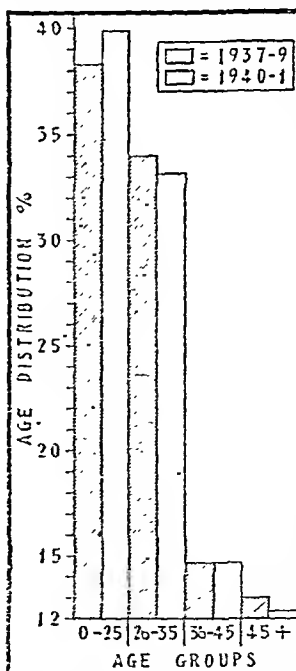


FIG. 2.—Pulmonary tuberculosis. Females. Distribution of fatal cases according to age groups. (*British Medical Journal*, 1943, 2, 684.)

This means that active tuberculosis is being found more often than before in the more experienced worker. Most of those lesions in the 35-45 age group are probably due to endogenous reinfection resulting from lowered resistance. In women the maximum incidence is earlier and other factors influence the problem. We know very little of the effect that endocrine disturbances have on the development of tuberculosis, and it may be that the unstable state of adolescent girls is related to the rapid rise of the incidence curve between the ages of 15 and 25. But this will not explain the distinct rise in incidence and mortality in the 20-30 age group during the war years 1940-2. The problem we have to solve is how far industry is responsible for the changes in the incidence of tuberculosis in the various age groups.

The rate of discovery of cases has increased, so the rise in incidence is not a true rise in the rate of development of the disease. Some consider

* Read at the meeting of the Tuberculosis Association at Oxford on July 18, 1946.

that the increase in case-finding, mainly by radiography, accounts for 50% of the rise. For the remaining 50% we must look elsewhere. Diet, overwork, anxiety, overcrowding, and poor ventilation are probably the chief predisposing causes.

Influence of Industrial Conditions

Although normally only eight hours of the day are spent in work, it is important that working conditions should be satisfactory, and I am not going to expatiate on the necessity for adequate ventilation, good lighting, and sufficient nourishment during working hours. Absence of these will cause a lowered resistance, which may lead to reactivation of an old focus or to a new focus from recurrent infection from a probably unknown carrier. In workers previously uninfected a progressive primary lesion may develop from the initial infection, or the reinfection may follow so quickly upon the primary that a secondary lesion develops before the primary has had time to heal or acquired immunity to develop. Where working conditions are poor there is often an abnormal amount of dust,

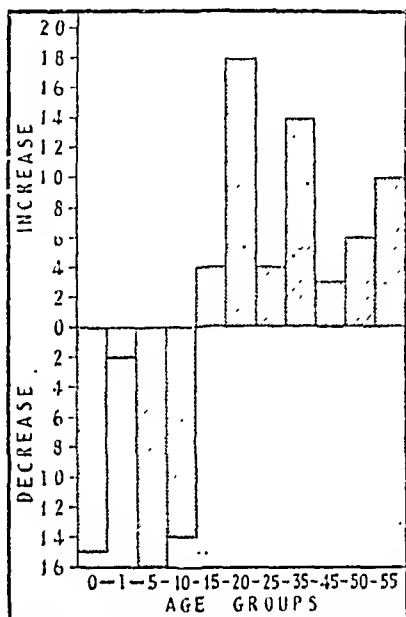


FIG. 3. Percentage increase or decrease of notifications of tuberculosis in age groups in 1942 compared with 1938.

and although it is difficult to demonstrate tubercle bacilli in dust even when collected from rooms occupied by open infectious cases, the incidence of phthisis is usually higher in dusty occupations than in others. Some dusts bear a special relationship to the development of tuberculosis; these dangerous trades are well known, and skiagraphic examination of all entrants is essential, as well as an annual survey of all employees.

It is not easy to estimate the danger of dust to health. The so-called harmless dusts may indirectly spread tuberculosis by causing chronic catarrh in an individual with an undiscovered active lesion. Some time ago I made an investigation of a group of offices where a number of cases of pulmonary tuberculosis had occurred. Sickness due to catarrhal influenzal colds was highest in those offices in which methods of removing dust were most inadequate, and although I could not trace any direct relationship between the incidence of tuberculosis and the degree of dustiness in the offices, the standard of general health in the cleaner offices was certainly higher than in the dusty ones. If the general health was better, then so was the resistance to disease, and there would be less likelihood of tuberculosis developing.

Certain dusts have a direct bearing on the incidence of tuberculosis. For instance, among the grinders of Sheffield the death-rate from respiratory tuberculosis in 1938 was reported in Parliament (1938) to be four times the rate for all persons over 15 in Sheffield. Further evidence comes from the figures of the Silicosis Medical Board (Sutherland, 1940) for the period 1932-9. Of 1,397 deaths due to silicosis, active tuberculosis was present in 797 cases. Numerous reports have shown that

dormant tuberculosis lesions may become active when a simple silicosis has developed. As for the infectivity of dusts in general, complete proof is not usually possible, but Cruickshank (1940), Mitman (1945), and W. F. Wells in America have shown that droplet infection is important in the spread of disease. Coughing and sneezing are particularly mentioned as expelling infected droplets into the air. Dust, by increasing catarrh, may make coughing and sneezing more frequent and so favour the spread of infection.

The importance of working conditions is seen when we consider how the mortality of tuberculosis varies in different occupations (Tables II and III).

TABLE II.—Deaths Registered 1930-2 per 100 Calculated Standard Deaths at Ages 20-65

Occupation, Males	All Causes	Resp. Tuberculosis
<i>Non-dusty Occupations</i>		
Stevedores	121	239
Barmen	149	212
Costermongers	140	200
Dockers	137	186
Waiters	134	176
Messengers	125	160
Hotel keepers	155	148
General labourers	127	146
Printers	89	128
Brewers	121	120
Compositors	92	116
Bargemen	121	110
Typists	77	105
<i>Dusty Occupations</i>		
Grinders	240	757
Sand blasters	304	750
Sandstone masons	180	396
Textile warehousemen	234	364
Metal grinders	137	275
Filers	154	260
Kiln and oven men	157	227
Barbers	122	162
Chimney sweeps	136	150
French polishers	110	148
Coat hangers	113	141
Cobblers	98	131
Horse drivers	126	124
Metal moulders	112	112
Plasterers	112	110
Sawyers	92	108
Bakers	78	71

TABLE III.—Deaths Registered 1931-2 per 100 Calculated Standard Deaths

Occupation, Single Women	All Causes		Resp. Tuberculosis	
	20-65	35-65	20-65	35-65
Nuns	110	110	194	256
Tailoresses	95	96	113	136
Charwomen	126	132	94	126
Dressmakers	108	110	124	119
Waitresses	109	111	124	—
Laundry workers	105	103	151	107
Domestics	106	115	84	103
Weavers	103	118	79	86
Typists	68	69	78	84
Sick nurses	78	74	82	81

Light work under bad conditions can be more harmful than heavy work under good conditions, as is seen by comparing the figures for farm labourers, stone quarriers, smiths, and steel forgers with those of hairdressers, barmen, costermongers and waiters. Heavy work and poor economic conditions are a serious combination—e.g., dockers. With regard to irritant fumes, there is evidence that the inflammatory reaction of the lung to chemical irritants favours the development of tuberculosis. An exception is fumes containing silica. This is supported by the American figures (1919) of 70,552 soldiers gassed in the 1914-18 war, of whom only 173 cases subsequently developed tuberculosis—2.45 per 1,000. The general rate for U.S. soldiers was 3.50 in 1918 and 4.30 in 1919.

Figs. 4, 5, and 6 (compiled from Registrar-General's Returns: 1931-2) show the percentage mortality from tuberculosis of all occupied males in certain industries in relation to various age groups. The mortality is generally higher in the dusty trades: the peak of the curve falling in the 50-55 age group in these and in the 40-45 age group in the non-dusty and heavy occupations. When similar figures are plotted for the Registrar-General's social class divisions (Fig. 7), in all the occupational classes the peak of mortality falls in the 40-45 age group for

males. It would seem that one factor which shifts the tuberculosis mortality to higher age groups is working in a dusty occupation, and that in such work there is a greater risk of dying from tuberculosis over the age of 45 than in the non-dusty occupations.

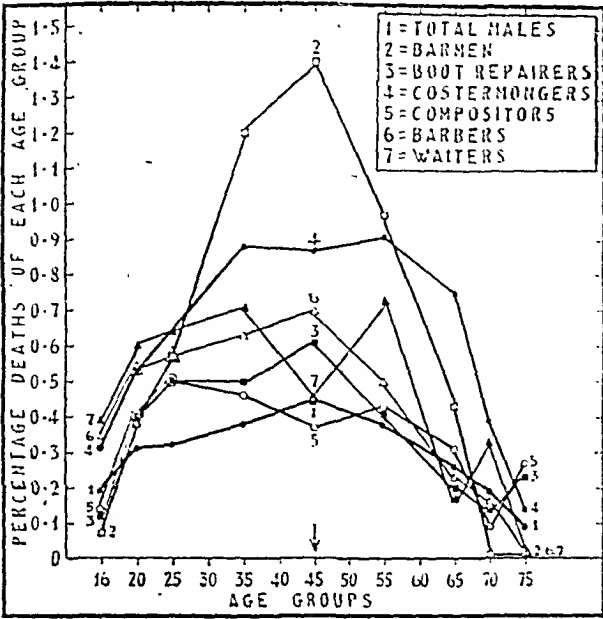


FIG. 4.—Non-dusty occupations. Males. 1931-2.

clinical significance cause difficulty, and will continue to do so until we have a more accurate method of assessing the degree of activity. At present it is by trial and error that we determine a man's capacity for work, and the allocation of a person with a stationary minimal lesion to modified work, change of occu-

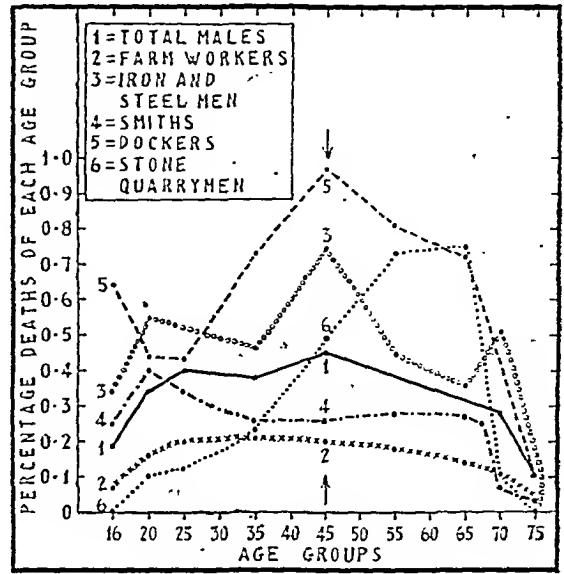


FIG. 6.—Heavy industries. 1931-2.

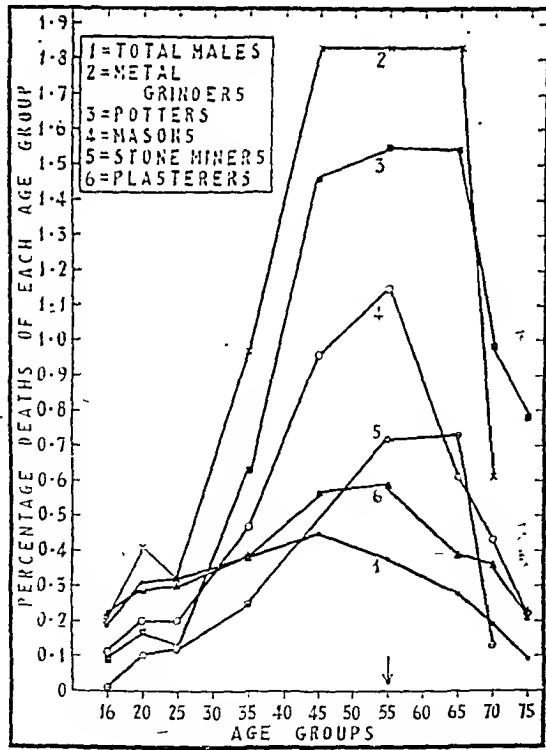


FIG. 5.—Dusty occupations. Males. 1931-2.

Mass Radiography

With primary infection tending to occur in the higher ages the need for discovering active cases becomes increasingly important, and with the development of miniature radiography, better termed fluorography, many unsuspected active cases have been found. In mass radiography surveys the number of cases found positive by smear examination of sputum is approximately 3.5 per 1,000 examined. These need sanatorium treatment, and the

pation, or continuance in his present employment is largely a matter of guesswork.

Curious situations may develop as a result of mass radiography. When the person in whom an active and possibly infectious lesion is discovered refuses to accept advice, the authorities are in a difficult position: the information, being confidential, must not be divulged to the managers of the firm

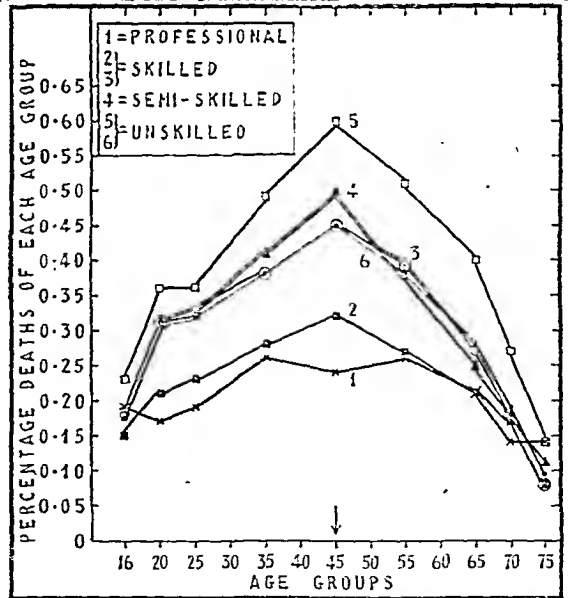


FIG. 7.—Social classes. Males. 1931-2.

concerned. Occasionally an error of judgment may have been made by the medical staff of the mass radiography unit, and as a result of an abnormal film being pronounced normal the management may retain the man at work, with a considerable occupational risk. Should that worker develop the disease the management might claim justification for their action because of the normal report.

The position of the industrial medical officer is somewhat

in the works in whom abnormalities have been discovered but must not be given the names of the persons who have tuberculous lesions. A much closer link between the tuberculosis dispensary, the local labour office, and the welfare unit of the firm is required; and a workers' health and welfare committee should be formed where these matters can be discussed without prejudice. In this way suitable employment for a disabled tuberculous person might be arranged in the works without raising criticism. The importance of strengthening the links between the D.R.O., the tuberculosis officer, and the local labour office of the Ministry of Labour is recognized in the Ministry of Health Circular Letter 52/46, May 15, 1946, which states that in future the T.O. must inform the L.O. of every tuberculous person under his care who in his opinion is fit for a measure of employment and needs and desires assistance in finding it, and any patient who may not be fit for employment but nevertheless wishes to have advice about employment prospects, registration, and the facilities of the Disabled Persons Employment Act (1944). The T.O. must also furnish, at the request of the D.R.O., medical reports on Form D.P.1(X), and provide facilities for him to visit patients at the dispensary and advise him as to the nature and conditions of work suitable for the particular patient concerned. This is not easy, and much research is needed into the problem of employing the disabled.

There are other situations in mass radiography surveys causing some apprehension—e.g., searching for tubercle bacilli in symptomless cases showing minimal pulmonary shadows. Laryngeal swabs and gastric lavage are producing a high percentage of positive results in these otherwise apparently healthy people. Webster (1943), in his examination of 1,630 cases, discovered by mass radiography among Australian military forces 364 positive cases of whom 189 said they were perfectly well and symptomless after exhaustive investigation. Are we to regard them as active, infectious cases with respect to their employment and need for treatment? Our laboratories must be above suspicion, as serious errors can occur from unsound methods or technique. Personally I think we should take every precaution to prevent the spread of infection and to arrest the disease, for we have a good chance of curing these cases; and that a compromise between employment and treatment while activity exists should be avoided. In the past too much time and skill have been wasted on the impossible task of restoring the advanced case to health when consideration of the morbid anatomy would have caused us to direct our energies to efficient treatment of early cases. Mass radiography is increasing our opportunities to effect permanent cures, and we must not default by relying on the apparently healthy condition of the individual, making a wrong assessment of his capacity for work because we can offer him a light job.

Mass radiography can be of great value in discovering any person with clinically significant shadows in the chest skiagram and eliminating him from occupations in which the risk of developing tuberculosis is high. As mass radiography of the whole population is impracticable, it is best applied to serial examination of those sections of the community in which the tuberculosis risk is highest. Pre-employment radiographic examinations throw a serious responsibility upon employers in hazardous industries, for if tuberculosis subsequently develops in an individual it can be more conclusively attributed to conditions of employment.

Rehabilitation

Great advances are being made in the rehabilitation of the tuberculous by granting financial assistance. Memorandum 266T. of the Ministry of Health provides for financial assistance to pulmonary cases likely to return to work. It is insufficient for his needs, but the principle is right. It is a wartime emergency measure and will probably be abolished when the National Insurance Bill is passed. The industrial section of this Bill is of particular interest as regards tuberculosis. Part iv, clause 54, 2a, states:

"A disease or injury may be prescribed (for the purposes of this part of the Act) in relation to any insured persons, if the Minister is satisfied that (a) it ought to be treated, having regard to its causes and incidence and any other relevant considerations, as a risk of their occupations and not as a risk common to all persons,

and (b) it is such that, in the absence of special circumstances, the attribution of particular cases to the nature of the employment can be established or presumed with reasonable certainty."

Perhaps the Minister will schedule tuberculosis as an industrial disease, but this is doubtful, and it is probable that every claim will be taken on its merits. As the injury benefit is 19s. per week more than the sickness benefit there will be more claims that tuberculosis shall be considered as an injury. There has already been one ruling in court that a tuberculous lesion is an injury in the meaning of the Act. Our incomplete knowledge of the pathogenesis of tuberculosis will increasingly emphasize the need for a national tuberculosis research body supported by Government funds to investigate tuberculosis problems—particularly the development of the disease and assessing the activity of the lesion. The best solution for the tuberculous would be to enhance the privileges under Memorandum 266T. in favour of all those suffering from tuberculosis and thereby eliminate the need for proving that the disease is due to the nature of the employment.

Disabled Persons Employment Act

The Disabled Persons Employment Act, 1944, is another measure which provides means whereby the tuberculous may be rehabilitated. The full benefits of this Act have not yet been appreciated, as some time must elapse before the machinery for its working is complete, but the Minister of Labour has powers to establish a full rehabilitation scheme. One drawback to the smooth working of the Act is the reluctance of tuberculous persons to put their names on the Disabled Persons Register. The disabled person hides as much as possible his having suffered from the disease for fear of being penalized.

The general opinion of employers is against the inclusion of tuberculous persons in normal industry. Bashford and Scott (1936), after examining the histories of 3,755 cases of pulmonary tuberculosis occurring in a Post Office staff of 185,000 men and 55,000 women, concluded that of those who incur tuberculosis not more than 50% return to work even after prolonged treatment; and that of those who returned to industry there was a further wastage of about 48% from recurrent pulmonary tuberculosis or other forms of ill-health by the end of ten years. The heaviest wastage occurred in the first six years. There was a further wastage of 14% of those who survived the first ten years.

The time has come to treat this problem realistically. Two most important principles are that the employment of the tuberculous in industry must not disturb the relationship between management and labour by introducing special privileges and conditions for a selected few employees, and that the tuberculous person may be employed at work which requires a low energy output, but while he works he must complete his duties, and not expect that he can slack because he is tuberculous.

Employable patients who have received the maximum benefit from treatment are in two groups: (1) sputum-positive; (2) sputum-negative. (1) These are infectious, have an active focus in the lungs, and are particularly liable to relapse if subjected to strain or anxiety. Only exceptionally should they be re-employed in normal industry. They need special workshops and close medical supervision. These can be provided under the Disabled Persons Employment Act. They present a formidable problem. A subsidy is needed to cover their reduced capacity for work, and workshops in the form of industrial clinics where sheltered conditions can be provided. (2) These can be subdivided into three classes: (a) fit to resume on full time their occupation or trade; (b) fit to resume work on part time; (c) cannot resume their occupation or trade but could be employed at other work if properly trained. The first class does not present any difficulty. The second can sometimes be accommodated by large firms, but difficulties over wages and privileges are too great for the small firm. So-called light work often means dead-end jobs with poor pay. Unless there is a prospect of return to full work within twelve to eighteen months it is better for them to be retrained in work within their capacity and skill. It is highly important that the energy output required is within the man's capacity. The research of Orr and Leitch (1938) on the calories expended per hour (Table IV) in carrying out certain tasks should

form a standard by which we can gauge the suitability of any occupation for a particular individual. However, we still seek an easy means of determining the limit of energy output for tuberculous patients beyond which it is unsafe to go. When this is known it will not be difficult to suggest suitable occupations for most patients when sanatorium treatment is completed.

TABLE IV.—*Calorie Requirements of Man (Orr and Leitch)*

Occupation	Calories per Hour
Sewing	10-20
Writing	10-20
Sweeping	110
Stone mason	350
Sawing wood	420
Tailoring	50
Typewriting	55
Bookbinding	65
Ironmaking	90
Painter	160
Smith (heavy)	350
Coal-mining	320
Walking	150-240
Charwomen	81-157
Securing	73
Seamstress	6
Dusting	110
Carpentry	155

Those who cannot be re-employed in their previous occupation will have to be given other work, though to maintain the original standard of living is often difficult. Retraining usually means either temporarily or permanently lower wages for the person over thirty. The peak of the tuberculosis-incidence curve in males is shifting to the higher age groups, so this problem is likely to increase. The situation calls for the establishing of centres for the tuberculous similar to Egham, with close connexion with special workshops where continued employment may be obtained for those unable to find suitable posts in normal industry. Considerable advance in the principles underlying the employment of the tuberculous has been made by the Ministry of Labour's agreeing that such persons need not be given outdoor work. Most outdoor jobs are heavy and often poorly paid. It is very satisfactory that this should be recognized and that sedentary work should be arranged.

Russia has successfully linked sanatorium treatment with the prophylactic workshop attached to the main works, which provides modified employment for patients still under treatment at a dispensary or a night sanatorium. Adequate nourishment and rest are ensured, but remuneration is on a lower scale than that of the healthy worker. The scheme is worthy of close study and might be adopted with slight modification here.

Conclusions

To summarize the relationship of industry to tuberculosis: occupation rarely causes tuberculosis, but conditions of labour can predispose to it. These conditions, particularly the elimination of dust, which appears to be more harmful with regard to tuberculosis in the higher age groups, should receive continued attention, and also that all workers should obtain adequate nourishment during work hours. Tuberculous persons entering hazardous employment should be examined periodically by miniature radiography. A fundamental principle is the exclusion of infectious persons from normal industry, except where the other workers can be protected and suitable employment provided for the disabled person. Pre-employment radiography imposes a liability on the employer when engaging proved healthy persons in a hazardous industry. The return of the tuberculous person to normal industry must be through a properly organized rehabilitation scheme, which should be closely associated with industries that can provide suitable employment for recovered persons. Recent legislation has made this possible, but the co-operation of industry as a whole is needed to ensure success.

A national tuberculosis research organization would investigate methods for assessing the disability of those who are recovering or have recovered from the disease. The Government has accepted its share of the liability; it is now our responsibility to take advantage of the privileges provided and develop this section of industrial medicine. Special workshops or industrial clinics are required for those who cannot take their place in normal industry; indoor work within the disabled

person's capacity is more suitable than outdoor, which is usually heavy and poorly paid.

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THE INTERNAL COMBUSTION ENGINE AND THE SPREAD OF DISEASE

BY

G. M. FINDLAY, C.B.E., M.D., D.Sc., M.R.C.P.
 Late Consulting Physician, West African Command

From the dawn of history infectious diseases, together with other specialized merchandise, have spread along the trade routes of the world, whatever the mode and speed of transport. To-day it is the speed of travel both on land and in the air which adds danger to the spread of disease from endemic to non-endemic areas. Fifty years ago, when the first European missionaries went to Uganda, it took them between three and four months to walk from Mombasa; to-day the same journey can be made by air in from three to four hours. Flights of twenty-four hours for a journey from West Africa to India or of sixteen hours from England to West Africa are becoming commonplace. With jet-propelled planes the flying times will be even shorter; speeds of 500 to 600 m.p.h. (800-960 km.p.h.) for passenger planes are predicted in the near future. But it is not only in the air that the barriers to rapid intercourse have fallen. A generation ago few Africans dared to wander far from their tribal lands: if they did, it was at the risk of death, or at the best enslavement. Mountains once formed an insuperable barrier. In the old days, for instance, the Nyakysa in East Africa feared to cross the 8,000-ft. (2,438-m.) range which blocks their valley to the north, since they were liable to die from cold. Disease was also a barrier, for the same tribe did not often visit the adjoining Kinga, who live on the Livingstone Mountain, not only because of the cold but because they were afraid of catching tick fever, which was endemic among the Kinga (Wilson and Wilson, 1945). One small tribe in the Nuha Mountains, in south-eastern Kordofan, are said to have introduced tsetse flies in order that the Baggara, or Cattle Arabs, should give them a wide berth. Evans-Pritchard (1940) relates that the Galla and Amhara of the Ethiopian highlands refuse to descend to the plains for any length of time for fear of malaria. Immediately before the war, and still more during the war, motor roads have been built throughout the Tropics in ever-increasing numbers. Shakespeare's prophecy that "the vasty wilds of wide Arabia are as thoroughfares now" is no less true of Africa and Asia, and the local inhabitants have readily taken advantage of those roads and of the motors which pass along them. There is evidence that in the past few years in Africa yellow fever, cerebrospinal fever, relapsing fever, trypanosomiasis, intestinal bilharziasis, and gonorrhoea have all been spread by those who have used the roads in their search for work or trade.

The possibility that infectious diseases and their insect vectors might take advantage of the rapid means of transport now available was translated into fact when in 1930 Shannon discovered *Anopheles gambiae* in the city of Natal, Brazil; it had apparently arrived from tropical Africa, where it is the most important malarial vector, not by air but by one of the fast torpedo-boats employed in connexion with the French transatlantic air service.

In 1933 the first International Sanitary Convention for Aerial Navigation was drawn up; but in many ways it was unworkable, and in 1944 some of its provisions were modified in the light of more recent knowledge. During the war the possibility that infectious diseases or their insect vectors might be carried from endemic to non-endemic areas was met in the more dangerous areas of Africa by the formation of inter-Allied mosquito control boards, the membership of the boards being

made up of civilian officials and Allied Service personnel. With the end of the war these control boards have in most cases lost their Service members, together with many of their executive staff. Although for the moment there is probably a decrease in the number of persons flying, in a short time the world's air routes will once again be crowded with passengers and freight. The present is therefore a suitable time to discuss very briefly how far the present organization is adequate to guard against the spread of disease by air.

Disease and its Spread by Air

The diseases which are specially feared in relation to spread by air traffic are yellow fever and malaria. There are, however, others which might readily be spread by infected persons or by insect vectors—for example, dengue, poliomyelitis, the insect-transmitted encephalitides, and trypanosomiasis, as well as acute respiratory infections such as influenza.

Yellow Fever

Yellow fever may be carried by an infected mosquito or by a person incubating the disease. The endemic yellow fever zones in Africa and South America, shown in the accompanying map (U.N.R.R.A. Health Division, 1945) are now traversed by a number of air routes. In Africa a great part of the continent

between 15° N. and 10° S. is involved, but Tanganyika is excluded. The Barotse Province and the Balovale district of Northern Rhodesia are, however, included, as are the islands in the Gulf of Guinea. The Port of Massawa, in Eritrea, has been excluded.

In South America the ports of Belem in Brazil, Cayenne in French Guiana, Paramaribo in Surinam, Georgetown in British Guiana, the Caribbean ports of Colombia and Venezuela, and the cities of Caracas in Venezuela, Bogotá in Colombia, and Corumbá in Brazil are excluded. In addition, the Ilheus and Itabuna districts in the State of Bahia, Brazil, are for the time being regarded as endemic yellow fever areas.

It will be seen that the portion of the earth where yellow fever is endemic is too large to be absolutely avoided by long-distance aeroplanes, although in the future it may be possible for aeroplanes to fly the 4,000 miles (6,400 km.) from Cairo to the Union of South Africa without touching down inside the yellow fever area.

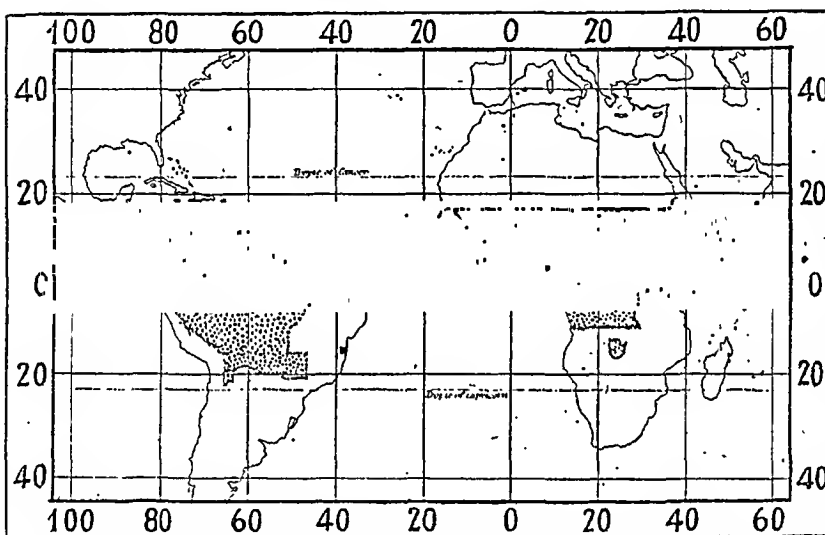
Experiments made before the war by Trolli (1932), Hicks and Chand (1936), and others showed that mosquitoes could quite easily survive long journeys by air of over 9,000 miles (14,400 km.) in which heights of 10,000 to 12,000 ft. (3,048-3,658 m.) were reached. Griffiths (1933) also proved that mosquitoes released in the cabins of aeroplanes do not necessarily leave the aeroplane at intermediate stops on the air route. Before the war a number of mosquitoes from the Old World, capable of transmitting yellow fever, had been found in aeroplanes (Whitfield, 1939), including *Aedes aegypti*, *A. simpsoni*, *A. luteocephalus*, *Taeniorhynchus* (*Mansoniodes*) *africanus*, and *Culex fatigans*.

While the chances of an infected mosquito gaining entrance to an aeroplane may not be great, they are by no means remote. With compulsory yellow fever immunization for all those who fly through endemic zones the chances of an infected person being carried are, however, extremely small, provided that active yellow fever vaccine has been used.

Malaria

Malaria may, also be spread by a person with parasites in his blood or by the carriage of some of its insect vectors. It is now recognized that different strains of the same species of malarial parasite exist, some being more virulent than others. The introduction of highly virulent strains of *falciparum* parasites into an area where *vivax* strains were predominant might or might not be followed by a severe outbreak of malaria; the experiment has not been tried. After the war of 1914-18 a small outbreak occurred in South-East England as a result of the return of infected soldiers, and a similar outbreak has already taken place in the Berlin area. A number of the anopheline vectors of malaria were found in aeroplanes in Africa and in America both before and during the war. The list includes *Anopheles gambiae*, *An. funestus*, *An. pharoensis*, and *An. albimanus*. While the original appearance of *An. gambiae* in the New World was not directly due to aeroplanes, during the war years it did successfully make the Atlantic passage by air. The difficulties in eradicating it from Brazil have been retailed by Soper and Bruce Wilson (1943). There is also some evidence to show that *An. albimanus*, found breeding at Boca Paton, Florida, arrived from South America by air. Of the anopheline vectors of malaria which have travelled by

air, *An. gambiae* is probably the most dangerous in view of its domesticity and its catholic taste in breeding-places. At present it is found throughout Africa south of the Sahara and as far north as Wady Halfa, just south of the frontier between Egypt and the Anglo-Egyptian Sudan (Lewis, 1942-1944). It is probable that it has been at Wady Halfa for many years. It has, so far as is known, never reached the Nile Delta, though during the war it was found in Central Egypt. *An. gambiae* is present in Madagascar and has



The epidemic yellow fever areas of the world as delineated by the expert commission on quarantine, U.N.R.R.A. Health Division.

been identified in the Aden hinterland and at Jeddah, in Arabia.

Other Diseases

Tsetse flies are inveterate travellers by train, motor-car, and even on the back of the humble pedal cyclist. It is therefore not surprising that they should have been found in aeroplanes in Africa (Symes, 1937). During the war on two occasions *Glossina palpalis* were also caught in Natal, Brazil: their only means of crossing the Atlantic must have been by air (Soper and Wilson, 1943). Chaga's disease has not been reported outside the New World.

Other diseases transmitted by mosquitoes are dengue and the various forms of encephalitis at present limited to America and Japan. There was, however, before the war some evidence that Japanese Type B encephalitis had spread into China. Flies are frequent passengers in aeroplanes; they are, it seems, able to carry poliomyelitis and probably infective hepatitis. Strains of poliomyelitis are known to vary in virulence, while it is also possible that there are different strains of infective hepatitis with varying degrees of virulence. The geographical distribution of sandfly fever and kala-azar by no means coincides with that of *Phlebotomus*. Plague transmission is a more remote danger, though during the war a live mouse was found in an aeroplane arriving at Miami, Florida, from San Juan, Porto Rico.

Prevention of Spread of Disease by Aeroplanes

The measures which are necessary to prevent the spread of insect-borne diseases by aeroplanes are of course well known,

and if they are carried out properly should make the risks infinitesimal. These measures are the sanitary control of (a) aerodromes, (b) aeroplanes, and (c) air-passengers, crews, and ground-staff.

The sanitary control of aerodromes requires a considerable staff. For aerodromes dealing with international traffic the areas involved are large: runways 3,500 yards (3.2 km.) long are required, and extensions up to 5,000 yards (4.5 km.) are visualized in the future. The existence of many acres of flat tarmac and of large hangars means that in the Tropics during the wet season a tremendous volume of rain-water often has to be run off the aerodrome area. Clearing of drains and soil erosion have to be guarded against. Mosquito control must be exercised not only over the actual aerodrome but over a zone of country extending in some directions or as much as three miles (4.8 km.), if during tropical storms mosquitoes from uncontrolled areas are not to be blown on to the aerodrome. This involves the spraying of native villages, and in some cases of urban areas, with D.D.T. or other insecticides, as well as the careful supervision of drains, lagoons, and all other possible breeding areas. It is obvious that a large staff is required. During the war many extensive drainage schemes were begun in Africa in order to sanitize aerodromes. Some of these schemes were finished before the end of the war, other were left unfinished. In any case anti-mosquito schemes, cannot look after themselves; constant vigilance is necessary, and the cost of maintenance is usually high.

The sanitary control of aeroplanes involves the use of insecticides. The ideal method is undoubtedly the application of an insecticide to the inner walls of the aeroplane (Madden *et al.*, 1945), combined, while in flight, with some form of aerosol spray containing a rapidly acting insecticide such as pyrethrum (Maekic and Crabtree, 1933). During the war, when the Freon bomb or a hand-spray was the standard equipment, disinsectization was not as a rule carried out until the aeroplane had been grounded, and then often in so perfunctory a manner that insects had ample opportunity either to leave the aeroplane or to remain in it alive for a further journey.

The sanitary control of passengers, crews, and ground-staff involves immunization against yellow fever. In accordance with the International Sanitary Convention for Aerial Navigation of 1933, as modified by the Convention of 1944 (Stock, 1945), all passengers and crew must have been immunized not less than ten days and not more than four years before the date at which they enter the yellow fever endemic zone.

Before the war, when yellow fever immunization was still in an experimental stage, the majority of persons inoculated were tested for immunity. Under wartime conditions this became impossible. Some tests, however, were carried out in West Africa with discouraging results. Thus of 156 British officers and other ranks inoculated within six months in 1943, 83 were protected while 73 were not. There were two reasons for these results: (a) failure to remove residual moisture from the vaccine during the process of preparation, and (b) maltreatment of the vaccine after leaving the place of manufacture. The first difficulty has now been completely overcome, and further tests show that between 97 and 98% are successfully vaccinated. Maltreatment of the vaccine has occurred in a number of ways: breakdown of refrigerating plant used for storage of vaccine; inefficient vacuum flasks for its transportation; the use of hot syringes for injecting the vaccine; and exposure of the redissolved vaccine to high temperatures. The following figures show the results of using an inefficient vacuum flask for transporting yellow fever vaccine (Batch A) some 50 miles (80 km.) by road in West Africa. Tests were made a month after immunization, and all injections were carried out by the same pathologist.

Batch	No. of Persons Protected	No. of Persons Not Protected
A ..	44	21
B ..	17	1
C ..	15	1

Since the yellow fever vaccine is thermolabile it is obvious that considerable care must be exercised in its storage and handling.

Yellow Fever Certification

All passengers by air who are travelling through endemic yellow fever zones must now carry a certificate that they have received yellow fever vaccination more than ten days before the date at which they enter the endemic yellow fever zone and not longer than four years. At present an international yellow fever certificate is printed by the World Health Organization, following U.N.R.R.A., who had issued a booklet, appropriately bound in yellow, containing a yellow fever certificate.

A few minutes' search, however, at an aerodrome allowed seven different types of British yellow fever certificates to be collected, all signed by different medical officers. Since those who examine yellow fever certificates are not always provided with specimens of these various types or with a list of the medical officers who are empowered to sign such certificates, it is not surprising to learn that yellow fever certificates have in the past been forged and that it is reported on credible information that on the Continent there is a black market with a recognized tariff for these certificates. It is therefore obvious that to prevent the forgery only one form of yellow fever certificate should be available, while lists of the medical officers whose signatures are accepted should be kept in every airport.*

The International Sanitary Convention for Aerial Navigation of 1933 as amended by the Convention of 1944 (Stock, 1945) provides for the isolation of persons who do not hold a valid anti-yellow-fever inoculation certificate and who are travelling by air from an endemic yellow fever area to one in which the disease does not exist but in which conditions may permit of its development. Such persons may be isolated in screened quarters until such a certificate becomes valid or until six days shall have elapsed, whichever is the lesser period. The Convention also provides that in exceptional cases the countries signatory to the Convention may issue "certificates of urgency" to persons not immunized against yellow fever "whose unobstructed passage is absolutely and immediately essential on grounds of high policy, certifying that a passage without hindrance to the bearer of the certificate is urgently necessary."

As a wartime emergency such a measure was doubtless essential. In Crown Colonies the right to grant certificates of urgency was vested in the governor, but in practice it involved the granting of these certificates by the governor's deputy, the Colonial Secretary, or his deputy, and in fact by a considerable number of persons in each secretariat. The Governments of the Union of South Africa and of Southern Rhodesia have now very wisely refused to accept these certificates of urgency, the use of which should be everywhere abolished.

During the war, in order to reduce the risk of any person in the incubation period of yellow fever coming within controlled aerodrome areas all ground staff as well as casual labourers were immunized. In some areas this involved the immunization of a considerable proportion of the population of villages and towns in proximity to aerodromes.

Need for an International Organization

The organization which dealt with the sanitary control of aerodromes and aeroplanes during the war has now largely been dispersed, but peace has not brought a solution of these problems, which remain as urgent as ever. Yet many of the countries which find themselves on international air routes have neither the staff nor the money to devote to matters which are not their primary concern. There are three possible solutions. It may be thought that the danger of the spread of infectious diseases and their vectors is negligible and that therefore there is no need to have any special organization to deal with air transport. This point of view, in face of the International Aerial Sanitary Convention of 1933, amended in 1944, can hardly be maintained. It may be thought that there is a danger but that it is safe to allow each separate country to have complete control over the international aerodromes in its own territory. In view of the many loopholes which became apparent during the war, and of the meagre resources possessed by many countries for dealing with international air traffic, it seems that the only really satisfactory organization is an international one with an adequate staff and funds of its own. This concern might well be placed under the World Health Organization of the United Nations, and in close association with P.I.C.A.O. (the Permanent International Civil Aviation Organization). Its functions would be: (1) To take sanitary control of all aerodromes and aerodrome areas which are considered to be involved in the spread of infectious diseases from endemic to non-endemic areas; (2) to control the disinsectization of all aeroplanes on routes where spread of infectious diseases is likely to occur; (3) to control the storage

* The Government of India now insists that valid yellow fever certificates must be signed only by approved persons, and other Governments are adopting the same procedure.

of yellow fever vaccine and its injection under standardized conditions, and to approve institutes for the testing of yellow fever vaccines; (4) to control the issue of yellow fever immunization certificates.

So far as the sanitary control of aerodromes and aerodrome areas is concerned, this implies something more than the biannual meeting of government officials which before the war occurred at the Office International d'Hygiène Publique in Paris. It would involve a partial abrogation of sovereignty on the part of the territories concerned, since the sanitary staff engaged in this work would be responsible not to local directors of medical services but directly to the World Health Organization of the United Nations.

In the age of the internal combustion engine the spread of disease can be held in check only by a scheme which is internationally sponsored and internationally controlled.

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ABACTERIAL PYURIA

WITH SPECIAL REFERENCE TO INFECTION BY SPIROCHAETES

BY

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The problem of sterile, amicrobic, or abacterial pyuria is occasionally brought up in medical publications in relation to a new case observed. It is a problem that has interested us for several years, and we have published some papers on the subject in Chilean medical journals (Vargas-Zalazar, 1937; Coutts, 1938; Coutts and Vargas-Zalazar, 1945); our findings, however, may not be generally known. In our opinion "abacterial" is the right designation for this syndrome, which may originate through ascending or descending infection of the urinary tract by viruses, spirochaetes, or protozoa. In most cases causative diagnosis was not made because dark-ground observation of centrifuged urinary deposit of bladder or kidney urine samples has not been incorporated into routine laboratory practice.

We refer later to cases of abacterial pyuria, which according to our findings are produced by spirochaetes. Our first suspicion of the possible action that some of these micro-organisms might have in the production of such a type of pyuria was aroused more than ten years ago.

A medical student consulted us for slight dysuria and cloudy urine, in the absence of urethral discharge, which had been troubling him for a few days. Prof. Bisquertt-Torres, who had charge of the case, found pus cells but no bacteria of any kind in urine obtained direct from the bladder. Cystoscopy revealed only a slight congestion of the trigone. Bilateral kidney-pelvis catheterization performed on two occasions showed numerous pus cells but no bacteria. Cultures and animal inoculations of urine from both kidneys and bladder failed to reveal Koch's bacilli. At the time Bisquertt-Torres and one of us (Coutts) thought that the most probable diagnosis was that of bilateral renal tuberculosis. Before travelling to Switzerland the patient visited his dentist, who removed a gold-filled molar which was somewhat tender on pressure and showed a certain amount of apical damage in a radiograph. Urinary symptoms then sub-

sided rapidly, the urine cleared, and the pus disappeared. He is now a well-known physician, is married, has several children, and enjoys good health.

In 1937 Vargas-Zalazar, at one of the weekly staff meetings of our clinic, presented a case of abacterial pyuria. In the discussion Coutts, remembering the above case and some similar ones presented by Wildbolz at the French Congress of Urology in 1933 and treated successfully with arsenicals, suggested a search for spirochaetes in urinary deposits observed under dark-ground illumination. These micro-organisms might proceed from the oral cavity or intestinal tract. In this case spirochaetes were discovered. On perusing the medical literature we found that Briggs (1935), Cook (1936), and Wildbolz (1937) had treated similar cases of abacterial pyuria successfully with arsenicals.

The following is a summary of five cases of abacterial pyuria in which we were able to demonstrate spirochaetes or spirilla under dark-ground illumination of deposit from centrifuged bladder urine obtained by catheter.

Case Reports

Case 1.—A male student aged 21 consulted Vargas-Zalazar privately in 1937. He had undergone tonsillectomy at 8 years of age. His present illness began in 1934, when, after gonorrhoea complicated by epididymitis, his urine on complete bacteriological recovery remained cloudy and contained pus cells. The attending urologist studied the case from a renal point of view and found abacterial pyuria in both kidneys. Investigations for Koch's bacilli were all negative. As the patient felt no symptoms he abandoned further medical care. In 1937 renewed urological studies by Vargas-Zalazar gave similar results. An intravenous pyelogram revealed a right hydro-uretero-nephrosis. Dark-ground investigation of bladder urine showed the presence of large numbers of spirilla. He was treated with one dose of 0.15 g. and three of 0.3 g. of neosalvarsan, and in twenty days pyuria and spirilla disappeared from the urine. Later controls have proved his cure to be complete (Vargas-Zalazar, 1937).

Case 2.—A merchant aged 47 consulted Coutts in 1937 because for two months a slight urinary diurnal frequency and tenesmus had been troubling him. His urine was cloudy and did not clear, nor did symptoms disappear after two successive courses of protosil album. On examination there was no urethral discharge, the urine was cloudy, and the prostate and genitalia were normal. Bladder urine contained numerous leucocytes and some red cells but no bacteria. Koch's bacilli were not seen. The bladder capacity was 150 ml., and the urethral orifices were normal. On the trigone and right wall several aphthoid lesions were observed. Dark-ground illumination of the bladder urine deposit revealed numerous spirilla. Methylene-blue instillations into the bladder and three injections of a pentavalent arsenical intravenously cured him. When last seen he was in perfect health and his former trouble had not recurred (Coutts and Vargas-Zalazar, 1945).

Case 3.—A woman aged 34 entered our clinic in 1938. Her previous history was of no importance. The present illness began fourteen months before with slowly increasing urinary frequency by day and night. Terminal haematuria was occasionally present. The bladder urine contained pus and cocci, but Koch's bacillus was absent from several samples. The bladder capacity was 40 ml.; there was intense congestion of mucosa with numerous disseminated ecchymotic spots and patches, some covered by exudate. Local treatment was unsuccessful. Dark-ground examination of bladder urine deposit showed numerous spirilla. Arsenic and bismuth combined cured the condition rapidly (Bisquertt-Torres, 1938).

Case 4.—A married hospital nurse aged 32 began in 1940 to have painless haematuria lasting for two days. There was a similar recurrence in December, 1941. As the loss of blood was not stopped by treatment she was admitted to our clinic. Her bladder urine always showed red cells and a few pus cells but no germs. Koch's bacilli were never found. Blood pressure and coagulation tests were normal. Bilateral renal catheterization on two occasions showed blood in both kidney pelves and very slight pyuria but no bacilli. Koch's bacilli were not found. A descending pyelogram proved normal. Dark-ground examination was positive for spirilla (bladder urine). She was treated with pentavalent arsenic by mouth, and haematuria then disappeared. In November, 1944, haematuria reappeared, and spirilla were found in bladder urine. She was cured with stovarsol and was sent to her dentist (Coutts and Vargas-Zalazar, 1945). Up to the time of writing she had relapsed once again.

Case 5.—A physician aged 49 consulted Coutts in 1946 for dysuria and cloudy urine. Five days previously a dead nerve was removed from the canal of an upper median incisor. A few hours later the upper lip started swelling, and twenty-four hours later an abscess of the anterior portion of the gum was drained surgically. Bladder

symptoms started shortly afterwards. There was no urethral discharge; pus was present in the urine, but no bacteria. Under dark-ground illumination a few spirilla were found. He had been taking sulphonamides. Stovarsol was given by mouth; bladder symptoms subsided and pus disappeared from urine.

Discussion

Cases of abacterial pyuria, besides those already quoted, have also been studied by Schaffhauser (1937), Houtappel (1939), Moore (1940, 1943), Cook (1944), Donovan (1945), Peters (1946), etc. Most of them have been cured with arsenicals, but in no case have spirochaetes been proved to be their cause, although they have often been considered as the possible aetiological agent. Peters (1946) brings this problem up again; because of the prompt therapeutic action of neoarsphenamine he believes that the causative organism belongs to the spirochaete group. The spirochaete, he thinks, has escaped identification, probably because of some morphological peculiarity. Except those published by us (Vargas-Zalazar, 1937; Coutts, 1938; Coutts and Vargas-Zalazar, 1945) only one case of pyuria by spirochaetes appears in the medical literature; it was also studied at the clinic here and reported on by Bisquetti-Torres (1938). According to our observations bladder and kidneys may become infected by the ascending or the descending route. Spirochaetal (non-syphilitic) infection of the male and female urethra is not uncommon. Descending infection is usually of the blood-stream type. Spirochaetes have been found in bladder urine in cases of so-called war nephritis (Salomon and Neveu), in trench fever (Nankivell and Sundell), in relapsing fever (Chung), and in Weil's disease. In our opinion the spirochaetes present in our cases might have a buccal or intestinal origin. Pettit (1928) considered the possible buccal nature of spirochaetes discovered by Croveri in stools; Buttiaux (1930) found them in stools of patients suffering from colitis; Docges (1938) found them in gastric glands in 45% of 103 samples of stomachs selected from 3,400 necropsies; Kritchewski and Séguin (1923) found them in cases of retrograde pulpitis; Cavalié and Mandoul (1921) in alveolar-dental expulsive polyarthritis; Gins (1942) in cases of periodontitis; Saenz de la Calzada (1934) describes a case of urinary frequency of dental origin; Ferreira (1939) reports a case of metastatic infection of the prostate from a dental focus; Goldberg (1943) describes prostatitis and arthritis of dental origin.

In all our cases we found spirilla of diverse morphology; some were slender and had only a few spirals, while others were very similar to *Sp. dentium*. We believe they belonged to the buccal flora, but we have no further evidence of this. Treatment with pentavalent arsenicals was always successful. All cases were submitted to dental attention. In order to demonstrate the presence of these fragile micro-organisms we recommend slow and prolonged centrifugation of freshly obtained bladder urine. Before examining the deposit under dark-ground illumination it is advisable to add a drop of normal saline at 37° C. in order to increase the movements of the parasites.

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PERIPHERAL NERVE INJURIES RECENT PROGRESS IN TREATMENT

BY

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The importance of peripheral nerve injuries in modern warfare is shown by the fact that Spurling and Woodhall (1946) estimate that there were 25,000 peripheral nerve injuries in the second world war, and that they formed 10.5% of battle casualties. There are no fewer than 7,000 end-to-end sutures in the U.S. Registry of Peripheral Nerve Injuries, which was established in November, 1944, to follow up these injuries and assess at regular intervals the results of treatment.

While the final results will not be available for some years, the preliminary reports of surgeons in both American and British neurosurgical teams and centres are of great value and convey information which must influence the future treatment of this type of injury. The opinion expressed in the *Report on Peripheral Nerve Injuries* which was published after the first world war (1920), that the results of treatment are largely independent of the interval between wounding and surgical repair, had already been disproved, as regards delayed suture, by the poor quality of the clinical results and the underlying reasons for failure explained by the important experimental work carried out during the last few years. Thus Holmes and Young (1942), Sanders (1942), and other workers showed that the poor results after delayed secondary suture were due to shrinkage of the neurilemma tubes in the peripheral segment, which delayed maturation of the down-growing axonal fibres; and Gutmann and Young (1944) found that with delay there is progressive atrophy in the muscle fibres and end-plates, so that the new fibres returning down the tubes are, after some months, unable to re-enter the old nerve plates. The resulting pattern of innervation is then far from normal, and many muscle fibres never recover at all.

It was therefore fully realized that delay in suturing was certain to lead to reduced efficiency of regeneration, but there was no unanimity concerning the respective advantages of primary and early secondary suture. The obvious arguments in favour of some delay in suture were: (1) to give time for at least some absorption to take place of the degeneration products in the neurilemma tubes in the peripheral segment and at the site of division; (2) Tello and Cajal's view that the new fibres are drawn into the peripheral stump by chemical attraction set up by the degenerated products, which reached its height two to three weeks after division of the nerve; (3) the possibility that the Schwann cells which line the walls of the neurilemma tubes regenerate rapidly after division and aid down-growth of the axonal protoplasm.

Cajal's views were adopted by Duel and Ballance (1932) with considerable success in experimental work on monkeys and in human beings, in whom Duel used degenerated autografts to repair defects in the facial nerve. These problems were, however, reinvestigated by Bentley and Hill (1936), who failed to find any evidence in favour of Tello and Cajal's theories, and their views are supported by Sanders and Young (1942). Ahernrombie and Johnson (1942) and Young (1942) do not agree with these adverse findings regarding the advantages of predegeneration, and their conclusions accord more closely with the clinical results, about which there can be no dispute. These authors found evidence that degeneration of the nerve fibres caused activation of the Schwann cells, which reached its peak between the 19th and 25th days after section; and, since Schwann cells probably play an important part in forming the junction when severed nerves are repaired, they will be more active in joining together two nerve stumps if the nerve suture or nerve graft is left a few (say 10 to 20) days to degenerate before making the repair. "In this way there would be less likelihood that the Schwann cell junction will be hindered by the prior development in the suture line of serious fibrosis. The same argument indicates the use of predegenerated grafts, providing predegeneration is short (10 to 20 days)."

Advantages of Early Secondary Suture

The clinical results furnish strong evidence in favour of early secondary as opposed to primary suture. Zachary and

Ascorbic acid preparations may now be supplied to the welfare departments of factories. The Directorate of Medical Supplies of the Ministry of Supply, Portland House, Tothill Street, London, S.W.1, has taken over the supply and distribution of these preparations.

Holmes (1946) analysed 49 cases of primary suture from a clinical standpoint, and concluded that the general standard of recovery after early secondary suture is better than after primary suture. Thus, in comparable groups, 4 out of 12 early secondary sutures of low lesions of the ulnar nerve reached nearly complete recovery, even of the intrinsic hand muscles, whereas only 2 of 13 primary sutures reached the same stage; and one of these patients was aged 7, which favoured the primary suture results, as it is generally agreed that the prognosis of nerve suture is considerably better in young individuals.

The preliminary report of the American Army neurological surgeons Spurling and Woodhall (1946) offers still more convincing evidence in favour of early secondary suture. Their figures show that primary suture resulted in 22.4% of failures, whereas early secondary suture after the wound had healed had only 5% failures, and primary healing of the wound took place in 98% after the secondary operation for formal nerve repair. They conclude that, while the results of early nerve suture show a promising trend toward normal regeneration in most of the cases treated, the high incidence of failure in primary nerve suture has been clearly proved and substantiates the directives forbidding this procedure issued during the war in the European theatre of operations. We must therefore conclude that primary nerve suture at the time of wound excision is inadvisable, the best results being given by early secondary suture as soon as the wound is healed and, if possible, in the period two to five or six weeks after injury.

There is, however, not the same agreement concerning the treatment of the nerve stumps at the time of wound excision. Spurling and Woodhall recommend that they should be roughly approximated by a sling suture, but Thomson *et al.* (1946) found that retaining sutures were harmful, because they increased the amount of fibrosis within the nerve ends and were of negligible help to the operator in subsequent identification. They consider that the nerve ends should simply be placed under the adjacent muscles for protection. The efficiency of wound excision and chemotherapy in the forward areas was manifested by the fact that comparatively little scarring was found when early secondary suture was performed in the 1,500 cases recorded by Spurling and Woodhall, so that the stumps were readily mobilized and the gaps that could not be closed by end-to-end suture amounted to less than 1%. Sufficient mobilization to ensure coaptation of the nerve ends without any tension may necessitate an extensive dissection, which is of course inadmissible at the time of wound excision, both in surgery of warfare and in that of civil life.

Spurling and Woodhall emphasize that every surgeon who participated in peripheral nerve surgery was instructed in the following generally accepted principles:

1. The suture line must be free from tension, this result being accomplished by extensive dissection, with transplantation of the proximal and distal nerve segments if indicated, rather than by traction and unphysiological flexion of the contiguous joints.
2. The proximal and distal ends must be accurately trimmed until grossly normal nerve ends were visible.
3. The transected ends must be approximated by a very carefully performed interrupted epineural suture. The use of a trans-neural or sling suture was left for the surgeon to decide.
4. Rigid haemostasis was mandatory, and was to be accomplished without the use of a tourniquet unless required by an associated vascular lesion.
5. Nerve lesions other than division were to be treated by strict conservatism.

Tantalum wire 0.003 in. (0.076 mm.) swaged upon atraumatic needles was recommended as suture material, but was not mandatory. Fine silk could be used if preferred, or if tantalum wire was not obtainable. Tantalum wire has the advantage of being radio-opaque, which, in some cases that failed to recover function, was found helpful as evidence of disruption of the nerve ends. The use of fibrin film and clot (Singer, 1945), with a tension suture only, to fix the nerve ends together does not appear to have improved results, and Thomson found that they increased fibrosis.

Gum acacia 50% has proved successful to fix skin grafts in place (Rubin, 1945), and has also been used to glue nerve ends or cable graft strands together (Klemme *et al.*, 1943).

Causes of Failure of Primary Repair

Zachary and Holmes's analysis of the causes of failure in 19 cases of primary suture which they explored is instructive.

They excluded from their total number of 49 cases no fewer than three cases in which they found that the nerve had been sutured in error to a cut tendon which were referred to the Wingfield-Morris Peripheral Nerve Injury Centre. Every surgeon has encountered similar gross mistakes of this kind, and it is not surprising to note that these authors regard poor technique at primary repair as the principal cause of failure. As primary nerve suture is definitely contraindicated as an emergency procedure, it would be productive of better results if all cases needing peripheral nerve surgery were, whenever possible, referred to special neurosurgical centres, where formal early secondary repair could be carried out by those with special experience and interest in this branch of surgery.

In carrying out early secondary suture, the proximal and distal segments of the nerve should be identified in their undisturbed surroundings above and below the lesion. Before the nerves are displaced a single marking stitch of black silk should be inserted through the epineural sheath near their cut ends to prevent axial rotation, as there is a definite possibility that the inferior results in suture of a mixed nerve, such as the ulnar, may be due to "shunting" and inability of the larger motor fibres to grow down the smaller sensory neurilemma tubes which may lie opposite them if rotation should have occurred.

Inadequate resection of the nerve ends is the next most common cause of failure, and the ends must be cut back with a fine sharp knife or razor blade until rounded glistening fasciculi are exposed in both segments. The pattern of the fascicular bundles in the ends of the nerves is then matched as nearly as possible, and close apposition made by interrupted fine silk sutures which include the epineural sheath only. The line of union must be accurate, as otherwise the regenerating fibrils will escape from the junction and form a neuroma with subsequent loss of function. Secondary suture is facilitated and rendered more secure by the thickening of the epineural sheath, which is well marked two or three weeks after division.

When loss of nerve function follows contusion without an open wound, greater difficulty is encountered in assessing the degree of injury, and we may, because of the hope that spontaneous recovery will occur, lose the opportunity of early repair if recovery should fail to take place. In the absence of any evidence of recovery the nerve should be explored within three months of injury. The appearance and feel of the nerve and its ability to transmit a weak faradic current on direct stimulation are of assistance in determining the extent of intraneural damage. In the absence of definite evidence of gross injury the nerve should be freed from any adhesions, protected from scar, and then left alone, as a surprising degree of spontaneous recovery may take place (Livingston *et al.*, 1945). A negative response to faradism when tested through the intact skin is unreliable. Learmonth (1944) found that the study of the curves of muscle excitability is of assistance in doubtful cases (Ritchie, 1944; Hoen, 1946). In partial wedge-shaped injury to a nerve, or in excision of a neuroma in continuity, great care must be taken to preserve any remaining conducting nerve bundles which give a response, the divided fascicles being adequately resected and then sutured end-to-end, after the intact portion has been mobilized sufficiently to enable them to be brought together without tension.

The prognosis is particularly bad in ulnar nerve lesions. Elkington (1944) found that this was equally true whether the lesion was near the wrist or high in the forearm, in apparent contradiction to the general rule that a lesion is more serious the higher it is situated in a nerve, because of the longer time required for regeneration after repair. One factor may be that the intrinsic muscles of the hand act as opponents to the long flexor muscles as they extend the fingers at their interphalangeal joints, through their insertions into the extensor tendon expansions.

When division of the ulnar nerve, and particularly of both the ulnar and median nerves, is done below the level of supply to the long flexors a marked degree of clawing of the fingers is produced by the then unopposed action of the long flexor muscles, whereas, though the long flexors are also paralysed in high lesions, this troublesome dissociation clawing does not occur. Seddon makes the helpful practical suggestion that the poor results after injuries of the ulnar and median

erves at the wrist might in part be explained by the fact that after repair the hand is kept flexed at the wrist to relax the suture line, which may be damaged during subsequent correction of the position. It is his practice to mobilize the nerve, if need be up to the elbow, so that it could be sutured with the elbow flexed to 90° and the wrist in the neutral position or even in slight extension.

Nerve Grafting

We have seen that end-to-end suture must be without tension, and when there is any considerable gap following the injury or resection of the nerve ends many ingenious procedures have been practised to enable the ends to be brought together. Mobilization of the segments by blunt dissection, transplantation of the ulnar nerve to the front of the elbow, re-routing the radial to the antero-medial side of the humerus, and, when associated with a compound fracture, resection of as much as 3 in. (7.5 cm.) of the shaft of the humerus have all been practised with more or less success. When a gap between the ends of a nerve cannot be closed by any of these length-gaining procedures the prognosis is exceedingly bad, as there is at present no satisfactory way of dealing with this condition, in spite of the fact that both scientists and surgeons have worked at the problem for many years. All the devices to provide a sleeve or scaffolding which would fill the gap and guide regenerating nerve fibrils into the distal stump have so far proved unsuccessful.

Homografts.—The use of nerve homografts—grafts transplanted from an individual of the same species—has yielded results which are difficult to interpret, as the regenerating fibrils grow down for varying distances into the graft and then fail to progress. Seddon and Holmes (1944) suggest that the homograft sets up an active immune reaction, such as Medawar (1945) found to be responsible for the destruction of skin homografts, preceded by a latent period during which their behaviour resembles that of an autograft. During the latent period the nerve fibres begin to colonize the graft, and in a short homograft in animal experiments may even succeed in traversing the graft before the specific immunity reaction sets in and arrests further progress, if it catches them still in the graft. Further complete failure with homografts has recently been reported by Barnes *et al.* (1946) in 8 cases. The use of stored grafts to avoid this immune reaction has proved equally unsuccessful, as they were found to provoke a foreign-body reaction which led to their removal by phagocytosis.

Autografts.—The results following the use of autografts have been more encouraging, as, though the graft dies, it preserves its original neurilemma structure, and neurotization of the autograft is predominantly regular and parallel to the graft structure, while in homografts the regenerating fibres follow an irregular and deviating course (Loyal Davis *et al.*, 1945). Autografts of sufficient size are, however, seldom obtainable in human surgery.

I have already referred to Duel's successful use of degenerated grafts. The method he employed was to cut the anterior femoral cutaneous nerve proximally and distally, and then to leave it otherwise undisturbed in place for two or three weeks to allow degeneration and enough absorption to take place before using it as a graft. Duel (1934) states that when portions of the nerves treated in this manner were used to graft defects in the facial nerve, facial response was restored in a quarter to half the time formerly required for fresh grafts. Lathrop (1946) used Duel's technique with success in 9 cases to repair lesions of the facial nerve secondary to war wounds. He employed fresh grafts of the anterior femoral cutaneous nerve in 5 and predegenerated grafts in 4 cases, and reports that the only advantage of the latter was that it was more easily handled because "its increased consistency permitted better coaptation of the suture lines"; but the rate of recovery of function was not hastened.

Bunnell (1944), utilizing the sural cutaneous nerve from the back of the calf as a fresh cable autograft, records very successful results. A bundle of short lengths of a size to match the injured nerve was used. This method has not proved so successful in other hands. Loyal Davis found that "even in the cat autogenous grafts did not heal like an end-to-end

suture. The ectodermal elements of the graft underwent a necrobiotic process, and only the mesodermal elements remained alive. The myelin degeneration process was different from Wallerian degeneration. It also seemed that the Schwann cells in the graft became necrotic, possibly as a result of ischaemia. The mesodermal endoneural cells, however, usually survived and were an important factor in the preservation of the original structure of the graft. They proliferated almost immediately after implantation of the graft, and thus paved the way for the regenerating nerve fibres which, accompanied by outgrowing Schwann cells, followed the old endoneural tubes."

Necrosis is most marked in the central portions of a large autograft, and regenerating nerve fibres to a great extent occupy the peripheral zones of the graft. Bunnell considers that this is due to the surrounding lymph having penetrated the periphery to maintain its vitality, and he believes that the success of the multiple-stranded autograft is due to the fact that lymph is able to penetrate more easily throughout its looser structure. Gutmann and Sanders (1943), however, suggest that the endoneural tubes may be too narrow to allow the effective maturation of large motor fibres, and consider that this may explain some cases of failure of cable grafts of cutaneous nerves for gaps in the larger peripheral nerves, though they may succeed, as Bunnell has found, in repair of smaller sensory nerves and for certain special nerves such as the facial.

Tendon Transplantation.—In the present state of our knowledge, however, the chances of success after grafting are so poor that, in addition to the use of an autograft, tendon transplantation should be resorted to without delay. There seems little justification for Iselin's (1945) arguments in favour of tendon transplantation as a routine measure even when end-to-end suture has been possible. He advises early muscle transplantation in all cases of division of the larger peripheral nerves before muscle atrophy; joint stiffness, and other trophic changes have had time to develop and to curtail the period of incapacity. He considers that the present practice of resorting to orthopaedic measures only after nerve repair has failed has little chance of success, because too much is required of the transplanted muscles, which, though weakened and acting at considerable disadvantage in their new positions, are expected not only to correct deformity but also to furnish movement. He urges, along the same lines as Bunnell, that the static deformity must first be corrected by tenodeses and other orthopaedic methods before the muscles are transplanted to restore mobility. Iselin believes that, even in the event of nerve repair ultimately proving successful, this result will be assisted because the transplanted muscles act as tutors while those whose action they have reinforced are regaining their functions.

Iselin's views appear to be supported by Altman and Trott (1946), who performed muscle transplantations in 23 cases of paralysis of the radial nerve, with most successful results, as the function of the hand and wrist approached normal in approximately two to three months after the operation, of which they describe some useful modifications in technique. Tendon transplantations have proved successful and have been widely practised for many years to correct the effects of radial nerve paralysis, and more recently treatment along similar lines has been devised to restore some usefulness to clawed fingers secondary to an irremediable ulnar nerve lesion, and to bring back opposition of the thumb after paralysis of the muscles concerned in that essential movement. Bunnell, in particular, has given a detailed description of this form of treatment.

Conclusion

Throughout all stages of the treatment of peripheral nerve injuries it is of great importance to remember that denervation is associated with trophic changes which affect all the structures of the limb, including the joints; and though splinting is necessary in their treatment and after-treatment to relax the paralysed muscles and to safeguard the nerve repair, the splints must be removed frequently to permit guarded exercises to preserve joint mobility and electrical stimulation of the paralysed muscles, as the one and only criterion of success is restoration of function, which is so quickly lost and so difficult to regain.

Summary

The reasons are given why delayed secondary suture of peripheral nerve lesions is likely to prove unsuccessful.

The preliminary results of surgical treatment during the second world war, which are now becoming available, furnish strong evidence in favour of early secondary as opposed to primary nerve suture.

Recent work on nerve grafts is considered.

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ACUTE APPENDICITIS IN THE AGED

BY

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Relatively little has been written about this ubiquitous disease in the aged, yet its manifestations are often so different in patients over 60 that a description is merited. The following points are stressed: (1) The incidence, and the advanced age at which it may occur. (2) The differences in the symptom-complex, and the importance of bearing them in mind. (3) The difficulties in diagnosis and treatment. At any age surgical intervention is well worth while.

Pathology

In acute appendicitis 1 to 2% of all cases occur in patients who are over 60 years of age (Taylor, 1935; Maylard, 1920). The aetiology of the disease is the same as at other ages, but emphasis must be placed on obstructive factors, especially faecoliths. The structure of the organ has altered by the time 60 years have passed. Most of the lymphoid tissue has disappeared and fibrous atrophic changes have occurred, associated with vascular changes, causing impaired circulation and an inability to respond to the demands of inflammation for increased blood supply. Thus the devitalized organ, when subject to obstruction, rapidly succumbs to the onslaught of the infective contents and soon perforates. The omentum and general peritoneum often lack their pristine ability to localize infection, and general peritonitis results. This is withstood poorly, and a fatal termination is common.

The following summary of different series clearly demonstrates the prevalence of serious pathological changes:

		Stalker	Wood
Appendix ruptured ..	..	62%	80%
Appendix not ruptured ..	..	38%	20%

These figures show that in over two-thirds of the cases the appendix is ruptured.

The mortality is variously reported: Stalker (1940), 16%; Taylor (1935), 20%; Wood (1934), 28%; Fitch (1928), 54%. The commonest causes of death are general peritonitis and

pneumonia, while pulmonary embolism, cardiovascular accidents, cardiac failure, septicaemia, and intestinal obstruction account for a small number. Thus acute appendicitis in the aged rapidly passes to a state of gangrene, followed by perforation and often by general peritonitis, when the localizing powers are too slow or ineffective to allow of abscess formation.

Clinical Aspects

The symptoms and signs differ considerably from the usual pattern in younger patients, but nevertheless there is a fairly well defined syndrome in the aged. Pain is often poorly localized, though nearly always present, and becomes intense only when peritonitis has supervened. In the early stages it is frequently attributed to constipation, which often accompanies or precedes the attack. The taking of aperients, no doubt, adversely affects the issue.

The general reactions of nausea, vomiting, fever, and elevated pulse rate are not found, though a slight fever is recorded in some cases, especially when general peritonitis has supervened. The localizing signs of rigidity, tenderness, and pain on rectal examination are vague and inconclusive, or are absent. Thus in the early stages the patient does not appear ill and show no signs of the mischief afoot, so that even the wary may be deceived into thinking that constipation is the only complaint. The patient frequently considers this to be the trouble, and delays seeking advice. Hence many cases are not seen until peritonitis has developed.

The clinical picture is now dominated by pain and distension, while vomiting and fever are common. Intestinal obstruction is often suspected by the medical attendant, and valuable time may be lost in attempts to locate a growth. When a mass is present this diagnosis receives strong support. (In Wood's series 38% were misdiagnosed before operation as carcinoma or obstruction of the bowel.) Assistance in diagnosis will be found in a white cell count, which is often significantly elevated even in the aged, but it will greatly help if it be remembered that 1 to 2% of all cases of acute appendicitis are found among those over 60.

Treatment

It is manifest that ideals in treatment are difficult to attain when the surgeon is in doubt as to the nature of the condition before operation. If there is a confident diagnosis, a muscle-cutting incision exposing the lateral side of the caecum permits the removal of the appendix with a minimum of interference with the peritoneal cavity. Those cases showing satisfactory ability to localize the condition—i.e., "appendix mass"—are best treated conservatively, provided the symptoms subside under conditions of rest. Close observation in hospital is, of course, essential.

When appendicitis is considered possible, but there is some doubt as to the diagnosis (38% of cases according to Wood) an incision over the right iliac fossa should be made rather than a near midline laparotomy. If the appendix proves innocent, the operation can be concluded promptly by a caecostomy for relief of large-bowel obstruction. Rarely will it be necessary to close the original incision and make a near midline one in search of small-bowel obstruction.

If there is no suspicion of the appendix before operation and a near midline laparotomy has been performed, appendicectomy should be done only when the surgeon is confident of an easy, speedy removal, with a minimum of manipulation of the intestines—e.g., pelvic or ileac position of the appendix and no adhesions. When the general condition is far from satisfactory a drain down to the appendix is wiser. Taylor, in 1935, strongly advocated drainage in all cases, and particularly stressed the dangers of appendicectomy through a near midline incision.

The following case well illustrates most of the above remarks and it is recorded to emphasize the advanced age at which the condition may be successfully treated.

Case Report

A woman aged 85 was admitted to Kingston County Hospital from a pensioners' home on Aug. 8, 1946. She had been constipated for several days, but made no other complaint until a sudden attack of vomiting the previous evening. Two enemata that night produced neither flatus nor faeces. She continued to vomit greenish-brown offensive fluid, and complained of some vague abdominal pain.

On examination the old lady was very thin and dehydrated, with dry coated tongue and distended abdomen, especially centrally. She tended to hold the abdomen tight and resented palpation, but no localized pain or mass was detected. Auscultation of the abdomen was inconclusive. Rectal examination was negative, and no herniae were present. All other systems were normal. The temperature was 96° F. (37.55° C.), pulse 86, respirations 22. A provisional diagnosis of acute intestinal obstruction was made, and the stomach emptied by a Ryle tube, while an intravenous infusion of saline and plasma was administered. Two further enemas failed to produce a result, and a laparotomy under thiopentone-cyclopropane anaesthesia was made a few hours after admission. A lower right paramedian incision revealed free foul pus in the peritoneum and a sticky exudate covering acutely inflamed dilated loops of bowel. The caecum was collapsed, and a perforated gangrenous appendix was lying in the same position, free from adhesions. The appendix was easily clivered and removed. The peritoneum was drained and the abdomen closed.

Post-operative treatment, including intravenous glucose-saline, with alphadiazine 1 g. 4-hourly and 15,000 units of penicillin 3-hourly, brought about steady improvement, and the patient was discharged to the pensioners' home on the sixteenth day of the illness.

Discussion

Early symptoms were not noticed by the patient, and only when vomiting occurred (due to established peritonitis) was advice sought. The clinical picture strongly suggested intestinal obstruction, which no doubt was present in the nature of an ileus, but the cause was not diagnosed until the abdomen was opened. A white cell count before operation might have aroused sufficient suspicion of acute appendicitis to cause the preferable method of right iliac incision to be used. The remarkably eventful recovery indicates that even advanced age should not deter the surgeon.

Summary

An account of acute appendicitis in the aged is given. The incidence is 1-2% of all cases of acute appendicitis, and the mortality about 25-30%.

The pathology is a rapid development of gangrene, perforation, and peritonitis.

Clinical aspects are discussed, stressing the paucity of symptoms and signs in the first few days, and the similarity to acute intestinal obstruction and growth of the bowel in later cases.

The treatment is discussed (1) when there is a confident pre-operative diagnosis; (2) when acute appendicitis is merely suspected; and (3) when acute appendicitis is not diagnosed before operation.

An illustrative case at the advanced age of 85, with survival, is reported.

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The Medical Officer of Health of Willesden, Dr. G. F. Buchan, has presented an interesting review of his 34 years' period of office with that borough. From the days when he toured his district in a horse-drawn carriage ("thereby adding greatly to the enjoyment of life and work") to the present time, every year has seen the extension, and sometimes the pioneering, of public health facilities. Comparing the five years 1907-11 with 1941-5, the death rate fell from 11.1 to 8.3, the infantile mortality rate from 100 to 50, and the maternal mortality rate from 3.8 to 1.7. A ringworm clinic was opened in 1912 and has greatly reduced the incidence of that disease; an eye clinic followed in 1914. Already in that year the falling birth rate was being critically examined from physical, social, and economic aspects. In 1917 a midwife and home-help service began for necessitous mothers confined at home. A scholarship scheme for training sanitary inspectors, the first of its kind, which was started in 1927, is very successful and has been copied by other local authorities. Of the three health centres the first was opened in 1916, the second in 1918, and the third in 1930, attendances rising from 18,089 in 1917 to 255,962 in 1938. Plans for the extension of the health services have been worked out, but they are necessarily tentative because of the priority of housing.

Medical Memoranda

New Albumin Blood Substitutes

Known blood substitutes (salts) do not yield good results when the patient has lost large quantities of blood or is in a condition of traumatic shock. It has long been considered necessary to add a colloidal component to the salt solution of every blood or plasma substitute to give it body when injected into the blood vessels. The manufacture of artificial colloidal media as substitutes for blood is still an urgent problem. The selection is limited by the presence of foreign albumins which are biologically active; the colloidal-albumin component of the blood substitute should therefore possess no anaphylactogenic or primary toxic properties.

In our work at the Blood Transfusion Institute we have made use of a solution for intravenous transfusion which we called "colloidal infusin"; it contains an albumin product obtained from the casein of cows' milk. Casein, of course, has both anaphylactogenic and toxic properties. We set about preparing an albumin product from casein which did not possess these properties and which could be used for internal injection in large quantities. A system of fractionation of natural casein was developed to remove the substances possessing primary toxic and anaphylactogenic properties. Practically, this consists in a special method of denaturation and a weak hydrolysis of the initial natural albumin with extraction by means of an organic diluent.

EXPERIMENTAL

Before recommending colloidal infusin to the clinics as a therapeutic medium for parenteral infusion and injections we studied it on animals. Experiments on the substitution and stimulation aspects of the solution were developed in accordance with the following plan: (1) Biological test for anaphylactogenic and primary toxic properties. (2) Substitution effect on dogs whose blood had been drained in quantities sufficient to cause death. (3) A study of the dynamics of the serum albumins in patients suffering from alimentary dystrophy and treated with frequent injections of colloidal infusin. (4) The effect of non-anaphylactogenic casein on the permeability of the blood vessels in patients suffering from alimentary dystrophy and in experimental animals.

Numerous experiments on rabbits showed the complete absence of toxic properties in colloidal infusin (4% concentration) after a single injection of a large quantity (up to 2 g. per kg. weight with internal application). Subsequent internal injections of this albumin at optimum times for anaphylaxis did not produce any reactive effect in the rabbits. The testing of the solution on guinea-pigs by the classic method of producing anaphylaxis also gave negative results.

CLINICAL APPLICATION

To-day we have behind us the experience of 700 clinical transfusions of colloidal infusin given to patients suffering from various ailments (burns, volvulus, alimentary dystrophy, etc.). In many cases a second injection was given at a period dangerous for anaphylaxis, and no reactions were noted which in any way resembled a state of allergy (rash, Quincke's oedema, and other symptoms).

By using numerous successive injections of colloidal infusin we were able to obtain a rapid increase in the amount of albumin in the serum of patients suffering from alimentary dystrophy, with a corresponding increase in colloidosmotic pressure. The data obtained in experiments on animals and in the treatment of human beings demonstrate the significance of colloidal infusin in combating hypoproteinaemia in various diseases.

We now have considerable data, both clinical and experimental, on the question of the effect of colloidal infusin on the permeability of the epithelium of the capillaries of the patient. The question of the permeability of the capillaries is an important pathogenic factor in the development of many diseases. As a rule an injection of colloidal infusin noticeably lowers the permeability of the capillaries, with a pathogenic increase in permeability during the first hours after the injection. Lower capillary permeability was expressed by a lowering of the liquid filtration figure and—a most important fact—by a cessation in the pathological filtration of albumin.

Colloidal infusin is now used clinically in the following ways: as a plasma substitute in cases of traumatic shock and as a complete blood substitute in cases where there has been considerable loss of blood; as a means of treating hypoproteinaemia of various origins (exhaustion from wounds, deficiency of food,

etc.); and as a stimulant in all cases of indolent wounds. In the surgical and therapeutical clinics of the Academy Profs. H. H. Vlahos and V. I. Kazansky have made over 700 injections of colloidal infusin. Patients have proved able to withstand large doses of the solution, and its value as a substitute and a stimulant has been proved.

Prof. N. A. FEDOROV, M.D.,
Director of Experimental Laboratory.
Blood Transfusion Institute,
Academy of Medical Sciences, U.S.S.R.

Monovular Twins

I would like to place on record the following case of twin labour which occurred at the Bosworth Park Infirmary, Market Bosworth, and which appears to confute the theory of X and Y chromosomes.

CASE REPORT

In a primipara aged 31 a twin pregnancy was diagnosed antenatally. This was confirmed some three weeks before parturition by an x-ray photograph, which showed a vertex and a breech presenting. A week later the breech of the larger foetus seemed to be in front of the vertex of the smaller; so by simple external manipulation the latter was made to engage in the pelvic brim.

At the commencement of labour the diagnosis of vertex and breech was confirmed, and the vertex was found to be leading. Labour proceeded normally and expeditiously up to the birth of the first twin, a girl who weighed 5 lb. 2 oz. (2.3 kg.); the placenta, however, remained *in situ*, and its normal delivery was prevented by the head of the second twin following on the heels of the first, so that the second head engaged in the pelvic brim, and the presenting part became the vertex instead of the breech. The birth of the second child was complicated by the presence of the umbilical cord of the first, which latter was no doubt responsible for the imperfect flexion of the head, which resulted in a deep transverse arrest. With the aid of forceps the second twin, a boy of 6 lb. 12 oz. (3.06 kg.), was delivered 2 hrs. 20 mins. after the first.

The after-birth came away naturally after the second twin was born, and consisted of a single bag of membranes containing two placentae. There was no visible communication between the two placentae, nor was there any evidence, either macroscopically or by palpation, of the remains of an atrophied partition of membranes, which would have indicated the fusion of two gestation sacs into one. Mother and children are all doing well.

I am indebted to Dr. G. D. Kelly for permission to publish this case.

G. H. PICKERING, M.R.C.S., L.R.C.P.

Oedema of Vulva due to Toxaemia of Pregnancy

The following case of vulval oedema obstructing normal delivery may be thought interesting enough to be put on record.

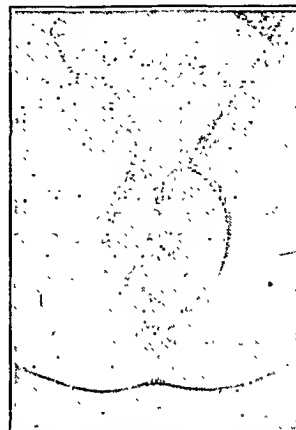
CASE REPORT

Mrs. B., a primigravida of 21 years, attended the antenatal clinic at this hospital throughout her pregnancy. She had no history of any cardiovascular or renal disease, and these systems were normal on examination. Her last menses started on June 19, 1945, the expected date of delivery therefore being March 26, 1946. At first examination she appeared healthy, her blood pressure being 110/55 mm. Hg. There was no oedema or albuminuria. Her pregnancy was uneventful until Feb. 15, when she complained of some swelling of her legs. A fortnight later, at the 36th week of pregnancy, her B.P. was 150/95. On March 14, the 38th week, her B.P. was 150/105, and there was considerable albuminuria (+ +), together with gross pitting oedema of legs and thighs, stretching up on to the anterior abdominal wall. Her face looked puffy and oedematous, but there was no oedema of her hands. She had vomited once during the previous night, but was free from visual symptoms and headaches.

On examination on admission there was also considerable pitting oedema of the vulva as well as of the legs and abdomen. The B.P. was 150/110, and there was considerable albuminuria—5 parts per 1,000. In spite of routine treatment, including fluid restriction, salt-free low-protein diet, and 3 mg. vitamin B, three times a day, the oedema did not decrease. The following day oedema of the vulva was greater but that of the legs was less. The labia majora and minora were grossly enlarged, as can be seen in the accompanying photograph. Her urine contained 6 parts of albumin per 1,000, and her B.P. was 140/110.

By March 16 no improvement in her condition had occurred; her B.P. was 140/100, albuminuria 5½ parts per 1,000, and oedema greater still. Urinary output was persistently normal and satisfactory. Caesarean section was therefore performed, the indications being a severe pre-eclamptic toxaemia not responding to treatment, with gross oedema of vulva sufficient to obstruct any attempt at a normal delivery. The classical upper-segment operation was performed, because of the impossibility of catheterization of the bladder due to the gross oedema. On opening the peritoneal cavity 1 to 1½ pints (568 to 852 ml.) of pale yellow free fluid was found. This was removed. A normal male child weighing 6 lb. 1 oz. (2.749 kg.) was delivered in good condition, and cried immediately. The mother's condition at the close of the operation was good.

Subsequently her progress was satisfactory. On the third day after operation she developed a temperature. There were no symptoms to account for this, and the oedema prevented a catheter specimen of urine or cervical swab being taken. The pyrexia soon settled with a course of sulphadiazine. The oedema subsided during the course of the next 10 to 14 days, her blood pressure rapidly fell to normal limits, and the albuminuria had disappeared after 10 days. On April 8 she was discharged from hospital in very good health. There was no oedema or albuminuria, and her B.P. was 120/85. The infant weighed 6 lb. 6 oz. (2.89 kg.), was fully breast-fed and



Showing the oedematous vulva, from a photograph taken on March 15, the day before Caesarean section was performed.

in very good condition. The mother was subsequently seen at the postnatal clinic on May 1, 1946, six weeks after delivery, when she was still well, with no trace of oedema or albuminuria. B.P. was 130/70. The child was progressing satisfactorily.

I wish to thank Mr. A. J. Wrigley and Mr. F. H. Finlaison for permission to publish this case, and Mr. M. G. Allen for the photograph.

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Modification of Ochsner and Mahorner Test for Patency of Deep Veins of Calf

It is well established that before an operative cure of varicose veins can be contemplated the patency of the other venous drainage of the leg—that is, the deep system—must be proved. At present there are two standard methods of doing this. The first is that of Ochsner and Mahorner, in which an Esmarch bandage is used to occlude the superficial veins; the onset of pain on walking indicates occlusion of the deep veins. Secondly, that of Delbet and Mocquet, which is based on the anatomical facts that there is free communication between the deep and superficial veins of the calf through the gastrocnemius and soleus and that contraction of those muscles plays a large part in the onward transmission of blood from the leg. When the patient walks with the superficial veins occluded by pressure the collapse of the veins below the pressure signifies patency of the deep veins. The test as described in Hamilton Bailey's *Physical Signs in Clinical Surgery* is a combination of the principles underlying these two tests. Both are rather laborious, and the modification to be described, based on these principles, seems to me more convenient and equally effective.

THE TEST

When the incompetence of the saphenous valves has been proved by the presence of a "cough impulse" the thumb or fingers are laid over the great saphenous vein in the thigh with just sufficient pressure to occlude it. The patient is then asked to raise himself up and down on his toes, thus bringing the muscles of the calf into action. He continues to do this until either he complains of pain or the veins below the thumb are definitely seen to be emptying (this usually takes 15 to 30 seconds). The pressure in the thigh is then released, and the veins will be seen to refill rapidly from above. Any doubts as to their having emptied will be dispelled. If this emptying occurs the deep veins may be confidently stated to be patent.

This is a quick and convenient test and is chiefly of value when emptying occurs. If no collapse is seen, although the deep veins may be patent they should be regarded with suspicion. Further inquiry may reveal a history of old thrombophlebitis, which obviously contraindicates ligation.

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Reviews

PROGRESS OF BIOCHEMISTRY

Annual Review of Biochemistry. Volume XV. Editor, J. Murray Luck; Associate Editors, James H. C. Smith and Hubert S. Loring. (Pp. 634, 30s.) California: Stanford University P.O. Annual Reviews Inc. London: H. K. Lewis and Co.

It is difficult to believe that nearly a year has passed since we noted the appearance of Vol. XIV of the *Annual Review of Biochemistry*. Vol. XV is appreciably smaller than its immediate predecessor, consisting of twenty-one special articles by experts instead of the twenty-eight that appeared in the *Review* for 1945. The number of pages has fallen from 772 to 616, with a corresponding reduction in the lengths of author and subject indexes. The present volume has thus returned very nearly to the size of Vol. XII, published in 1943, and has not maintained the increased girth displayed in the two intervening years. These changes in size seem to be largely fortuitous; they are certainly not due to any alteration in lay-out or typography; these are, as hitherto, clear and unpretentious, without unnecessary flourishes, which would be unbecoming in books as severe as *Annual Reviews*. The twenty-nine authors, all different from last year's, are drawn, as were the authors of the previous volumes, mostly from the United States, the home of twenty-one, who are responsible for fourteen of the articles between them. There are three chapters contributed by four Canadian authors, who this year represent the British Dominions in place of three from Australia last year. There are also three chapters contributed from this country, each by a single author, and one from Switzerland. It is a particular pleasure to find a chapter on the chemistry of the steroids by Prof. T. Reichstein and Dr. H. Reich.

The present volume repeats many of the staple features of previous issues; the authors continue to write from laboratories engaged in a great variety of different activities, from research institutions to medical schools and from university departments to industrial laboratories. The book opens with an article on biological oxidations and reductions, which is perhaps an intentional recognition of the fact that animal and vegetable organisms are primarily elaborate contrivances for securing a smooth and continuous maintenance of these particular chemical reactions, with a maximum thermodynamic efficiency and a minimum production of heat sufficient to maintain the organism at the required activity and temperature without damage. This chapter, covered by K. A. C. Elliot, is followed by one on the non-oxidative enzymes by A. M. Wynne; the biochemical ball is thus opened by two Canadians. After an article by S. Peat of Birmingham University, on plant carbohydrates, a subject on which members of Prof. Haworth's school are particularly fitted to write, we return to the usual regular accounts of the chemistry of certain essential nutrients. This year, as before, we have chapters on the chemistry of the lipids (J. B. Brown) and of the proteins and amino-acids (T. L. Meekin and R. C. Warner), as well as articles on the metabolism of carbohydrate (G. F. and G. T. Cori), of fat (W. C. Stadie) and of proteins and amino-acids (D. Rittenberg and D. Shemin). In the last-mentioned chapter reference is made to the very important work of Umbreit and Gale and their respective colleagues, working on opposite sides of the Atlantic, which has resulted in identification of the co-enzyme of tyrosine decarboxylase with pyridoxal phosphate. Thus, another "B vitamin" has been fitted into an enzyme system essential to intermediary metabolism, but this time, unexpectedly enough, the metabolism of protein and not of carbohydrate.

Vitamins, surveyed by R. A. Dutcher and N. B. Guerrant, are this year covered in a long chapter of 74 pages, the water-soluble and fat-soluble vitamins having been hitherto separately treated. Two contiguous articles, one on photosynthesis (C. S. French) and the other on plant respiration (W. C. James), bear witness to the steady maintenance of interest in vegetable biochemistry, as indeed do also four other chapters, though we are sometimes inclined to forget that bacteria and the many problems arising from their symbiotic or parasitic activities are of vegetable origin. These four chapters are concerned with growth factors for micro-organisms (E. E. Snell), the biochem-

istry of yeast (C. Neuberg), bacterial metabolism (H. A. Barker and M. Doudoroff), and immunochemistry (E. A. Kabat). Perhaps it is not quite fair to place this last chapter under the wing of the plant physiologist and thus remove it from the sphere of influence of the biochemist, who will doubtless also lay claim to the chapters on viruses (N. W. Pirie), chemistry of the hormones (H. Selye and H. Jensen), the biochemistry of teeth (H. M. Leicester) and the steroids, to the last of which reference has already been made.

An account of recent work on pressor amines (W. H. Hartung) strikes a slightly pharmacological note, though it is concerned primarily with the inactivation and detoxication of these substances. The contribution on organic insecticides (W. M. Hoskins and R. Craig) deals with matters of the most far-flung importance in medicine, as well as being highly topical, because of the bearing of insect control on the epidemiology of disease, more especially in wartime and in hot climates.

It will be seen that the 1946 *Review* maintains the catholicity of interest and the high standard of expert knowledge, as witnessed by the names of the authors, that have characterized previous volumes; yet one is left with a slight sense of misgiving. We have the *Annual Reviews of Physiology* as well, to say nothing of surveys of enzymology and chemistry, both pure and applied, some, like this one, from the United States, others from Britain, and some in competition from both sides of the Atlantic. In addition, there are such admirable surveys, periodical but not necessarily strictly annual, as *Vitamins and Hormones*, now in its third number, and one cannot help wondering whether some kind of survey of surveys might not help to reduce their number and thereby also the labour of those who wish to keep up to date as well as of those who are trying to help them to do so.

A. L. B.

OPHTHALMIC SURGERY

Eye Surgery. By H. B. Stallard, M.D., F.R.C.S. (Pp. 444; 338 illustrations, 50s.) Bristol: John Wright and Sons, Ltd. 1946.

It is some thirty-five years since a book on the surgery of the eye has appeared in this country. Mr. H. B. Stallard's substantial volume entitled *Eye Surgery* is therefore welcome. His contribution, as he explains, was written at sea, in military transports, and in camps, amidst many and various distractions, and without any access to ophthalmic literature. This makes it essentially a record of personal methods and experience, but it is none the less a trustworthy guide to current practice. Much that is obsolete (and which finds a place in books produced under more leisurely conditions) is mercifully absent. Inevitably, however, experiences with war casualties tend to colour the writing. Many of the 338 illustrations have been drawn by the author, and this again lends strength to the text, as professional artists cannot illustrate the text so pertinently as the surgeon himself if he has the skill to do so.

The introductory chapter, with its stress on detail, beginning with the personal qualities of the surgeon and ending with the dressings, is characteristic of the book as a whole. A short chapter on anaesthesia and analgesia is followed by an extensive account of the eyelids and reconstructive surgery. This occupies almost a third of the text on operations, and it is here that the effect of the author's experiences during the war are seen at their fullest. The chapter on the lacrimal apparatus contains many personal departures from the standard operations, which, however, are not overlooked. The chapters on the extraocular muscles, on the conjunctiva, cornea, anterior chamber, and sclera are more orthodox in scope, and this also largely applies to the chapters on the iris, the lens, glaucoma, and the retina, choroid, and vitreous. The two concluding chapters deal with traumatic surgery, civil and military, and with the orbit.

Attention to minutiae is the essence of competent operating, and the author's stress on detail makes his text valuable not only for the learner but for the accomplished practitioner. There is much with which individual surgeons will disagree, but the practice of eye surgery as expounded in this book is consistent. Learners will be grateful for the clear indications given on operations for cataract, and few surgeons will quarrel with Mr. Stallard's advice—contrary to textbook teaching—that in the occasional event of the knife being entered with the cutting edge downwards the operation should be postponed, and not

continued at the risk of mutilating the iris. Whether one needle bent at an angle should be used in operations with two needles seems a moot point. Most surgeons prefer to avoid angled instruments, since direction is less certain than with straight instruments.

In post-operative complications in glaucoma delayed reformation of the anterior chamber is undoubtedly a serious matter, but few surgeons will subscribe to the rather pessimistic view taken by the author, which is almost reminiscent of the conception of "aqueous calamity" of the ancient writers. The author likewise probably takes an extreme view in believing that malignant melanomata of the choroid are not so radiosensitive as glioma of the retina. Many pathologists regard melanomata as particularly susceptible to radiation, and believe that the evil repute of the melanomata is due to the early metastases that they give. Few surgeons who have tried it will agree that a Krönlein operation is particularly valuable for the removal of retro-ocular new formations. It is, however, easy to find points from which to dissent in an exhaustive practical treatise. The more significant thing is that here is an adequate text on contemporary operative technique.

PARATUBERCLE BACILLI

Inventaire et Description des Bacilles Paratuberculeux. By Paul Hauduroy. (Pp. 168. 200 francs.) Paris: Masson et Cie. 1946.

If the painstaking collection and recapitulation of facts without any attempt to draw conclusions from them is a worthy scientific purpose, then Prof. Hauduroy may well be congratulated. In his monograph entitled "An Inventory and Description of the Paratubercle Bacilli" he has copied, mainly from the papers of the original authors, a description of no fewer than 160 members of this group. He has wisely refrained from committing himself to any classification of these organisms, realizing that the criteria necessary for such a purpose are still far from clear. He has contented himself rather with defining a problem, and has left it to others to seek its solution. He is plainly intrigued with the potential pathogenicity to laboratory animals of a few strains of paratubercle bacilli; and he has included a chapter on the properties of the tuberculin-like substances, or paratuberculins, that these organisms may produce. The work is for a limited public, intended purely for reference purposes, and will necessarily find a place in the libraries of those whose interest is in systematic bacteriology.

SOME CONTRASTS AND COMPARISONS

Doctors Differ. Five Studies in Contrast: John Elliotson, Hugh Owen Thomas, James Mackenzie, William Macewen, R. W. Philip. By Harley Williams. (Pp. 249; illustrated. 12s. 6d.) London: Jonathan Cape. 1946.

Here is a new and fascinating approach to modern British medical history. The theme of the book is that "the way to make progress in medicine lies through different temperaments." This method is fully justified in the vivid accounts Dr. Harley Williams gives of men opposed in temperament but complementary in achievement who were responsible for some of our most important advances. The first section is concerned with the tentative efforts towards a medical psychology in which such men as Mesmer, Charcot, Freud, and Coué were engaged. Elliotson of University College Hospital is singled out as the pioneer here. His was a brilliant and erratic career well described with incidental sketches of the men with whom he came into contact and generally into conflict. U.C.H. men will be astonished but diverted to read of the strange doings there in its early days, when more or less public séances took place, conducted by Elliotson assisted by two "magnetic" sisters. Wakley of the *Lancet* comes prominently into the picture, first as a stout supporter of Elliotson the innovator, but later a bitter opponent of a "charlatan and exhibitionist." Dr. Williams shows that Elliotson was a real pioneer with the curiosity and perseverance of the scientist, but he was diverted from the track which might have led to a substantial advance in psychology by his belief in an actual fluid magnetism which operated directly or indirectly on certain sensitive people. But there was much that was admirable in Elliotson, and we are reminded that Thackeray dedicated to him the second volume of *Pendennis*.

In the section "Rural Healers" the story of the evolution of orthopaedics from bonesetting is told, illustrated by the

personalities of the Thomas family—Evan, the village bone-setter; H. O. Thomas, his son and the uncle and master of Robert Jones. We have H. O., the fiercely independent and quarrelsome craftsman, and Jones who made friends wherever he went. There are also thumbnail sketches of Hutton, the bonesetter, and Wharton Hood, who sat at his feet.

The next contrasted pair are Osler and James Mackenzie, who were "largely responsible for the great revival of internal medicine, as much a feature of the 20th century as was surgery in the 19th." The two very dissimilar characters are very well done. Then come Macewen and Victor Horsley mainly in connexion with brain surgery. The reviewer found this section particularly attractive, having known and revered both men and most of those mentioned by the way. The two chief actors are described at length with obvious relish: Macewen the self-sufficient—"I am not a co-operator"—who acknowledged no master save Lister, to whom he had acted as house-surgeon; Horsley who "worked gregariously and loved to exchange ideas." The nature of the work of these men is shown as complementary, and justice is done to the genius of both except in one particular. Horsley in his latter days developed a strong interest in politics of an advanced kind. He was adopted as a Liberal candidate for Parliament, but quarrelled with his supporters and resigned. The author says, "Few men aroused more antagonism for their theories of life and more love for their personal qualities." Casting his mind back, the reviewer does not think that love was the sentiment aroused by Horsley—rather admiration and respect. And Dr. Williams does him less than justice when he says he was a "failure as a politician," for he overlooks Horsley's great achievement as a medical statesman more responsible than any other individual for the revolution in the constitution of the B.M.A. which transformed it into a vigorous democratic body with a constitution of which Horsley was the main inspiration. This section has well-timed references to Hughlings Jackson, "the philosopher of the nervous system," and to Rickman Godlee, who was the first to operate on a brain tumour.

The final section is devoted to the fight against tuberculosis, the leading and contrasted figures being Robert Philip of Edinburgh and Trudeau of the U.S.A. Why and how these men dedicated their lives to preventive medicine with special reference to tuberculosis is told with gusto and with a spice of sly malice in regard to Philip which will be greatly enjoyed by those who knew him.

In offering thanks for a very interesting book, a special word of praise is due to the illustrations—mostly portraits. That of Philip is literally lifelike. The reviewer wishes, however, that the portrait of Macewen could have shown him as the commanding and handsome figure he was in his old age—if Macewen can be said to have had an old age.

A.C.

Notes on Books

The Ministry of Health has published a pamphlet *You and Your Children* (H.M. Stationery Office; 6d.) reproducing B.B.C. talks by a woman medical psychologist (Dr. Doris Odum). These gave simple hints on the handling of normal children—their fears, fads, and fancies—and the problems that arise in every family.

A full account of the Royal Cancer Hospital mechanically sorted punched card index system has been compiled by Dr. D. W. Smithers, Mr. K. M. H. Branson, and Dr. H. O. Hartley. Applications for copies should be made to the Secretary of the Royal Cancer Hospital, Fulham Road, London, S.W.3.

A volume of 126 pages, *The League Hands Over*, has been issued from Geneva and is obtainable in London from Allen and Unwin, Ltd., at 2s. The last Assembly of the League of Nations has met and has been dissolved and this little book is meant to illustrate why and how the work goes on. It records briefly what the League did during the war and gives extracts of the speeches delivered during the 21st session held in April, 1946.

The Commonwealth Fund of New York has issued a booklet entitled *Eight Years of Public Health Work*, by Dr. HARRY E. HANDLEY and Miss CAROLINA R. RANDOLPH. The area covered in this report is that of Jones County, Mississippi, and the period 1937-44. The topics considered include sanitation of the community, the child under school age, the school child, the health of the adult, and collection and tabulation of vital statistics. The London publisher is Geoffrey Cumberlege and the price is 3s. 6d.

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NEONATAL DIARRHOEA

The publicity which the outbreak of diarrhoea in the maternity department of the Leicester City General Hospital has received in the lay Press again focuses attention on a problem to which we have referred from time to time.¹ Enteritis in infancy is nowadays divided into neonatal diarrhoea, sometimes called epidemic diarrhoea of the newborn, and the gastro-enteritis of older infants. Outbreaks of diarrhoea in the nurseries attached to maternity units have been frequent in the large cities of America, and particularly in New York, but have rarely been encountered in this country, though medical officers of health and bacteriologists have been specially requested to report any such incidents.² There may be a certain hesitancy in reporting trouble in maternity units just now on account of the great shortage of beds and the natural unwillingness to attract attention to a condition which may necessitate closing down the unit for a period. But primary neonatal diarrhoea is a highly fatal infection, and infantile deaths do result from it. However, the mortality rates in the neonatal period have shown a marked decline during the past five or six years, and it is therefore unlikely that this serious infection has hitherto been common in this country. Incidentally, there is no indication that it is associated in any way with malnutrition.

The problem, however, has been complicated during the past few years by the occurrence among adults of a non-bacterial infectious enteritis which has been particularly prevalent in maternity departments. A typical example was reported in this *Journal* by Brown, Crawford, and Stent.³ The persistence of this infection in maternity units is probably related to the rapid turnover of patients, so that fresh fuel is continually being added to the fire which in consequence keeps smouldering on, flaring up periodically into more serious outbreaks. This infection, characterized by profuse watery diarrhoea of one to four days' duration with slight pyrexia, may affect a high proportion of both mothers and nursing staff, but its incidence among babies is usually much less (around 10%), and as a rule it is a mild infection in the baby, although deaths have occurred, usually in weakly or premature infants. This is the disease which apparently has affected the maternity units where both mothers and nursing staff were being attacked, but the high mortality rate among the infants at Leicester suggests that the infection there may be the true epidemic diarrhoea of the newborn.

The aetiology of the condition is still obscure. Intensive studies on the bacterial flora of affected infants have failed

to show the presence of any accepted pathogen, while there is no evidence that the toxins of such bacteria as *Staph. aureus* or *Cl. welchii* play any part in the pathogenesis of the infection.⁴ An interesting hypothesis has been put forward by Gale,⁵ who found that some strains of *Str. faecalis* actively produced tyramine from tyrosine and that tyramine was toxic to young rats which had not yet developed the specific detoxicating enzyme. Babies in the first few months of life also lack this enzyme, and as active tyramine-producing strains of *Str. faecalis* have been found in the stools of babies with neonatal diarrhoea it was suggested that these organisms might be causally related to the condition. That *Bact. coli* and other Gram-negative bacilli may also be involved is suggested by the finding of *Ps. pyocyanea* as the predominating organism in an outbreak of neonatal diarrhoea⁶ and of *Bact. neapolitanum* in 90% of cases of gastro-enteritis in older infants.⁷ Cruickshank⁸ has put forward the view that many of the types of diarrhoea seen in infants may be associated with potentially pathogenic variants in the coliform group.

The possibility that a virus may be involved cannot of course be excluded in spite of some negative findings. A few years ago two American workers⁹ claimed to have isolated from the stools of cases of neonatal diarrhoea a filtrable agent which produced diarrhoea in inoculated calves. This filtrable agent was unusual in that it resisted heating at 100° C. for five minutes. However, the claims of these workers have not apparently been substantiated. Buddingh and Dodd¹⁰ have described a syndrome of stomatitis and diarrhoea in infants from whose mouth lesions a virus-like agent was isolated, but their syndrome does not correspond with the usual clinical features of neonatal diarrhoea as seen in this country.

While aetiology still remains a mystery, prevention and control of the infection seem to be closely linked with breast-feeding of the infant and a high standard of hygiene in the nursery. The breast-fed baby is not immune to epidemic diarrhoea, but outbreaks are rare and usually mild in character in units where over 90% of the babies are wholly breast-fed, as we understand is the case at both Oxford and Leicester. In one outbreak Ormiston¹¹ reported a fatality rate of 14% among breast-fed babies and of 60% among artificially fed infants. In another outbreak⁶ in a unit where at the time only 12 out of 30 babies were wholly breast-fed these 12 babies alone escaped infection; the remaining 18 all developed diarrhoea and all died. If supplementary feeds have to be used, great care must be taken to see that bottles and teats are washed, and preferably sterilized, immediately after the feeds so that bacterial contaminants have no opportunity to grow and to produce toxic substances. One maternity unit has dispensed with feeding-bottles altogether for supplementary feeds or extra fluids and uses the spoon instead. Another common practice of housing all the babies in a communal nursery that is frequently overcrowded might well give way to the more

¹ *Lancet*, 1941, 2, 590.² *British Medical Journal*, 1944, 1, 631.³ *Lancet*, 1943, 2, 758.⁴ *J. Path. Bact.*, 1945, 57, 239.⁵ *Arch. Dis. Child.*, 1945, 20, 145.⁶ *Amer. J. Publ. Hlth.*, 1943, 33, 1451.⁷ *J. Pediatr.*, 1944, 25, 105.⁸ *Lancet*, 1941, 2, 583.⁹ *British Medical Journal*, 1944, 1, 595; 1945, 2, 189.¹⁰ *Monthly Bull. Min. Hlth. and E.P.H.L.S.*, July, 1942; June, 1943; Nov., 1946.¹¹ *British Medical Journal*, 1945, 2, 524.

natural arrangement of having mother and baby together, particularly where the maternity department is made up of small, four- or six-bedded units. Premature babies should be kept singly or in pairs in cubicles, for they are particularly susceptible to any kind of infection.

Despite all these precautions it has usually been found that the only procedure which will terminate an outbreak of neonatal diarrhoea is closure of the maternity unit, and it is wise to take this somewhat drastic step early rather than late. Control of the diarrhoea of adults which secondarily affects both breast- and bottle-fed babies presents considerable difficulties. The available evidence indicates—recent Oxford experience is in accord—that the infection is airborne, therefore good ventilation should be maintained at all times, even when the outside temperatures drop to a low level. Again, special care must be taken to protect the premature infant. Closure of the unit will, temporarily at least, cut short an outbreak of this type, but unfortunately the disease is often endemic in the area and may light up again with fresh admissions to the hospital. Treatment of the severe form of neonatal diarrhoea is disappointing. Both good and poor results have been reported with sulphaguanidine and succinylsulphathiazole. Intravenous fluid therapy, using Hartmann's solution plus 5% glucose and half-strength serum or plasma alternately, has proved very valuable in the dehydrated older infant and should be tried more often. It could be used, probably combined with oxygen therapy, even in very young babies. Such treatment requires expert team-work by medical officers and nursing staff, and mobile teams might well be utilized to cope with outbreaks in hospitals where such experienced personnel are not available.

MENTAL HEALTH LAW REFORM IN SCOTLAND

The National Health Service (Scotland) Bill, like the Act for England and Wales, will bring about many changes in the administrative pattern of mental health services. The Bill would make the main mental treatment and mental deficiency services part of the new hospital and specialist arrangements. It would lay a duty on the Secretary of State "to co-ordinate and supervise the administration by education and local health authorities of their powers and duties with regard to defectives." Local health authorities would be responsible for the ascertainment of mental defectives and for the provision of "suitable training or occupation for mental defectives who are under guardianship." The Bill would involve amendments and repeals of varying extent to the Lunacy (Scotland) Acts, 1857 to 1913, and the Mental Deficiency (Scotland) Acts, 1913 and 1940. It would also provide for the statutory disappearance of the word "asylum" and the substitution of "mental hospital." The publication of the Scottish Bill gives a new interest to the report¹ issued a few months ago by a Departmental Committee which was appointed in February, 1938, by Dr. Walter Elliot, then Secretary of State for Scotland. The Committee, with Lord Russell as chairman, was set up to inquire into the law relating to lunacy and mental defi-

ciency and to report what amendments it considered necessary as a preliminary to the consolidation of mental health law in Scotland.

The Committee is not in favour of a special qualification in psychological medicine for medical practitioners signing certificates for the purposes of detention. It suggests rather that the reforms in the training of students advocated by the Goodenough Committee should be carried out so as to ensure that every medical practitioner will in future be adequately equipped to certify under the Lunacy Act. Any qualified medical practitioner on the *British Register*, in the Committee's view, should in law be competent to grant certificates under either the Scottish or the English Lunacy Acts, but if there are in fact any legal or administrative difficulties these should if possible be removed. A specific statutory definition of the word "lunatic" is not desirable, but it is recommended that the terms "lunatic," "insane person," and "person of unsound mind" should be replaced by the term "mental patient." "Idiots" should be transferred from the purview of the Lunacy Acts into that of the Mental Deficiency Acts. The term "mental patient" would apply to any person who on account of mental illness is certified by two medical men to be a person requiring detention for care and treatment. Care and treatment should be the operative words, and so far as possible compulsory detention should be applied only when the patient is unable or unwilling to consent to such care.

The system of voluntary treatment which has been used in Scotland for nearly a century should be continued. On temporary provisions the Committee proposes to follow the English Act of 1930. It also agrees that the reception procedure should be simplified and that opportunities should be provided for early treatment for a limited period, as in the voluntary and temporary provisions of the English Act. Compulsory detention for prolonged treatment should be covered by the authority of a judicial order. Medical certification and the provision of hospital care are entirely medical matters and should be in the hands of some branch of the health department of the local authority. The petition to the sheriff for an order in respect of both lunatics and mental defectives requiring assistance should be presented at the instance of the local authority. In considering a petition for an order under the Lunacy Acts the sheriff should be authorized to proceed on lines somewhat similar to those laid down by English law. The Committee would also apply the English private patient procedure to all patients, and pending the result of inquiries would institute an interim order. The present emergency certificate which is valid for only three days should be valid for seven days, like an English urgency order. The present safeguards against improper detention are thought sufficient.

Senile patients present an increasingly serious problem. The shortage of accommodation for mental patients generally is due to the accumulation of patients who have not recovered and of elderly patients whose mental deterioration has made them too difficult to look after at home. It is suggested that asylum authorities might be empowered, though not required, to make special provision for such patients in a separate section of an institution, or even a completely separate provision. Senile patients who do not require prolonged institutional care should not be certified

but should be provided for along the lines of the English Mental Treatment Act. Persons who are senile but not so mentally ill as to be certifiable form an important group for which some provision may be required to be made by the public health authorities.

The Committee hopes that a special department of the Central Health Authority will deal with all branches of mental health. The General Board should, in its opinion, have power to order the transfer of a mental patient from one place to another when this is necessary or desirable in his interests but the person responsible for his detention does not make the necessary application. The relative position of the Board and the local authorities in the management of district asylums should be clarified. The English procedure by which the visiting committee of a new asylum submit draft rules for its government through the Board should be copied. The Committee would require the consent of the Board or of the Secretary of State to the dismissal of the medical superintendent of an asylum as well as of a certified institution.

Medical superintendents should have power to grant patients leave of absence for short periods at their own discretion, and leave on probation for longer periods with the sanction of the Board, but no person committed as a dangerous lunatic should be liberated temporarily without the sheriff's authority.

Broadly speaking, the Committee would assimilate the Scots law to that of England in regard to voluntary and temporary patients. It stresses the importance of having fully qualified staffs in charge of observation wards attached to general hospitals. It also recommends the creation of one centrally situated institution for Scotland for the reception and treatment of dangerous lunatics. This should be equipped, managed, and financed as part of the State Asylum for the detention of criminal lunatics. The Prisons Division of the Scottish Home Department should cease to have any control over the State Asylum, and full responsibility should be transferred to the General Board of Control. It is hoped that before long criminal and dangerous lunatics will be detained in a suitable building, not just part of a prison, and large enough to keep such patients out of ordinary asylums.

Also urgently needed is a State institution separate from the State Asylum for dangerous or violent mental defectives. In the definition of mental deficiency the Committee approves the English classification, except that they would leave out the class of moral defectives and call the feeble-minded, imbecile, and idiot classes Grades A, B, and C, respectively. Educable children should not be described as mentally defective, and their mental condition should not be classified until the age of 16. The Committee mentions another class of adolescents who display distressing symptoms of unstable disordered behaviour and are regarded as social misfits but whose mental capacity and conduct touch only the fringe of insanity, mental deficiency, or criminality. No suitable treatment appears to exist for this group, and the Committee suggests that the legislature might at the earliest moment devise some provision which will submit such persons to training and supervision in a colony or institution in which medical and psychological treatment will be available.

Local authorities should, in the opinion of the Committee, be compelled to carry out their duty of ascertainment, and should be authorized to deal with mentally defective children under 5, but only with the consent of the parent or guardian. The Committee would discontinue the present arrangement under which children found unsuitable for education in special schools and classes are passed on to the public assistance authority. The duty of providing education and training for all trainable defectives up to 16 should be laid upon the education authorities, who should be obliged to employ a psychiatrist, a psychologist, and at least one psychiatric social worker. It is not recommended that all mental defectives capable of useful training should be under compulsory control and supervision and required to attend at training and educational centres up to the age of 18. Mental defectives capable of remunerative occupation at 16 should be exempt from compulsory attendance. For those not so capable training facilities should be provided as part of the system of education, perhaps under the Disabled Persons (Employment) Act, 1944. The continued care and training of mental defectives over 18 should become the duty of a composite mental health committee, on which the interests of education, public health, and public assistance should be represented.

The Committee recommends the setting up of a central index with notification of ascertained defectives by the education authorities. Information from the index should be available only to local authorities and public prosecutors, who would be obliged to inquire whether the name of any accused person is on the index and, if it is, to see that the court knows of the fact.

Prof. D. K. Henderson, a member of the Committee, made a number of reservations. He thinks that the adoption of the English Mental Treatment Act would unnecessarily complicate the status of the voluntary patient, who at present can be kept in hospital if he loses his volition but who under the English rules would have to be discharged after 28 days. He would go further than the Committee and amend the Mental Treatment Act so that all non-voluntary admissions could have temporary treatment for a year without certification. He is also doubtful about the possibility that the education authority will be given too much responsibility in matters concerning the mental state of defectives, which is a question for the health authority. Supported by Lord Provost John Phin, he suggests that directors of education should continue to supervise all educable defectives between 5 and 18, but that all other children should be under the jurisdiction of the health authority.

A MORAL ISSUE

As might have been expected, the medical profession as a result of the plebiscite has had what is usually described as "a bad Press." The British Medical Association is by now used to having its actions and views widely misinterpreted. There can, for example, be no justification for this accusation of the *Times*: "... it is evident that the B.M.A. intends to persist in the rather reckless and emotional agitation which has contributed in no small measure to the outcome of the ballot." The *Times* leader

writer goes on to say of general practitioners: "Yet they do not seem to recognize that no comprehensive medical service can be made to work without a considerable transformation in their personal circumstances, a transformation which by collaboration they could help to plan on constructive lines." On the contrary, it is because practitioners recognize what is euphemistically described as "a considerable transformation" and not because of any "reckless and emotional agitation" that the results of the plebiscite are what they are.

In the face of so much hostility medical men may well have felt discouraged during the past fortnight to find so little sympathy for their case and so little understanding on the part of the Press of the roots of their opposition to Mr. Bevan's Bill. It was therefore heartening to discover in the independent Sunday newspaper, the *Observer*, a leading article which put the case of the medical profession in a way which showed intimate understanding of its real position: "The impression given by many criticisms is that they [the doctors] are a set of old fogeys, blindly obstructing the tide of progress and putting their own interests before the health and social welfare of the nation. This is an unfair picture of the resisters and their motives. They have a case which should be heard. . . . The charge that they are defying Parliament has no legal substance." The article goes on to describe the wide powers of the Minister to make regulations and orders, to explain the reason why medical men so strongly object to the basic salary, and to see in the resistance movement "a conviction that the Act represents the first stage in a Socialist policy which would eventually transform the character of medical practice as a free profession and profoundly injure the personal relationship of doctor and patient." The *Observer's* leader points out that with the present Act a Minister who shared the wish of a strong section of the Labour Party for a whole-time fully salaried service, could translate this wish into action without further legislation. A notable contribution to the controversy is concluded by this paragraph:

Inveterate planners are impatient of principles: having set their heart on a scheme they want above all to make it work. They are more interested in the results expected from it than in the methods employed, however harshly these may bear on human scruples or human relationships. There is no doubt that a National Health Service is greatly needed, and that it could bring great benefits to the community. The resisting doctors recognize this: but the present Act seeks to obtain benefits by methods which they cannot reconcile with their conscience and sense of medical duty. They are standing on a moral issue, and for this they should be given credit, even by their opponents.

In our correspondence columns this week Dr. Alan Maberly writes: "There can be no doubt that this is a moral and ethical issue of the first importance." Other correspondents are just as clear about the principles which have determined the policy of the Association. The doctors who answered "No" in the plebiscite are standing on a moral issue, and for this "they should be given credit."

We fear it will be some time yet before our critics will extend us this credit, but believe that in the course of time they will slowly and reluctantly be compelled to realize the truth of the issue so clearly placed before the general public in the statement quoted from the *Observer*.

TRAVEL AND DISEASE

From the earliest historical times the desire to trade, to dominate, to convert, or to satisfy an idle curiosity has impelled men to travel far and wide over the earth. Besides bearing their culture to distant lands they have also, as Dr. Findlay points out in an article on p. 979 of this *Journal*, spread their diseases. Modern transport facilities have enormously increased the likelihood of diseases spreading, and in particular the speed of aeroplanes permits not only the transport of an infected passenger to another country and his entry into the new society before the disease becomes apparent, but also the carriage of vectors of certain diseases—vectors that would previously have perished in the course of slower journeys by ship.

The mosquito-borne diseases yellow fever and malaria are particularly dangerous in this respect, but fly-borne infections may also present a problem, as well as trypanosomiasis, dengue, and the insect-transmitted encephalitides. Tsetse flies share with man a liking for swiftly moving vehicles, whether train, motor-car, or bicycle, and they have been reported in aeroplanes. Mosquitoes, too, are not averse from air travel, as Dr. Findlay mentions, and have survived flights of over 9,000 miles at heights of 10,000 to 12,000 feet. Traffic on the new motor roads in Africa has been responsible for spreading diseases as diverse as gonorrhoea, bilharziasis, and relapsing fever.

The prevention of transport by aeroplane of the insect-borne diseases, though a comparatively simple problem, is of a greater magnitude than might at first appear. Schemes for keeping aerodromes and their neighbourhood clear of the mosquito's breeding-grounds require large staffs if they are to work satisfactorily. A single aerodrome may cover several square miles—a large area to be kept perfectly drained in countries subject to tropical rains—and nearby native villages may require spraying with insecticides and supervision of their wells, drains, tanks, and ponds. The scrupulous application of insecticides to the interiors of aeroplanes and to the passengers and crew is essential. In addition, all travellers must be immunized against yellow fever not less than ten days and not more than four years before entering a locality where the disease is endemic.

There can be no doubt that the measures required can be adequately carried out only by an international organization. Many countries on international air routes—and perhaps particularly those where the insect-borne diseases are chiefly endemic—have neither the money nor the staff to provide adequate control. The wealthy countries are quite as concerned as the poor that the spread of disease should be checked, and there is no reason why contributions to this end should not be proportionate to a country's income. The World Health Organization of the United Nations would seem to be the most suitable body to undertake this work. The staffs appointed by it would be responsible to W.H.O. and only secondarily to their own governments.

A further argument favouring an international attack on the problem is the urgent necessity for preventive measures. The schemes put into operation during the recent war have in many cases lapsed, particularly in tropical countries. Wind and rain and neglect are combining to destroy the work built up at such great cost; severe damage can overtake a drainage system in a season if it is not attended to; mosquitoes return to their old haunts to breed as soon as the opportunity occurs. Again, it seems that there is not only confusion about the yellow fever certificates and who is empowered to sign them, but black market forgeries are available for those who want to avoid being immunized. This sort of trafficking requires international control for its suppression.

HOSPITALS' BALANCE SHEET

The execution morning may not be far distant, but there is nothing of the atmosphere of the condemned cell about the record of the London voluntary hospitals during 1945. The *Statistical Summary*, which King Edward's Hospital Fund presents,¹ is a dry enough compilation, but as with Dr. Johnson's friend, Oliver Edwards, "cheerfulness is always breaking in." It is, of course, true that in 1945 the Government proposals for the future of hospitals had not been promulgated, but the Government came into power in the middle of that year, and its programme could be anticipated. On the other hand, the cessation of war may well have evoked a spirit of thanksgiving which took the form of enlarged gifts to hospitals. However it may be, the subscriptions and donations to 164 voluntary hospitals in London in 1945 reached £1,276,000, being £135,000 more than the year before. Not only so, but in spite of death duties, high taxation, and other adverse economic circumstances, legacies rose to £676,000, an increase of £121,000 on the year. Mr. Bevan, in a recent speech, mentioned a voluntary hospital in his own mining district of South Wales and said that as a miner he paid 4d. a week to the hospital, as did all his fellows, not as a voluntary act, but from the necessities of their occupation, so that in this way the miners contributed 97.5% of the hospital income, and only 2.5% was contributed by the charitable, yet it was the charitable, he added, to whom the vote of thanks was accorded at the annual meeting. No proportion like this holds good in London hospitals. The voluntary gifts, leaving entirely out of account patients' payments, contributory schemes, and the like, account for just over one quarter of the total income. Patients' payments, including patients out and in, pay-bed patients, and patients coming under contributory schemes, account for just under one-third of the income, and the remainder is made up by payments from local authorities and dividends on investments. On the whole, the smaller the hospital the larger the proportion of voluntary contributions. Thus in the twelve hospitals with medical schools the proportion of voluntary gifts is 21.4% of the total income, whereas in the group of the smallest general hospitals, those with 50 or fewer beds, the comparable figure is 31.8%. The highest proportion of voluntary giving is to children's and maternity hospitals, and the lowest to orthopaedic and cancer hospitals.

On the other side of the account, however, hospital maintenance expenditure is steeply rising. The cost of salaries and wages in 1945 was up by a quarter of a million on the figure for 1944; in the teaching hospitals alone it was up by £100,000. This increase is accounted for not only by rising prices, but by increased services, for over 30,000 more in-patients were in the hospitals in 1945 than in 1944, and nearly 200,000 more out-patients were making attendances. Here it is necessary to read between the figures. Increased income is not keeping pace with increased costs. Thus while 68 general hospitals rejoice in a surplus and only 29 show deficits, the total deficit of those 29, £143,000, is more than the total surpluses of the others. Moreover, a number of hospitals show no balance on one side or the other, offsetting an excess of expenditure by transfer from free legacies; and, on the basis of sound hospital finance, these ought also to be ranked as hospitals in deficit.

The *Statistical Summary* gives particulars of the average length of stay of patients in hospital. In the general hospitals the average duration in 1945 was 18.3 days, and in

the special hospitals 29.5 days. In the medical school group the average was just over 20 days. The average number of attendances of out-patients in all the general hospitals was 4.8 for each patient. In the teaching hospitals and also in the largest hospitals without medical schools it was just over 5 attendances. In the special hospitals, of course, this figure varies widely according to the condition treated and was highest in the orthopaedic hospitals (13 attendances).

IT CAN HAPPEN HERE

The new "Medicine" is beginning to take shape long before the appointed day provisionally fixed for April, 1948. On Dec. 11 the Council of the B.M.A. declared its opposition to the "closed shop" and is recommending to the Representative Body that "it is undesirable on principle that any practitioner should be required to join any body, B.M.A. or other." But when the Socialist State owns all the hospitals and will, therefore, be the employer of all those working in them, we shall, no doubt, see Willesden repeated on a grand scale. The Willesden incident was bad enough, but what doctors fear more than anything else is interference of the State with the responsibility of the individual doctor for his own patient. There have, of course, been the usual assurances from Government spokesmen that such a thing cannot happen here, but that it can is shown all too plainly in a letter from Dr. H. Foxell, of Birmingham, which appears elsewhere in this issue.

A patient of Dr. Foxell's suffered from cancer of the oesophagus which proved to be inoperable. A gastrostomy was performed in hospital, and as he had lost over two stones in weight the hospital dietetic expert and the consultant surgeon decided the patient should have 2 oz. of fat a day as butter or margarine. Just before discharge of the patient from hospital Dr. Foxell gave to the local food office the necessary particulars and "the medical reasons, why the extra rations are considered necessary." The local food officer granted the extra fat. Some days later Dr. Foxell received from this officer a copy of a letter from the divisional food officer of the Ministry of Food stating that the extra butter could not be continued. Dr. Foxell was informed that the medical advisers to the Ministry of Food considered there was "no need for extra butter in such cases as there is no call for a lubricant for swallowing as the operation allows the food to be inserted below the obstruction." No doubt the medical advisers to the Ministry of Food considered that Dr. Foxell and the surgeon who had done the operation were ignorant of these simple facts. Dr. Foxell, however, having the interests of his patient at heart, ignored the snub and explained in a personal letter to Dr. Edith Summerskill, Parliamentary Secretary for the Ministry of Food, that he had ordered, upon consultation with a dietetic expert, the extra fat in order to maintain the life of his patient. Dr. Summerskill, backed up by medical advisers who had not seen the patient, continued to treat at a distance, and allowed an extra 2 oz. butter *per week* "on compassionate grounds." Dr. Foxell concluded the correspondence with a letter on Nov. 29 to Dr. Edith Summerskill thus: "With reference to your letter of Nov. 18, the patient about whom I wrote died suddenly from haemorrhage a few days ago. Therefore my fight to try to prolong his life is now ended." One may be permitted to wonder what the patient in his last unhappy days thought of a State machine which deprived him of the 2 oz. of fat a day which he had been recommended in hospital. We may doubt whether he fully appreciated the humanity of the decision to allow him 2 oz. a week "on compassionate grounds."

¹ *Statistical Summary of the Income, Expenditure, and Work of 164 London Hospitals for the Year 1945*. King Edward's Hospital Fund for London, 10, Old Jewry, E.C.2. ts. net, 1s. 6d. post free.

HAEMATOLOGICAL HERESY*

BY

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One of my teachers used to say that every so often there should be proclaimed a kind of sabbatical year. For this time, firm in the resolve to add nothing to medical writing, we should sift what had already been written and try to formulate principles. Whether we like it or not, the war has given some of us several such years, though I doubt if we have made the most of them; for military life, even when leisurely, is little suited to calm reflection, and libraries are often inaccessible.

A cursory acquaintance with haematological writings before the war of 1914-18 is enough to show that studies of a basic nature were interrupted by that war and some have never been resumed. A few years later the world of haematology, and indeed of medicine, was dazzled by the finding of a cure for pernicious anaemia and by the admirable experiments of the Boston school that soon afterwards revealed the source of the liver factor. I mean no disrespect whatever to the authors of these entirely brilliant discoveries when I say that their work seems in some ways to have continued to dazzle the world of haematology from that time on. It is odd, for instance, that there is, almost no mention in English medical textbooks of the artificial synthesis by Hans Fischer of a near relative of the pigment portion of haemoglobin—another event of the same period which must surely one day take its place as an achievement of the first rank; and I cannot help thinking that the theory of anaemia due to arrest of maturation in the bone marrow has enjoyed an undeserved immunity from criticism because it saw light as an explanation of one of the two or three most dramatic discoveries in medicine of the century. It is this theory that I am going to indict with such vigour as I can muster. But should this heresy, which, like many others, is only the revival of an older doctrine, one day become orthodox, I would be the first to say that the theory in its day appeared to bring order out of disorder, and did excellent service as a scaffolding on which haematological teaching could be based.

The theory of arrest of maturation as a cause of anaemia holds that, in the absence of a factor necessary for a particular stage in the ripening of red cells in the marrow, there may be an accumulation of cells which cannot develop further and a useless hyperplasia of the marrow. As one author put it, "it is as if a mass-production motor factory were unable to obtain an essential manufacturing part. Soon the assembly hall is crowded with unfinished cars, but outside the street is empty of vehicles." A simile from military life might here seem appropriate. It is as if recruits were poured into a training area but no trained troops emerge. When, however, to carry a simile a little further, it is discovered that the area is full of soldiers who have been equipped only with left-sided boots, and right-sided boots are supplied, troops pour forth into battle.

The Hopper Theory

At the height of its glory the theory of arrest of maturation (more intimately known as the "hopper theory," from the resemblance in diagrams of stored-up cells to grain in hoppers) included the liver factor, thyroxine, ascorbic acid, iron, and copper as factors necessary for different stages in the ripening of the red cell.

Thyroxine and ascorbic acid were never perhaps very strong members of the team, but they held a humble place. I like to think, though others might not agree, that some observations I made on anaemia in myxoedema (Bomford, 1938) first lost thyroxine its place. Briefly I showed that when hypothyroidism with liver deficiency and hypothyroidism with iron deficiency were excluded there remained some cases of moderate anaemia which could be cured, but very slowly, by thyroid alone, and only by this means. The blood picture in these cases resembled fairly closely that which had been produced in animals by exposing them to atmospheres richer in oxygen than the normal; and I suggested that the anaemia should be regarded as a com-

pensation—in itself physiological—to the diminished needs of the body for oxygen. Unfortunately I did not examine my patients' bone marrow, but, collecting what scanty information there was available about the bone marrow in other hypothyroid states, I suggested that the bone marrow in myxoedema was relatively hypoplastic. That this is indeed the case was confirmed a year or so later (Jones, 1940). The uncomplicated anaemia of myxoedema appears, therefore, to be a partial atrophy of the erythron (a term that has been used to indicate the blood and the bone marrow considered as a single organ) as an adaptation to the diminished need of the body for oxygen, the bone marrow is relatively hypoplastic, and there is no evidence of an arrest of maturation.

Erythropoiesis in scurvy has also been the subject of a recent paper (Israëls, 1943). The existing knowledge was again scanty, and that author writes about three cases of his own, which appear to be the first in which the marrow was examined both before and after treatment. Briefly, Israëls found that before treatment there was diminished erythropoiesis in two patients, while in the third erythropoiesis was within the range of normal. After treatment with ascorbic acid the marrow showed increased erythropoiesis in all three cases. The effect of ascorbic acid deficiency seemed to be a depression of erythropoiesis rather than a failure of maturation at any particular stage.

I do not propose to say much about anaemia due to lack of iron or copper. There is no known human anaemia due to a deficiency of copper, but there is evidence that small traces of copper sometimes assist in cure of iron-deficiency anaemia. This may well be as a catalyst in some as yet unknown stage in the formation of haemoglobin. The normoblastic hyperplasia of the marrow in iron deficiency may simply be due to the fact that this particular part of the marrow is working overtime at the production of small and ineffective cells. Since, however, iron is the only one of the so-called maturation factors which is known to be a constituent of red cells an arrest of maturation of some kind is more plausible in this instance.

The Liver Factor in Anaemia

There is left for consideration the corner-stone of the theory—anaemia due to deficiency of the liver factor. Just before the war I travelled rapidly from the West Coast of America to London. In San Francisco I heard the theory roundly criticized—it has, I think, never really taken root in Western America (Dock, 1936). In Eastern America the subject was at least a proper one for discussion, but in London I found that to question the hopper theory in pernicious anaemia was to risk being cut in the corridor or common room. So from time to time in my enforced sabbatical years I have returned to ponder on this subject.

In morbid anatomy pernicious is distinguished from other anaemias by its association with changes in the alimentary tract, particularly atrophy of the gastric mucosa; by an increase in the amount of red marrow, which is of the type known as "megaloblastic"; by haemosiderosis of the liver and other organs; and by histological evidence of active phagocytosis of red cells by the reticulo-endothelial system. It is distinguished biochemically by gastric achlorhydria, by an increase of the bilirubin in the plasma, and by an increase in the urobilinogen or similar substances excreted, mainly in the faeces. It has a characteristic blood picture, in which the number of red cells is decreased more in proportion than is the percentage of haemoglobin, and the cells are mostly large, well stained, and unduly irregular in size and shape. Finally, it is distinguished therapeutically by the fact that it is completely relieved by the injection of small quantities of the liver principle, and that the onset of the remission is accompanied by a reticulocyte response of a particular kind.

How are these various features of the disease to be interpreted? Is the anaemia due to haemolysis, for which an accelerated rate of erythropoiesis is unable to compensate, as was generally thought until the last two decades? Or is it due to a diminished rate of erythropoiesis, brought about by an arrest in the process of maturation?

Consider first the increase of bilirubin in the blood, the increased excretion of urobilinogen, the haemosiderosis, and the histological evidence of active phagocytosis of red cells. An increase in the bilirubin of the plasma used to be thought to indicate an increase in the rate of blood destruction.

* Abridged from a lecture delivered to the Poona Military Medical Society.

ut it is now regarded more as evidence of impaired liver function—of the liver's inability, that is, to deal rapidly enough with products of haemolysis. It can be neglected in this argument. The other features mentioned are regarded as indications that the rate of destruction of red cells is greater than normal in other anaemic states, and it is difficult to account for them otherwise in pernicious anaemia. Upholders of the theory of arrest of maturation usually say, therefore, that though a diminished rate of erythropoiesis is the chief cause of the anaemia, there is also present some increase in the rate of haemolysis, due to the easy breaking up of abnormal cells. But this, surely, is impossible, for simple calculation will show that the combination of a rate of erythropoiesis noticeably below normal with a rate of haemolysis noticeably above normal must lead to a rapidly progressive anaemia and an early exit.

The Part played by Haemolysis

A main argument against the haemolytic theory was that the rate of haemolysis, if the daily amount of urobilinogen excreted as in fact derived from the breakdown of haemoglobin, was so high as to be incredible. An example of an increase to thirteen times that found in health was quoted. It was therefore suggested that the urobilinogen was derived from precursors of haemoglobin, which had not been utilized because of the arrest of maturation at a stage, presumably, before the red cells acquire haemoglobin. But if it is incredible that haemolysis could be going on at thirteen times the normal rate, it is surely equally incredible that, in the presence of diminished erythropoiesis, the body should go on producing precursors of haemoglobin at thirteen times the normal rate? In point of fact, methods of estimating the daily excretion of urobilinogen in the stools and urine have improved since the time of these observations, and recent measurements show that the daily excretion in pernicious anaemia is usually not more than three or four times that in health. Such a rate of haemolysis is not incredible, and is little if at all greater than is found in other indubitably haemolytic conditions. My biochemist friends tell me that the supposition that these large quantities of urobilinogen are derived from hypothetical precursors of haemoglobin involves serious difficulties. So far as is known, urobilinogen can be derived only from the breakdown of porphyrin ring compounds, and the porphyrin ring compound of haemoglobin is formed only in developing red cells. It is difficult to see, therefore, how this increased amount of urobilinogen can be derived from anything but the breakdown of red cells, unless, indeed, it comes from some other respiratory pigment, and this seems unlikely. Further, if unused precursors of haemoglobin are excreted as urobilinogen, an increased excretion of this substance would be expected in iron-deficiency anaemia, for the response to treatment with iron suggests that there is no shortage of pigment in this disease. In fact, the excretion of urobilinogen is diminished.

The interpretation of the bone-marrow picture is linked with that of the reticulocyte response. For, according to the theory of arrest of maturation, the cells held up in the bone marrow pour into the circulation when the missing factor is supplied and give rise to the reticulocyte response. Or, to use the car factory simile, the missing part is supplied and the cars accumulated in the assembly hall pour into the street. If not this, what is the explanation of the reticulocyte response? It has been suggested by those who favour the haemolytic theory that reticulocytes, being young and tender, are more easily lysed than are mature cells. In other words, that the low count of reticulocytes before treatment is due to a selective lysis of reticulocytes. (There is a little evidence that a selective lysis of reticulocytes occurs in some forms of malaria.) When this process is brought to an end by treatment the reticulocyte count rises rapidly, and falls again slowly as matters readjust themselves. I am not sure that there is not an even simpler explanation. Let us return, admitting the fallacy of similes, to the car factory. On the haemolytic theory we must assume that the demand for cars is three or four times that which the moving belt was designed to produce. There is some acceleration, but this is not enough to supply the demand. Congestion then occurs in the early part of the assembly chain—not because the rate of production is diminished, but because cars cannot be fitted fast enough with necessary parts. When the demand falls rapidly and suddenly the moving belt, geared to the faster

rate, does not at once adjust itself to a slower rate, and pushes a number of very new cars into the street. This kind of explanation would account for the fact that there is in some cases a shower of nucleated red cells as well as an increase of reticulocytes for a short period at the beginning of treatment.

Finally there is sometimes a reticulocyte response when anaemia with malaria is treated with quinine. This must surely be due to a sudden slowing of the rate of haemolysis, and it is polemical to suggest, as I have heard done, that anaemia in malaria is due to an arrest of maturation brought about by the malign influence of malarial toxins.

Of the bone marrow I will say only that Miller and Rhoads (1934) have produced a marrow picture in animals that in essentials appeared to resemble quite closely that of pernicious anaemia. This they did by bleeding the animals regularly, separating off the haemoglobin that had been removed, and re-injecting it as a solution—a manoeuvre which reproduced some of the features of continued haemolysis.

Synthesis of Haemoglobin

Recent studies in the metabolism of pigments have possibly provided a means—though a difficult and very arduous one—of measuring biochemically and roughly quantitatively the rate of synthesis of haemoglobin (Dobriner and Rhoads, 1938, 1940). Briefly, the porphyrins of the animal body can be divided into types I or III according to whether they could theoretically be derived from types I or III of the four possible aetioporphyryns, or pattern types of porphyrin. All respiratory pigments, including haemoglobin, have a pigment portion which consists of a type III porphyrin. But normal persons excrete minute quantities of a type-I porphyrin. It has been suggested that the type I porphyrin is formed as a by-product in the synthesis of the type III porphyrins needed by the body, and thus that the amount of this pigment excreted daily provides an indication of the rate of formation of haemoglobin. The rate of excretion of type I porphyrin is increased in haemolytic jaundice, in polycythaemia vera—conditions in which no one presumably would deny that the rate of erythropoiesis also is increased—and in pernicious anaemia. So far as this work has gone it seems to confirm that erythropoiesis is accelerated in pernicious anaemia, and this finding is of course incompatible with an arrest of maturation.

Suppose for a moment that the haemolytic theory is the correct one, and see in what other ways current views about the disease would need to be modified. The conclusions of the Boston school as to the source of the liver principle and its storage in the liver would of course stand unaffected. That the liver factor was in any sense utilized in the bone marrow was never more than supposition. We should have to assume that this factor in some way prevents a particular kind of haemolysis, possibly—and there is a little evidence for this—by altering the conditions of absorption from the intestinal tract. Now the multiplication of hypothetical toxins should probably be regarded as one of the cardinal sins of medicine (and will probably, like heresy in any form, be forbidden in organized services of the future by a medical administrative instruction), but it must be admitted that a return to the older theory of a haemolytic toxin, absorbed perhaps from the intestine, might help to solve some difficulties. It would help to explain those rare cases in which the presence of a small stagnant loop of intestine—too small to be expected seriously to interfere with absorption—is associated with an anaemia of the pernicious type (Barker and Hummel, 1939). Further, if the toxin had an avidity for lipids, it might explain not only the haemolysis but the particular type of red cell found in pernicious anaemia, for the shortage in this disease would appear to be of stroma or its constituents rather than of materials necessary for the formation of haemoglobin. And, finally, a toxin with a taste for the lipids of nerve cells as well as those of red cells might help to explain the association of this anaemia with subacute combined degeneration of the spinal cord.

Conclusion

To return to more practical things; since a near relative of the pigment portion of haemoglobin has been synthesized artificially, it should not be beyond the wit of man to discover how haemoglobin is synthesized naturally and what constituents

are actually necessary for the formation of red cells. There are signs that such inquiries are being pursued actively at the present time, and advances of this kind might well open the way to much new knowledge about the workings of the erythron.

I have stated the case for a reconsideration of the part played by haemolysis in pernicious anaemia in a provocative and, some may think, tendentious manner. There is, however, a case to be considered, as was realized in America before the recent war (Minot and Castle, 1939), and my object will have been achieved if some British haematologists are induced to give their minds to it.

I am grateful to the D.M.S. in India and to Col. J. H. Baird, A.M.S., for permission to publish this lecture.

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MENTAL DEFICIENCY IN NORTHERN IRELAND

A colony for mental defectives, providing ultimately for a thousand beds, within 20 or 30 miles of Belfast is recommended by the Mental Health Services Committee, whose report to the Minister of Health and Local Government is obtainable from H.M. Stationery Office (price 1s.). In a foreword the Minister (the Rt. Hon. William Grant) says: "The report gives a clear picture of the problem to be solved and contains many valuable recommendations as to the action which we in Northern Ireland might usefully take. It has been endorsed in its entirety by the Health Advisory Council. New legislation would be necessary to bring into operation a mental deficiency scheme, and this aspect of the matter is receiving consideration. I feel, however, that before the Government presents proposals to Parliament it is desirable that the committee's report should be made available to the public."

In Northern Ireland, says the report, there is no Mental Deficiency Act, no institution, no community supervision, and there is only one special school (in Belfast), which is unable to meet even local needs. Apart from the inadequate provision made by the Education Acts and the Poor Relief Acts, the responsibility for dealing with mental defectives has not been placed by statute on any authority, and for the most part these unfortunate people, estimated on the basis of parallel figures for England (Wood Committee) to number about ten thousand in the whole Province, lead a hopeless existence at in Poor Law institutions, or in mental hospitals. The problem of mental deficiency has, by years of neglect, developed a grave social evil.

Four Classes of Defectives

The committee is of opinion that the education authorities should accept responsibility only for those backward children who are educable and socially efficient, and that all mental defectives should come under the aegis of the mental deficiency authorities. "It follows, therefore, that any definitions of mental defectives for the purpose of a Mental Deficiency Act should be based on the conception of social inefficiency rather than of educational inefficiency." Mental defectiveness is defined by the committee as meaning a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury. It divides mental defectives into four classes:

Class 1: Persons in whose case there exists mental defectiveness of such a degree that they are unable to guard themselves against common physical dangers.

Class 2: Persons in whose case there exists mental defectiveness which, though not amounting to that of Class 1, is yet so pronounced that they are incapable of managing themselves or their affairs or, in the case of children, will when older be incapable of doing so.

Class 3: Persons in whose case there exists mental defectiveness which, though not amounting to that of Class 2, renders them socially inefficient to such a degree that they require care, supervision, and control for their own protection or for the protection of others, and in the case of children special training also.

Class 4: Persons in whose case there exists mental defectiveness of such a nature that their behaviour is strongly antisocial and they require care, supervision, and control for the protection of others.

Ascertainment and Executive Powers

As mental deficiency is most often discovered during the school years the initial task of ascertainment will fall on the health service operating under the Education Acts. The committee recommend that where a medical practitioner is of opinion that a person is a mental defective it should be compulsory for him to notify the mental deficiency authority, with whom should rest the final responsibility of ascertaining whether there is disability of mind amounting to mental deficiency. It should be a statutory requirement that when, as a result of conducting mental tests, a teacher, educational psychologist, or school medical officer has reason to suppose that a person is a mental defective, a notification, with reports, must be sent to the mental deficiency authority to enable the case to be reviewed by the authority's psychiatrists.

The committee recommends that in Northern Ireland the Minister of Health and Local Government should be the central authority and that a regional authority should be established rather than the task of administration be thrown on the county and county borough councils. The regional authority should be composed of representatives from the county and county borough councils and other interested bodies. It should be responsible for ascertaining the provision and administration of institutions, and the supervision of defectives in the community. In addition local mental health committees should be formed to advise the regional authority and co-ordinate the activities of persons interested in the problem. The committee believes that the duties of the authorities relating to mental deficiency would be most efficiently carried out as an integral part of a general mental health service for the Province. In order to bring this about there should be either an actual amalgamation of, or the closest possible co-operation between, the mental deficiency authorities and the authorities administering all the other mental health services.

Other recommendations are that it should be permissive for a class of defectives to be submitted for treatment to the regional authority at the instance of a parent or guardian; that in an Northern Ireland legislation the mental deficiency authority should be given powers to deal compulsorily with all ascertained defectives; and it should be obligatory for appropriate care, supervision, and training to be provided; and that persons who suspect they are mental defectives should, if over 18, have the right to submit themselves for examination and appropriate treatment by the mental deficiency authority. "It is wrong to wait until the defective gets into trouble or runs foul of the law before affording him the care, supervision, and training which his mental condition requires and which it is in his own interests to receive. Mental deficiency is often hereditary, and we consider it wrong to leave any power in the hands of mentally defective parents. . . . Each case would be carefully examined by the competent authorities, and many would be allowed to remain at home or elsewhere in the community if adequate care and supervision could be provided there."

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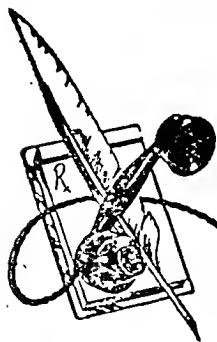
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SYNTHETIC INSECTICIDES IN THE TROPICS

A team of three entomologists, two chemists, two field officers, and a laboratory technician have been making experiments, under the direction of the Colonial Office, on the effectiveness of synthetic insecticides—D.D.T. and gammexane—in the control of insect pests in East Africa, and results were reported by Dr. C. B. Symes, Senior Medical Entomologist, Kenya, on Dec. 10.

In 1944 the Colonial Office was able to obtain sufficient D.D.T. for an experiment on a reasonable scale in malaria control in Kenya. Solutions were applied to the interior wooden surfaces of houses, with promising results considering the small scale of the experiment. In 1945 the team was formed, and certain areas of vegetation were selected in Uganda, including isolated islands and headlands of Lake Victoria, for a full-scale experiment in combating the tsetse fly and the malaria parasite. In fighting the tsetse fly two areas, one of 40 and the other of 100 acres (0.16 and 0.40 sq. km.), were taken and the bush was treated in the one case with D.D.T. and in the other with gammexane. The fly populations in these areas were measured, and small portions selected where the flies appeared to be in greatest number. The actual intensive spraying was carried out over 2 to 4 acres (8,000 to 16,000 sq. m.) of jungle. After a single application of either D.D.T. or gammexane the fly population was found to have diminished by about 50%, and on a further application of gammexane in double the amount the decrease was carried to 80%. The substances were found to be having little effect a week after application, owing partly to the fact that the insecticide was applied in an oily solution which was readily absorbed by the leaves and stems of the vegetation and partly to the prolonged sunshine, which broke down the power of insecticides after a certain time. It was not possible to bring about complete disappearance of the insects by a single application.

The effect of repeated applications on the same patch of vegetation was tried over a period of fifty or sixty days—significant because of the approximately fifty-day life-cycle of the tsetse fly. The fly population was reduced by about 99% in one such experiment, but a later experiment was vitiated by natives who brought herds of cattle to the experimental regions, and thus linked up those regions with an untreated area. The question arises of economy in treatment of large areas of vegetation. One plan would be to distribute the insecticide by aeroplane, but unless there is some means of lateral dispersion this would touch only the top layers. Another possibility is the use of smokes, but then there is the difficulty of changing winds.

Control of Insect Vectors

Six of seven native sub-districts in rural Uganda were sprayed with synthetic insecticides, the seventh being used as a control. These experiments, generally speaking, indicated that oily solutions of both D.D.T. and gammexane proved effective in Uganda in stopping the rising seasonal incidence of malaria in the rural population. But such solutions were largely lost by absorption in the mud walls of native houses. A solution of gammexane powder mixed in water and applied with a sprayer was tried, and reduced the "malaria parasite-rate" in the area by one-half in three months. The powder in water was not taken in by the absorbent surfaces to anything like the same extent as a straight solution in oil, and it is hoped that dispersible powders will prove of value in malaria control. Experiments by various investigators in different parts of the world do not all accord with the Uganda experience. Some have found the preventive use of D.D.T. solutions against malaria to be of no particular advantage, while others have made sweeping statements as to the efficacy of the method. The Uganda operations certainly seem promising, but, of course, they require critical examination. In some other places the observations have been confined to the effect on mosquitoes, but in Uganda the malaria itself has been measured and it is in the "malaria rate" that the most striking results are shown.

The work is being extended by investigators in tropical Africa who are applying these synthetic insecticides to the control of various major pests and disease vectors. In Kenya some promising results have been obtained with the use of

D.D.T. in the control of *Simulium ochraceum*, a small fly which breeds in running water and causes oncocercosis, a serious problem in parts of Kenya and elsewhere. It is an advantage that this work is being done under the aegis of the Colonial Office and financed centrally, instead of being undertaken by the individual governments; there is more likelihood of consistent and large-scale results being obtained. It is the general feeling of the Colonial Office authorities that special research teams are well worth while.

No attempt has been made to evaluate the relative merits of D.D.T. and gammexane. Gammexane used against insects has a more rapid effect than D.D.T., but it is more volatile and likely to be lost. New and improved insecticides may well appear, and when the best manner of using them is worked out it is quite possible that they may revolutionize life in the Tropics.

TUBERCULOSIS ALLOWANCES

A deputation from the Joint Tuberculosis Council (*Journal*, Dec. 21, p. 955), supported by additional representatives of associated organizations, of the Hospital Almoners' Association, and the Tuberculosis Care Workers' Association, waited on the Ministry of Health on Nov. 15, 1946. The deputation was received by Sir Arthur Rucker, with Sir Wilson Jameson in the chair. Representatives of the Ministry of National Insurance, the Assistance Board, the Department of Health for Scotland, and other officers of the Ministry of Health were also present.

For the Ministry it was explained that it fully accepts the view that tuberculosis calls for special provision in the interests both of the patient and of public health, but that this provision in future would have to be made within the general pattern of the new social legislation. The new National Insurance Act would provide benefits in various adversities on a scale that it was hoped would, in general, be adequate in itself. There would be those, however, who would need something more, and this would be forthcoming under a National Assistance Bill which was now in preparation to sweep away the Poor Law and to give effect to a new concept of Government assistance for those in need. Tuberculosis patients would be basically provided for in this way, conforming with the general pattern of social security. But, by virtue of their special needs, the Assistance Board would, it was hoped, be empowered in the new Bill to make payments to needful persons under treatment for pulmonary, but not for non-pulmonary, tuberculosis on a scale higher than the normal scale of assistance applicable to the community as a whole.

The Ministry took note of criticism regarding the deduction of family allowances from payments under the present tuberculosis scheme, and the alleged inadequacy of the general scale-rates under this scheme. Increased rates of allowances are now to be made for dependants under 16 years of age. (*Supplement*, Dec. 21, p. 162.)

The Nuffield Provincial Hospitals Trust is advised by a Scottish Committee on matters relating to hospital or ancillary services in Scotland. The trust has a medical committee which has lately issued a second interim report, presenting as appendices memoranda which have been submitted to it during the last two or three years on a health service for university students, the care of the chronic sick and the aged and infirm, standards of hospital services, the place of the hospital almoner in the regional health scheme, and a report on the health and sickness records bureau in Glasgow. This last report is a condensation of the full account of the incidence of acute perforated peptic ulcer in the West of Scotland (*British Medical Journal*, 1944, 2, 617, 655).

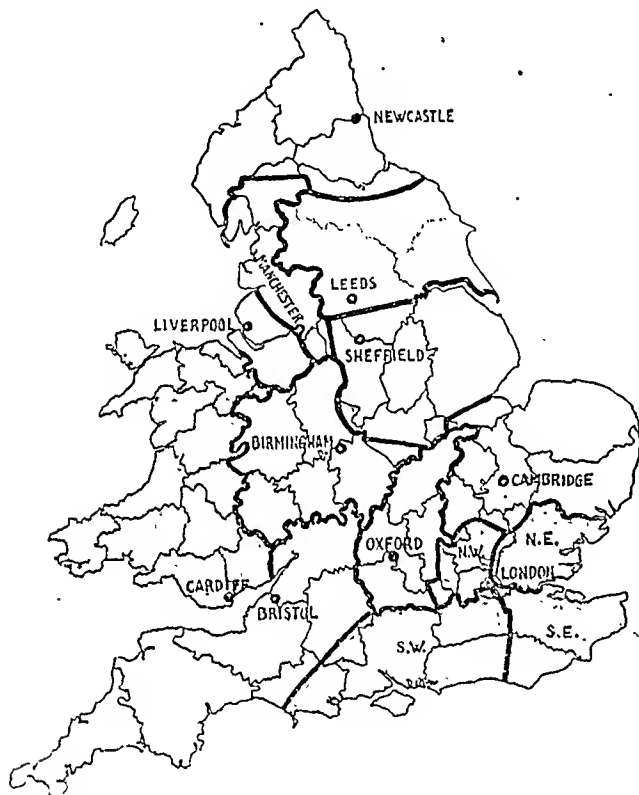
Dr. A. Grieg Anderson, who is chairman of the Medical Committee, in a report on a health service for university students brings forward a draft scheme for medical examinations for Aberdeen students by a whole-time medical officer who is soon to be appointed. Dr. Duncan Leys suggests that all medical staff at a hospital above the rank of registrar might have a definite obligation to consult without fee in patients' homes at the request of any doctor in practice in the area, unless their terms of appointment specially recognize this to be impracticable. Sir Alexander Macgregor and Dr. Crawford Knox write useful memoranda on the standards for nursing staff in hospitals.

AREAS OF REGIONAL HOSPITAL BOARDS

THE FIRST STEP

As the first step towards setting up the administrative machinery for the future hospital service, the Minister of Health (Mr. Aneurin Bevan) on Dec. 20 laid before Parliament an order defining the areas for which Regional Hospital Boards will be responsible under the National Health Service Act.

On Nov. 15 the Minister sent out to all the bodies concerned—over 200 in all—provisional proposals for the boundaries of these areas (*Journal*, Nov. 30, p. 828), and asked for their views and advice. Among the bodies from which the Minister has received observations are the universities and medical schools, the British Hospitals Association and its area committees, the



three Royal Colleges, the King Edward's Hospital Fund for London, the Nuffield Provincial Hospitals Trust, and the local health authorities (county and county borough councils). In light of these views he has made a number of modifications, which the following are the more important:

1. Wigan and district and Crewe and district are associated with Manchester instead of with Liverpool. [Note.—Representations have been made that the area of the Liverpool region is inadequate to meet the needs of a large medical school and modern teaching hospital. The force of this contention is realized, and the needs of the Liverpool region have been kept in mind throughout. It is felt, however, that they can best be met by administrative arrangements rather than by varying the regional boundaries, which would create other difficulties. There has long been a close link between the Liverpool hospitals and North Wales, and this will be preserved by providing representation for Liverpool representatives on the Welsh Regional Board. Similarly there are links between Liverpool and North Lancashire which will be maintained by appointing for that area a subcommittee of the Manchester Regional Board on which Liverpool representatives will sit.]

2. Goole and neighbourhood are associated with Leeds instead of Sheffield.

3. Burton-on-Trent and neighbourhood are associated with Birmingham instead of Sheffield.

4. Hineley is associated with Sheffield instead of Birmingham.

5. The whole of Bedfordshire is associated with London instead of the northern part being associated with Cambridge.

6. High Wycombe and district are associated with Oxford instead of London.

7. West Dorset (except Lyme Regis) is associated with London instead of Bristol.

8. North-east Gloucestershire and North-east Wiltshire (including Swindon) are associated with Oxford instead of Bristol. Details of the regional areas are given in the Order, which is: No. 2158.—The National Health Service (Determination of Regional Hospital Areas) Order, 1946, dated Dec. 18, 1946, made by the Minister of Health under section 11 of the National Health Service Act, 1946 (9 and 10 Geo. 6. c. 81).

Reports of Societies

PROBLEMS OF RENAL LITHIASIS

In the Section of Urology of the Royal Society of Medicine on Nov. 28 Mr. R. H. O. B. ROBINSON, the new president, delivered his address on "Problems bearing on the Aetiology, Diagnosis, and Treatment of Stone in the Upper Urinary Tract."

Relationship of Infection to Stone

Organisms in the urine in the pelvis of the kidney might change from time to time, and this suggested that its composition varied considerably, and that organisms absorbed from the bowel and then excreted might, or might not, find conditions favourable to their growth.

Calculi associated with hyperparathyroidism were a well-recognized group at the present time, but a point not so well appreciated was that they could occur without any lesions of the bony skeleton. Deficiency of vitamin A disturbed the calcium-phosphate ratio and produced changes in the epithelium of the urinary tract. Stones found in such circumstances were of Randall's type 2, starting as tubular inspissation of calcium phosphate, but after prolonged vitamin deficiency severe tubular changes occurred. In patients suffering from peptic ulcer, calculus was attributable to the high intake of milk, alkalis, and calcium carbonate, with a resultant alkaline urine, but few statistics were available.

Calcium-phosphorus metabolism was probably the most important factor in stone formation, as calcium figured in all types of stone under discussion. The metabolism of citric acid had a definite relationship to the formation of renal calculi. Oestrogens increased the citrate excretion in the urine and lowered that of the calcium. The addition of citrate would prevent precipitation of calcium phosphate from solution, and this effect was maximal in alkaline solution, in which calcium phosphate was least soluble. This was obviously an ideal mechanism for the kidney to prevent precipitation of calcium phosphate; a further step in prevention would be a reduction of the phosphate ions, and this could be brought about by the administration of aluminium hydroxide gel, which formed a highly insoluble aluminium phosphate in the gut, thus reducing the absorption of phosphorus.

Treatment of Calculi

The indications for active surgical intervention were obstruction of the drainage mechanism of the kidney, as evidenced by intravenous pyelography. Non-operative treatment was indicated under the following conditions: (1) Limitation of the calculi to the cortical part of the kidney, where they had no macroscopic connexion with a calix; (2) mobile stones not causing obstruction and of such a size as to make passage *per vias naturales* possible; (3) stones composed of calcium phosphate or mixed phosphatic stones; (4) bilateral stones, associated with gross disease and limited function in both kidneys, rendering any operation hazardous.

Much could be done by forced fluids, by correction of faulty diet, and by attempts to control superadded infection. Postural drainage might be very helpful in dislodging a stone. In the case of decubitus calculi or phosphate stones attempts

might be made at solution with Suby's G fluid used before secondary infection, particularly with urea-splitting organisms, supervened.

In the operative approach to the kidney, incision in the line of the twelfth rib, with subperiosteal resection of the rib, was favoured. Calculi should preferably be removed by pyelolithotomy, and with a proper exposure and suitably curved forceps the calices could be entered and stones removed from the pelvic incision. Incision in the long axis of the ureter with suture, if haemostasis was complete, was preferred unless the pelvis was thickened and friable. Nephrolithotomy was an undesirable operation.

The indication for active surgical intervention was dilatation of the upper urinary tract above the stone, particularly if infection was superadded. If neither dilatation nor infection was present a conservative attitude could be adopted indefinitely. Impaction of ureteric calculi commonly occurred between second and third lumbar vertebrae, or on the pelvic floor in the terminal part of the ureter.

THE PROBLEM OF TONSILLECTOMY

At a meeting of the Liverpool Medical Institution, on Nov. 21, with the president, Dr. G. F. RAWDON SMITH, in the chair, Mr. T. B. LAYTON opened a discussion on the responsibility of the physician in the problem of tonsillectomy.

Mr. Layton said that this operation was carried out too often and for indications which did not bear close scientific inquiry. The physicians referred patients for tonsillectomy with the idea of removing the focus of sepsis, and if after full investigation they expressed the view that the tonsils were at fault, this was difficult for the surgeon to refute. He outlined the indications for the operation and drew attention to the danger of operating during the winter months and epidemic periods. It was only streptococcal infections of the tonsil which gave rise to trouble.

In the discussion which followed, Dr. G. F. RAWDON SMITH emphasized that the size of tonsils and amount of adenoid tissue removed at operation had lessened considerably during the past twenty-five years. Dr. R. W. BROOKFIELD referred to the difficulty of determining whether the tonsils were at fault. Two attacks of tonsillitis in one year with persistent rheumatic pains justified tonsillectomy, and was often a prelude to complete resolution in those cases of acute nephritis which had continuing albuminuria and haematuria.

Mr. HORACE MATHER considered that the general practitioner and the mother should be adequately consulted before tonsillectomy was undertaken in children. Dr. W. GRANT MCAFEE inquired about the indications for the removal of tonsils in the diphtheria carrier. Mr. R. J. MARTIN raised the question of the school child with constant colds referred for the operation. Probably tonsils and adenoids were responsible for a small proportion of these cases, and tonsillectomy was only indicated in recurring attacks of tonsillitis or in gross obstruction. Dr. C. A. CLARKE pointed out the danger of removing children's tonsils when there was an epidemic of anterior poliomyelitis. In Australia a statistically significant number of cases of this disease had occurred in children who had recently had their tonsils removed.

A British Council for Spastic Paralysis was constituted at a London meeting on Dec. 12, under the chairmanship of Prof. J. M. Mackintosh. There are thousands of children and adults suffering from this disability in Great Britain, and the main object of the new council will be to encourage and organize research into the best means of education and treatment and to provide adequate school, hospital, and other facilities. The new council is widely representative and has been assured the active support of the Ministry of Education, the Ministry of Labour and National Service, the Ministry of Health, the Ministry of Pensions, the Scottish Education Department, and the Department of Health for Scotland. A constitution has been adopted covering a wide range of objects, including discovery and registration of cases, establishment of special day and residential schools, clinics, and vocational training. There is one small teaching unit already in existence, and promise of establishment of special schools for children suffering from this disability near Croydon, Birmingham, and Plymouth.

Correspondence

A Foretaste of Control?

STR.—Early in October a patient of mine suffering from carcinoma of the oesophagus was discharged from hospital. He had had a gastrostomy carried out, an exploratory thoracotomy having shown the growth to be irremovable. He had lost over 2 stones (12.6 kg.) in weight, and the hospital dietetic expert, in agreement with the consulting surgeon, decided it was necessary for the patient to have 2 oz. (60 g.) of fat a day in the form of butter or margarine. He was given this in hospital in addition to 2 pints (1.1 litre) of milk a day and other substances that would pass through the gastrostomy tube.

When he was about to be discharged I wrote to the local food office (in accordance with Form MED. 1, p. 7) "a detailed medical statement, giving full particulars of the applicant's condition and the medical reasons why the extra rations are considered necessary." As the result of this confidential report the local food executive officer granted the extra fat. Some days later this officer sent me a copy of a letter from the divisional food officer of the Ministry of Food, dated Oct. 14, 1946, and signed by the a/assistant divisional food officer:

"I have now received a reply from Headquarters that our medical advisers are of the opinion that in cases of gastrostomy the important point in relation to food is that the food chosen is such that will go through the gastrostomy tubes. In their opinion there is no need for extra butter in such cases as there is no call for a lubricant for swallowing as the operation allows the food to be inserted below the obstruction.

"It is their opinion that in these cases, however, it would be advisable to permit a priority allowance of two pints of milk and eggs at the rate of three per week, and perhaps in this case the doctor will be satisfied if the extra allowances are granted.

"I shall be glad, therefore, if you will point out to the doctor the allowances recommended by our advisers, giving the reason why they are not prepared to recommend extra butter. Medical report is returned herewith."

In response to this communication I wrote a personal letter to Dr. Edith Summerskill "as a doctor" (a favourite expression of hers), as I felt it was wrong to reduce my patient's fat ration—he was only just holding his own in weight. I pointed out that my patient was not ordered butter "as a lubricant for swallowing" but as a means of feeding him with extra fat, as considered necessary by the hospital dietetic expert; also, that the Ministry had entirely missed the point that the extra fat was necessary to help to maintain life. I further commented that the Ministry's medical advisers could not fully understand the case, not having seen the patient. It was not until nearly three weeks later that I received a letter dated Nov. 18, 1946, from Dr. Summerskill's private secretary:

"Dr. Summerskill has asked me to reply to your letter of Oct. 30 recommending an extra allowance of butter for one of your patients.

"The refusal of the extra allowance by our local office was fully in accordance with the recommendations of our medical advisers. Dr. Summerskill feels, however, that this is a case where an extra 2 oz. of butter per week should be allowed on compassionate grounds."

"Compassionate grounds" indeed! So the patient was to be allowed to have less than what was considered necessary for life. The necessity of maintaining life was apparently dismissed and the patient was to be allowed, "on compassionate grounds," to go downhill by the recommendation of the medical advisers to the Ministry. The end came, and I wrote on Nov. 29:

"With reference to your letter of Nov. 18, the patient about whom I wrote died suddenly from haemorrhage a few days ago. Therefore my fight to try to prolong his life is now ended."

I pointed out that it seemed wrong that the opinion of a general practitioner of very considerable experience—especially when supported by a distinguished consulting surgeon and a recognized dietetic expert—should be overruled by the medical advisers to the Ministry who had never seen the patient. Is this a foretaste of control?

And now it is all over, a question comes to mind. Recently the G.M.C. struck off the *Register* a doctor who had given panel certificates without seeing the patient. What might well

be asked is the position of medical advisers at the Ministry who, without seeing the patient, advise against the opinion of the doctors in charge of the case.—I am, etc.,

Birmingham.

HUMPHREY FOXELL.

National Health Service Act

SIR,—It was a tragic day for medicine when it became a political issue, but for this the profession is not responsible. As many doctors have not had the time to read the Act or the full account of the debates during its passage through both Houses of Parliament, it is well that we should be told that the doctor is "first a citizen." This apparently harmless statement can mean nothing less than that a doctor must submit his clinical judgment as to what is best for his patient to the overriding authority (or duties) imposed by bureaucracy in the name of the people. Many German doctors are now being sentenced for criminal offences committed by order of their government for the alleged welfare of the people. It is also well that the Willesden Borough Council should have let the cat out of the bag, thereby eliciting a gentle rebuke from the Minister for not having the taste and good sense to wait a little longer. It should now be plain to all what is going to happen in a year or two, when there will be only one employer.

We can respect the sincerity of those who, through fanatical adherence to a group, large or small, lose their powers alike of clear thinking, detached observation, and foresight, but for the rest of us there can no longer be any doubt of a quickening pace of totalitarianism, both precept and practice, in central and local government in this country. Persecution of opposing minorities is spreading rapidly, and even freedom of conscience is looked upon askance.

Apologists for the Act claim that its remaining defects are but minor matters, but can we accept this description as apt for the clauses (retained owing to the refusal of the Minister to accept amendments pressed by our professional representatives in and passed by the House of Lords) that permit the Minister to refuse submission of the Central Health Services Council's report to Parliament, and deny the right of appeal to the courts by an aggrieved practitioner? It is further claimed that the doctors have no right to decline to co-operate in the application of the Act, more particularly as they do not yet know how it is to operate. The answer to this is that Parliament did not hesitate to pass an Act the ultimate implications of which it knew nothing. The Minister was handed a blank cheque. If the doctors enter into discussions on such a basis they will be held jointly responsible for the outcome, although there is no reason to suppose that the Minister will take any more notice of their views at this stage than during the passage of the Act through both Houses. If we then protest and try to withdraw, the Minister can accuse us of entering freely and willingly into discussion, and then, out of mulish obstinacy, trying to sabotage the scheme sanctioned by Parliament and handed by the nation.

The issue is surely clear. The Act is a bad Act, inimical to welfare of the patient and endangering the freedom of the doctor to serve his patients as he sees fit. Let the doctors make this plain and leave it to the Minister to frame his regulations and take full and sole responsibility for the Service. Those doctors who then feel they can enter it with a clear conscience will do so. We must make no mistake about it. The writing on the wall at Willesden, and in the denial to the doctors of the elementary right of all citizens—appeal to the courts—is there for all to see. There can be no doubt that this is a moral and ethical issue of the first importance. The temptation to sell our birthright for a mythical security will be strong for many, but for those who succumb there will be no turning back, no second chance.—I am, etc.,

London, W.1.

ALAN MABERLY.

SIR,—Dr. H. B. O. Cardew's letter (Dec. 7, p. 873) needs to be related to its setting. I have no real fear that its substance will influence any members of the profession, but one has recently encountered several muddled and vacillating minds. Dr. Cardew contested Weston-super-Mare in the General Election and is now, I believe, prospective Socialist candidate for a local constituency. I think it may justly be said that his ambition is political rather than professional.

Most of his plausible statements can be refuted. We are not fighting this Act for political motives. The profession has had a raw deal from all political parties, and the last direct (and successful) fight was with a Conservative Minister in 1923. It is true that the B.M.A. has for many years urged a comprehensive health service, confirmed by the profession in 1944, and that the electorate probably approve the idea, but the majority of the profession cannot, and I am certain that the majority of the thinking electorate will not, approve the National Health Service Act—a polycephalic, trichotomous monster, even armed with the traditional spiked club. The Minister has built for us, without "meeting us doctors in a reasonable spirit," a cumbrous and forbidding barracks, detention cells, kettledrum, and all. And now, says he, will you come into my parlour and discuss decorations, furnishings, and pieces of silver?

The B.M.A. runs on thoroughly democratic lines, and the Council have the duty of implementing the decisions of the meetings of representatives. Four representatives of the Services are elected annually to Council. The "tens of thousands of members" (total membership 52,500) have only themselves to blame if the local committees, Divisional representatives, and members of Council, for whom they did not trouble to vote, may not always represent their wishes. Failure of the democratic intention can occur owing to inertia or ignorance of the *demos*. And it is precisely for that reason that the A.R.M. last July asked for a plebiscite of the whole profession, including those on active service. Can anything be attempted more democratic than this?

Doubtless Dr. Cardew will be able to blind himself to these things so that he may continue faithfully to toe the party line and to use the profession and Association of which he is a member as fodder for his political platforms. Political motives many of us may have, but it is quite clear where the political beams are.—I am, etc.,

Bristol.

A. GORDON HERON.

SIR,—Dr. Lennox Johnston in his letter (Dec. 7, p. 874) says: "The 'fundamental principles' on which the B.M.A. has taken its stand are not moral principles. They are merely political. . . ." It is hard, however, to understand how politics can be kept out when discussing an Act of such grave significance not only to our profession but to the whole community. Political views are in the main based on moral principles—some no doubt of a higher and some of a lower variety. I trust, however, that Dr. Johnston does not think that the higher standard is only the possession of those who believe in the Socialist doctrines. Conservatives believe in private enterprise and consider that the natural rewards that fall to industry, ability, and foresight have a high moral value. They see nothing wrong with private ownership and private profit honestly come by, and they consider that brisk competition is the best way, at the present stage of human development, to secure good service.

Doctors who hold these views must feel that the National Health Service Act as at present framed is likely to be harmful, and it is their duty to resist it by all fair and lawful means; and further, that to enter into negotiations about the details with a Minister who refuses to consider alteration in the fundamental principles can only be futile, and would give the impression to the public that we agreed with these principles. To give way now because we fear we would suffer in a struggle with the Government, as suggested by Dr. Johnston in his last sentence, is advice difficult to reconcile with his previous insistence on moral principles. If there are not sufficient doctors available the Act must be unworkable, and medical service will have to continue as at present until the basic principles of the new Act are made more acceptable. There is no question of any illegal action nor of a doctors' strike—both points which ought to be made very clear—I am, etc.,

Wakefield.

D. H. RUSSELL.

SIR,—The vital importance of the subject impels me to comment on some of the letters in the *Journal* of Dec. 7. Mr. W. Etherington-Wilson and others (p. 874) have realized that this matter is not merely a small sectarian one affecting the doctors alone but a threat to the very liberty of a section of the British people and an utter negation of all we have fought for in two

terrible wars. Some of us seem to have become so confused as to think that a "No" in the plebiscite indicates a vote against a National Health Service; that of course is nonsense. What we object to is an Act which has been ruthlessly imposed on us, not only without reasonable consultation on its terms, but in wilful opposition to certain principles which the Government knew well we held dear and would fight for—a method now popularly known as the "dictatorship of the proletariat."

Dr. H. B. O. Cardew (p. 873) talks of a "clear mandate from the people." Nonsense! The "people" were not a majority of the community, and the vast bulk of them knew nothing and still do) and cared less about a National Health Service, except that it was "something for nothing" (they were not to hold the cost) and only one plank in the Utopian platform on which the workers were to sit at ease while the good things of life appeared by magic. Even if the Government had had a clear mandate it was not a mandate to impose terms which were an outrage on the liberty of the subject and which cannot be put into effect, as only we seem to realize, to the ultimate disadvantage of the most important person of all—the patient.

Dr. Lennox Johnston (p. 874) admits in his final sentence that the Minister has called his bluff at least; he disguises only with a paean of praise for the principles of Socialist society that it is his own welfare which is his main concern. He does not blame him for thinking of that; we are all concerned for our livelihood; but we can at least fight for it, and we are not yet means at the last ditch yet.

I have voted against negotiation because we have had sufficient experience of the present Minister's conception of the word and his own denial of it to know that it would be a farce unless backed by a strength equal to his own; and also, so far as I can see, any terms negotiated might well be only temporary as they could afterwards be altered by a stroke of the Ministerial pen. Before we can honestly negotiate terms we must have the Act so amended as to restore our liberty if we join the Service, and it would appear that we must impress on the Government that we have not fought and won a war against dictatorship only to submit to it disguised as democracy of the Soviet pattern.—I am, etc.,

FitzWilliam.

J. S. LAURIE.

SIR,—At a time when medical men are threatened with the loss of the goodwill of their practices and hospital governors are in danger of losing their hospitals, the following quotation from Plato's *Republic* seems very apposite.

"This form is a despotism, which proceeds not by small degrees but by wholesale in its open or fraudulent appropriation of the property of others, whether it be sacred or profane, public or private: perpetrating offences, which if a person commits in detail and is found out, he becomes liable to a penalty and incurs deep disgrace; for partial offenders in this class of crimes are called sacrilegious, men-stealers, burglars, thieves, and robbers. But when a man not only seizes the property of his fellow-citizens but captures and enslaves their persons also, instead of those dishonourable titles he is called happy and highly favoured, not only by the men of his own city but also by all others who hear of the comprehensive injustice which he has wrought."

It should also be remarked that Plato forecast the successive forms that government may take: aristocracy, then its overthrow by oligarchy, and its overthrow by democracy. According to Plato democracy inevitably paves the way for tyranny, the future tyrant being at first the selected champion of the commonalty but gradually becoming more and more powerful, obtaining increasing authority under specious pretences and finally turning out a consummate tyrant. Has not this prince of ancient philosophers a message for the medical profession (and, indeed, the whole community) to-day?—I am, etc.,

Weston-super-Mare.

CYRIL G. EASTWOOD.

SIR,—Surely the first and most essential points for the honour and prestige of our profession are that the customs and usages, including the right of private practice and the buying and selling of such, shall be forcibly insisted on and clearly agreed to by the Minister of Health before any further talk, and, if refused, any further discussion be promptly broken off and bluntly refused. No recently qualified man should bear any pecuniary loss, as the B.M.A. has ample funds and he will be well supported.

I suggest that the excellent letter on the plebiscite (Nov. 9, p. 707) written by our former highly respected Secretary, Dr. Alfred Cox, be carefully reread.—I am, etc.,

Birmingham.

E. T. LARKAM.

SIR,—I suggest that a brief and explicit statement be made to the Minister of Health and to the lay Press that the medical profession is not only willing but desirous to co-operate in working a good National Health Service Act, but it refuses to work a bad one. Doctors are best qualified to judge whether the Act is good or bad, and they have decided that the present Act is a bad one. Many words give rise to confusion of thought.—I am, etc.,

Cheltenham

J. RUPERT COLLINS.

Willesden and the Plebiscite

SIR,—I wonder if the word "Willesden" will make those who answered "Yes" think again and write and say they should have answered "No." Willesden, I think, has shown what we may expect if we put our heads in the noose. I cannot help feeling that the B.M.A. did not put the case clearly.

Our representatives decided that the medical profession demanded among other things (a) no direction; (b) no basic salary, (c) sale and purchase of practices to continue. If we are going to insist on these it is useless to negotiate. Neither Mr. Bevan nor the B.M.A. can negotiate on these principles. They are passed into law, and that leaves the position as follows: If we insist on sticking to those three and any other essential demands, get the Act altered allowing our demands, and we will be only too willing then to negotiate on Regulations.—I am, etc.,

Leicester.

FILMER COLEMAN.

SIR,—It is quite clear that the Willesden incident has fundamentally altered and clarified the relationship between the medical profession and the Ministry of Health. Why not register this? There should be another plebiscite: "Are you willing to work as a Civil Servant under the Ministry of Health?" There would be an astonishing response to this. The B.M.A. should be active, not passive, for the time is now very short.—I am, etc.,

Old Colwyn.

A. NORMAN LEEMING,
Late President, N. Wales Branch, B.M.A.

SIR,—First, "No" by a considerable majority of general practitioners; then a unanimous and resounding "No" by the Willesden doctors and nurses. I cannot doubt that if the Willesden "No" had been recorded before the plebiscite, there would have been not a considerable but a nearly unanimous "No" by the general practitioners. All who are not made blind by doctrinaire dope can now see the prematurely disclosed Socialist threat—a mental concentration camp for the profession.

I am the youngest practitioner in this area. I do not belong to any political party, but when I see a party endeavouring to make my profession a totalitarian tool I know I doubt the integrity of that party in spite of its professed ideals.

We must indeed close our ranks and agree to negotiate only with prior Government assent to the Principles so ably enunciated by our Negotiating Committee—this assent being secured by Act of Parliament. While we are prepared to take our part in a health service for the nation, we are not willing to prostitute our ideals for the sterile security now offered to us. Let us therefore say "No" with growing voice until our Principles are conceded to us.—I am, etc.,

Teignmouth.

GEORGE A. F. QUINNELL.

Trade Union for Doctors

SIR,—I am an ardent believer in the preservation of all individual liberties that do not directly conflict with the good of the community and dislike the dictatorial attitude of the Willesden Borough Council and the whole idea of the "closed shop." At the same time it is not necessary for us to form a really effective trade union now that the N.H.S. Bill has become law?—I am, etc.,

London, W.14.

C. W. ROE.

The Plebiscite

SIR,—I agree with several of your correspondents that the plebiscite paper was too lengthy and difficult to understand. Many believed that if they replied "No" they jeopardized their future opportunities for work in any hospital, such being at the disposition of a Minister who has not shown understanding of the personal relationship of doctor and patient. His attitude of "abhorrence" of what seems to us normal and right proves his ignorance of our profession. As a matter of fact even many of the public mistakenly believe that when a practice has been sold they are obliged to summon the new doctor who has bought the practice. They do not know that they have a right to go to any doctor whom they prefer. Possibly Mr. Bevan has the same misapprehension, which would explain his "abhorrence" of the sale. In reality a sale implies that a suitable successor is likely to follow; and that he is introduced to the patients, with complete notes of their maladies and of the important matters in their family history.

Here is the true history of a case which would have suffered sadly under Mr. Bevan's dictatorship. An elderly physician, full of wisdom, contracted tuberculosis from a patient and was slowly dying. He had a large family, and was in despair as to their future, as he had been a bad business man and could have left no money for the children's education. He saw several young men who were keen to buy his large practice; he selected the one most suitable and for a whole year was able to pass on to him his experience and his wisdom. The young man was grateful and soon able to redeem his debt for the purchase of an inimitable opening; and all the patients stayed with him, equally grateful that the younger man had full information as to their condition and the remedies best suited to them.—I am, etc.,

London, W.1.

AGNES SAVILL.

Objectionable Certificates

SIR,—Ministers of religion, relieving officers, medical practitioners, and other qualified persons are being asked to sign confirmatory certificates for the Ministries of Pensions and Social Security, the Army, and other departments, in which they are asked to certify that "the claimant is known to me personally and that all the statements in this claim are true to the best of my knowledge and belief." (Forms C.P.1., W.P.1., M.N.1., and O.A.P.17.) I submit that in spite of the saving clause the latter half of this certificate is objectionable because the witness is being asked to warrant the accuracy of the claimant's answers to questions on a wide range of subjects of which the witness cannot possibly be fully informed. A commissioner for oaths will only attest a claimant's declaration on oath that the statements he has made are true. A medical practitioner or other witness should not be asked to combine the roles of guarantor and unqualified commissioner.

In my opinion a suitable formula is that used by the Ministry of Pensions (L.C.109): "I hereby certify that the foregoing declaration was signed this day in my presence and I believe him/her to be the person who he/she represents himself/herself to be. Signed." This certificate should be sufficient to satisfy all parties. The supplementary inquiries found on certain forms as to whether the witness is the claimant's employer, regular medical attendant (A.F.O.1842A), or practising within five miles of the claimant's residence are completely irrelevant and unnecessary.—I am, etc.,

Leeds.

J. H. E. MOORE.

Physiology of Vision

SIR,—I really must protest against the travesty of my discoveries presented by Prof. H. Hartridge (Sept. 28, p. 473). I discovered that the responses of the "eye" to its natural stimulation by light had their parallels in the stimulation of beating hearts by drugs. Previous to Burridge it was firmly believed that these parallels ought to be found in the phenomena elicited by the application of electric currents to the frog's muscle-nerve preparation. Actually the parallels were never found, with the result that a science of visual stimulation has grown up which is a collection of conflicting theories, each of which attempts to rationalize some one fact of visual stimulation with the assumption that a parallel ought to be

found in that muscle-nerve preparation. When I first made that discovery the stimulating drugs were unknown. It now seems likely that acetylcholine functions as the drug in respect of the central nervous system, and that some of the "drugs" produced by the action of light on visual purple stimulate the end-organs of the eye. But, judging by the theories produced, many physiologists still believe that a drug "ought" to act like an electric current.

Having found that a retinal end-organ behaved like a beating heart, I tried out the possibilities that amplitudes determined brightness and rates determined colour, and they worked. Granit is now proving that rates and colours are associated. But also, if "eyes" behaved like beating hearts, it should be possible to augment strengths and slow rates as well as to augment and quicken. When I first used these facts not enough was known about visual purple to make full use of it. Now I teach my students that it seems to me likely that different lights produce different "visual-drugs" from visual purple and that some of these "drugs" augment and quicken while others augment and slow.

From this new standpoint my students just work things out; they learn in fact to predict colour phenomena. Thus, denoting the normal retinal rate by the letter n , then any colour based on quickened rates becomes denotable by the term $(n+x)$, and any colour based on slowing may have its rate denoted by the term $(n-x)$. My students then just put $(n+x)$ and $(n-x)$ together, as it were, and deduce that every colour "ought" to have an opposite or complement such that when the two act together they should give a common result. What is thereby predicted is; and the student learns in a few lines more about the neutrality of grey or white than can be taught in a whole chapter of attempted explanations.

Prof. Hartridge refrained from accepting the challenge that a valid theory of dark adaptation would provide an explanation of the colours of Benham's top. In contrast with this my students here, in the examination held at the end of their first term of study, were able to give satisfactory replies to a question wherein they were required to show that the existence of dark adaptation was compatible with the artist's division of colours into the warm, cold, and neutral. To Prof. Hartridge such a question could well savour of madness, but my students answered it in a few lines because it was so easy.—I am, etc.,

Rangoon.

W. BURRIDGE.

Micturition after Vaginal Plastic Operations

SIR,—I was interested to read of Mr. A. A. Gemmell's method of dealing with the bladder after vaginal repair operations by the instillation of 0.5% mercurochrome (Nov. 30, p. 833). I have no statistics to offer, but it might be of interest to some were I to detail briefly my post-operative treatment for such cases which I have employed for many years with satisfactory results.

It is impossible to tell beforehand which patient will have reflex retention of urine, but a considerable number do have that complication, so I try to forestall it. After the operation is finished, a single gauze swab soaked in paraffin and flavine is inserted right up to the vault of the vagina as a light pack, the end just protruding from the orifice of the vagina. This is left in for 48 hours. An indwelling rubber catheter is also retained in the bladder for the first 48 hours. A clip is put on the catheter and released periodically. The bladder is never allowed to contain more than a few ounces of urine and is kept well below the normal distension limit. If the bladder is allowed to distend, due to reflex retention, the patient suffers much distress and the operation may be prejudiced by strain on the catgut sutures. If the clip is not released sufficiently frequently, some urine may escape at the side of the catheter and the wound may be wet with urine. It is seldom that patients have any trouble with micturition after the catheter is removed. If this does occur, however, it may be replaced for another two or three days. I am satisfied that there is far less risk of infection of the bladder in this method than if a catheter has to be passed repeatedly, however carefully as to asepsis. An over-distended bladder certainly predisposes to infection. This condition is akin to that found with residual urine.

The paraffin-flavine pack serves five purposes: (1) It is soothing to the tissues. (2) It is antiseptic. (3) It tends to prevent

mediate adhesions from forming between the anterior and posterior wounds. (4) When removed it carries away with it any blood or clots that may be lying in the vagina. (5) It prevents urine from running into the vagina. There is special ability for this to happen when a patient is lying on her back. From the very beginning of the first week in bed the patient is encouraged to move the lower limbs, especially the ankle joints, freely in order to obviate the risk of venous stasis with a possibility of clotting and embolism.

Patients are kept lying in bed after operation, without once rising themselves or being raised, for two weeks. During the third week they are free to sit up in bed. At the end of three weeks they get up. A few days later they are allowed home. They are given special instructions as to carefulness about straining from any undue strains for the next two months. Before leaving hospital they are examined, a finger being inserted into the vagina so that any small plastic adhesion between anterior and posterior wounds may be broken down. Two months after leaving hospital the patient reports for a final examination so that the result may be assessed. I have found at this routine has given excellent results and it is quite simple to carry out as far as the nursing is concerned.—I am, Sir,

Dundee.

A. E. CHISHOLM.

Smallpox in the Vaccinated

SIR,—As a ship surgeon concerned with the vaccination of crews I find myself in agreement with Dr. C. Killick Millard, who recommends (Oct. 12, p. 552) that vaccination of those likely to be exposed to smallpox should be carried out on the principle of "little and often." In the course of about thirty years at sea I have had to deal with smallpox on five occasions, though in only one instance was a member of the crew involved. This latter occurrence led me to reduce the interval between revaccination from two years to one year. I consider early revaccination a necessary and sufficient routine measure for the type of population referred to. Exceptionally, cases of modified smallpox do occur within a year of successful vaccination, and I have encountered instances of successful vaccination repeated within an interval of much less than a year; but the answer to these exceptional cases of comparatively fleeting immunity is not, I think, to reintroduce multiple-mark vaccination for all but to note anyone in whom this tendency is suspected and revaccinate him more frequently.

The duration of immunity after successful vaccination appears to be a personal characteristic (possibly a family one) independent of the number of marks made on vaccinating. On the one hand one finds the man with a small solitary scar made in infancy and conferring lifelong immunity of a high degree, and on the other hand the man with one or both arms pitted with a series of multiple marks in whom immunity must be short-lived.

For the past twenty years I have used the intradermal method of vaccination, and I often find it possible to obtain a successful result by this method when recent attempts by scarification have failed. In dealing with large numbers the method is time-saving as well as economical, as no primary dressing is required. Seamen who protest against revaccination can usually be persuaded to have an immunity test carried out by this method, and infants can often be vaccinated while asleep. Finally, for those interested in the study of immunity reaction the intradermal puncture affords an ideal opportunity of observing the rate of development of the areola and papule, etc. In this connexion I have carried out the procedure on myself on some sixty-odd occasions during the past few years and can testify as to its simplicity, safety, and reliability.—I am, etc.,

Rustington.

A. GARDNER.

Grafts for Fractured Neck of Femur

SIR,—I was greatly interested to see Mr. F. P. Fitzgerald's description (Dec. 7, p. 861) of his instruments and technique for the insertion of chip grafts in fractures of the neck of the femur. For some time I have been thinking and hoping that the superior osteogenic and vascularizing power of medullary grafts from the crest of the ilium would help to reduce the vexing number of cases of non-union and avascular necrosis

seen in these fractures after simple nailing. I was therefore much encouraged to read that Mr. Fitzgerald's results have been very satisfactory, particularly as I have recently had a somewhat similar set of instruments made to my design and have not yet had sufficient time to judge the success of the results.

I use a one-piece pencil graft cut from the iliac crest with a saw made from thin-walled 3/8 in. (0.9 cm.) tubular stainless steel with the teeth cut at one end—i.e., a trepanning saw. With this an excellent graft can be cut in a matter of seconds with the aid of a pneumatic drill. The graft is then slid via a cannula into a tunnel drilled into the head of the femur. I am able to insert both the graft and the nail without having to expose the femur, thus saving time and lessening shock in the most frail and ancient patients.—I am, etc.,

Bedford

G. S. STORRS.

Amoebiasis

SIR,—Dr. G. W. Hayward is to be congratulated on his excellent article on amoebiasis as seen in Italy which was published in the *Journal* of Sept. 28 (p. 457) of this year, and which has only recently reached me. His description of the more chronic and insidious manifestations of amoebiasis is most opportune in view of the large number of troops still returning to the U.K. from amoebic endemic areas. I would, however, beg to disagree on certain points concerning amoebiasis as seen in India nowadays and add a few remarks concerning diagnosis and results of treatment.

In the Far Eastern theatre during days of war frank dysenteric symptoms of amoebiasis were common, due mainly to massive infection often occurring in debilitated personnel and also to concomitant bacillary infection, the role of which will be discussed later. These cases were usually treated with sulphaguanidine either in unit lines, in field ambulances, or casualty clearing stations, with, in the majority of cases, a resultant cessation of diarrhoea. They were then returned to the fighting line only to suffer at a later date the inevitable relapses with diarrhoea, abdominal disturbances, loss of weight, and sometimes hepatitis. Through the long passage back to a base hospital via "normal lines of communication," during which time the patients were often inadequately treated, the disease had ample time to become chronic, the amoebic ulcers being secondarily infected with a variety of pathogenic organisms which seemed to prevent the anti-amoebic drugs from having their full effect. Such cases were eventually evacuated to U.K. having had many courses of anti-amoebic treatment with little effect, until the advent of penicillin plus sulphonamides, which combination clears the large bowel of secondary infection and allows the anti-amoebic drugs their full action. This course now cures the majority of cases. Previously results of treatment in these cases was admittedly poor, and a certain number of them perforated and died of the resultant peritonitis or succumbed to amoebic hepatitis. It must be emphasized that such cases have rarely arisen in India Command either during or since the war, and are now, to the best of my knowledge, seldom seen in any part of the Far Eastern theatre. They were due mainly to the exigencies of war which caused delay in treatment, while part at least of the dysenteric symptoms was due to a co-existing bacillary infection, a finding which has been extremely common. I do not believe that the underlying amoebic infection differs from that seen in other parts of the world, for when early and adequate treatment was given to these cases they almost invariably did well.

The question of mixed infections is one of very considerable importance, and some observers go so far as to say that all cases of amoebic dysentery are primarily associated with a bacillary infection. The sequence of events is as follows. A patient is admitted with diarrhoea, the stools containing blood and mucus. Microscopically, red cells, pus cells and macrophages, Charcot-Leyden crystals, and vegetative *Entamoeba histolytica* are seen. If in order to clear the bacillary infection sulphaguanidine is given, the diarrhoea usually ceases, and, this being very important, red cells, pus cells, and frequently *E. histolytica* disappear from the stools, a point first described by Ransome and Stokes. This disappearance of *E. histolytica* is presumably due to healing of the amoebic ulcers by eliminating the bacillary element. It is therefore of fundamental importance that even a seemingly straightforward

case of bacillary dysentery occurring in endemic amoebic areas should have very careful stool and sigmoidoscopic examination to ensure that no amoebic element exists. If this is omitted the patient will often be readmitted after a few weeks with the more insidious forms of amoebiasis.

To-day the type of case most commonly seen in India is that described by Dr. Hayward—the chronic case in which ill-health insidiously attacks the patient almost without his knowledge. Vague abdominal symptoms, of which flatulence and a sense of fullness occurring after a few mouthfuls of food are common; abdominal pain or discomfort, usually in the right iliac fossa and never severe; loss of weight, which is not rapid but which is in some cases as much as 1-1/2 stone (6.3-3.1 kg.); tiredness, lassitude, irritability, and lack of concentration: these are the commonest symptoms. Diarrhoea is seldom complained of, and a history of a certain periodic looseness of the bowels is only elicited on direct questioning. On examination patients look tired and unwell, the loss of weight often showing itself most noticeably in the face. The most valuable physical sign, as stressed by Dr. Hayward, is thickening and tenderness of the caecum and ascending colon, which sometimes can only be ascertained by deep palpation. Patchy tenderness over various parts of the colon has not been seen. Sigmoidoscopy has been very helpful, though the number of cases in which vegetative or cystic forms of *E. histolytica* have been found in a sigmoid swab when absent from the stool has been negligible. The changes seen in the rectal mucosa are more valuable pointers to the diagnosis. Stool examinations have not been so successful as in Dr. Hayward's cases, although I have not adopted so rigorous a means of purgation, having found that one or two large doses of salts early in the morning are sufficient to produce several watery stools.

Although positive stools have been found in the majority of cases, a group remains in which, from all points of view, the diagnosis of clinical amoebiasis seems justified. They presented the typical picture of chronic amoebiasis as previously described, but with entirely negative stools repeated up to a dozen times following purgatives, and an entirely normal rectal mucosa. These cases seemed to be caused by a very chronic amoebic infection strictly localized to the caecum. At first one was chary of giving these patients a course of treatment lasting for a month, but, having seen the dramatic improvement which has occurred in all cases so treated, there is now no hesitation in starting treatment in any case in which one feels certain of the diagnosis of amoebiasis, despite negative laboratory findings. I speak with some feelings on this point, having myself experienced the welcome return of well-being after treatment, which was not in my case aided by bed-rest.

Treatment has been along the lines laid down by the Army in India—i.e., "diodoquin" tabs., 3 t.d.s., days 1 to 20; emetine, 1 gr. (65 mg.) intramuscularly, days 1 and 2; emetine bismuth iodide, 3 gr. (0.2 g.) at night, days 3 to 14; carbarsone, 4 gr. (0.25 g.) b.d., days 15 to 20. This treatment has been entirely satisfactory, and since its adoption approximately one year ago I have not yet seen a single relapse. There is no doubt that the adoption of "diodoquin" in place of retention enemata has made treatment far easier for the patient and nursing staff and far more effective.

I would end by again stressing (and it cannot be stressed too often) the utmost importance of realizing the existence of these chronic forms of amoebic infection and of investigating them on the lines suggested by Dr. Hayward in his paper. In this way much chronic ill-health and many cases of amoebic hepatitis may be avoided.—I am, etc.,

FRANCIS T. PAGE,
Capt., R.A.M.C.

Namkum, India.

Prevention of Infant Deaths

SIR,—I have read with great interest Dr. J. Tudor Lewis's excellent and informative article on the prevention of infant deaths (Dec. 14, p. 893). I agree with Dr. Lewis that there is need for the closest co-operation between maternity units, hospital, and home services, and I commend the trial scheme which he has described.

In connexion with the cases quoted it would be interesting to know the weight of each of the seven infants on discharge from the hospital or maternity unit. This information would enable one to assess whether these infants might well have been

kept in hospital for a longer period. This applies in particular to the five of the seven cases which were premature or immature, for it has been my practice to keep such premature infants in hospital until a weight of seven pounds has been reached; thus one is assured that the infant is robust on discharge and has a better chance of survival than if it is discharged when it has regained its mere birth weight.

Respiratory complications arose in four infants. It is well known that partial atelectasis tends to occur in weakly and premature infants. Moreover, respiratory infection of a latent or chronic type is so often missed because the clinical picture is dominated by dietetic difficulties and there is little, if any, rise in temperature. I would stress therefore the importance of *regular clinical examination of the lungs during the time the infant is in hospital*. One finds so often evidence of a patchy bronchitis, or occasionally more ominous localized patches with sharp crackling rales suggestive of an early pneumonic consolidation. Regarding Case 7 it is stated: "Antenatal clinic attended regularly," and later: "Mothercraft not very good." To my mind this is an important point and shows how hospital antenatal clinics concentrate unduly on the obstetric and medical aspects of pregnant women, neglecting the ever-important principle of teaching mothercraft during the antenatal period.

More emphasis should be placed on teaching the mother in her home, and health visitors should be especially trained in paediatrics, visiting homes more frequently than is the custom and having the fullest co-operation of the family doctor. It is in this latter respect that much improvement could be effected and the mutual antagonism existing so often between the family doctor and health visitor be eliminated. Perhaps medical officers of health might consult their local authorities to consider the advisability of setting up a panel of general practitioners in the district with special experience of paediatrics; who would be willing to visit and treat infants in their homes when the health visitor is not satisfied with the progress of such infants. The work of this group of doctors could be enhanced by including in this panel consulting hospital paediatricians whose clinical knowledge of the infant would render great service to the scheme. The realization by the public health authorities, and indeed by the medical profession as a whole, of the efficient co-ordination of all services vital to the well-being of the mother and her newly-born infant will be a big step forward towards the ideal we seek to attain. Until this is generally accepted we cannot hope for any noticeable improvement.—I am, etc.,

Leeds.

ISAAC ROSE.

Gastro-enteritis in Maternity Hospitals

SIR,—Publicity has recently been given to outbreaks of gastro-enteritis in the nurseries of some maternity hospitals. An outbreak of apparently similar nature occurred in the autumn of 1944 at the Royal Hampshire County Hospital at Winchester. Careful investigations by the research laboratory failed to disclose the causative organism, and it was presumed to be a virus infection. In spite of treatment which included blood transfusions by various routes we had a number of deaths among those infected, particularly the premature infants. Finally it was decided to employ sulphonamide medication, and in view of the gastric disturbance it was felt that probably sulphadiazine would be most easily tolerated. The dosage given was one-sixteenth of a gramme every four hours combined with alkalis. The effect was quite remarkable, and the remaining cases cleared up within the course of two or three days. After dealing with one or two further incipient cases the epidemic completely subsided. I think our experience at the hospital may be of use in dealing with similar outbreaks, and it is a treatment that I should not hesitate to employ should we have the misfortune to have any recurrence of this very disquieting disorder.—I am, etc.,

Winchester.

C. J. PENNY.

Immunization against Whooping-cough

SIR,—I note with interest Dr. H. Sugar's letter (Dec. 7, p. 876) on the subject of immunization against whooping-cough. My experience in this matter has been very encouraging and may be worth recording. I have been medical officer to an orphanage since 1941 and have made a practice of immunizing all

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children against whooping-cough as soon after admission as practicable, using a stock vaccine and giving three injections of 1 ml. at weekly intervals followed by a fourth after a further four weeks. Where children have not been previously immunized against diphtheria I have combined the third and fourth doses with the appropriate dose of A.P.T.

In spite of the fact that there has been a considerable and prolonged epidemic of whooping-cough in the district, to which the children have been exposed by contact in school, and that at least two new admissions were found to be in the acute stage of whooping-cough, we have not had a single case among the inoculated children.—I am, etc.,

Harrogate.

H. CRAVEN PETCII.

Marasmius oreades, an unrelated species which is responsible for the familiar rings.

For many years now a common English plant with a common English name has masqueraded in medical literature under the horrible Americanism "alfalfa." And only the other day I heard one of the leaders of our profession express surprise that our native *Senecio jacobaea* does not cause hay fever, like the North American species which shares its vulgar name. For much that comes to us across the seas we should be grateful, but may we not keep our own names for our own plants? One other point: is not the inclusion of *Clitocybe* and *Buellia* among the higher plants an unmerited promotion?—I am, etc.,

London, S.E.1.

C. P. PETCH.

Lactic Acid Injections in Osteoarthritis

SIR,—During the last year I have treated over 60 osteoarthritic joints with lactic acid and have had most encouraging results. The knee- and shoulder-joints are very quick to improve, but it is only fair to warn patients with advanced hip disease that any improvement must take a considerable time.

Dr. Mawson's statement (Nov. 9, p. 691) that up to six injections are given if needed is very misleading. In the twenty or so hips I have treated it is only in the very early cases that any rapid improvement has been obtainable. I feel sure that Mr. Grant Waugh (Dec. 7, p. 876) will agree that severe hip-joints with cartilage destruction and mushrooming of the head of the femur will require an injection once a fortnight for a year or more before any permanent benefit can be expected.—I am, etc.,

London, W.1.

VERNON HETHERINGTON.

"Analgesic" or "Anaesthetic"?

SIR,—Dr. J. N. Fell (Nov. 9, p. 711) has registered a protest against the use of the term analgesic. I believe that the exclusive use of this word whenever applicable would be rather pedantic, and I am not aware that there is in fact any real attempt to substitute it for the more commonly used term anaesthetic. Macintosh and Mushin, in the preface to their book, *Local Anaesthesia of the Brachial Plexus*, explain that although analgesia is the more accurate word, they frequently use the more comprehensive term.

Dr. Fell has accurately defined the two words, but thereafter his reasoning seems rather faulty. "Novocain" and cocaine and other local anaesthetic agents do not abolish all sensation in the affected area. They do abolish pain, and are therefore true analgesics: they do not abolish touch, deep pressure, and thermal sensibility, and are not therefore strictly anaesthetics. No one expects a local anaesthetic agent to abolish sensations outside the local area in which they are acting; it is therefore irrelevant to argue that they do not normally affect sight, hearing, or consciousness. Neither analgesia nor anaesthesia implies loss of motor conductivity, and the occurrence of this phenomenon is not used as an argument justifying the use of either term.

I frankly do not understand what Dr. Fell means by intravenous general analgesia. I hope he is not referring to intravenous barbiturates, for these drugs are hypnotic, sedative, and anaesthetic, but not analgesic. The only intravenous general analgesic in common use is intravenous morphine. It is a well-established fact that the first stage of general anaesthesia, except with the barbiturates, is a state of analgesia. For some unknown reason Dr. Fell calls this fact a crowning absurdity. Finally, is analgesia such an ugly word? It is surely less likely to be mispronounced by the laity than anaesthesia and its derivatives.—I am, etc.,

London, W.1.

F. W. ROBERTS.

Plant Names

SIR,—The identification of the larger fungi is not of much practical importance until one is faced with a case of fungus poisoning, and Dr. P. D'Arcy Hart's most interesting Mitchell Lecture (Nov. 30 and Dec. 7) does not show much use for them as a source of antibiotics. But may I nevertheless make a small protest against his description of *Clitocybe gigantea* as the "fairy-ring mushroom"? In England this name belongs to

Age Limit in Advertisements

SIR,—Frequently there appear in the *Journal* and other papers advertisements inviting applications for whole-time posts under the various Ministries. To quote the wording: The posts are permanent and pensionable in accordance with the general rules governing the grants of pensions in the Civil Service. Candidates must be under 45 and preferably younger. The salary offered is £1,150 to £1,500.

There must be many men and women who after a hard life in general practice would be glad to apply for such posts but are barred by the age limit imposed. These doctors would be quite capable of doing the work from a physical point of view and have, moreover, years of experience behind them, not only of the special work appertaining to the particular post but in dealing with the psychology of the individual. I am of course fully aware that for superannuation one must enter any scheme at 45 or under, but surely this difficulty as far as the medical world is concerned could be surmounted. I feel sure that many doctors over the above age limit would be glad to have a sure income and lighter work without any question of superannuation, especially if they were offered the maximum salary on taking over the post. They could hold the post while physically fit or retire at their own option. Gradually, as time will take its usual toll, vacancies could then go to the younger people.

Under the new Health Act and the Industrial Injuries Act there will be, necessarily, scores of whole-time posts created, and under the present regulations these posts will go to the younger men, leaving the older ones to work the Acts (always presuming they will be worked) as best they can under their own physical limits. This surely is not going to benefit the public when it has been stated that at least 50,000 doctors will be required to work the National Health Act efficiently. Less than half that number are available and the required number will not be reached for years. Why then should an age limit be applied?

I myself am well over the age of 45, but physically fit, with many years of general practice, including hospital appointment as physician in charge of out-patients, and referee to many industrial and life assurance companies. It may be asked why I do not retire. The simple answer is that I cannot afford to do so owing to the economic conditions of to-day. I am not anxious to take service under the Act as a general practitioner, but I shall be compelled to do so since any compensation I may receive for my practice would be quite insufficient to keep me in my present standard of living. There may be many doctors in like circumstances, and I visualize that we shall have to keep on working in a general practice and so shorten our days unless we are given the opportunity of living longer by obtaining a whole-time post with its lighter work. I think this is a matter which should engage the attention of the Council of the Association, and especially of the Negotiating Committee if and when they do negotiate.—I am, etc.,

DUNMAR.

A circular from the Ministry of Health points out that local authorities should not disregard family allowances when assessing the resources of applicants for relief under the Blind Persons Act, or for tuberculosis allowances, or for any purpose for which the assessment varies with the size of the applicant's family. The National Health Service and the National Insurance Scheme are designed to eliminate any apparent anomalies that may exist, but until they come into operation double allowances should be avoided.

Obituary

A. R. NELIGAN, M.D.

We regret to announce the sudden death on Dec. 8 of Dr. A. R. Neligan, who in later life was well known as a spa physician at Droitwich, but before then had been for twenty years physician to the British Legation in Tehran.

Anthony Richard Neligan, son of J. W. Neligan, M.D., was born in 1879 at Tralee, Co. Kerry. He was educated at Whitgift School and St. Bartholomew's Hospital, where he had a distinguished career, winning the Brackenbury scholarship in medicine, the Matthews Duncan gold medal and prize in obstetrics, the Skynner and Burrows prizes in pathology. He graduated M.B.Lond. in 1903, and after serving as house-physician to Sir Norman Moore and Sir Archibald Garrod became interne gynaecological assistant under Sir Francis Champneys. He had been honorary secretary of the Hospital Amalgamated Clubs and later one of the three founders of the Students' Union. He represented Bart's, the United Hospitals, and Surrey County at rugby football. In 1906, after taking his M.D. and while demonstrator of pathology under Sir Frederick Andrews, Neligan was appointed by the Foreign Office to the post at Tehran on the death of D. F. Odling, who had spent thirty years in Persia. Neligan found the professional and social life in Tehran most interesting; it included service at the Legation dispensary, where poor Persians had received free treatment for more than a century, and consulting work among Europeans and Persians. He started the first pathological laboratory in the capital and carried out all the clinical pathology. For twenty years he had a place as the British representative on the Persian Sanitary Council and was its vice-president for a year. He did especially good work in the prevention of malaria and small-pox, and was first director of the public vaccination service. The village of Gulahek, where the Legation spent the summer, came to be spoken of as a sanitary model for the country. In the war of 1914-18, during which he was retained in Persia by our Foreign Office, Neligan was lent, with his friend J. S. Scott, to the Persian Government to reorganize its hospital at Tehran. He was a founder and first secretary of the Tehran Medical Society and adviser to the Legation on Persian opium traffic. When he retired in 1926 he received the thanks of the Secretary of State. On returning home he took up the study of chronic rheumatic conditions, visited medical centres in Europe, the U.S.A., and Canada, and made lasting contacts with men of like interests. As its first superintendent he helped to organize the Red Cross Clinic for Rheumatism in Regent's Park (1930), and later settled at Droitwich in spa practice and took part in the proceedings of British and international societies concerned with rheumatism and physical medicine. At Droitwich he was honorary physician to the Royal Brine Baths Clinic, and chairman of the fund for treatment of rheumatism in poor persons. He was a medical officer in the Home Guard during the last war and a member of the Worcester Medical Board.

Neligan joined the B.M.A. in 1920, he served on the Spa Practice Committee for several years, and was a member of the Rehabilitation Committee up to the time of his death; he also served on the Spa Practitioners Group Committee from 1934 onwards. A man of most kindly and courteous nature, he will be much missed by many friends. Bart's has had no more loyal son, and his election as a governor gave him great pleasure.

On Jan. 1, 1947, an Order-in-Council will bring under the control of the Dangerous Drugs Act the following drugs and preparations which have not hitherto been so controlled. Dihydrodesoxymorphine (commonly known as desomorphine), pethidine (1-methyl-4-phenylpiperidine-4-carboxylic acid ethyl ester), or any preparation, not being a preparation capable of external use only, made from extract or tincture of Indian hemp. From Jan. 1 next, therefore, it will be unlawful for any person who is not authorized to manufacture, supply, procure, or possess any of these drugs. Doctors and retail chemists should therefore be careful to comply with the regulations regarding the issue of prescriptions and the keeping of registers in respect of these drugs.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The following appointments to posts in the Department of Biochemistry and Pathology in connexion with Addenbrooke's Hospital have been made from Oct. 1, 1946: University biochemist to the hospital, N. R. Lawrie, Ph.D.; university morbid anatomist and histologist, A. M. Barrett, M.B., B.Chir.; university bacteriologist, M. H. Gleeson White, M.B., B.S.Lond.

The forthcoming appointment of a Huddersfield lecturer in special pathology is announced in the *University Reporter*. The person appointed will be required to undertake research and give instruction on viruses and on diseases produced by viruses. Candidates should send their applications to the secretary of the Appointments Committee of the Faculty of Biology "B" at the Department of Pathology, Tennis Court Road, Cambridge, to reach him by Feb. 1. Further information about the duties and conditions of the post may be had from Prof. H. R. Dean at the Department of Pathology.

UNIVERSITY OF SHEFFIELD

The following appointments were made at a meeting of the University Council held on Dec. 13: *Lecturer in Physiology*, Q. H. Gibson, M.D., Ph.D. *Lecturer in Medicine for Dental Students*, W. D. Wallace, M.Sc., M.B., Ch.B. *Lecturer in Surgery for Dental Students*, M. F. A. Woodruff, M.D., M.S. *Assistant Tutor in Medicine at City General Hospital*, K. J. G. Milne, M.D.

UNIVERSITY OF EDINBURGH

At a Graduation Ceremonial on Dec. 13 the following degrees were conferred:

M.D.—M. W. Archdall, ²L. F. Brown, ²E. M. Donaldson, ²J. Greenstein, ²A. F. Lang, ²T. Macleod, ²I. R. Milne, ²R. W. G. Ramsome-Wallis, ¹G. D. F. Steele.

D.Sc.—*Department of Pure Science*: Lydia D. Parsons, M.D. M.B., Ch.B.—H. I. O. Armstrong, G. H. Blair, J. Calder, G. R. Duffes, Janet T. Y. Forrest, Mary G. Forsyth, G. R. C. D. Gibson, A. C. Jacob, Muriel G. James, D. L. Kirk, W. H. Lloyd, J. M. Loughran, N. C. Low, A. MacLennan, Jean C. I. Melville, Catherine S. Paterson, J. P. Payne, J. C. Phemister, K. Robertson, C. M. C. Smelt, Anne M. Stewart, I. C. Wilson, ²J. H. Young.

The following degrees were conferred in the Polish School of Medicine at Edinburgh:

M.D.—A. J. Baranski, J. F. Majeranowski. M.B., Ch.B.—B. Adamski, S. Dyakowski, M. Gonszor, A. Jarosz, A. Kepinski, J. Klimczynski, T. Klosowski, J. K. Koziol, J. G. Lipski, W. Milius, Z. Prokopowicz, Anna M. Sokolowska, M. Szamocki, Z. Teleszynski, J. Wilczynski, Hanna H. Wozniak, S. Wozniak, W. Zaleski, W. Zarski.

¹Highly commended for thesis. ²Commended for thesis. ³In absentia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At an ordinary meeting of the Council of the College, held on Dec. 12, with Sir Alfred Webb-Johnson, Bt., President, in the chair, Prof. Ian Aird, F.R.C.S.Ed., was admitted *ad eundem* to the F.R.C.S.Eng.

The Hallett Prize was presented to Mr. R. P. Melville (Sydney). Mr. J. G. Turner and Prof. Evelyn Sprawson were elected Charles Tomes Lecturers for 1947.

Mr. P. H. Mitchiner was appointed editor of the forthcoming College publication.

A diploma of Membership was granted to E. N. Rees (Cardiff). Diplomas of Fellowship were granted to the following successful candidates:

A. G. Tresidder, J. Penry, D. B. Cater, T. Derneess, W. G. France, J. A. R. Johnson, C. M. Dransfield, M. A. Margo, J. W. M. Leslie, J. A. Rhind, W. D. Doey, K. H. Taylor, J. A. S. Green, C. A. Jackson, R. G. Robinson, D. H. Thompson, T. H. Cullen, J. S. McConnachie, K. W. Martin, A. J. Walker, F. H. D. Hutter, G. K. Rose, G. E. Stein, L. R. S. Taylor, C. E. Drew, H. H. G. Eastcott, A. Klidjian, P. C. Walsen, T. L. Kennedy, H. W. A. Baron, A. Jolleys, C. O. Fung-Kee-Fung, A. M. Wood, L. L. Bromley, I. A. Alexander, A. H. M. H. Ashoor, C. H. Bartlett, S. K. Burcher, M. Burdman, H. A. Daniels, J. B. Dowe, H. B. Hattam, L. H. Hiranandani, E. S. R. Hughes, H. Ibrahim, D. S. Iyer, D. R. Leslie, L. Loewenthal, S. D. Loxton, A. B. McCarten, R. J. Maneksha, R. Marcus, K. W. Priddis, J. G. Pyrer, R. F. Read, W. S. Rees, D. B. Robertson, D. R. Ryder, V. S. Sheth, F. N. Street, J. M. Tyler, S. A. Vincent, Muriel C. Waterfall, T. E. Wilson.

Diplomas in Anaesthetics were granted, jointly with the Royal College of Physicians of London, to the following successful candidates:

E. F. Adams, S. N. Albert, G. S. Ambardekar, J. D. M. Barton, W. L. Bilsland, R. P. Bliss, N. H. Bloom, R. A. Bowen, D. M. Brown, C. A. Cheate, H. C. Churchill-Davidson, R. E. W. B. Comerford, R. L. Coulter, J. I. Davies, W. W. Deane, A. G. Doughty, G. L. Evans, H. Fairlie, D. J. H. Goodhead, Helen E. Gordon, R. W. G. Grindlay, J. R. Hamerton, G. Herington, M. H. W. Holloway, G. Houseman, M. S. Howe, J. McN. Inglis, R. G. Jones, W. A. Jones, F. M. Lancaster, R. A. Lattey, J. D. Louchrey, T. H. McCall, I. M. McCully, A. I. MacKenzie, J. Maisher, Julia M. Middleton, M. Nash, J. North, J. R. Odell, H. F. Patrick, A. W. Raffan, G. A. Rawlins, D. F. Rees, G. J. Rees, T. B. L. Roberts, Eleanor H. Russell, L. T. Scott, J. J. Slowe, J. Sironen, E. I. Tate, W. N. Vellacott, G. L. Way, J. H. Willis, F. G. Wood-Smith, S. D. Young.

No. 49

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec. 7.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or to return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	40	5	22	—	—	41	1	11	—	4
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	313	31	91	33	7	574	43	181	76	24
Deaths	4	—	1	—	—	7	—	3	1	—
Dysentery	76	13	23	—	—	242	36	50	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	—	1	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	45	8	6	—	—	51	7	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	69	6	19	59	2	36	6	7	41	2
Deaths	—	—	—	—	—	—	—	—	—	—
Measles*	6,466	239	225	44	179	611	33	103	138	1
Deaths	3	—	—	—	2	—	—	—	1	—
Ophthalmia neonatorum	60	4	9	—	—	54	4	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	6	2	—	1 (B)	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	677	56	7	4	4	744	56	11	4	3
Deaths (from influenza)	21	6	3	1	1	35	6	1	1	—
Pneumonia, primary	—	—	331	25	13	—	—	268	13	11
Deaths	—	46	—	—	—	—	41	—	—	—
Polio-encephalitis, acute	1	—	—	—	—	5	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polymyositis, acute	14	—	1	10	—	28	1	—	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	14	—	—	—	2	17	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	128	9	8	1	—	116	16	12	1	1
Deaths	—	—	—	—	—	—	1	—	—	—
Relapsing fever	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,277	109	360	37	39	1,779	144	250	26	55
Deaths	—	—	—	—	—	1	—	—	—	1
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	7	2	—	4	2	5	1	1	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,783	105	247	87	33	1,225	102	65	25	10
Deaths	6	1	3	—	—	6	2	1	—	1
Deaths (0-1 year)	410	51	67	—	22	349	44	44	39	13
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,647	727	621	142	4,865	734	639	217	116	—
Annual death rate (per 1,000 persons living)	—	—	13.7	—	—	—	14.5	14.0	—	—
Live births	9,620	1,453	1,158	271	6,630	890	853	351	244	—
Annual rate per 1,000 persons living	—	—	23.3	—	—	—	17.1	22.6	—	—
Stillbirths	264	24	65	—	202	32	27	—	—	—
Rate per 1,000 total births (including stillborn)	—	—	53	—	—	—	31	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, 16, 23, 30, and Dec. 7.

EPIDEMIOLOGICAL NOTES

Neonatal Diarrhoea and Enteritis

Outbreaks of neonatal diarrhoea and enteritis have been reported from several widely separated institutions. Diarrhoea and enteritis is not notifiable, and how much the newly born have contributed to the recent rise in mortality cannot be determined until deaths by ages are available. Deaths from this cause in the 126 great towns increased during the 45th week of this year from 31 to 57, and small increases have been noted in subsequent weeks until 69 deaths were recorded in the 49th week. The number of deaths in recent weeks is above the total for the corresponding period of the preceding years, although the figures for earlier weeks had been considerably below the corresponding figures for previous years. A comparison of the deaths in the recent weeks with those of the same weeks in the two preceding years shows this trend:

Deaths from Diarrhoea and Enteritis in Infants under 2 years in the 126 great towns

Weeks	1946	1945	1944
35-39	201	363	386
40-44	198	269	239
45-49	317	177	200

In other words, the Registrar-General's figures for the first eleven weeks of the December quarter do not show any notable increase of mortality from enteritis and diarrhoea. In the 126 great towns, including London the average number of deaths of infants under 2 years of age per 1,000 births for the December quarter 1946 to date was 5.8. The comparative figure for the same period of 1945 was 6.8.

Outbreaks recently reported from maternity homes and institutions in various parts of the country are not all of the same clinical type. The most serious appears to have been that at two hospitals in Leicestershire, with between 40 and 50 cases among infants and 23 deaths. In its high case mortality and relative lack of associated illness in adults this outbreak resembles incidents already recorded in America (Frant, S., and Abramson, H., *New York State J. Med.*, 1939, 39, 784) and also in this country (Sakula, J., *Lancet*, 1943, 2, 758). Clinically this condition usually begins during the first three weeks of life with a sudden weight loss which may precede obvious gastro-intestinal upset by several days. Pyrexia is not a marked feature, but the subsequent course suggests an intense toxæmia. In any particular institution the beginning of such an outbreak may not be explosive, there being intervals of a week or so between the first cases. Breast-feeding does not always protect, but the breast-fed infant usually appears to stand a better chance of survival. Pathological and bacteriological investigations have hitherto proved entirely negative. The only effective measure of control is closure of the ward or nursery concerned.

In the outbreak reported in connexion with a maternity home at Preston the illness of the 18 fatal cases started at varying intervals after discharge from the home, and the trouble began as long ago as August. It is not at present possible to state the case mortality of this outbreak, which presents some unusual clinical features that are being investigated by a team of paediatric specialists.

The illness among infants reported from institutions in several other areas differs clinically from that at Leicester and at Preston and appears to be much less severe. Usually mothers and nursing staff have been affected as well as infants. In one outbreak at Hull it is possible, though not yet confirmed, that the cause was a *Salmonella*.

Discussion of Table

In England and Wales increases were recorded in the notifications of measles 461, dysentery 18, and diphtheria 12, while decreases were reported for scarlet fever 106, whooping-cough 95, and acute pneumonia 68.

The fall in the incidence of scarlet fever was mainly contributed by the West Midland counties, but no county showed a large deviation from the total of the preceding week. The only change of any size in the local returns for diphtheria was an increase of 12 in Lancashire; the city of Liverpool accounts for half the notifications of diphtheria in this county and for one-eighth of the total for the whole country. The returns for whooping-cough rose slightly in the southern section of the country but fell in the north; the largest decline was Lancashire 56. The largest rises in the notification of measles were Glamorganshire 99, Middlesex 89, Lancashire 80, Northumberland 79, and Staffordshire 62: the only significant decline was Kent 90.

A fresh outbreak of dysentery involving 14 persons was reported from Durham (Chester-le-Street U.D. 10). The only other large centre of dysentery was London 13.

In *Scotland* the principal changes in the trends of infectious diseases were a rise of 51 for scarlet fever and a decrease of 106 for measles. Of the total of 360 cases of scarlet fever 156 were recorded in the city of Glasgow.

In *Eire* the chief features of the returns was a rise of 31 in the notifications of whooping-cough and an increase of 10 for diarrhoea and enteritis. Of the 87 cases of whooping-cough 38 were recorded in Dublin C.B., and 26 in the rural district of Youghal No. 2, Waterford.

In *Northern Ireland* an increase of 73 was recorded in the outbreak of measles in Belfast C.B.

No returns are available for week ended Dec. 14.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery, Obstetrics and Gynaecology, will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, *British Medical Journal*, B.M.A. House, Tavistock Square, London, W.C.1.

The annual general meeting of the Medical Society of the L.C.C. Service will be held at the County Hall, Westminster Bridge, S.E., on Wed., Jan. 8, 1947, at 4.30 p.m., when Mr. G. F. Stebbing will give an address on "The Organization of Cancer Treatment."

A course of twelve lectures on "Recent Advances in Dairy Technology" will be given at the Central Laboratories, Express Dairy Company, 133, Euston Road, N.W., under the auspices of the Chelsea Polytechnic, on Tuesdays at 6.30 p.m., from Jan. 14 to April 1. On Jan. 7, at 6.30 p.m., Dr. N. C. Wright, director of the Hannah Dairy Research Institute, will deliver an inaugural lecture on "The Production and Handling of Milk and Milk Products in Sub-tropical and Tropical Countries." The twelve lecturers include Dr. S. K. Kon, who will speak on "The Nutritive Aspects of Milk and Milk Products" on Feb. 4; Prof. G. Selby Wilson, who will discuss "Diseases Caused by Dairy Products" on March 18; and Dr. W. A. Lethem on "The Ministry of Health in Relation to the Dairy Industry," on March 25. The fee for the course is £1 1s., which should be sent to the Principal, Chelsea Polytechnic, Manresa Road, Chelsea, S.W.3.

The annual congress of the Ophthalmological Society of the United Kingdom will be held at Glasgow on March 27, 28, and 29, 1947, when the president will deliver an address entitled "De Senectute." The subject for discussion will be "Rhinology in Relation to Ophthalmology," to be opened by Mr. John Marshall, Mr. Gilbert H. Howells, and Dr. R. McWhirter. Members who wish to read papers are asked to send the titles to Mr. E. F. King, F.R.C.S., 79, Harley Street, London, W.1., as soon as possible. Abstracts of papers should be submitted by January 31, 1947. The annual dinner of the society will be held on March 27, and on March 28 there will be a clinical meeting at Glasgow Eye Infirmary. The afternoon of March 29 visits have been arranged to the Glasgow Art Galleries, Kelvingrove, and to the Hunterian Museum at the University of Glasgow.

The Council of the Royal Medical Foundation of Epsom College will, in March, 1947, award a pension of at least £30 per annum to a necessitous medical man, fully 55 years of age, who has been registered for five years. Forms of application may be had from the Secretary, Epsom College, Surrey, and must be returned by Jan. 30, 1947.

A combined clinico-pathological meeting was held on Nov. 29 at the Durham County Hospital. A pathological exhibition demonstrated B.M.R. determination, haemoglobinæmia, dysentery due to *B. dysenteriae flexneri* "W," and a case of chorionepithelioma presenting certain curious anomalies.

Dr. E. H. R. HARRIES, at a meeting of the Medical Society of the L.C.C. Service at the North Eastern Fever Hospital on Dec. 5, outlined changes in the service since 1890 when compulsory notification had led to its establishment. In increasing measure the older main causes for admissions—scarlet fever, diphtheria, and the enteric group—were being replaced by children's measles, whooping-cough, and gastro-enteritis. Isolation of cases until diagnosed and avoidance of cross-infection determined hospital planning. The specialties in his hospital were now in the hands of experts and the frequent presence of students—undergraduate and postgraduate—was most stimulating to the staff.

The British Empire Cancer Campaign's Garton Medal and prize for 1946 were presented at the annual meeting on Dec. 19 to Prof. E. L. Kennaway.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

—Regeneration of Divided Nerves

Q.—What is the physiological mechanism of regeneration from the proximal end of a divided nerve fibre? Do nerve fibrils split and thus reduplicate themselves?

A.—When a nerve fibre is divided the peripheral part degenerates; the axon and myelin sheath are removed by phagocytosis and all that remains is an empty tube composed of Schwann cells, the bodies of which form the wall of the tube, enclosed by a thin collagenous envelope called the endoneurium. If the injury has been at all violent there is more or less degeneration on the central side of the break this is sometimes called retrograde degeneration but does not differ in any way from the degeneration that occurs distally. Regeneration starts surprisingly early, probably within twenty-four hours, and consists of an outflowing of axoplasm from the central end of the divided axon. The substance of the axoplasm behaves as if it were a viscous fluid, and the line of flow, like those of a stream of lava, are determined largely perhaps exclusively, by mechanical factors. Thus it is usual to find a number of streams of axoplasm, often twenty or more, flowing out from one divided axon, and these streams will divide and join again according to the obstructions they encounter. Their ultimate fate depends upon the nature of the injury, and here we must turn from consideration of the isolated fibre to that of the nerve as a whole.

If the nerve has been completely divided the blood clot at the site of injury is rapidly transformed into scar tissue and the outgoing streams of axoplasm are almost all prevented from reaching the peripheral stump. They wander about in an aimless fashion, some penetrating the scar to some extent while others find their way laterally, and a few double back and twist round the central fibres. This great activity, together with the cellular proliferation that occurs at the end of the central stump, gives rise to the well-known central swelling which is called a neuroma. Effective regeneration cannot occur until the whole of the damaged segment has been excised and undamaged surfaces of the central and peripheral stumps brought into contact by accurate suture. When this has been done the Schwann cells of the peripheral stump, which multiply very considerably after division of the fibres, grow towards the central stump in longitudinally orientated strands which provide a sort of palisade along which the outgoing streams of axoplasm are conducted to the empty Schwann tubes of the peripheral stump. The destinations of the outgrowing axonal streams are entirely fortuitous. One from a central motor fibre may grow into a Schwann tube connected with a sensory end-organ. An axon formerly innervating one muscle may grow into a Schwann tube connected with another. Some of the small streams of axoplasm may wander down between the tubes and fail completely to make any sort of peripheral connexion. A point of particular interest is that when one of a number of streams flowing from a particular axon has grown down a Schwann tube and made connexion with an appropriate ending the other abortive outflows from the same axon gradually disappear. It appears that the successful axonal sprout is developed at the expense of its less fortunate fellows. Thus there is a progressive reduction in the number of streams of axoplasm growing from one axon.

In another type of injury, such as is produced by heavy pressure on a nerve, the axons and their myelin sheaths are interrupted without there being any break in the Schwann cells; this is the condition that has been termed axonotmesis. The process of regeneration is essentially the same, but since there is no break in the continuity of the Schwann sheath the growing streams of axoplasm are confined to their proper channel. They rapidly form into one stream which flows down along its proper course, reaches its appropriate end-organ, and rapidly increases in diameter. Hence, there is none of the constriction and wastage of axonal outgrowth such as must inevitably occur after division and suture of a nerve. This accounts for the striking difference in functional recovery after these two different types of nerve injury. Perfect restoration of function after suture can never occur, though in a purely motor or sensory nerve it is sometimes very good; on the other hand, after axonotmesis recovery will be perfect since the pattern of innervation is fully restored.

Myxoedema at the Menopause

Q.—Why should myxoedema appear at the menopause in healthy woman with no previous thyroid imbalance. Could an upper incisor tooth devitalized fifteen years ago be considered a causative or contributory factor?

*A.—*It is a known clinical fact that myxoedema may begin at a time of the climacteric. The cause of this is unknown, except so far as the climacteric is a period of endocrine adjustment, maladjustment, and involution of the gonads takes place; a similar way involution of the thyroid may take place, followed by fibrositis and hypothyroidism. It seems to the writer very improbable that the devitalized tooth can be a coincident factor. The treatment, of course, is thyroid extract.

Penicillin in Phenol Saline

Q.—I often use normal saline kept sterile by the admixture of 0.5% carbolic acid. Would this inactivate penicillin?

*A.—*Penicillin is not inactivated by phenol, parachlormetanesol, and other such substances used as preservatives. On the other hand, 0.5% phenol saline would be an undesirable vehicle for a solution to be injected repeatedly or in any considerable quantity.

Sexual Problems at Puberty

Q.—A worried parent has consulted me. His only son, aged 15, has begun to be interested in a girl of about his own age and has expressed a defiant determination to achieve sexual intercourse with her. I have said that the ideal of marriage must be inculcated and that the responsibility of explanation and example rests particularly with the father. The boy has very few friends, and has practised masturbation for about a year. What is the right approach to this kind of problem?

*A.—*One cannot answer this question adequately without knowing much more about the boy's personality and his background. But from the facts presented an explanation may be attempted. The age of 15 is a common one for the first romance, which, however, in the normal boy or girl is usually of a non-sexual type growing into a more sexual attachment about 17 or 18. This boy's sexuality is obviously of an exaggerated type, but excluding physiological overdevelopment this exaggeration is probably psychological. Masturbation is, of course, very common in boys of this age, and in itself is of little consequence. Excessive masturbation is most commonly resorted to as a solace for the feeling of lack of affection (there may not be a real lack); since no one loves him he will love himself. The lack of friends suggests such to be the case. In other boys masturbation is a reaction to a feeling of inferiority, since it gives a transitory feeling of well-being. In either case it is accompanied by defiance and a sense of grievance. Such a situation would explain his masturbation, his defiance, and his determination to gratify his passions at the onset of the heterosexual phase. Holding up marriage deals is sound; but moral injunctions are not likely to have much effect. The more deeply seated causes of this boy's reactions need to be investigated, preferably by a qualified child psychiatrist, or anyone who can win the boy's confidence. Its

roots probably go to much deeper resentments and a resort to sex in earlier childhood. Was there, for instance, any jealousy of another child? Did he feel neglected as a child, and did he resort to autoerotism as a solace? Has he a sense of grievance against either parent, and, if so, why?

Frequency of Micturition

Q.—Can anything be done to help a man aged 77 who complains of too frequent micturition? He has no symptoms of cystitis, no enlargement of the prostate, and no albumin or sugar in his urine.

*A.—*No mention is made in the question of a cystoscopy, and the existence of prostatic enlargement cannot be excluded by rectal examination alone. It is likely therefore that the patient is suffering from an intravesical projection of the prostate. If he is unwilling to undergo any form of operative treatment, or if for other reasons this is inadvisable, he should be fitted with a rubber urinal. By wearing this he will be able to attend meetings and social functions. The mere fact that he can pass water whenever he likes will relieve him of anxiety and reduce the frequency of micturition.

Formation of Red Cells

Q.—What factors are responsible for maintaining the red blood corpuscles at a relatively constant level in the blood? What changes occur in the life of the red cell as the individual ages?

*A.—*So far as is known the chief factor maintaining the red blood corpuscles at a relatively constant level in the blood is control of the rate of formation by varying oxygen tension in the bone marrow. A fall of the haemoglobin value below the normal level stimulates increased formation; when the value rises to normal the stimulus is reduced, and thus the value is kept fairly constant. If the value is increased above normal, as, for instance, by residence in high altitudes, on return to normal conditions there is probably no increased rate of destruction but the rate of formation is simply reduced below normal until normal conditions are once more attained. The life span of the red corpuscles does not vary with the age of the individual. In old age the decreasing amount of marrow simply leads to lower red cell counts than are found in younger individuals, but red cells produced probably survive for the same length of time.

Pethidine and Demerol

Q.—What is "demerol"? It is said to have the properties of morphine without the danger of addiction.

A.—"Demerol" is sold in this country under the name of pethidine. It is regularly advertised in the medical journals. Since it relieves pain it is not true to say that it has no danger of addiction. Addiction, however, is rare. Pethidine is 1-methyl-4-phenyl-piperidine-4-carboxylic acid ethyl ester, and from Jan. 1, 1947, it will come under the provisions of the Dangerous Drugs Acts.

Absence of Teeth

Q.—A small boy, aged 18 months, has not yet cut any teeth. A radiograph shows only one lower molar on each side, with no further evidence of any other teeth, upper or lower. The child is otherwise perfectly normal and healthy. Is any treatment needed? The mother of the child never had any lower incisors. She is pregnant again; are there any precautions she should take to try to prevent a similar condition in her next child?

*A.—*The absence of some or all teeth of the deciduous or permanent dentition, though not particularly common, is a condition that has been recorded on many occasions. Absence of teeth of the permanent dentition is on the whole more common than that of the deciduous. The most common teeth to be affected are the maxillary lateral incisors.

It is not clear from the question whether the lower molar shown radiologically is the permanent molar or deciduous molar. At 18 months approximately half the crown of the first permanent molar and the tips of the first and second incisors should be sufficiently calcified to be shown by x rays. If the permanent teeth are present, there is no reason for supposing that they will not erupt in the normal way. If the child

is healthy and there are no vitamin or hormone deficiencies there is no treatment indicated at present.

Absence of teeth is not infrequently hereditary. It is of interest in this particular case that the mother had no lower incisors. Unfortunately if the condition is hereditary there are no known precautions that can be taken to prevent a similar condition in the next child, though of course such absence may not necessarily be an inherited character with every child.

Cocaine Sensitivity

Q.—(1) Does cocaine sensitization exist or is it a myth? (2) Is it safe to use cocaine hydrochloride as a local anaesthetic injected into the tissues? (3) Is it safe to use a cocaine hydrochloride throat spray (say 10% as a preparation for laryngeal intubation) as a routine without first testing for susceptibility?

A.—(1) Cocaine sensitization exists in the sense that some people require very much less cocaine to acquire a certain degree of anaesthesia than others; it exists also in the sense that in some persons toxic symptoms arise after very small doses. Severe toxic effects have occurred after a dose as small as 20 mg. (1/3 gr.).

(2) It is not safe to use cocaine hydrochloride as a local anaesthetic injected into the tissues. Either procaine (B.P.) combined with adrenaline should be used for this purpose or, if a stronger anaesthetic is required, it is safer to use "nupercaine" (0.05–0.1% with adrenaline).

(3) There is no test for susceptibility which can be applied before using a throat spray; a 5% spray should be sufficiently strong for laryngeal intubation. It is wise to give the patient a barbiturate one hour previously (e.g., phenobarbitone B.P. 2 gr. or 0.13 g.) as this diminishes the risk of convulsions occurring. Patients with myasthenia gravis are specially susceptible to the risk of collapse due to cocaine or procaine.

Anencephaly

Q.—A patient has had one ovary and half the other ovary removed for cystic disease. After ten years of fruitless married life she produced an anencephalic monster. She is now pregnant again. What are the chances of a recurrence of this condition, and is abortion justifiable?

A.—A woman who has had an anencephalic child is more likely to produce another one than is the average woman. Nevertheless the absolute risk is not very great. The incidence of the condition rises as maternal age increases, but even should this patient be over forty the chance of the present baby being anencephalic is less than 1 in 20. It could be explained to her that the chances are heavily in favour of her child being perfectly formed. After all, the chances in any random pregnancy that the foetus will be malformed in one way or another are not so very different—say 1 in 50. In my opinion abortion on genetic grounds is quite unjustifiable. Anencephaly has been diagnosed radiologically at, of course, a relatively late stage. A radiologist might be consulted later as to whether examination was worth while; then, if the child did indeed prove to be anencephalic, the pregnancy might be terminated.

INCOME TAX

Professional Use of Residence

T. D. resides in a house separate from his surgery. All messages are received at his house, but patients are seen there by appointment only. The inspector of taxes declines to allow more than £10 in respect of the expenses of the house.

* In strictness T. D. seems to be entitled only to the amount of the additional expenditure (of all sorts) incurred in maintaining the house which is due to its use for professional purposes. Whether £10 is insufficient on that basis depends so much on the actual facts that it is not practicable to offer specific advice.

Training Grants for Demobilized Doctors

G. C. holds "a grade III post in the Government scheme for demobilized doctors while studying for the final F.R.C.S." Are the payments he receives taxable?

* We understand that such grants are regarded as subsistence allowances and are not liable to tax.

LETTERS, NOTES, ETC.

Swallowed Kirby Grips

Mr. A. M. DESMOND, F.R.C.S. (London, S.W.12) writes: In view of the recent correspondence (Sept. 7, p. 352) concerning the dangers of swallowed Kirby grips the following case may be of some interest. A female aged 4½ years was admitted to hospital on Aug. 15, 1946, the mother stating that the child had swallowed a Kirby grip six days previously. On the morning of admission she complained of lower abdominal pain. On examination the child was a little fretful, but otherwise did not appear ill. The tongue was clean, temperature normal, and pulse 128. There was lower abdominal tenderness but no guarding. Rectal examination revealed a tender lump centrally placed in the pelvis. The hair clip was not palpable; x rays showed the clip lying in the pelvis transversely. She was kept under observation, and in 24 hours the pain and tenderness had disappeared. On Aug. 17 x ray showed the clip in the same position. On rectal examination a "linear thickening" was felt, and this was thought to be the foreign body. Under general anaesthesia (ethyl chloride and ether) sigmoidoscopy was carried out, and the blunt end of the clip was seen just above the recto-sigmoid junction. Although grasped with forceps it would not be withdrawn. A finger was then inserted, and it was found that the clip had penetrated the bowel wall just above the recto-sigmoid junction and was buried to its hilt in a downward direction. By gentle manipulation it was found possible to invert and withdraw it. Pus was noted on the finger. Prophylactic penicillin and sulphathiazole were given for 24 hours, and the child made an uneventful recovery. This report again emphasizes the importance of treatment of these cases in hospital under skilled observation.

Digital Traction

Dr. S. J. NAVIN (Ombabika, Ontario) writes: In the *Journal* of Oct. 26 (p. 614) Dr. Kenneth M. MacLeod describes a "new" method for digital traction. I saw this method used by Dr. F. C. Barton, then a Flight-Lieutenant, R.C.A.F., in Gander, Newfoundland, in 1942 or 1943. Barton claimed no originality for his method, which I believe he got out of Scudder's textbook. At any rate this method of digital traction, which is very effective, is quite well known on this continent and has been in use for some time. In passing it may be noted that Barton used rubber bands tied to the piece of non-elastic suture material to secure his traction.

Haemospermia

Dr. SAMI KHAYATT (London, W.C.) writes: As regards the aetiology of haemospermia, discussed in "Any Questions" (Nov. 16, p. 758), I have to mention that in Tropical countries this condition may result from infection with *Schistosoma haematobium*. A few cases were reported in Iraq, and the diagnosis was confirmed by the finding of the terminal spined ova in the spermatic fluid. Probably these ova came from the capillaries of the seminal vesicle during ejaculation.

Car Sickness in Children

Dr. G. F. L. MITCHESON (Portslade) writes: In "Any Questions" (Nov. 30, p. 842) your reply makes no mention of the great value of hyoscine hydrobromide. I find in the case of my own children that a drink containing 1/200 gr. (0.32 mg.) of hyoscine hydrobromide given half an hour before a long car trip makes all the difference between joy and misery for us all.

Discovery of Chloroform as an Anaesthetic

Dr. ROBERT ANDERSON (Birmingham) writes: In 1890 I visited an old lady in Fifeshire who told me that when she was a young woman she was very friendly with Sir James Simpson, and that when he was experimenting with chloroform he used to give it to the guests at his drawing-room parties as if it were a parlour game.

Wilson's Disease: A Correction

Dr. A. DOYNE BELL (London, W.) writes: Your expert who answered the question on Wilson's disease (Dec. 14, p. 929) is surely guilty of a *lapsus calami* when mentioning neonatal jaundice as "a symptom of haemorrhagic disease of the newborn..." He should have written "haemolytic disease of the newborn." Haemorrhagic disease of the newborn, associated with a prolonged prothrombin time and effectively reacting to the administration of vitamin K, is not accompanied by jaundice or, usually, by lesions of the central nervous system.

Correction

In the *Journal* of Dec. 21, at p. 956, in Table I, category 9, whole-time teacher, qualified 8–14 years, column headed Total: No, the figure 233 should read 33, and the total at the foot of the column should be 3,267 instead of 3,467.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 28 1946

THE ACT AND COUNSEL'S OPINION

Counsel's opinion has been taken by the British Medical Association on two problems arising from the passing of the National Health Service Act. It is as follows:

Service Under the Act

The National Health Service Act, 1946, does not impose any obligation upon a medical practitioner to provide general medical services or any other services thereunder. On the contrary, Section 34 confers the right upon any medical practitioner engaged in medical practice (otherwise than as a paid assistant), if he wishes to provide general medical services under the Act, to apply before the appointed day to be included in the list. Any such medical practitioner is perfectly free to decide for himself whether he will apply to be included in the list or not. It is clear, therefore, in my opinion, that there is no possible justification for the statement that any such medical practitioner who elects not to apply is breaking the law.

The position is precisely the same, in my view, if the majority or indeed all of such medical practitioners elect not to apply to be included in the list. Moreover, I cannot see any ground for the assertion that any such medical practitioners who elect not to apply to be included in the list or (if it be the case that the majority of such medical practitioners have so elected) that the profession is challenging the authority of the law as promulgated by Parliament. Any individual or individuals who exercise an option which Parliament has enacted that he or they may exercise do not in my view thereby challenge the authority of the law as promulgated by Parliament.

It seems to me that this assertion is really founded upon the fact that, if a large number of such medical practitioners decide not to apply to enter their names upon the list, it may not be possible to operate the scheme of a comprehensive health service effectively or at all. The argument appears to be that Parliament has by this Act established a comprehensive Health Service and, as this Service can only be operated provided the majority of the medical practitioners co-operate by electing to join the Service, their failure to co-operate is a challenge to the authority of Parliament. This argument is in my view untenable and completely ignores the express provisions of the Act which give to the medical practitioner the right to elect whether he will or will not join the Service.

It must have been obvious to the Minister and to Parliament that in order to carry out the scheme it was necessary either (1) to compel medical practitioners under the Bill to join the Service, or (2) to make such satisfactory arrangements with the profession as would ensure the voluntary co-operation of the profession or the bulk of its members. Parliament did not think fit to make service under the Act compulsory. If, therefore, through the failure of the Government to secure the voluntary co-operation of the profession, a number of medical practitioners sufficient to work the scheme does not elect to join the Service, there is no justification in my view for saying that the profession is challenging the law as promulgated by Parliament. This opinion does not apply to such medical practitioners (e.g., employed by a local authority) as are liable to transfer under Section 68. Parliament has established a regular Army, Navy, and Air Force for which men can volunteer to join if they please. Men who do not volunteer to join do not thereby break the law or challenge the authority of Parliament.

A further question (which is wholly separate and distinct from the preceding question) arises as to the position of the

B.M.A. having regard to its Memorandum of Association. One of the objects of the Association is to maintain the interests of the medical profession. It is, however, provided that the Association shall not support with its funds any object or endeavour to impose on or procure to be observed by its members or others any regulation, restriction, or condition which, if an object of the Association, would make it a trade union. The B.M.A. has invited every member of the profession (including its own members) to decide by plebiscite whether he or she desires the Negotiating Committee to enter into discussions with the Minister on the regulations authorized by the Act. The form issued for this purpose states (*inter alia*) that a negative vote by general practitioners and members of visiting hospital staffs implies an undertaking by them, if so advised by the Association, not to enter the new Service.

One of the statutory objects of a trade union is "the imposing of restrictive conditions on the conduct of any trade or business," and, if the B.M.A. acted in such a way as to make this object its principal object, such acts would be *ultra vires* its Memorandum of Association. However, in my opinion the action taken by the B.M.A. in connexion with the plebiscite does not contravene the provision to Clause 3 of the Memorandum of Association. The undertaking is given only by those who vote in the negative and will be implemented only if the B.M.A. so advises. Those who gave the affirmative answer are not asked to give any undertaking and are at liberty to decide whether they will enter the Service. A question of difficulty might, however, arise if the B.M.A. at some future date made or sought to make a regulation that *none* of its members should enter the Service. I gather, however, that such a step is not and never has been contemplated by the B.M.A.

Hospital Treatment of Private Patients

The medical practitioners who may be allowed by the Minister to treat their private patients at a hospital providing hospital and specialist services are medical practitioners serving on the staff of such a hospital. Section 5 (2), however, clearly contemplates that medical practitioners serving on the staff of such a hospital may fall into two categories—namely, (1) those serving in an honorary capacity, and (2) those serving in a paid capacity. If, therefore, a consultant in private practice (whether he now holds the appointment of honorary consultant to a hospital or not) is hereafter appointed under Section 12 of the Act to the staff of a hospital providing hospital and specialist services in an *honorary capacity*, he would in my view be eligible to treat his private patients at that hospital or any other such hospital. It is not necessary for him to enter the Service in any way other than by such appointment.

It remains to be seen whether consultants in private practice, who desire to serve upon such hospitals in an honorary capacity, will ever be given the opportunity of doing so, or, if they are appointed, whether they will be permitted to treat their private patients in such hospitals. Appointments to the staff of such hospitals are made from persons selected by the appropriate advisory appointments committee by the Regional Hospital Board in the case of hospitals other than teaching hospitals, and by the Board of Governors in the case of teaching hospitals. Such appointments are, however, subject to regulations and directions given by the Minister (Section 12). The remuneration and conditions of service of all such officers are, subject to regulations, to be determined by the Regional Hospital Board or the Board of Governors as the case may be (Section 14).

Moreover, Section 66 empowers the Minister to make regulations with respect to the qualifications, remuneration, and

conditions of service of such officers and provides that no officer to whom the regulations apply shall be employed otherwise than in accordance with regulations. Therefore the extent to which consultants who desire to serve on the staff of such hospitals in an honorary capacity will in fact be appointed will depend upon the policy of the Minister and the regulations made by him and/or upon the policy of the Regional Hospital Boards or Board of Governors as the case may be and/or upon the Advisory Appointment Committees. The Minister could, in my view, if he so desired, block the appointment of consultants who desired to serve on the staff of such hospitals in an honorary capacity.

Moreover, even if a consultant secures appointment to the staff of such a hospital in an honorary capacity, he is not entitled as of right to treat his private patients at that hospital or any other such hospital. Permission has to be obtained from the Minister, who has a complete discretion to grant or refuse it. Further, the provision of special accommodation for private patients in such hospitals depends upon the discretion of the Minister and can only be made by him if, having regard to his duty to provide hospital and specialist services, he is satisfied that it is reasonable so to do. Therefore, though in theory consultants in private practice are eligible for appointment to the staff of such hospitals in an honorary capacity and to treat their private patients at one or other of such hospitals, it may be found in practice that few, if any, are given the opportunity to do so.

MEMBERSHIP OF TRADE UNIONS

The following letter has been sent to all local authorities from the British Medical Association:

December 16, 1946.

Dear Sir,

Trade Union Membership

The Association has considered, with particular reference to medical officers in the local government service, the position arising from the repeal by the Trade Disputes and Trade Unions Act, 1946, of the Trade Disputes and Trade Unions Act, 1927, Section 6 of which made it illegal for any local or other public body to require as a condition of the employment of any person that he should or should not be a member of a trade union.

Some local authorities have passed resolutions imposing on their employees a requirement of membership of a trade union or other organization. In this connexion I am instructed to inform you that the British Medical Association, which represents the great majority of doctors and enjoys a membership of over 54,000 and is the negotiating body for the medical profession, recognized as such by the Ministry of Health and the associations of local authorities, is opposed on principle to practitioner being required to join any body, British Medical Association or other—this does not of course apply to membership of medical defence societies. The Association prefers that membership should be voluntary, the strength of the Association remaining an expression of the profession's confidence in its representative body.

I should be glad to hear from you on this matter with regard to appointments under your Authority.

Yours faithfully,

(Signed) CHARLES HILL,
Secretary.

To the Clerk of the Council or the Town Clerk.

HOSPITAL DOMESTICS IN SCOTLAND

A clearer differentiation of the domestic from the nursing staff is implied in recent recommendations issued by the Secretary of State for Scotland. Hospitals should institute training schemes for domestic workers and provide better opportunities for promotion to supervisory positions. The properly trained domestic worker would have a higher standing and responsibility than at present, and for the supervisory posts might take a course at one of the Scottish colleges of domestic science. Large hospitals would have a whole-time domestic supervisor. Hospital authorities are asked to re-examine their arrangements for domestic work in the light of these suggestions.

HEARD AT HEADQUARTERS

Parliamentary Elections

The Public Relations Committee of the Association devoted the greater part of its last meeting to the whole question of parliamentary representation. This has been a difficult problem for the Association for many years past, though there has been a Parliamentary Representation Committee in existence and some sort of fund. A General Election in the ordinary course is little more than three years ahead and may be precipitated earlier. Difficulties arise out of the nature of the case, for Members of the House of Commons are representatives of constituencies and not of professional or other interests. Moreover, nearly all of them have party affiliations. University representation seems the most likely field to cultivate, but even here the way is not easy. Of all the leaders of the Association the late Sir Henry Brackenbury was one of the most suitable for the parliamentary arena, but his attack on the English Combined Universities in 1937, in spite of the support of the doctors' vote, left him at the bottom of the poll. The whole question is now receiving very careful attention, and the Public Relations Committee includes some able men of affairs.

Another matter of importance under consideration is municipal candidatures. Municipal bodies will have an enhanced importance from the point of view of health services. Mr. Bevan himself said in the Committee stage of the Health Bill that "these professional people," by which he meant in this case doctors, should normally find their way on to local councils by the ordinary course of popular election, and for that reason he stood out against compelling elected bodies to appoint persons who had not taken the trouble to stand. He was impatient with the argument that the busy general practitioner had no time for municipal elections; if he had no time to stand, said Mr. Bevan, he obviously had no time to serve. It is reassuring that the Public Relations Committee is including municipal as well as parliamentary matters in its consideration.

The Chronic Sick

The special committee recently set up by the Council to consider the care and treatment of the elderly and infirm had its first meeting recently. It is a strong committee, including among its members the chairmen of three of the principal standing committees of the Association as well as other persons both inside and outside the Council who have had special experience in this field. One representative of the Institute of Almoners is a member, and one member of the Association of Non-teaching Voluntary Hospitals; and the committee has power to co-opt three other members if necessary to secure representation of particular experience. The committee came to its task well documented. The extracts from the Hospital Surveys, which have done a great deal to direct public attention to the problem of the chronic sick, were laid before it, together with Sir Ernest Rock Carling's recent letter in the *Times*. Another memorandum was by Dr. A. G. Anderson, himself a member of the committee, who is chairman of the Medical Committee of the Scottish Advisory Committee of the Nuffield Provincial Hospitals Trust, and yet another was a succinct statement of the problem by three other members of the committee—Dr. Marjory Warren, Dr. E. B. Brooke, and Mr. L. Z. Cosin.

The "Doctors' Dilemma"

Shaw's play, the title of which has come in handy for newspaper headlines, is now out of date, and indeed it was never anything but a caricature of the medical profession, for doctors never have talked to one another as they talk there. But in one respect Shaw, writing forty years ago, showed remarkable prevision. This advice, in the preface to his *Doctor's Dilemma*, was written at a time when the present Minister of Health was only a boy of nine: "Make up your mind how many doctors the community needs to keep it well. Do not register more or less than this number, and let registration constitute the doctor a Civil Servant with a dignified living wage paid out of public funds." Shaw was insistent on the dignity of the wage: "Nothing is more dangerous than a poor doctor; not even a poor employer or a poor landlord."

Correspondence

The "Closed Shop"

SIR,—The specious arguments of the advocates of the "closed shop" have all the marks of the totalitarian mind. Dr. P. W. Roe (Dec. 14, p. 159) speaks of the "recalcitrant minority," as Nero doubtless spoke of the Christians, and Hitler of the anti-Nazis. The pellucid honesty of those who want to force doctors into trade unions is, of course, demonstrated by their remarkable belief that those who agree with them are so right that, despite their small numbers, they do, in fact, form the majority. The "freedom" that Dr. Roe alleges must follow the joining of a trade union must, I imagine, resemble the liberty of the caged tiger, who may no longer hunt for his food but is, of course, free from the danger of being attacked by other wild beasts.

I presume that Dr. Roe has heard of the political levy (tactful though it is not to mention it when freedom through coercion is the theme). Does he suggest that this also is a method of "ensuring the liberty and true freedom of the ordinary trade unionist"? What, may I ask, is an extraordinary trade unionist? Is he one who, having muscled in on the racket good and early, hopes to become one of those T.U.C. bosses who forcefully ensure "freedom" of the ordinary trade unionist?—I am, etc.

London, W.1.

A. PINEY.

The Willesden Affair

SIR,—I have sent the following letter to the chairman of the Willesden Urban District Council:

Thank you for having made up my mind for me. A few weeks ago I was prepared to extend a guarded welcome to the National Health Service. Now I am 100% opposed to it, your Council's action having brought vividly to my mind the wartime slogan, "Your freedom is in danger. Defend it with all your might."

Other members of the profession may feel as I do, and possibly it would be a good idea if all of them would send a letter similar to the above, notifying the Secretary of the B.M.A. that they had taken this action.—I am, etc.,

Lannceston.

DONALD M. O'CONNOR.

Medical Unemployment and Public Appointments

SIR,—*"F. B. P."* (Dec. 7, p. 152) ignores the grave disadvantages from which ex-Service holders of the D.P.H. suffer as the result of the loss of many years' experience in the public health service when seeking public appointments. This loss is particularly serious as the majority have not had the opportunity of gaining a great deal of experience before enlistment.

When applying for a public health appointment the candidate has first to fill in an application form which, under a large number of different headings, invites him to describe his previous civilian public health experience. Little if any space is devoted to the question of experience in the Forces. Later, if he is lucky enough to be called for an interview, he finds himself asked many searching questions regarding his work under different Acts of Parliament and in the various activities of public health authorities. No inquiry is made as to what he did while in the Forces, and he is given the unmistakable impression that such experience is considered irrelevant—an impression confirmed by results.

It will thus be seen that unless allowance is made to the ex-Service candidate for a deficiency in experience of public health work arising from his prolonged absence from civilian life, he does not compete on anything like even terms with the man who has remained in the public health service throughout the war.—I am, etc.,

EX-SERVICE D.P.H.

Dangerous Drugs Act: Withdrawal of Authority

The Home Office announces that Dr. John Stuart Prentice (Shap, Westmorland) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

H.M. Forces Appointments

ROYAL NAVY

Temp. Surg. Lieut.-Cmdr. (R.N.V.R.) the Hon. A. G. Gathorne-Hardy has been transferred to the R.N. in the rank of Surg. Lieut.-Cmdr.

Acting Surg. Lieut.-Cmdr. G. A. S. Anthony to be Surg. Lieut.-Cmdr.

Temp. Surg. Lieuts. (R.N.V.R.) W. H. B. Ellis, B. Geoghegan, and F. A. Lennan have been transferred to the R.N. in the rank of Surg. Lieut.

ROYAL NAVAL VOLUNTEER RESERVE

Prob. Temp. Surg. Lieuts. H. J. Shaw and D. C. G. Bett to be Temp. Surg. Lieuts.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. G. B. Hadden has retired on retired pay and has been granted the honorary rank of Col.

Lieut.-Col. C. Wilson, having attained the age for retirement, is retained on the active list supernumerary.

Major (War Subs. Lieut.-Col.) J. T. Robinson, O.B.E., to be Lieut.-Col.

Major M. A. Rea, O.B.E., to be Lieut.-Col.

Major J. S. Ruddell has retired receiving a gratuity and has been granted the honorary rank of Lieut.-Col.

Major W. R. M. Drew, O.B.E., has been seconded under the Foreign Office.

Major W. M. E. Anderson, D.S.O., has resigned his commission.

War Subs. Major N. Bickford to be Major.

War Subs. Major C. H. George, M.C., has retired and has been granted the honorary rank of Major.

Capt. A. Bennett to be Major.

Short Service Commission.—Capt. P. E. R. B. Unwin has retired, having received a gratuity, and has been granted the honorary rank of Major.

Short Service Commission.—War Subs. Major D. G. C. Whyte, D.S.O., from R.A.M.C., Emergency Commission, to be Lieut., and to be Capt.

Short Service Commission.—War Subs. Majors N. Bickford and D. G. C. Whyte; D.S.O., and Capt. H. J. McCann, A. R. T. Lundie, R. G. Macfarlane, and H. M. Macfie, M.C., have been appointed to permanent commissions.

Short Service Commission.—War Subs. Capt. J. B. Headley-Blythe and S. A. H. Lesser from R.A.M.C., Emergency Commissions, to be Capt.

Short Service Commission.—War Subs. Capt. A. S. Beare, from R.A.M.C., Emergency Commission, and A. W. Merrick, from R.A.M.C., T.A., to be Lieuts. and to be Capt.

Specialist Short Service Commission.—War Subs. Capt. J. K. Sueden, from R.A.M.C., T.A., to be Capt.

Specialist Short Service Commission.—Lieut. L. Mackie, from R.A.M.C., Emergency Commission, to be Lieut.

SUPPLEMENTARY RESERVE OF OFFICERS: ROYAL ARMY MEDICAL CORPS

War Subs. Capt. C. S. Pitt has relinquished his commission on account of disability, and has been granted the honorary rank of Capt.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Senior Training Corps.—War Subs. Major R. P. Smyth, O.B.E., supernumerary for service with Queen's University, Belfast, Senior Training Corps (Medical Unit) in the rank of Lieut.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Majors H. L. W. Sixsmith, O.B.E., R. C. Cunningham, and J. C. Shee have relinquished their commissions on account of disability, and have been granted the honorary rank of Lieut.-Col.

War Subs. Majors N. U. Khan and D. B. Wilson have relinquished their commissions and have been granted the honorary rank of Lieut.-Col.

War Subs. Capt. W. C. Muir, L. Werbeloff, and D. J. A. MacLean have relinquished their commissions and have been granted the honorary rank of Major.

War Subs. Capt. J. C. A. Davies and D. H. Lewis have relinquished their commissions, and have been granted the honorary rank of Capt.

War Subs. Capt. G. H. T. Lloyd has relinquished his commission on account of disability, and has been granted the honorary rank of Capt.

War Subs. Capt. L. Banski has relinquished his commission.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) L. D. Barnhouse has relinquished her commission and has been granted the honorary rank of Major.

War Subs. Capt. (Miss) D. Mook Sang has relinquished her commission and has been granted the honorary rank of Capt.

Lieut. (Miss) E. Nankivell has relinquished her commission and has been granted the honorary rank of Capt.

ROYAL AIR FORCE

Wing Cmdr. L. I. Hyder has retired.
Fl.-Lieut. P. J. O'Connor, O.B.E., to be War Subs. Squad.-Ldr.
Fl.-Lieut. (Temp. Squad.-Ldr.) C. G. G. MacKay has been transferred to the Reserve of Air Force Officers and called up for Air Force service.
J. B. Ross to be Squad.-Ldr. (Permanent).
H. O'B. Howat to be Squad.-Ldr.
To be Fl.-Lieuts. (Permanent): W. O. Davies and R. Maycock.

ROYAL AIR FORCE VOLUNTEER RESERVE

D. A. Sanford to be Squad.-Ldr. (Emergency).
Fl.-Lieut. (Temp. Squad.-Ldr.) L. O'N. Knox has resigned his commission retaining the rank of Squad.-Ldr.
Fl.-Lieut. J. R. Fountain has relinquished his commission on account of medical unfitness for Air Force service, retaining his rank.
To be Flying Officers (Emergency): M. A. Coleman, L. V. Martin, J. D. Nelson, J. P. Nowlan, K. I. Roberts, L. Silverstone, G. I. Tewfik, T. A. Wylie, P. O. Yates, and E. V. de C. Medill.

INDIAN MEDICAL SERVICE

Major-Gen. Sir J. B. Hance, K.C.I.E., O.B.E., K.H.P., has retired.
Lieut.-Col. J. M. Mitchell, O.B.E., has retired, and has been granted the honorary rank of Col.

COLONIAL MEDICAL SERVICE

The following appointments have been announced: S. Caruana, M.B., G. M. Glass, M.B., Ch.B., Medical Officers, Sierra Leone; D. W. F. Charlton, M.R.C.S., L.R.C.P., R. G. Davies, M.B., B.S., Medical Officers, Kenya; A. R. Duff, M.B., Ch.B., I. W. J. McAdam, F.R.C.S., A. B. Raper, M.D., M.R.C.P., Medical Officers, Uganda; J. E. Furness, M.B., B.S., R. H. Strudwick, M.B., Ch.B., Medical Officers, Nigeria; E. Scott, M.B., Ch.B., Lady Medical Officer, Nigeria; J. P. Lane, F.R.C.S., C. G. F. Smartt, M.R.C.S., L.R.C.P., Medical Officers, Tanganyika; D. Scott, M.B., B.Ch., Medical Officer, Gold Coast; R. H. Isaacs, L.R.C.P. & S., Medical Officer, Malaya; S. H. Moore, M.B., B.Ch., D.T.M. & H., Medical Officer, Hong Kong; C. M. Joyner, M.B., Ch.B., District Medical Officer, Bahamas; E. Morrison, M.B., Ch.B., Specialist in Anaesthetics, Health Department, Trinidad; S. Stecher, M.R.C.S., L.R.C.P., Medical Officer, Grade C., Trinidad; L. G. Eddey, M.B., Ch.B., Deputy Director of Medical Services, British Guiana.

Association Notices

CONSULTANTS AND SPECIALISTS COMMITTEE

As a result of the recently held elections, the following have been appointed representatives of Regions 8 and 17 of the Consultants Roll upon the Consultants and Specialists Committee for the remainder of the session 1946-7:

Region 8: Mr. D. A. Abernethy, Oxford.

Region 17: Dr. F. M. B. Allen, Belfast.

Diary of Central Meetings

JANUARY

- 9 Thurs. Publishing Subcommittee, 11 a.m.
Journal Committee, 2 p.m.

Branch and Division Meetings to be Held

MID-ESSEX DIVISION.—At Chelmsford and Essex Hospital, Sunday, Jan. 5, 1947, 10 a.m. Dr. Bathurst Norman: Coronary Artery Disease.

Meetings of Branches and Divisions

TUNBRIDGE WELLS DIVISION

Speaking on Nov. 27 Dr. John Thwaites said that a grave responsibility rested upon every member of the medical profession at the present time. The National Health Service Bill was now an Act of Parliament. The most important part of any health service was the doctors who worked in it. A health service was first and last a human service dealing with human relationships. It would have been common sense if the Minister had sought the co-operation of the representatives of the medical profession in framing his health Bill.

The declared policy of the Socialist Party was that sooner or later there should be a whole-time salaried State medical service, and the fact that this was still its policy had been confirmed in public speeches by leading members of the Government. The only reason that it was to be in the future was that the present time was not ripe for it. The opposition of the profession to such a type of service had always been adamant. The Act did infringe against some of the strongest of our principles. No specialist could work without beds and special apparatus for diagnosis and treatment.

As the Minister was to own and control hospitals of all kinds it seemed certain that in a very short time there could be no independent specialists. It was clear, too, that if the basic salary increased the Treasury would have a very real say in the distribution of doctors and would have a marked influence on the work of the central medical practices committee whose job it would be to decide the number of doctors to be allowed to practise in any area. Why should the Treasury pay out more salaries than they thought necessary? The doctor with the small practice would either be redundant or be allocated a greater number of patients.

The Minister was convinced that it was immoral for doctors to sell the goodwill of their practices, and on these grounds alone he wished to abolish our right to do this. But once they had lost the right to their own practices they had lost the last shred of their independence.

Those who were opposed to them (doctors) on political grounds were not slow to try to influence public opinion against them by saying that they were defying the will of the people as expressed by an Act of Parliament. But the Act did not say that all doctors must join the Service. It was left perfectly free for doctors to decide for themselves whether or not they would choose to work in the new Service.

It must be clearly understood that they would not and could not under any circumstances go "on strike." The doctors would be there to attend the sick and would do so; the hospitals would not close their doors and the public health services would continue to function.

Medicine and health should be outside the political field. It was the Government, by introducing into the non-political field their own particular political ideology of nationalization, who had made this conflict appear political. Nationalization of the health service would be contrary to all that was best in medicine and the development of medical science, and it must be fought to the bitter end. The profession had given ample evidence of its wish to take its share in the planning of a comprehensive health service for the country, and of its desire to see such a service come into being. I had also made it clear that there were certain fundamental principles which it considered essential to the structure of any health service and that any Act which did not respect these principles would be unacceptable to the profession. They wished to see the freedom of their patients and themselves remain intact; they wished to be employed by their patients and be responsible to them and not to third employing party, the State.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Sections of Surgery and Radiology.—Wed., 8 p.m. Discussion: The treatment of carcinoma of the tongue. Openers: Sir Stanford Cade, Dr. J. Ralston Paterson, and Mr. W. R. Douglas.

Section of Neurology.—Thurs., 8 p.m. Hughlings Jackson Memorial Lecture by Prof. E. D. Adrian: General principle governing nervous activity.

Section of Anaesthetics.—Fri., 5.30 p.m. Discussion: Anaesthesia for abdomino-perineal operations. Openers: Drs. Ronald Jarman and Frankis Evans.

POSTGRADUATE NEWS

The Edinburgh Postgraduate Board for Medicine (University New Buildings, Edinburgh, 8) announces a series of open lectures on subjects of wide biological interest to be given on alternate Tuesdays at 5 p.m., from Jan. 14 to March 11, 1947, in the West Medical Lecture Theatre of Edinburgh Royal Infirmary. All graduates and students are invited to attend the lectures. Details will be published in the diary column of the *Supplement* for the appropriate weeks.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BURKITT.—On Dec. 13, 1946, to Violet, wife of Dr. Robin Burkitt, M.D. F.R.C.S.I., a son.

CLARKE.—On Dec. 1, 1946, at London Hospital, to Katherine, wife of Dr. Owen Clarke, a son—John Owen.

COOPER.—On Nov. 18, 1946, at Newcastle, to Frieda, wife of Capt. J. R. Cooper, R.A.M.C., Corby, 26, Pierremont Gardens, Darlington, a daughter—Jennifer Ann.

GREENHALGH.—On Dec. 7, 1946, to Christine, wife of Dr. Eric Greenhalgh, Bramhall, Cheshire, a son.

WADDINGTON.—On Dec. 5, 1946, to Ella, wife of J. K. B. Waddington, F.R.C.S.Ed., 253, Nantwich Road, Crewe, a second daughter.

MARRIAGE

WAUGH—SMITH.—On Dec. 11, 1946, at the Church of St. John the Evangelist, Princes Street, Edinburgh, by the Rev. S. Harvie Clark, P.O. Ian Grant Waugh, M.A., B.M., B.Ch., son of Mr and Mrs. W. Grant Waugh, of Sunderland, to Catherine Mary Goodsir (Berry), M.B., Ch.B., daughter of Professor and Mrs. A. Sydney Smith, of Edinburgh.

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AN INQUIRY INTO THE EPIDEMIOLOGY OF PEMPHIGUS NEONATORUM

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In recent years there has been a considerable increase in the incidence of pemphigus neonatorum, especially in nurseries in maternity hospitals and units. Cases and outbreaks have in the main been mild, with a very low mortality, but this does not lessen the administrative problems of isolation, quarantine, and ward closure. The rise in incidence of infection due to *Staph. pyogenes* not only in infants but also in nursing mothers, and bacteriological studies of infection in surgical operation wounds, war wounds, and industrial dermatitis, have led to an increased interest in the epidemiology of staphylococcal infections in general. The study of the epidemiology of pemphigus neonatorum and of other staphylococcal infections is rendered difficult by the ubiquity of the causative organism, and it is obvious that the application of any method whereby strains of *Staph. pyogenes* can be differentiated into types must inevitably lead, as in the case of *Str. pyogenes*, *Str. pneumoniae*, the typhoid bacillus, and *Salmonella* organisms, to more accurate knowledge of the sources and paths of spread of infection.

The most generally accepted criterion of actual or potential pathogenicity of staphylococci at present is the ability to produce coagulase, and as staphylococci may be golden, yellow, off-white, or white we have applied the term *Staphylococcus pyogenes* to coagulase-positive strains regardless of pigment production. The first acceptable differentiation of *Staph. pyogenes* into types was described by Cowan (1939), using a slide-agglutination technique whereby most strains of *Staph. pyogenes* were found to fall into three types and an atypical group among which he tentatively recognized five subtypes (personal communication). Differentiation of the subtypes is often difficult, as they are not always clear-cut, and a considerable amount of cross-reaction may occur owing to the presence of common antigens. In 1940 Christie and Keogh, using the same technique, succeeded in differentiating nine types, including Cowan's original three; their observations were based on reactions with absorbed and unabsorbed sera, and the organisms were classified according to the presence of major and minor agglutinogens, but they did not find it possible to eliminate the considerable antigenic overlap between different strains. A further development occurred in 1945, when Wilson and Atkinson described a method of differentiating types among *Staph. pyogenes* by means of bacteriophage action, evolved from the original observations of R. T. Fisk (1942) and

R. T. Fisk and Mordvin (1944); by this method they were able to recognize 21 types or subtypes and to apply the technique successfully to the investigation of several outbreaks of staphylococcal infection, in particular food-poisoning due to staphylococcal enterotoxin.

In the course of investigations to confirm and extend the work of Cowan and of Christie and Keogh, and to explore the possibility of obtaining more clear-cut results by agglutination methods, we were called upon to investigate outbreaks of staphylococcal infection causing pemphigus neonatorum and breast abscess in nursing mothers (Hobbs, 1944), food-poisoning due to staphylococcal enterotoxin (Murphy and Edward, 1944), and cases of sycosis barbae (Hobbs, Carruthers, and Gough, 1947). This provided an opportunity for testing experimental sera and for carrying out investigations on the epidemiology of staphylococcal infections, in particular pemphigus neonatorum.

In November, 1943, we were asked to investigate an outbreak of pemphigus neonatorum, affecting eight infants, in the main nursery of the maternity unit, City Lodge Hospital, Cardiff. This marked the beginning of a series of observations on the epidemiology of pemphigus neonatorum in the unit, which continued uninterruptedly for two years till November, 1945. During this period 2,719 infants were born in or admitted to the unit, of which 111 (4.1%) developed pemphigus neonatorum; all strains of *Staph. pyogenes* isolated from these patients were investigated serologically.

In addition, there occurred during the period of investigation 25 cases of staphylococcal conjunctivitis ("sticky eye"), either alone or associated with pemphigus neonatorum; cultures were taken from the infected conjunctivae for bacteriological and serological examination.

Procedure and Technique

(a) *Collection of Specimens.*—The specimens examined came from the lesions, nose, eyes, and occasionally umbilicus of infected infants, from the nose of healthy infants in infected nurseries, from likely sources of infection such as the nose, throat, and skin of infants' mothers, nursing, domestic, and medical staff, from air and dust in the nursery, and from infants' blankets and gowns. New patients were visited as early as possible in order to collect fluid from intact bullae by aseptic puncture with sterile Pasteur pipettes drawn out to a fine capillary. If the lesions were already open and discharging, swabs

were taken from the exudate after initial cleansing with sterile gauze. Nasal and eye swabs for infants were made from a fine pliable copper wire with a very small pyriform pledget of cotton-wool. Specimens for culture from skin were taken from the thumb, the terminal phalanges of the index and middle fingers, and the palmar and dorsal surfaces of the hand with swabs previously moistened with quarter-strength Ringer solution. Dust samples consisted of floor sweepings, which were collected in sterile test-tubes and shaken up in quarter-strength Ringer solution; cultures were made from tenfold dilutions. For air-sampling, blood-agar plates were exposed for one to three hours in the air of the ward during both quiet periods and periods of greatest activity. Blankets and infants' gowns were tested by soaking two small areas of about 12 sq. in. (75 sq. cm.) of each article in nutrient broth, cultures being made from the broth and from dilutions of the broth.

(b) *Laboratory Procedures.*—Agar plates containing 10% horse blood were the basic medium used for the culture and isolation of strains of *Staph. pyogenes*, but specimens from lesions were often cultured also on gentian violet (1/500,000) blood agar, especially if the presence of *Str. pyogenes* was suspected. Swabs still moist were inoculated direct on to blood-agar plates, but any which appeared to be dry were moistened with broth or quarter-strength Ringer solution. An ideal procedure was to incubate the swab in broth after inoculation of the plates. The broth culture after 18 hours' incubation was used for the tube-coagulase test (Gillespie, 1943), and if the direct plate showed no staphylococci the enrichment broth was plated out on to blood agar. By this method small numbers of staphylococci often missed by direct plating were isolated in almost pure culture. Following overnight incubation of the direct plate at 37° C. observations were made on the amount of growth, the types of organisms, and the proportion of colonies of *Staph. pyogenes*. From all cultures showing the presence of staphylococci at least two colonies were tested for their ability to produce coagulase by the slide-coagulase test introduced by Cadness-Graves *et al.* (1943), using human plasma. Pigmented strains which were coagulase-negative by the slide technique were re-tested by the tube method (A. Fisk, 1940). At least two coagulase-positive colonies from each culture were sub-cultured for serological typing. It was found advisable to leave the blood-agar plates on the bench for a few days to allow the full development of pigmentation and colony morphology. By so doing differences between types of colony became more obvious, and such differences were frequently found to correspond with different serological types, and often more than one type was present on a plate. Serological typing was carried out by means of the slide-agglutination technique described by Cowan (1939), using crude and absorbed sera from rabbits inoculated with vaccines prepared from Cowan's original three strains and from strains of additional types described by Christie and Keogh (1940). Agglutinating sera were also prepared against a number of freshly isolated strains which did not appear to fit into any of the hitherto identified types; these strains were cultured from various staphylococcal lesions during the course of the investigation. Many of the strains of *Staph. pyogenes* type Ib isolated from lesions during the second outbreak of pemphigus were typed by the bacteriophage method at the Public Health Laboratory, Oxford, and were regularly lysed by the same phage filtrates.

Prevalence of Pemphigus Neonatorum during the Period of Investigation

The maternity unit was housed in a 2-story block and consisted of a main nursery (Nursery 10) with 32 cots (later reduced to 16), a nursery for premature infants (10 cots), another 10-cot nursery, and five isolation nurseries (10 cots) together. In three of the six wards mothers and infants were nursed about 90 infants with their mothers, including isolation cases.

Prior to November, 1943, cases of pemphigus neonatorum in the unit had been rare, and had occurred singly and sporadically. Between November, 1943, and October, 1945, 132 cases of pemphigus neonatorum and staphylococcal

conjunctivitis occurred in the unit, and their distribution the various wards and nurseries is shown in Table I. It will be seen that 93 cases (70.5%) occurred in infant Nursery 10, attached to Wards 10 and 11, while 29 (22%) occurred in infants in Wards 8 and 9; there only two cases in premature infants. It is also to be

TABLE I.—Distribution of Cases

No. of Ward or Nursery	No. of Cases of		
	Pemphigus Neonatorum	Staphylococcal Conjunctivitis	Pemphigus Neonatorum + Staphylococcal Conjunctivitis
2	4	—	—
6A	2	—	—
7	2	—	—
8/9	25	—	1
10	73	4	3
14	1	—	—
Totals:	107	21	4

that all 21 cases of staphylococcal conjunctivitis and that of the four cases of combined pemphigus and staphylococcal conjunctivitis occurred in Wards 8 and 9; Nursery 10. As over 70% of the cases were among infants in this nursery the epidemiological investigations carried out were centred round it.

The present investigation began when three cases of pemphigus occurring in Nursery 10 were reported to laboratory during the first week of November, 1943, at the unit was visited to take specimens for bacteriological examination. During the two succeeding weeks five further cases of pemphigus developed in this nursery, and serological methods of identifying the infecting strains of *Staph. pyogenes* had already proved successful in tracing the source of a small outbreak of pemphigus neonatorum in a private nursing home it was decided to widen the scope of the inquiry in order to discover the source of infection and the mode of spread.

Investigations and Results

Coagulase-positive staphylococci, usually in pure culture were isolated from the lesion of every case investigated including both pemphigus and "sticky eye." Swabs from the lesions of many cases were examined on repeated occasions, and in infants with multiple lesions sometimes several swabs were taken from different infected areas of the body. All the strains were subjected to serological examination and the infecting organism was typed in all but one of the 132 cases.

Distribution of Serological Types in the Lesions of Infected Infants

Fig. 1 shows the distribution month by month of the serological types of *Staph. pyogenes* isolated from all the cases in the maternity unit during the period of investigation. The total number of infants born in the maternity unit month by month during the period is also shown, and varied from 84 to 144, with a mean of 113.7. The number of cases of pemphigus and staphylococcal conjunctivitis per month varied from 0 to 22, with a mean of 5.5. In broad outline the chart shows a small sharp outbreak due to *Staph. pyogenes* type I which occurred early in November, 1943 (8 cases: 6 type I). This was followed by an outbreak due to type Ib which began in January, 1944, and continued with varying intermissions and recrudescences until May, 1945 (119 cases: 101 type Ib). Following an intermission of three months during which no cases occurred, there were indications of a third outbreak starting early in October, 1945 (5 cases: 4 type I), just as the investigation had to be terminated.

The first outbreak involved eight infants, all in Nursery 10, who were infected over a period of two weeks in November, 1943. *Staph. pyogenes* type I was isolated from the lesion of six infants; of the remaining two, one was infected with *Staph.*

pyogenes type I/II and the other with type IIIc. The latter infant was later reported to have been discharged from the unit with no evidence of pemphigus and to have been brought back one week later suffering from pemphigus and staphylococcal conjunctivitis. Type IIIc was also isolated from pus from the infected eyes and from the nose. During December no cases

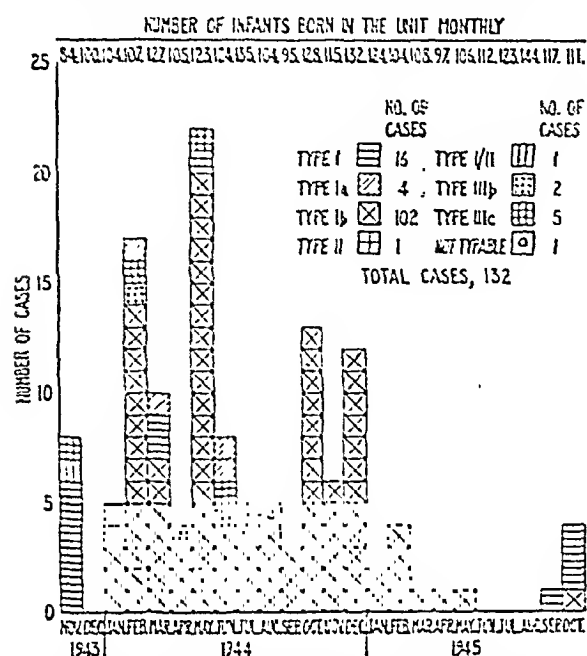


FIG. 1.—The serological types of *Staph. pyogenes* causing pemphigus neonatorum and staphylococcal conjunctivitis among infants in a large maternity unit month by month from November, 1943, to October, 1945.

of pemphigus occurred, but in January, 1944, there were five cases, in two of which infection was due to *Staph. pyogenes* type I. From the three remaining cases *Staph. pyogenes* type Ib was isolated, and this type became the prevailing cause of pemphigus neonatorum in the unit during the remainder of the period of investigation. In February there were ten cases of pemphigus, all due to type Ib, and seven cases of staphylococcal conjunctivitis, of which four were caused by type Ib. During March no cases of pemphigus occurred in Nursery 10, but there were seven cases of staphylococcal conjunctivitis, of which four were due to type Ib, two to type I, and one to type Ia. A sharp rise in the incidence of pemphigus took place in May, mainly affecting Nursery 10 in which 21 cases occurred, 20 due to type Ib and one to type I. The one case of staphylococcal conjunctivitis in May was due to type IIIc. Following this outbreak in May, Nursery 10 was closed for a few days at the beginning of July and was thoroughly washed and cleansed. The nursery was reopened under less crowded conditions and there were no further cases of pemphigus in it in July, but six occurred during August and September, all due to type Ib. A further rise in incidence in this nursery took place between October and December, when type Ib caused 17 cases of pemphigus, one case of pemphigus and conjunctivitis, and two cases of conjunctivitis alone. The next five months produced nine cases, all due to type Ib, of which seven occurred in Nursery 10; but no more cases of staphylococcal conjunctivitis were observed up to the end of the investigation. There were no cases of pemphigus during June, July, and August, 1945, but in September there was one case due to type I. When the investigation was terminated in October there had been three more cases in Nursery 10 all due to type I.

Table II gives the numbers of cases of pemphigus and staphylococcal conjunctivitis which occurred throughout the investigation in the various nurseries and wards, and also shows the type distribution of the strains of *Staph. pyogenes* isolated from the lesions. It demonstrates, as already pointed out, that

TABLE II.—Distribution of Serological Types of *Staph. pyogenes*.

No. of Ward or Nursery	Illness	Serological Type								Total
		I	Ia	Ib	Ic	I, II	IIb	IIIc	Not Typed	
2	P	2	1	1	—	—	—	—	—	4
6A	P	—	1	2	—	—	—	—	—	3
7	P	—	—	1	—	—	—	—	—	1
8, 9	P	1	—	23	—	—	—	—	—	24
10	P	10	1	59	1	1	—	2	—	73
14	P	3	—	9	—	—	—	2	—	14
Alt	P	13	2	87	1	1	—	2	1	107
	P + C	3	2	12	—	—	—	2	—	21
Total		16	4	102	1	1	—	5	1	132

P = Pemphigus neonatorum. C = Staphylococcal conjunctivitis.

type Ib, isolated from 102 (77.3%) of the 132 cases, was responsible for the great majority of the infections. It may also be noted that 73 (68.2%) of 107 cases of pemphigus and 17 out of 21 cases of staphylococcal conjunctivitis occurred in Nursery 10; between 50 and 60% of the infants born in the unit occupied Nursery 10.

Staphylococcal Conjunctivitis

A study of Table II shows that 87 (81.3%) out of 107 cases of pemphigus were caused by type Ib, and only 12 (57.1%) out of 21 cases of staphylococcal conjunctivitis were due to the same type; three out of four cases of combined pemphigus and conjunctivitis were due to type Ib. It would appear, therefore, that in an outbreak of pemphigus due to a particular serological type of *Staph. pyogenes* associated cases of conjunctivitis due to the epidemic type may occur, but there may also arise sporadic cases of conjunctivitis due to other serological types of *Staph. pyogenes* not prevalent as the cause of pemphigus, or indeed in the absence of pemphigus.

Swabs were taken from both eye and nose of nine cases of conjunctivitis, and seven showed the same type in eye and nose, the types being different in the remaining two. Swabs from four patients with coincident pemphigus and conjunctivitis yielded the same type from eye and lesion in each case, and in two cases from which nasal swabs were also taken the infecting type was found in the nose as well. When pemphigus and conjunctivitis occurred in the same patient, therefore, the double infection was caused by the same serological type of *Staph. pyogenes*. Also when conjunctivitis alone occurred the same type of *Staph. pyogenes* was present in the infected eyes and in the nose of a high proportion of cases.

Serological Types of *Staph. pyogenes* Isolated from Nursery Staff

Swabs were taken from the noses, hands, and occasionally the throats of the nursery, domestic, and medical staffs of the unit three times during the course of the investigation (Table III). The first of these occasions was in November, 1943, two days after starting the investigation of the first outbreak of pemphigus neonatorum in Nursery 10. Nose, throat, and hand swabs were taken from 15 members of the medical and nursing staff of the infants' nursery, and 10 (66.7%) were found to be harbouring *Staph. pyogenes* in one or more of the three sites. Four carried the epidemic type I, two harboured type IIIb, two type IIIc, and one each types Ia and Ib, all the nose. *Staph. pyogenes* was isolated from the hands of 9 members of the nursing staff, and all the strains belonged to the same serological types as were present in the infants' individuals.

The second swabbing of the staff took place in November, 1944, when cases in the second outbreak of type Ib were increasing in number. Of this outbreak was reached in May, hand swabs were taken from 40 persons, including sisters, nurses, pupil midwives, and was

was decided if not, the first of swabbings of the staff was a different light to the swab which was not

TABLE III.—Summary of Results of Serological Examination of *Staphylococcus pyogenes* isolated from Infants and their Environment in Nursery 10 during Three Consecutive Outbreaks of Pemphigus Neonatorum (1943-5)

Source of Specimens	1st Outbreak— <i>Staph. pyogenes</i> Type I			2nd Outbreak— <i>Staph. pyogenes</i> Type Ib			3rd Outbreak— <i>Staph. pyogenes</i> Type I		
	Total Examined	No. showing		Total Examined	No. showing		Total Examined	No. showing	
		<i>Staph. pyo.</i>	<i>Staph. pyo.</i> Type I		<i>Staph. pyo.</i>	<i>Staph. pyo.</i> Type Ib		<i>Staph. pyo.</i>	<i>Staph. pyo.</i> Type I
Infants with pemphigus									
Lesion ..	7	7	6	56	56	52	3	3	3
Nose ..	7	7	6	56	51	29	3	2	2
Eye ..	6	4	3	56	46	30	3	3	2
Infants with conjunctivitis									
Eye ..	—	—	—	20	20	11	—	—	—
Healthy infants									
Nose ..	32	28 (87.5%)	11 (34.4%)	—	—	—	18	11 (61.1%)	2
Nursery staff									
Nose ..	15*	10 (66.7%)	4 (26.7%)	40†	29 (72.5%)	12 (30%)	49‡	33 (68.8%)	18 (37.5%)
Hands ..	15	7	4	40	11	6	48	10	5
Others									
Milk ..	4	2	2	—	—	—	3	3	1
Skin ..	2	1	1	—	—	—	—	—	—
Nursery dust	—	Present	28% of 18 colonies	—	—	—	—	—	—
Nursery air	—	—	Present	—	—	—	—	Present	Present
Gloves and gowns	8	6	1	—	—	—	—	—	—

* One nurse (6.7%) harboured *Staph. pyogenes* type Ib in her nose. † Two nurses (5.0%) harboured *Staph. pyogenes* type I in the nose. ‡ Two nurses (4.2%) harboured *Staph. pyogenes* type Ib in the nose.

aff of wards and Nurseries 8, 9, 10, and 11. It appeared that most of the junior nursing staff had altered since the previous swabbing in November, 1943, as a regular change-over of pupil midwives took place every three months. Of 40 persons (72.5%) harboured *Staph. pyogenes*; 28 of these were nasal carriers and one had a positive throat culture only. The epidemic strain, type Ib, was harboured by 12 persons (30%), type Ia by six persons, types IIIa and IIIb by three persons each, type I (5%) by two persons, type IIIc by one person, while two persons carried unidentified types. Ten members of the staff had *Staph. pyogenes* in both nose and throat, and in eight the organisms in both sites were of the same type. Eleven persons showed *Staph. pyogenes* both in the nose and on the hands, and in nine instances the types were the same in both tests.

It was apparent that the percentage of the staff harbouring the first epidemic strain, type I, had declined from 26.7% to 5%, and that the second epidemic, type Ib, was now prevalent to a degree (30%) shown formerly by type I; in the first swabbing type Ib was found present in the nose of only one nurse (6.7%). These findings suggested that a high carrier rate among the staff of an infective strain of *Staph. pyogenes* would render the infant population of a nursery highly exposed to infection by that strain, and be followed by the appearance of initial cases of pemphigus neonatorum and of staphylococcal conjunctivitis. An opportunity to test this hypothesis was provided by the occurrence of a small number of cases of pemphigus due to *Staph. pyogenes* type I in September and October, 1945. Following three isolated cases caused by type Ib in March, April, and May there had been a lull in the incidence of pemphigus throughout the unit during June, July, and August. Alterations in the technique of routine procedures that may have been responsible for this decline in cases are described in a later section. At the beginning of October, 1945, nasal and hand swabs were taken from 48 members of the maternity staff, more than half of whom were pupil midwives who had recently joined the staff and had not been swabbed previously; 33 (68.8%) were found to be harbouring *Staph. pyogenes* in the nose and 10 on the hands. Eighteen of the nasal carriers carried type I, eight harboured type IIIb, three type I/II, two type Ib, and two type II. Again the most prevalent type present in the noses of the staff was that giving rise to the fresh cases of pemphigus in the nursery. Of the total staff 18 (37.5%) harboured type I, and only two individuals (4.2%) carried type Ib, which had been responsible for cases throughout 1944 and the early part of 1945 and which was present in the noses of 30% of the staff in February, 1944. The first two swabbings of the staff had been carried out during the height of outbreaks of pemphigus, and it was impossible to decide whether the high nasal carrier rate of the epidemic strain was a cause or a consequence of the outbreak. The third swabbing, however, was carried out after a case due to a different type had occurred, following a period of three months during which there had been no cases of pemphigus or staphylococcal conjunctivitis. The presence of a high proportion of

nasal carriers of the infecting type among the staff at this early stage strongly suggests that a build-up of nasal carriers of a potentially infective strain occurs among the staff before the appearance of cases of pemphigus.

Twelve members of the nursery staff were swabbed on two or more occasions. Nasal swabs from five either showed non-epidemic types of *Staph. pyogenes* or were negative. Of the remaining seven, four harboured the prevalent epidemic type once, while the remaining three yielded the prevalent epidemic type each time they were swabbed. The numbers are too small for any deductions to be drawn regarding the frequency of change of serological type of *Staph. pyogenes* in the nose in relation to the prevalent epidemic type.

Staph. pyogenes in Noses of Healthy Infants in the Infected Nursery

In addition to swabbing the staff, nasal swabs were taken from all the healthy infants in Nursery 10 on two occasions (Table III). First in November, 1943, at the time of the outbreak due to *Staph. pyogenes* type I, nasal swabs were taken from 32 healthy infants in the nursery; 28 (87.5%) were found to be harbouring *Staph. pyogenes* and 11 (34.4%) carried the epidemic type I and were free from clinical infection. Type Ia was isolated from six infants, type Ib from three infants, and type II from two infants, while 13 strains could not at that time be typed. Seven of the infants harboured more than one serological type of *Staph. pyogenes*. The infants harbouring type I were scattered throughout the nursery and there was no concentration of infants in neighbouring cots showing the same serological type in their noses.

When, in October, 1945, after a period of three months' freedom from infection, cases of pemphigus due to *Staph. pyogenes* type I began to appear in Nursery 10, nasal swabs were again taken from all of 18 infants in the nursery. Swabs from five of the infants, ranging in age from 5 hours to 2 days, failed to yield staphylococci; of the remaining 13 infants, aged from 4 days to 2 months, 11 (61.1%) were heavy carriers of *Staph. pyogenes*. The types were fairly evenly distributed, no single type being predominant, and the high nasal carrier rate of type I among the staff was not at this stage present among the infants.

Staph. pyogenes in the Nursery Air and Dust

Blood-agar plates were exposed in Nursery 10 on two occasions—first during the outbreak of pemphigus in November, 1943, and again in October, 1945. On the first occasion five plates were exposed at cot level in different parts of the nursery from 2 to 5 a.m. and a second series from 7 to 10 a.m., periods of least and greatest activity respectively in the nursery. A total of approximately 3,000 colonies, representing bacteria-containing particles, were counted on plates exposed from 2 to 5 a.m. Plates exposed from 7 to 10 a.m. were too overcrowded for counting. The organisms on the plates were predominantly saprophytic cocci and bacilli, but *Staph. pyogenes* was present in small numbers. Of three colonies of *Staph.*

Staph. pyogenes subcultured for examination two were identified as type I. The second exposure of plates in the nursery in October, 1945, yielded approximately 2,000 colonies during the early morning period and approximately 10,000 colonies during the active period between 7 and 10 a.m. Again *Staph. pyogenes* was present only in small numbers, but type I, which was at that time the cause of pemphigus, was identified on plates from four different sites.

It was evident, therefore, that the epidemic strain of *Staph. pyogenes* was present in the ward air during both periods of exposure, but it was not possible from these investigations to estimate to what degree, although it appeared to be low.

Two samples of dust from the floor of Nursery 10 were examined in November, 1943. The samples were collected into sterile jars from the routine morning sweepings. Cultures yielded large numbers of organisms, mainly saprophytic, but *Staph. pyogenes* was present in considerable numbers in one sample, while the other yielded scanty colonies. Of 18 colonies of *Staph. pyogenes* examined serologically five were identified as type I, four as type IIc, one as type Ib, while the remaining eight could not be typed. The epidemic type I therefore represented 28% of a random sampling of *Staph. pyogenes* in the floor dust of the nursery; the remaining identified strains belonged to types which were found in the noses of members of the nursery staff and of healthy infants in the nursery.

Staph. pyogenes in Infants' Blankets and Gowns

Staph. pyogenes was isolated from five out of six blankets from cots in Nursery 10 in November, 1943; type I was found on one blanket and types Ib, II, IIb, and IIc on the others. One blanket was re-examined after laundering, and *Staph. pyogenes* type I was isolated from nutrient broth in which part of the blanket had been soaked and also by shaking the blanket over exposed blood-agar plates. Two flannel gowns belonging to infants in Nursery 10 were examined after laundering; one gown yielded *Staph. pyogenes* type IIb and an untypable strain, while no staphylococci were isolated from the other.

Table III gives a summary of the results of examinations of ulcers from material taken in relation to the three outbreaks of pemphigus neonatorum in Nursery 10. It shows the regularity with which the epidemic types were found in the noses of a high percentage of the nursery staff, and elsewhere in the infants' environment, and suggests that widespread distribution of an infecting strain in the nursery environment may bear a causal relationship to the onset of an outbreak. Members of the staff swabbed during the second and third outbreaks included those engaged on nursing duties in other nurseries and wards of the unit, especially Ward and Nursery 8'9, in which 23 out of 24 cases of pemphigus and three out of four cases of staphylococcal conjunctivitis were caused by *Staph. pyogenes* type Ib.

Distribution of Infecting Types of *Staph. pyogenes* in Eye, Nose, and Umbilicus of Infected Infants

During the course of the investigation swabs were taken from 102 of the 111 cases of pemphigus neonatorum, not only from the lesions but also from other sites on the body, including the nose, eye, and umbilicus. Table IV shows the numbers of

TABLE IV.—Correlation Between Serological Types of *Staphylococcus pyogenes* Isolated from the Lesion, Eye, Nose, and Umbilicus of Cases of Pemphigus Neonatorum (Total Number of Cases Examined—102)

Sites	No. of Cases Examined	Same Serological Types		Different Serological Types	
		No.	%	No.	%
lesion and nose	102	75	73.5	27	26.5
lesion and eye	91	64	70.3	27	29.7
lesion and umbilicus	19	15	78.9	4	21.1
lesion, eye, and nose	91	55	60.4	36	39.6
lesion, eye, nose, and umbilicus	16	8	50.0	8	50.0

cases from which the various combinations of swabs were taken and the numbers and percentages of cases in which strains of

Staph. pyogenes were serologically identical or of different serological types. In general it was found that there was a remarkably high association between the serological types of *Staph. pyogenes* present in lesion and nose, lesion and eye, and lesion and umbilicus, with a lower but still notable association between the types when more than one site was swabbed in addition to the lesion. Findings, already quoted, indicated the ubiquity of the infecting strain in the infants' environment, and these figures show that the wide dispersal extends also to the infants' healthy skin, upper air-passages, and exposed mucous surfaces such as the conjunctivae.

Serological Types of *Staph. pyogenes* Isolated from Mothers of Infected Infants

Apart from the nursery staff, consisting of doctors, nurses, and ward-maids, the only persons with whom the infants came into contact were the mothers, during breast-feeding. It was therefore decided to investigate serologically the staphylococcal flora of a number of mothers as a potential and intimate source of infection.

Swabs from the nose, throat, and in a few cases samples of the breast milk were taken from mothers of infected infants to see what relationship, if any, the serological types of *Staph. pyogenes* isolated from the mother bore to the type isolated from the infant. Swabs from the infants were taken from the lesion and from some or all of the following sites—nose, eye, and umbilicus. Table V shows the results of the examination

TABLE V.—To Show the Relationship Between Serological Types of *Staphylococcus pyogenes* Isolated from Infants with Pemphigus Neonatorum and from their Mothers

No.	Name	Serological Types of <i>Staph. pyogenes</i> Isolated from					
		Lesion	Eye	Umbilicus	Nose	Throat	Breast Milk
1	Mrs. Cl. Baby Cl.	I			I IIb, IIc	—	IIb
2	Mrs. Wo. Baby Wo.	I, II	I, II		I, II, I	—	—
3	Mrs. Co. Baby Co.	I	I		I	—	I
4	Mrs. Jo. Baby Jo.	I*	I		I	I	—
5	Mrs. Je. Baby Je.	I	I		I	—	—
6	Mrs. Cr. Baby Cr.	I	Ib	Ib	Ib I, Ib	Ib	—
7	Mrs. Pe. Baby Pe.	Ib	Ib	IIc	Ib, Ia II	II	—
8	Mrs. Ba. Baby Ba.	Ib	Ib	Ib, IIId	Ia Ib, Ia	Ia	—
9	Mrs. de H. Baby de H.	Ib	Ib	Ib	I II	—	—
10	Mrs. Wi. Baby Wi.	I		—	I IIc	—	—
11	Mrs. Mo. Baby Mo.	Ib	I	Ib	II IIb	—	—
12	Mrs. O'D. Baby O'D.	Ib	Ib	—	Ib, I IIb	IIb	—
13	Mrs. Pi. Baby Pi.	Ib†	Ib	—	Ib IIb	—	—
14	Mrs. Ph. Baby Ph.	Ib	Ia	—	Ib, I Ia	I	—
15	Mrs. Bi. Baby Bi.	Ib	Ib, Ia	Ib, Ia	Ia Ib	Ia	—

* Septic finger occurring after infection in her infant.

† Small septic lesion on breast following infection in her infant.

of strains of *Staph. pyogenes* isolated from 15 infected infants and from their mothers. In only six instances—viz., Nos. 1, 3, 4, 10, 13, and 14—was the serological type of *Staph. pyogenes* causing the infection in the infant also isolated from the mother; five of the six mothers harboured the organism in the nose, and in one (Mrs. Co., No. 3) it was found only in the breast milk. In the case of Mrs. Jo. (No. 4) the organism was isolated from the nose, the throat, and from a septic finger which occurred after her infant became infected with pemphigus, so it seems likely that she was infected by her infant. A similar explanation may account for the septic lesion in the breast of Mrs. Pi. (No. 13). If these two are eliminated, or even if not, the correlation of infecting strains in mother and infant is low. These findings, taken in conjunction with the results of the bacteriological investigations in Nursery 10, lend weight to the view that infection was spread in the nursery and was not transmitted to the infants by their mothers.

Discussion

The results of the serological identification of strains of *Staph. pyogenes* isolated from the lesions of 132 cases of pemphigus neonatorum and staphylococcal conjunctivitis occurring in a large maternity unit over a period of two years show that there were three separate outbreaks, each due to a distinct serological type of *Staph. pyogenes*. The organisms causing the outbreaks were isolated not only from lesions but also from the eyes and noses of a large proportion of infected infants, from the noses of healthy infants in the same nursery, and from the noses of a large proportion of the staff. During one outbreak the epidemic type was also isolated from air, dust, bedclothes, and infants' gowns in the nursery. It was evident, therefore, that the epidemic types were widespread in the infants' environment, and the results of different surveys of staphylococcal types found showed that this high concentration of the epidemic type in the noses of the nursery staff was present not only at the height of an outbreak but also in the early stages of an epidemic.

It is accepted that the main reservoir of *Staph. pyogenes* is the upper respiratory tract of man, in particular the nasal passages; but the organisms may also be present on the skin of a considerable proportion of the population (Gillespie, Devenish, and Cowan, 1939; McFarlan, 1942), and higher carrier rates were found among hospital in-patients and nurses than among the general population (Miles, Williams, and Clayton-Cooper, 1944). In the present investigation 72 (70%) of 103 members of the staff swabbed on three different occasions were carrying *Staph. pyogenes* in the nose, and in 34 instances (33%) the strains isolated belonged to the epidemic type; 28 members of the staff who harboured *Staph. pyogenes* in the nose were also hand-carriers, and in 15 instances the strains cultured from the skin were identified as the epidemic type. No hand-carriers of *Staph. pyogenes* were found among the 31 members of the staff whose nasal swabs were also negative. There was therefore confirmation of the close association between nasal carriage and skin carriage of *Staph. pyogenes*. The high percentage of the staff found to be carrying the epidemic types was probably not an accidental congregation of persons harbouring those types, but more likely a gradual build-up of infection by a strain possessing the ability to implant itself and multiply in the nose when spread from person to person.

The possible sources of infection of the infant with *Staph. pyogenes* are those who come into contact with it, either directly or indirectly, and include mother, doctor, nurse, ward-maid, and laundress. The mother may infect her own infant during breast-feeding, but the evidence shows that the spread of infection takes place in the nursery. The contacts between doctor and infant after it has been born are in general irregular and transitory, and there is little or no evidence that he plays any part in the spread of infection. The same conclusion applies to the ward-maid, whose presence in the ward is of short duration with only indirect, if any, contact with the infants. The laundry is a potential source of infection, either through failure to rid blankets and infants' gowns and napkins of staphylococci or by infection during handling. The nurse is in regular and intimate contact with the infants, especially during toilet and hygiene, and the evidence suggests that she is the most important factor in the spread of infection. This evidence is based on the epidemiological, bacteriological, and serological findings, and as a result of visits to different maternity units and nursing homes in order to watch the procedure and technique of infant hygiene and nursing.

The possible paths of spread of infection are represented in Fig. 2, which shows infection spreading from the adult nose at the centre via hand, fomites, air, and dust to the infant's skin, nose, and eye at the periphery. In the present investigation *Staph. pyogenes* has been found to be so ubiquitous in the infants' environment that no precise conclusions could be drawn regarding the mode of spread. The serological types of *Staph. pyogenes* which were the cause of the outbreaks were isolated in cultures on repeated occasions from the sources shown in the diagram, although infection of dust and air appeared to be low. The most probable path is via the nose and hands of the midwife or nurse to the infant's skin, but the infant's communal bath and towel also probably play an important part in the transmission of infection.

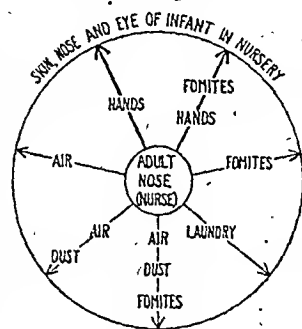


FIG. 2.—Potential paths of spread of infection in nursery outbreaks of pemphigus neonatorum and conjunctivitis.

Knowledge of the possible paths of spread of infection alone will not suffice as a basis for the prevention or control of outbreaks of infection. Factors which facilitate the spread of infection must also be considered and steps taken to eliminate them. During visits to several maternity units and nursing homes in which outbreaks of pemphigus neonatorum had occurred, many such factors were noted. One of the chief among these was overcrowding and bad spacing of cradles or cots: in one large nursery capable of accommodating a maximum of 18, allowing a minimum of 25 sq. ft. (2.3 sq. metres) per cot, there were 32 infants. Insufficient ventilation and light, partly due to black-out conditions and the building of anti-blast walls, were also noted as undesirable factors. In most of the units visited the wards and nurseries were cleaned by dry dusting, a practice which was immediately altered when attention was drawn to it. Associated with the overcrowding of nurseries the nursing staff was often inadequate, and too much of the toilet and hygiene of the infants had of necessity to be carried out by pupil midwives insufficiently supervised and still in an early stage of training with little or no knowledge of the nature of infection and modes of transmission. Other points facilitating the transmission of infection noted in different hospitals were: the communal changing-table covered with a towel on which all infants were placed in turn; failure to disinfect the bath after use for each infant; failure to wash the hands before and after attending to an infant; toilet requisites handled by different nurses and used in common for all infants in the nursery. Masks were employed in all the maternity units and nursing homes visited, but in one large maternity unit masks were often worn covering the mouth only, leaving the nose exposed.

Until more precise knowledge is available of the paths by which staphylococcal infections are spread in nurseries, it is justifiable to recommend measures to prevent and control outbreaks covering a wider range than may later be found necessary. Benians (1943) showed that the mere closure of a ward in which an outbreak had occurred, followed by cleansing and airing, was ineffective in terminating an outbreak, as fresh cases began to appear within three days of reopening the ward. It has also been pointed out by Elliott, Gillespie, and Holland (1941) that the use of masks, gowns, and rubber gloves alone did not have any observable effect on the spread of infection. Most of the

factors already noted as facilitating the occurrence and spread of infection suggest the obvious remedies—avoidance of overcrowding, adequate ventilation and natural light, a proper proportion of trained and untrained nursing staff with more supervision of the latter, and early training in the nature, sources, paths of transmission, and methods of prevention and control of hospital infections.

The ward or nursery should be cleaned by vacuum cleaner or by damp dusting. The infant's bath should be thoroughly disinfected either with undiluted lysol (M.R.C., 1941) or with 1% C.T.A.B. (Barnes, 1942) and washed after use by each infant, and well rinsed before again being used. So far as practicable a separate toilet outfit should be reserved for each infant, including the towel on which it is placed after its bath, if different from that with which it is dried. Consideration should be given to the changing of infants in their cots instead of on a communal changing-table, as is the practice in many maternity units, while the crib bath in an individual bath blanket has much to recommend it.

No member of the nursery staff—medical, nursing, or cleaning—should go on duty or enter the nursery if suffering from any acute upper respiratory infection or skin sepsis. Efficient masks covering both mouth and nose should be worn by all staff when in the nursery. Masks should be changed frequently, as they may become moist, rendering them inefficient and unpleasant to wear. The nurse's hands should be washed in soap and water and dried either with destructible tissue towels, which are again on the market, or on her own towel immediately before and after attending to an infant, and especially after every use of the handkerchief. Hamburger and Green (1946) have pointed out the importance of nose-blowing in the expulsion of *Staph. pyogenes* by nasal carriers, with infection of the hands and transfer from hands to secondary environmental reservoirs, such as clothing, bedding, towels, etc. This may be an important factor in the infant nursery as a source and mode of spread of staphylococcal infection, in view of the high percentage of persons in a semi-closed community, such as a hospital, who harbour *Staph. pyogenes* in the nose.

Members of the nursery staff who are aware that they are heavy nasal or skin carriers of *Staph. pyogenes* should be most meticulous in observing preventive measures even in the absence of staphylococcal infection in the nursery. Attempts to clear profuse nasal carriers of *Staph. pyogenes* with sulphathiazole snuff or ointment have not had the hoped-for success, but the application of penicillin ointment to the nostrils two or three times daily and sniffed in, recommended by Hobbs, Carruthers, and Gough (1947) as an adjunct to the treatment of sycosis barbae, may be more effective.

The numerous administrative and technical procedures necessary to prevent and control the spread of infection among infants in large nurseries in maternity hospitals—procedures which in many instances are not possible or practicable—give rise to consideration of the question whether the large infant nursery should not eventually be discarded in favour of the mother and infant being nursed together in a cubicle or in small wards. Apart from the respiratory and intestinal infections to which the newborn infant is so highly susceptible, it would not be exposed to the high concentration of infection which develops in a nursery in the earliest stages of an outbreak of pemphigus neonatorum, and the number of contacts, direct and indirect, would be very considerably reduced. The primipara, moreover, would have more opportunity for guidance and practice in the feeding, toilet, and hygiene of her infant. In any event the prevention and control of infection should be based on high standards of nursing technique and infant

hygiene as exemplified in Medical Research Council War Memorandum No. 11 (1944).

Summary

An outbreak of pemphigus neonatorum and staphylococcal conjunctivitis affecting 132 infants in a large maternity unit over a period of two years is described.

Serological identification of strains of *Staph. pyogenes* isolated from the lesions of all the cases showed that there were three outbreaks, each due to a distinct serological type of the organism; there were also a small number of sporadic cases due to different serological types of *Staph. pyogenes*.

Investigations in one large nursery in which 93 of the cases occurred showed that the infecting strain was widespread in the infants' environment, and was isolated from the noses of a high proportion of the nursing staff, from the noses of healthy infants, from blankets and gowns, and from dust and air in the nursery.

The findings indicate that the infants were infected in the nursery and not from their mothers.

The evidence suggests that the main reservoir of infection was the nasal passages of the nursing staff, whence infection was spread to the infants, probably via the hands.

Recommendations are made for the prevention and control of staphylococcal infection in infant nurseries.

We gratefully acknowledge the facilities afforded to us for these investigations by Dr. John Jones, City Lodge Hospital, Cardiff, and the willing and valuable co-operation of Dr. Olwen Williams, Sisters Priday and Davies, and the staff of the maternity unit. We also obtained much valuable help and information from several other maternity units and private nursing homes.

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There are now 12,000 industrial canteens known to the Chief Inspector of Factories, and more than half of these are in factories employing fewer than 250 workers. The Industrial Welfare Society has produced an illustrated brochure (4s. 6d. post free) entitled *Canteens in Industry*, which takes the form of a guide to the planning and management of these enterprises. It was first published at the beginning of the war and has now reached its sixth edition, incorporating a large amount of wartime experience. Suggestions are made concerning site, accommodation, lay-out, internal construction, lighting, heating, ventilation, furnishing, and colour scheme. There is a chapter on food and diet in which a number of useful hints are given, as, for example, the great food value of oily fish, such as the herring and mackerel; the need for making soups a substantial dish, of nourishing quality and distinctive flavour; the help of the friendly and filling dumpling; other accessories in making the available meat go; popularization of vegetables, especially the lesser-known value of salads, particularly if they include ingredient such as a good portion of potato or as an alternative to sweets; and also the value of supplementing minerals and vitamins.

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GALL-BLADDER COMPLICATIONS FOLLOWING RESECTION OF STOMACH FOR PEPTIC ULCER*

BY

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The Netherlands)*

Abnormal conditions in the upper abdomen which may occur after resection of the stomach for peptic ulcer may be considered under several heads. A detailed investigation into the occurrence and frequency of gastro-jejunal ulcers would be outside the scope of this paper. Occasionally, during the past five years, we have observed severe haemorrhage following gastric resection, but on no occasion was there demonstrable radiological evidence of ulcer. It was noted that the patients rarely complained of pain. Symptoms arising from internal strangulation of the small intestine by abnormal hernial rings are less frequent (for literature, see Suren, 1941).

Of common occurrence are less serious complaints, often of a temporary nature, as observed by Wangenstein (1944). He did not encounter serious disorders or anastomotic ulcers. Poor appetite and a feeling of satiety are common, especially after partaking of liquid food. It would be incorrect to ascribe these phenomena to over-filling of a stomach of reduced capacity; for most radiologists are acquainted with the rapid emptying which follows resection. A reasonable presumption would be that the liquid either fills the afferent loop of the anastomosis or interferes with the flow of pancreatic biliary juices from that loop. Symptoms may conceivably arise in this manner, and they can be anticipated and prevented by advising the patients to eat dry food. It is an outstanding fact that porridge and milk no longer agree with patients who, prior to operation, had lived almost entirely on that diet. Frequently there is an aversion to fatty foods. Finally, some patients are troubled in the early post-operative period by regurgitation of fluid. It is inferred from these findings that the backward flow of bile is impeded in resections of the Billroth II type. In many instances the resulting complications are slight and of a temporary nature. They may, however, be serious.

Stolte (1942) carefully observed 333 cases of ulcer in the Department of Medicine of the "Onze Lieve Vrouwe" Hospital at Amsterdam. Of these 333 patients 83 had previously undergone gastric resection and 26 had had gastro-enterostomy. Stolte found that gastro-jejunal ulcer was a complication in eight of those resected and in ten of those with gastro-enterostomy. Further, 22 patients after resection and four after gastro-enterostomy continued to have symptoms; but in no case could gastro-jejunal ulcer be demonstrated with certainty. The number of patients with abdominal symptoms after operation on the stomach is remarkably large in this series. Their complaints were serious enough to warrant their admission to the medical clinic after they had been operated upon.

We are greatly impressed with the fact that in Stolte's series severe unaccountable symptoms following stomach

resection. His paper is dedicated to our friends and colleagues of the nursing expeditionary Force serving in the neighbourhood of Roosendaal in the winter of 1944-5.

operations were more frequent than those arising from proved anastomotic ulcers, and that they were proportionately more frequent after resection than after gastro-enterostomy. Stolte does not state whether he examined the gall-bladder in investigating his series. One sees a similar picture in a review by Kingma (1939) of 65 cases of primary resection operated upon according to the Billroth II method for perforated ulcer. Severe symptoms persisted in six cases; but in only one was gastro-jejunal ulcer (repeated haemorrhage) the probable diagnosis. In the remaining five the diagnosis was uncertain; four of the patients complained of pain and three found that fat did not agree with them. No special attention was paid to the gall-bladder in this investigation.

During the past few years we have learned that severe symptoms occurring after gastric resection by the Polya-Balfour-Reichel type of operation are frequently caused by gallstones. We have not found this fact stated in the literature which we have studied, nor do Wangenstein, Stolte, or Kingma mention it as a possibility. The following case is noteworthy.

An Illustrative Case

Mrs. B. (Case 1), aged 36, was admitted to hospital on April 20, 1943. She had suffered from symptoms referable to the stomach since she was 16. The symptoms had an obvious periodic incidence, and during two pregnancies they were entirely absent. Pain was mostly referred to the left side of the abdomen, was unrelated to the taking of food, and was manifest in attacks lasting for ten or fifteen minutes. The patient did not complain of heartburn, nor did she vomit. In 1938 the pain disappeared when she was given ambulatory treatment elsewhere. In 1942 there was a slight recurrence. Since the autumn of 1942 the patient was never really free from pain.

Nothing of note was discovered on general examination. Some not very dark bile was found on duodenal intubation and no cholesterol crystals were seen in the bile sediment. Test-meal findings showed: free HCl 15°; total acidity 20°. There were no abnormal findings in blood or urine. Radiological examination of stomach and duodenum revealed "kissing ulcers" of the duodenal bulb. After the oral administration of tetraiodo-phenolphthalein in fractions, two of 3 g., a fair-sized gall-bladder was observed, duly filled with dye and free from stones.

On May 5 partial gastrectomy of the Polya-Balfour-Reichel type was performed. The post-operative course was complicated by severe pulmonary embolism on the nineteenth post-operative day. This complication was confirmed by observing a pleural friction rub over the foremost part of the right lower lobe. On June 20 she was discharged from hospital.

On April 12, 1945, the patient reported sick again. After the operation she had remained symptom-free for six months, except for nausea after food. In November, 1943, she had a violent cramp-like pain in the epigastric region after drinking home-made liqueur. From October, 1944, the attacks of cramp became more frequent. The patient did not become jaundiced, nor did she notice any darkening of the urine. She vouchsafed the information that these attacks of pain were of more sudden onset and of greater severity than the pain experienced before the stomach operation. "It is not my stomach," were her words. The pain was localized to the left subcostal region and did not radiate. Physical examination was negative; the blood and urine were normal. The previous operation rendered duodenal intubation impracticable. Radiography of the gall-bladder, using "biliselctan," revealed that it did not fill. A diagnosis of gallstones was made.

Cholecystectomy was performed on April 13. The gall-bladder contained thick bile and more than a thousand small stones of varying sizes. The post-operative course was complicated by slight infiltration of the right lower lobe, which responded to sulphathiazole. On May 2 the patient was discharged from hospital, and when she reported for medical inspection on Jan. 21, 1946, was in excellent condition and

free from pain. Milk and milk puddings do not agree with her, but she tolerates all other foods, even fatty ones.

We are reasonably certain that the gall-bladder was normal at the time of the partial gastrectomy. The first symptoms, presumably due to the gall-bladder, appeared six months after the operation, and one naturally surmises that there was some relationship between the resection and the development of cholelithiasis.

experienced before the operation. The history of Case 2 is less definite: the colicky pains which she had before her gall-bladder operation had certainly never occurred before the resection. All patients now complained of attacks of pain of short duration, recurring at intervals, sometimes long and irregular. The pain was often localized to the upper abdomen and on the left side. Slight transient jaundice occurred once only (Case 5).

TABLE I.—Details of Six Cases

Case	Age at Time of Resection	Sex	Date of Resection	Diagnosis of Ulcer Based on	Type of Operation	Time between Stomach Resection and First Gallstone Complaints	Date and Findings of Gall-bladder Skiagram	(a) Date of Gall-bladder Operation (b) Time between Resection and Gall-bladder Operation	Findings at Operation
1st B.	36	F.	5/1/43	Skiagram: two craters in duodenal bulb; gall-bladder normal	Polya-Balfour-Reichel. Afferent loop attached to greater curvature	6 months	12/4/45; not filled	(a) 13/4/45 (b) 23 months	Gallstones not to be felt at operation. After operation gall-bladder proves not to be inflamed. Thick bile with a good deal more than a thousand stones ranging in size from a pinhead to small mulberry stones
2nd C.	31	F.	29/12/41	Repeated stomach bleedings	"	Some months	14/11/44 and 17/11/44, not filled	(a) 22/11/44 (b) 35 months	Chronic inflammation with stones; common duct somewhat wide. Many small mulberry-shaped stones in gall-bladder
3rd A.	67	M.	20/9/43	Acute perforation of duodenal ulcer on 30/6/43	"	18 months	30/5/45 and 31/5/45; slight filling. At bottom of gall-bladder many small stones clearly visible	(a) Not yet operated upon (b) Diagnosis made 20 months after resection	
4th B.	46	M.	July 1941; operation elsewhere	Long and typical case history. Heavy stomach bleeding; further data missing	Billroth II. Probably afferent loop attached to greater curvature	37 months	3/3/45 gall-bladder clearly visible. With patient in erect position, many stones visible, arranged in a horizontal layer in the mid-portion of the gall-bladder (swimming stones)	(a) 9/3/45 (b) 44 months	Gall-bladder not inflamed; conglomerates of mulberry-shaped stones
5th H.	40	M.	Sept., 1942	Skiagram: showed crater in duodenal bulb	Polya-Balfour-Reichel. Afferent loop as above	7 months	12/11/43; not filled	(a) 4/1/44 (b) 17 months	Gall-bladder not inflamed; mulberry-shaped stones
6th H.	30	M.	15/10/43	"	"	28 months	No skiagram	(a) 20/2/46 (b) 23 months	"

TABLE II

	Column 1		Column 2		Column 3		Column 4	Column 5
	A. Number of Cases of Stomach Resection on Account of Ulcer	Hospital Mortality	B. Number of Cases of Gall-bladder Extirpation on Account of Stones or Inflammation Without Stones*	Hospital Mortality	C. Stomach Resection and Gall-bladder Extirpation done simultaneously	Hospital Mortality	Cases of Peptic Ulcer and Gallstones occurring simultaneously. For some Reason Only Stomach Resection carried out†	Number of Cases of Gallstones perceived after Stomach Resection‡
143 ..	68	0	45	1	0	0	—	—
144 ..	40	0	44	0	3†	0	—	2
145 ..	54	1	97	2	1	0	3	3±
146 ..	7	0	29	0	1	0	0	1
(1st quarter)								
of 3 ..	5		5					6
Total ..	174	1	220	3	5	0	3	

Mortality of all the cases of resection (A + C = 174 patients), 0.57%.

Mortality of all the cases of gall-bladder operation (B + C = 220 patients), 1.36%.

* All the patients operated upon included (also bad cases with pancreatic necrosis and long-standing jaundice).

† Inclusive of one case of ulcer perforation in an otherwise normal gall-bladder.

‡ In one of these cases no operation so far.

§ Cases of this column are included in column 1 only.

|| Cases of column 5 are included in columns 1 and 2.

Observations on Six Cases

Further observations are given in Table I. In none of these cases have we any exact knowledge of the state of the gall-bladder before stomach resection. There are, however, certain pointers to the improbability that any gallstones were present at the time of operation. Symptoms arose in all cases after periods of 6 to 37 months of freedom from pain. Patients Nos. 1, 3, 4, 5, and 6 said most decidedly that the nature of the pain was quite different from that

We can put forward important arguments (unpublished data) favouring the hypothesis that all gallstones, in our part of the country at any rate (i.e., North Brabant area of South Holland), originate as minute cholesterol particles, which aggregate to mulberry-shaped stones. All the stones found in our six patients belonged to these very young formations. This fact is in accordance with our supposition that these stones have originated only after the resection. That relief from pain followed cholecystectomy is very

strong evidence that the gallstones were the cause of symptoms in the five patients who were operated upon.

The diagnosis of cholelithiasis was entertained only after much hesitation in respect of our earliest patients. From Table I it appears that the gall-bladder was not visible in the skiagrams of three out of five photographed patients. Jaundice was always lacking at first. Further, after partial gastrectomy duodenal intubation (the findings of which manoeuvre we consider valuable) is no longer applicable as an aid to diagnosis. At first we thought that the altered gastric properties, after gastrectomy, might interfere with the resorption of the contrast medium from the intestine. Later it became clear to us that oral cholecystography, even after gastrectomy, is a reliable procedure, and that a gall-bladder which is not filled—certainly after the examination is repeated—is strong evidence of the presence of gallstones. Sassen and Wijnen (personal communication) came to a similar conclusion when they examined radiologically the gall-bladders of a number of patients who had been operated upon by the Billroth II method. Normal filling of the gall-bladder was found in the great majority. These examinations were conducted for the purposes of information on patients without symptoms.

In order to estimate the incidence of gallstone formation following gastric resection we compare, in Table II, those cases observed after gastric resection with all gastrectomies for ulcer and all cholecystectomies performed for stones or inflammation in corresponding years. The first impression, no doubt, is that gallstones are so often encountered during operations for ulcer that their occurrence after a resection is a mere coincidence. The simultaneous occurrence of ulcer and gallstones was observed seven times (Table II, columns 3 and 4), although this association was not systematically sought for in 1943 and 1944. Gallstones following resection were observed only on six occasions. It is emphasized that the stones found together with ulcer were on four occasions of an old or very old type, and small cholesterol stones were present on three occasions. In this respect already the two series in Table II differ. The proportion of males to females also differs. The comparison is made in Table III.

TABLE III.—Incidence of Gallstones After Gastric Resection :
the Sexes Compared

	Cases	Female	Male	Ratio
				F. : M.
Gastrectomies on account of stones or inflammation	219	187	32	5.8 : 1
Operations on account of ulcer	174	30	144	1 : 4.8
Gallstones ascertained some months after resection for peptic ulcer	6	2	4	1 : 3
Gallstones found during resection for peptic ulcer	7	6	1	6 : 1

As in normal experience, there was a female preponderance in gall-bladder operations, and men had the larger share in stomach resections. In the group where stones were found at operation for ulcer the male/female ratio corresponds to that for the cholecystectomy group. In the group of gallstones following resection the male element predominates, approaching the male/female ratio for resections. Although our series is a small one and by no means conclusive there is presumptive evidence that in the condition of gallstones following resection for gastric ulcer the resection itself may play a part. The evidence becomes all the more certain when we bear in mind that of 32 males operated upon for gallstones in 3½ years three had already had resection of the stomach. (Our fourth male patient has not yet been operated upon and has not been included in this computation.) One out of ten males undergoing cholecystectomy had therefore had a previous stomach

operation. This high occurrence rate also suggests that the gastric resection may predispose to cholelithiasis. Nor can it be maintained that one male in ten in this part of Holland undergoes gastric resection.

Discussion

There are five arguments in support of our view that resection of the stomach by the Billroth II technique may cause gallstones to develop: (1) the striking observation in the case of Mr. B.; (2) the evident discrepancy in the symptoms of our six patients (who developed gallstone complaints after resection) before and after the stomach operation; (3) the discovery of young stones exclusively; (4) the distribution of our cases between the sexes; (5) the fact that the gallstone symptoms always appeared shortly after the resection (6–37 months) may point in the same direction.

Even if this thesis is acceptable there are some problems still outstanding. It is not clear in what way the resection predisposes to gallstone formation. It is easy to visualize altered duodenal flow and pressure being reflected in the biliary system. Such alterations may explain the vague nature of the symptoms after many resections. It is possible that the precipitation of cholesterol is facilitated under the new conditions. If this hypothesis should be substantiated it would be interesting to know if there is any incidence of gallstones after the Billroth I type of operation.

It is especially important to know if the manner of attachment of the jejunal loop has any bearing on the formation of gallstones. Among the six cases under discussion the efferent loop was attached to the greater curvature on at least five occasions. This procedure has the advantage of virtually preventing pinching-off of the small intestine (Suren, 1941; Kummer, 1941). If, however, the manoeuvre should involve the bile ducts in abnormal conditions it is doubtful if it would be wise to continue to use it.

It is difficult to understand why cases with gallstones following resection have not before been published. There was no mention of such a condition in the literature at our disposal. The diagnosis is undoubtedly difficult unless it is always considered. The symptoms in all our cases were of colic; but the localization was uncommon for biliary colic and only once was there any jaundice. All the patients were referred with the provisional diagnosis "stomach cramps." A striking instance in point was Case 6. Four weeks after gastrectomy (Oct. 15, 1943) this patient acquired a small post-incisional hernia which was symptomless. On Feb. 11, 1946, he had a violent attack of pain in the epigastrium. Strangulation of the hernia was suspected and he was sent to hospital. At the operation the gall-bladder was purposely inspected, and on finding that it was full of mulberry gallstones it was removed. We believe that more cases of gallstones following resection will be discovered if they are systematically investigated.

The history of another of our patients (P. v. E.) is illuminating in that gallstones were not found, although the symptom he presented suggested that probably they were present. He was born on March 12, 1917, and had had medical treatment for duodenal ulcer in 1939 and 1940 and gastrectomy on March 19, 1941, when he was found to have "kissing" ulcer of the duodenal bulb. The operation was after Polya-Balfour Reichel, the gastro-jejunal anastomosis being effected with efferent loop at the lesser curvature. On June 15, 1943, he reported as an out-patient with symptoms of epigastric pain which had been present for one and a half years. Skiagram showed a normal resection stomach without ulcer and a gall-bladder with moderate filling and without stones. A trial breakfast showed free acid 14°, total acidity 20°. On March 13, 1945, the investigations were repeated because of violent attacks of pain after taking milk, cabbage, peas, and beans. A fractional

test meal revealed no free acid. There were no obvious abnormalities of the stomach and gall-bladder on x-ray examination. Dietetic treatment was given. On Feb. 23, 1946, he reported again at the out-patient department. He had been free from symptoms for seven months, but during the preceding few weeks he had renewed attacks of pain, mostly after milk and porridge. Once more there was no abnormality of the gall-bladder. He was completely free of symptoms after some days of complete rest and frequent small meals with little fat and without milk.

Conclusions

From a total of 220 extirpations of the gall-bladder and 174 resections of the stomach over a period of 3½ years it was observed that gallstones occurred on six occasions shortly after a resection. As a result we believe that it is necessary, when patients complain of pain after resection, to look for the cause in the gall-bladder rather than the anastomosis. Some arguments support the view that the Billroth II type of operation may further the formation of gallstones.

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DIATHERMY DISSECTION OF THE GALL-BLADDER

BY

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Eight years ago I published, jointly, an illustrated article on Thorek's method of electrosurgical obliteration of the gall-bladder without drainage (Bailey and Love, 1939). Briefly, this entailed partial removal of the gall-bladder and coagulation by diathermy of the strip which was left *in situ* attached to the liver. The main advantage of this operation, as compared with the standard cholecystectomy, was that drainage was unnecessary. We reported a series of 129 consecutive and unselected cases with no mortality, and in only seven were there post-operative complications. These included four patients who developed infection of the abdominal wall, one whose wound broke down on the fourth day, and two cases of biliary fistula following drainage of the common bile duct. These fistulae eventually closed spontaneously. We mentioned that in some cases the gall-bladder possessed a more or less complete mesentery, so that it was possible to remove the entire organ without damage to the liver capsule. The gall-bladder bed was then coagulated with a diathermy button and the peritoneal edges were sutured over the exposed area. If the area was too wide to cover with peritoneum a detached piece of falciform ligament or an omental graft was sometimes tacked over the surface.

The very satisfactory results which followed the diathermy dissection of the gall-bladder in cases in which the organ was loosely attached to the liver prompted one to apply it as a routine in all cases suitable for a complete cholecystectomy. Exceptions are patients in whom a cholecystostomy is the more prudent measure, or occasionally the gall-bladder is so embedded in the liver that it is easier and safer to perform Thorek's operation.

Diathermy dissection of the gall-bladder is, as a rule, an easy operation, and differs from the standard cholecystectomy only in that, after identification and ligation

of the cystic duct and artery, a diathermy knife is used to divide the peritoneum on either side of the gall-bladder (Fig. 1). The viscus is then dissected from its bed with the diathermy knife, care being taken that the knife is applied to the gall-bladder rather than to the bed. Thus, Glisson's capsule is unlikely to be damaged, and subsequent seepage of bile and blood is reduced to a minimum. If necessary any raw areas from which bile or blood exudes are coagulated with a diathermy button (Fig. 2). During dissection of the gall-bladder from its bed a constant watch must be kept for the presence of a cholecysto-hepatic duct (Fig. 3). This is an uncommon anomaly—for example, Flint (1923), in his review of 200 cases of the anatomy of the bile ducts and vessels (in which only 69 followed the textbook description), did not record a case. Neuhof and Bloomfield (1945) describe two cases in which the duct measured about 2 mm. in diameter. In one case it was unrecognized, and a fistula resulted which closed in forty-five days, and in the other the duct was recognized at operation and closed with a purse-string suture. When the surgeon is satisfied that the gall-bladder bed is dry the area is covered by approximation of the peritoneal flaps, reinforced, if necessary, with a graft of omentum or falciform ligament. The wound is then closed without drainage.

Excluding cases in which drainage of the common bile duct, or very occasionally the gall-bladder bed, was considered necessary, I have during the past 10 years operated on 332 cases of gallstones. The procedures adopted were: cholecystostomy, 18; Thorek's operation, 81; diathermy dissection, 233.

Cholecystostomy was advisable in some cases of empyema of the gall-bladder, or when the viscus was buried in adhesions so that anatomical dissection was impracticable, especially if the patient was obese. In these cases safe surgery resolved itself into removal of calculi and drainage of the gall-bladder.

Thorek's operation was performed when the biliary tract could be exposed, so that the cystic duct and artery could be ligated with safety. When a fibrotic and contracted gall-bladder is partially buried in the liver removal of part of the viscus, with coagulation of the embedded portion, entails less risk than a complete cholecystectomy. It should be mentioned, however, that many of the early

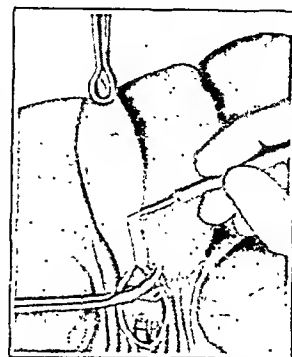


FIG. 1.—Division of the peritoneum with a diathermy knife in dissection of the gall-bladder.

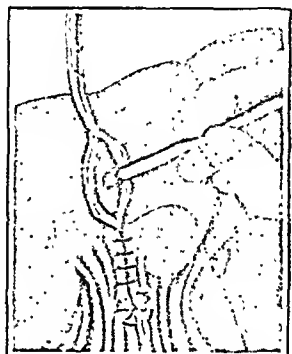


FIG. 2.—Coagulation of raw area with a diathermy button.

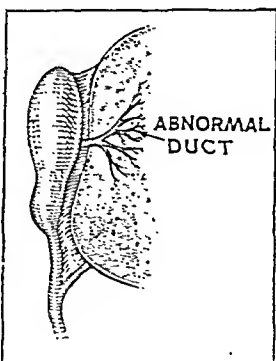


FIG. 3

cases in which Thorek's procedure was adopted would now, with increased experience, be dealt with by diathermy dissection.

Diathermy dissection was performed in 233 cases and two deaths occurred. The first fatality involved a somewhat feeble elderly male, who faded away a few days after the operation in what was apparently a combination of cholaemia, uraemia, and myocardial failure. The second fatality was due to failure to recognize the presence of a cholecysto-hepatic duct, and the history was as follows:

A woman aged 43 had a pre-operative diagnosis of gall-stones confirmed by a cholecystogram. The patient was somewhat obese, and the operation was rendered more difficult than usual, as adhesions between the diaphragm and upper surface of the liver prevented more than a moderate degree of rotation of that organ. However, there was not much difficulty in clearly exposing the junction of the cystic and common hepatic ducts, and the cystic duct and cystic artery were ligated in the usual manner. During diathermy dissection of the gall-bladder from its bed some discharge of bile was noticed, but this ceased when the raw area was coagulated with a diathermy button. Owing to the limited rotation inspection of the gall-bladder bed was somewhat restricted, but as it appeared to be dry the peritoneum was sutured over it and the wound was closed.

On the following day the patient complained of epigastric distress, and a tense swelling was obvious in this region. Some of the sutures were removed and sinus forceps introduced. About 15 oz. (425 ml.) of bile escaped, and a rubber drainage-tube was introduced. A biliary fistula developed, but there was no evidence of obstruction of the biliary ducts, and the faeces were well coloured. It was hoped that the fistula would close spontaneously, but after three months hope began to fade. It was proposed to temporize for another three months, and then, if necessary, dissect out the fistula and implant it into the jejunum. However, the patient developed menopausal melancholia, which was doubtless aggravated by her unfortunate condition. She became uncontrollable, constantly removing her dressings and making determined efforts to return to her home. Surgical intervention was obviously imperative, so the wound was reopened and the track of the fistula dissected from the abdominal wall and traced towards the under surface of the liver. The fistula was implanted in a loop of the upper jejunum. Three days later the wound broke down and the biliary discharge reappeared. The mental condition of the patient deteriorated and she died about one month later.

I was not at that time aware of the existence of the cholecysto-hepatic duct, and attributed the fistula to "slipping" of the ligature which was applied to the cystic duct. This was not very convincing, as the duct was easily notified and secured with No. 60 thread, which has a better frictional grip than catgut. On reviewing the case I now believe that the fistula was caused by division of an unrecognized cholecysto-hepatic duct.

Advantages of Diathermy Dissection

The average mortality of standard cholecystectomy in skilled hands is about 2%. Lung complications, including pulmonary embolus, account for the majority of fatalities. Both these conditions are predisposed to by restricted respiratory excursions. In the standard cholecystectomy a puddle of bile and blood collects beneath the diaphragm and the necessary drainage-tube causes further subphrenic irritation. Diaphragmatic spasm results, and inefficient aeration of the lungs predisposes to basal atelectasis. Also, as the piston-like action of the diaphragm is an important factor in maintaining an efficient venous circulation, impaired movements encourage venous stagnation, and associated risk of thrombosis and possible embolus accrues.

If Thorek's (1938) operation or diathermy dissection is employed, subphrenic irritation is reduced to a minimum. The risk of the above-mentioned complications is proportionately reduced, and the mortality is in the region

of 0.5%. In addition, convalescence proceeds more smoothly, tedious but non-lethal chest complications are uncommon, and thrombosis of the iliac or femoral veins is almost unknown. Also, the necessity for frequent removal of bile-soaked dressings is obviated, with the advantage that the patient is spared routine disturbances, and the time of the nursing staff is not occupied with the continual preparation of dressing trolleys. Finally, it is exceptional for the wound to heal other than by first intention.

Exploration of the Common Bile Duct

This procedure considerably increases the risk of the operation, and some authorities quote a mortality figure of 10% when drainage of the common duct is performed. The increased mortality is partly due to the fact that in many cases drainage is required when obstruction is present as a result of which cholangitis and cholaemia are often associated complications. In addition, the insertion of a T-shaped tube into the common bile duct is time-consuming and necessitates intricate manoeuvres under deep anaesthesia. However, palpation of the duct may reveal an obvious calculus which demands removal, and in other cases it is usually wise to explore the common duct if there have been attacks of colic or recurrent jaundice, or if obvious dilatation of the duct is discovered at operation. If exploration is necessary the cystic duct is usually slipped up and the incision carried into the common duct as far as required. Through the aperture the duct can be explored with a malleable probe, which, in the absence of obstruction should readily pass into the duodenum. Desjardin's forceps are useful for withdrawing calculi or debris from the duct.

At the operation doubt not infrequently arises as to whether the common bile duct should be explored or not. The surgeon is naturally averse to adding unnecessarily to the length and difficulty of the operation, but, on the other hand, it is even less desirable to overlook such a condition as a calculus impacted in the duct.

Choleldochography

This is a simple procedure which provides valuable information concerning the condition of the common bile duct. Information regarding the calibre of the duct, the discovery of a filling defect due to a calculus, and the presence of obstruction from other causes such as pancreatic compression are of value to the surgeon who is pondering on the necessity for exploring the common duct.

Technique.—It is preferable that the choleldochogram is taken before cholecystectomy is performed, as an intact cystic duct is more readily manipulated than a blind stump. Traction on the gall-bladder renders the cystic duct taut, and the wall is nicked with sharp-pointed scissors at a point about half an inch (1.25 cm.) from its fusion with the hepatic duct. A malleable cannula is the most suitable instrument for the introduction of the opaque medium, but an ordinary cannula or a short length of suitable rubber tubing may be used. The cannula, attached to a suitable syringe, is introduced through the cystic duct, and about 5 ml. of lipiodol is injected during a period of five seconds. As the last of the fluid is introduced the exposure is made and should be as short as possible. The film is ready for inspection within five minutes. It is important to remove metal retractors and unnecessary instruments from the field of operation immediately before the film is taken, otherwise opaque shadows may obscure the duct. During the interval of waiting the surgeon can perform appendicectomy if advisable, or else proceed with the gall-bladder dissection. In order to facilitate manipulation of the ducts the gall-bladder should be retained until a decision has

been reached as to the necessity for exploring the common duct. If exploration is deemed necessary the slit in the cystic duct is extended to permit the introduction of suitable instruments. In cases of infection or back pressure, drainage of the duct can be obtained, if necessary, by a T-shaped tube introduced through the opening. If exploration of the common duct is not required, then the cystic duct is divided and the distal end is ligated with silk or thread. Cholecystectomy is then performed.

By revealing a filling defect a choledochogram may prevent the surgeon from overlooking some condition which demands exploration of the duct. Thus a calculus may be more or less embedded in the wall of the duct and cause a appreciable obstruction to the passage of an instrument.

On the other hand, the choledochogram may indicate that although the duct is distended the lumen is patent, and consequently exploration is not necessary. Fig. 4 illustrates such a case: the duct was about three times the normal size, but lipiodol flowed freely into the duodenum. An unnecessary exploration was therefore avoided. The condition was due to subacute pancreatitis and consequent compression of the duct. Simple diathermy cholecystectomy was performed; the patient made a good recovery and has remained in good health.



FIG. 4.—Choledochogram showing distended duct and patent lumen.

Post-cholecystectomy Syndromes

After removal of the gall-bladder, and possibly a handful of stones, the patient naturally hopes to be rid of symptoms. But disappointments following cholecystectomy are not uncommon, though most of them are preventable or curable. Briefly, some of the more important causes of post-cholecystectomy syndrome are as follows:

1. A calculus, or calculi, may remain undetected in the hepatic or common duct and give rise to further attacks of biliary colic or obstruction. The hepatic duct should be explored if a stone is removed from the common duct, is retrograde migration of small calculi occasionally occurs. In some conditions, such as acholuric jaundice, small cinder-like stones are found in all the ducts, and irrigation of the hepatic duct is advisable in order to dislodge calculi which might not otherwise be detected. A choledochogram is a valuable precaution against overlooking a calculus in the common duct.

2. Chronic parenchymatous pancreatitis is often associated with infection of the biliary tract. Symptoms, including epigastric discomfort and flatulent dyspepsia, persist owing to deficiency of the external secretion, but they are relieved by the administration of a pancreatic preparation, such as "liquor pancreaticus," "panteric," or "pancrobilin." I referred to this syndrome many years ago (Love, 1933).

3. Spasm of the muscle of Oddi is alleged to be the cause of colicky pain which occasionally occurs after chole-

cystectomy. Cases apparently of this nature have been described by Maurice Lee (1946). Antispasmodics certainly relieve the symptoms, and pethidine, 25–50 mg., should be prescribed thrice daily, combined with an early morning saline aperient.

4. Dilatation of the stump of the cystic duct is apt to occur after cholecystectomy unless the duct is ligated within a quarter of an inch (0.6 cm.) of the common duct. Petersen (1946) records 42 cases, and states that the "re-formed gall-bladder" may be as large as a normal organ. I have on two occasions removed a single calculus from the stump of the cystic duct. In both cases intermittent jaundice was the predominant symptom, presumably due to exacerbations of infection around the stone and consequent pressure on the converging hepatic duct. A dilated cystic duct is usually buried in adhesions, and may be recognized only after probing through an incision in the common duct.

5. Conditions unrelated to the biliary apparatus may account for symptoms which persist after cholecystectomy. The appendix should always be removed during the operation of cholecystectomy, unless local conditions or the general condition of the patient preclude further operative intervention. The retention of a pathological appendix sometimes accounts for post-cholecystectomy symptoms. Presumably, when the gall-bladder is removed adjacent organs are scrutinized, in which case a peptic ulcer is recognized and receives appropriate treatment. Occasionally adhesions develop between the pylorus or duodenum and the gall-bladder bed. These are apt to cause angulation or even obstruction, but are unlikely to occur if the gall-bladder is removed by diathermy dissection.

Summary

When cholecystectomy is performed diathermy dissection of the gall-bladder is the method of choice. In the large majority of cases this is a simple and safe procedure, and the dry abdomen can be closed without drainage, with the great advantage that subphrenic irritation and consequent spasm of the diaphragm are reduced to a minimum. As compared with the standard operation chest complications and pulmonary embolism are much less common—a fact which is reflected in the lower mortality and reduced morbidity.

The technique and value of choledochography are discussed, and a summary is presented of some of the causes of post-operative persistence or recurrence of symptoms.

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A report of the Joint Tuberculosis Council (copies may be obtained from the Hon. Sec., 1, Becket Street, Oxford) sets out its views on the organization of the tuberculosis service under the National Health Service Act. The Council advocates that the Minister of Health should appoint a Central Advisory Committee for Tuberculosis and that there should be at least one member on the Central Health Services Council with a special interest in tuberculosis. It suggests that the Minister should create a direct link between the Regional Hospital Authority and the Tuberculosis Dispensaries, and that the tuberculosis service should be co-ordinated on a Regional level, each Regional Board appointing a tuberculosis committee for that purpose. The board should also appoint a Regional tuberculosis physician. The Council emphasizes that the health visitors provided by local authorities should hold either the Certificate of the Tuberculosis Association or the Health Visitors' Certificate, or preferably both. Local health authorities should establish tuberculosis subcommittees empowered to delegate to local voluntary care committees some functions relating to prevention, care, and after-care. The Council regards such voluntary agencies as important in tuberculosis work.

THE LONGEST SPAN OF LIFE BASED ON THE RECORDS OF CENTENARIANS IN ENGLAND AND WALES

BY

V. KORENCHEVSKY, M.D.

From the Gerontological Research Unit, Oxford

In stating their aims and planning schemes of research contemporary gerontologists stress the primary importance of making old age stronger, "to add life to years, not just years to life." At present old age is considered to be a pathological condition because senile decay appears prematurely and is aggravated by disorders that are not necessarily associated with normal old age, such as arteriosclerosis, hypertension, "senile" heart, some degenerative changes of liver and kidneys, mental deterioration, certain metabolic disturbances and auto-intoxication, gastrointestinal auto-intoxication, hypertrophy of prostate, etc.

This problem of gerontology, however, cannot, for two reasons, be dissociated from the other gerontological problem—that of how to increase the span of human life. (1) Most old people cling very strongly to life. Old men have the same right to a normal and healthy existence as children or adults, even though their most useful period of life has ended. (2) Besides this factor there is a scientific reason. The development of science and medicine must proceed in spite of and with complete disregard to all possible complications of a social and political kind. For many scientists and medical research workers, the problem of ageing is fascinating not only because it affects the well-being of every man and woman, but also, and often chiefly, because it is one of the greatest and most fundamental mysteries and riddles in biology and medicine, because present old age is considered abnormal, and because if this is so this abnormal process of life has to be made normal. Science and medicine will not rest until they solve the riddle of what is normal ageing and normal old age and what is the normal span of life.

From the point of view of longevity, the centenarians of the past and the present are of especial interest because the length of their life indicates the limit which is theoretically and potentially possible for every human being. With reservations, investigation into their ancestry and progeny might be useful in solving the genetical causes of longevity, while an examination of their mode of living, and of the functioning of their organism, with a post-mortem investigation, might contribute to some other problems of gerontology and geriatrics.

Difficulties of Investigation

There are several difficulties in the scientific investigation of centenarians, particularly as to their exact age. The basic information should be obtained from certificates of birth and death, of which the former presents the greatest difficulty, since it is often absent or doubtful. Young (1899) has fully discussed this and some other difficulties.

In the present paper data on centenarians are given only from 1930 to 1945, it being presumed that in this period the information and documents were more accurate than in the previous years, since the people of this country have gradually been trained in this respect. These data have been obtained from the most reliable sources available—for

the years 1930 to 1937 from the Registrar-General's *Statistical Reviews* for England and Wales, and for the years 1938 to 1945, as a personal communication, from the Registrar-General's Office at Somerset House, London. The dates of birth, however, were not verified by birth certificates, but were obtained from the persons who registered the deaths, which fact decreases the value of the data. These data have been divided into two periods, each of 8 years—namely, 1930–37 and 1938–45—and are summarized in Tables I and II. Examination of the figures in these tables reveals at once a constant and obvious fact—that the number of women centenarians is considerably larger than that of men, being about 4.4 times greater in the first period and about 4.9 times greater in the second period (Table I). Further, in the second period the actu-

TABLE I.—Number of Centenarians for Each Year in Period I (1930–7) and Period II (1938–45)

Period I	No. of Centenarians		Period II	No. of Centenarians	
	Men	Women		Men	Women
1930	18	43	1938	16	93
1931	15	76	1939	22	90
1932	15	94	1940	20	102
1933	19	91	1941	18	91
1934	6	70	1942	12	79
1935	29	66	1943	21	92
1936	14	82	1944	21	85
1937	21	79	1945	18	93
Total	137	601	Total	148	725
Average per year	17.1	75.1	Average per year	18.5	90.6
Average per year per 20 millions of population	17.7	71.4	Average per year per 20 millions of population	18.3	83.4

TABLE II.—Total Number of Centenarians of Each Age in Periods I and II

Sex	Period	Age (years)										
		100	101	102	103	104	105	106	107	108	109	110
Men	I	59	31	21	14	9	2	1	—	—	—	—
	II	63	36	25	6	3	5	3	3	2	1	—
Women	I	264	155	81	46	22	20	5	3	4	1	—
	II	320	191	100	53	34	14	7	1	5	—	—

number of women centenarians is significantly greater ($P < 0.02$, Fisher's test for small samples) than that in the first period. The increase of male centenarians in the second period was only slight, and was statistically not significant.

Limits of Longevity

From Table II it is clear that longevity of human being might extend up to 109 and even 112 years. The age of 106–112 years has been reached by 11 (3.9%) out of 28 male centenarians and by 26 (about 2%) out of 1,326 female centenarians—that is, from both sexes a slightly large relative proportion of men reached the oldest age. In favour of these data being of considerable value and comparative reliability is the fact that in each period investigated the annual figures of centenarians (Table I) are more or less constant, both for men and for women.

When calculated per year and per unit of the population (Table I), for 20 millions of men or women there were 17.1 male centenarians and 71.4 female centenarians in period I and 18.3 and 83.4 respectively in period II. This fact indicates that the increase in the number of centenarians in period II cannot be explained by an increased population only, but appears also to be connected with increased longevity.

Ernest (1938), reviewing all the cases of centenarians which have been critically investigated by different authors and by himself, concludes that the longest reported span of human life was trustworthy in four cases only. "Two

I should like to express my gratitude to Lord Nuffield for the grant which has made possible the establishment and work of the Gerontological Research Unit, and to Oxford University, Prof. A. C. Hardy, and Prof. E. G. T. Liddell for the kind hospitality extended to the Unit in the Departments of Zoology and Physiology.

of these four people lived over 110, one was nearly 112, and one over 113 years at death" (p. 55), residing in the U.S.A., Guernsey, Ireland, and Canada respectively. All the other cases of greater longevity reported in the literature, scientific and non-scientific, cannot be accepted as trustworthy. The distinguished Swedish gerontologist G. Backman (1945) also concludes that 113 years could be taken as the accurate age of the longest span of human life recorded, but that 125 years might perhaps be expected. Prof. I. Fisher (1923, p. 112), of Yale University, reports a comparatively recent case of life up to 120 years in Oregon, U.S.A., the case having been investigated by the Oregon Historical Society.

Prolongation of Life in the Future

As to the possible prolongation of human life in future beyond the extremity already reached by some centenarians (113 years), the scientists who studied this problem give different prophecies. Prof. Warthin (1929), of Michigan University, emphasizes that, according to the data of the U.S.A. Census Reports, "the increase in the average longevity is due to the saving of life through the prevention of extrinsic pathological death in the earlier decades of life, but that there has been no extension of the normal or biologic life limit" (pp. 166-7). "It is therefore neither possible nor probable that the average longevity can be raised to the heights prophesied by the over-zealous and very inaccurate advocates of life extension" (p. 170). Warthin in this case refers to an extension of life up to 125-140 years.

Metchnikoff (1907), on the contrary, says that "we may predict that when science occupies the preponderating place in human society that it ought to have, and when knowledge of hygiene is more advanced, human life will become much longer" (pp. 226-7).

Prof. Fisher (1923) concludes that "it would be surprising if the future should not witness a further lengthening of human life, and at an increasing rate. Of course, there is a limit to the further increase of human life, but there is good reason to believe that the limit is still far off" (p. 103). "If . . . notwithstanding all existing chances of death, it is possible for some persons to live beyond 120, the chances in the future for a larger proportion of such persons will be materially improved" (p. 112).

Prof. Simms (1946), of Columbia University, states that "there is at the time no proof for or against the possibility that we can some day extend our active life an extra one hundred or two hundred years, with retention of youthful health, intelligence, and appearance" (p. 24).

A scientific and medical investigation of the span of centenarian life might, as already mentioned, be of great importance from several points of view. For example, histories of two long-lived families described by Weber

(1919) indicate heredity as one of the causative factors of longevity. His tables on pages 21 and 23 give the respective data of the span of life of the brothers and sisters in these two families. These tables are abbreviated and pooled in Table III of the present paper.

A Social Problem

The question of centenarians is closely connected with one of the gravest social problems of our days—namely, the growing proportion of old people in the population. In the excellent report of the Nuffield Foundation (Rowntree, 1947) this is illustrated by a table (p. 3) prepared by W. A. B. Hopkin, a member of the staff of the Royal Commission on Population. The abbreviated data from this table are given in Table IV of the present paper. From

TABLE IV.—Population of England and Wales by Three Main Groups (thousands). (Abbreviated from Rowntree's Report, 1947, p. 3)

Year	Age			Total Population
	Under 15	Men, 15-64; Women, 15-59	Men 65, Women 60, and over	
1944	8,671	28,382	5,396	42,449
1954	9,036	28,080	6,143	43,309
1964	8,440	27,894	6,811	43,145
1974	8,051	26,692	7,804	42,577
1984	8,043	25,547	7,944	41,534
1989	7,886	25,071	7,848	40,805
1994	7,679	24,872	7,504	40,055

this table it is estimated that by 1989 the number of old people of pensionable age will equal the number of children, while by the same year the number of persons of working age will be approximately three millions less than in 1946. The report adds (p. 2): "The trend revealed in Mr. Hopkin's figures may, however, be even more pronounced than the table suggests; for other authorities, among them the Registrar-General, have forecast that as early as 1971 the number of persons of pensionable age may equal, or even exceed, the number of children."

This position is considered to be very serious because at present helpless old people become a great burden on the younger working population. Such a position, however, will not necessarily be the same in future, as Metchnikoff and Fisher emphasize. It is probable that medicine and science will not only add years to the life of an old man but simultaneously will conserve his physical and mental vigour for a longer period. "One result of lengthening life will be a greater utilization of accumulated experience. We shall have less immaturity in judgment. . . . It will give to society a body of old yet hale men of experience, whose influence and worth cannot be measured" (Fisher, 1923, p. 111).

Conclusions

In the data recorded in the Registrar-General's Office the certificates of birth of centenarians have not been checked, and therefore their age can be accepted only with some reservation. Since, however, these data were investigated during the latest period of 16 years, and as the figures investigated were constant in character, their value and reliability are probably still considerable.

According to these data, in England and Wales per 20 millions of male or female population there were each year on the average 17.7 male and 71.4 female centenarians in the period 1930-7, and 18.3 and 83.4 respectively in the period of 1938-45. Thus, unexpectedly, their incidence was regular and not very exceptional, and more women had a long span of life than men.

There was a statistically significant increase of female centenarians during the last eight years as compared with

TABLE III.—Two Long-lived English Families, Alexander and Kempe (Weber, 1919, pp. 21, 23)

Alexander (Quakers)			Kempe		
Name	Age at Death		Name	Age at Death	
	Yrs.	Mths.		Yrs.	Days
Ann Barber (mother) ..	86		Rev. J. E. Kempe ..	97	1
George William ..	88	7	Miss M. Kempe ..	87	326
Mary Barber ..	103	5	Rev. A. A. Kempe ..	96	246
William Dollin ..	81	11	Mrs. E. Mozley ..	103	*
Henry ..	91	3	Mrs. J. F. Martin ..	94	131
Samuel ..	74	9	Mrs. C. W. Benson ..	83	121
Frederick ..	82	3	Mrs. A. D. Benson ..	94	358
Elizabeth ..	93	10	Mrs. C. N. Kempe ..	77	108
Sarah Ann ..	100	*	Mrs. E. B. Parish ..	86	104
			Mr. R. C. Kempe ..	85	9

* Those marked by an asterisk were still alive at the time of publication of Weber's book.

a previous period of eight years, while a small increase in male centenarians in the last period was not significant.

During these periods the longest human lives recorded were 109 and 112 years, and this fact is in approximate accord with the conclusions reached by previous critical investigators for periods earlier than 1930.

Thus, theoretically and potentially, a span of life of 109-112 appears to be possible for a human being. As, however, the exceptional cases of longevity of human beings have occurred during the present time, when the process of ageing is abnormal, there is some possibility that the span of human life might be further extended when the process of ageing becomes a normal one.

There are some indications that the genetic factor is one of the causal factors of longevity.

Taking into consideration the primary aim of gerontology to make old age stronger and healthier, and not only longer, the prophecy of Metchnikoff and Fisher may be right—that in this way the *useful* period of human life might be extended and the community benefit by a greater utilization of the accumulated experience and wisdom of older people.

It is most desirable that scientific and medical investigation of cases of centenarians should be carried out by research workers.

I wish to express my gratitude to the Registrar-General and his Office, in particular to Mr. A. A. Dodge, for supplying me with all necessary data concerning published and unpublished cases of centenarians.

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Medical Memoranda

Relief of Pain in Childbirth

While acting as house-surgeons in Maryfield Hospital, Dundee, we obtained permission to try the administration of phenobarbitone and rectal ether for the relief of pain in childbirth as outlined by C. B. Lull and R. A. Hingson (1945).

The technique adopted was to give the patient a 5% sodium bicarbonate enema on admission. When her pains began to make her uncomfortable she was given 3 gr. (0.2 g.) of phenobarbitone, which was repeated in 1½ gr. (0.1 g.) doses as required. As soon as the pains became distressing—usually towards the end of the first stage—2½ oz. (70 ml.) of ether in 1½ oz. (42 ml.) of olive oil or mineral oil was administered rectally. This enema was given slowly, with the patient on the left side, care being taken to pass the catheter above the presenting part. This makes the patient feel very drowsy within a few minutes, the effect lasting for two to four hours. The rectal ether can be repeated in two hours if the effect is wearing off. If the patient is exhausted or it is suspected that the labour will be prolonged, 2 dr. (7 ml.) of paraldehyde may be added to the rectal instillation to produce a deeper sedative action.

Results.—In our series of twenty-five cases, mostly of primigravidae, we found that all received relief from this

treatment. All slept between their pains and also used their pains well. The multiparae admitted it was the easiest labour they had had, several of them requiring to be reassured that their baby had been born.

Actions on the Mother.—(1) Restlessness and distress were relieved so that they relaxed well between pains. They were in a state which was highly responsive to suggestion, and obeyed the instructions given by the attendant. (2) The pains continued with the strength and frequency which would have been expected if rectal ether had not been administered. (3) The pelvic floor relaxed well and the head advanced quickly. (4) The third stage was short, the average duration being 12 minutes, and after expulsion of the placenta the uterus contracted firmly and there was no case of post-partum haemorrhage. (5) The patients co-operated so well during the birth of the head that only three out of twenty-five required a perineal stitch. (6) There was no increase in the forceps rate.

Effect on the Foetus.—Every child cried immediately at birth, and was in no way affected by the sedation.

In conclusion, we found this method very satisfactory; it is safe for both mother and child, it is easy to administer, and it does not prolong labour.

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Safety-pin in Larynx for Five Weeks

The presence of an open safety-pin in the larynx of a 2-year-old child for over five weeks seems unusual enough to warrant record.

CASE REPORT

On April 13, 1946, a practitioner was called to see a small boy aged 2 who was reported to have had some dyspnoea during the night. He was over-quiet and pointed to his throat. He cried when the throat was examined. The practitioner described the cry as "croupous and husky." Nothing abnormal was found in the throat or chest. The temperature, pulse, and respirations were normal. The next day there was some dyspnoea and a croupous distressing cough. Laryngeal diphtheria was suspected; 800 units of antitoxin were given and the child was sent to a fever hospital. He had been immunized previously.

On admission he was given 40,000 units of antidiphtheritic serum, but the medical superintendent did not consider it was a case of diphtheria; he suspected an early pneumonia, though signs in the chest were absent. The respiration was increased and there was difficulty in getting him to take food. Negative swabs were obtained from the nose and throat on April 14, 15, and 16. The patient was fairly comfortable till April 24, when symptoms of obstruction arose. He was put in a steam tent, but did not improve, and in view of the increasing dyspnoea tracheotomy was performed the next day. During the following two weeks various attempts to remove the tube were made, but without success.

I first saw him on May 10. He was quite unable to breathe through the larynx. There was no cry. An attempt at laryngoscopy with inadequate instruments showed a mass in the larynx. The child was transferred to a nursing home and a direct laryngoscopy was performed on May 21. The larynx was filled with a mass of granulation tissue. When this was probed a foreign body was seen. It looked like a coin, but gentle traction showed that it was fixed, especially at the posterior end. The anterior end was gently pulled on and the body removed. It proved to be an open brass safety-pin 7/8 in. (2.2 cm.) long. During the next fortnight the tube was changed daily, but there was still no airway through the larynx. Direct laryngoscopy showed the swelling to be much smaller, and the left vocal cord was visible. A few days later he cried for the first time, and in a day or two began to say a few words, and was soon talking freely, with the tube corked. The tube was finally removed on June 20, a month after the operation. A week later he went home looking fit and well and talking freely and, for his age, clearly. I saw him again in October and found him quite well, and breathing and talking normally.

I am indebted to the doctors in charge of the case for details of the early history.

E. S. BURT HAMILTON, F.R.C.S.Ed.

Reviews

RHEUMATOLOGY

Medical Disorders of the Locomotor System, Including the Rheumatic Diseases. By Ernest Fletcher, M.D., M.R.C.P. (Pp. 625; 262 figures. 45s., plus 8d. postage.) Edinburgh: E. and S. Livingstone. 1947.

is admirably documented and illustrated textbook of the rheumatic diseases, including a chapter on medical cases of bone, provides many references to the large amount of work being done on the subject, but the reiteration of perhaps it may be "or" "we suspect that" shows how obscure the subject is and how incomplete our knowledge. The probational aetiology of these conditions precludes satisfactory classification, and it is possible to arrange them only in broad general divisions. The author has entrusted certain sections to other specialists—for example, that on fibrositis to Dr. Copeman and on radiology to Dr. Campbell Golding—but for the most part he writes from his own experience backed by study of the literature.

After preliminary chapters on anatomy and physiology, general aetiological factors, and radiology the author discusses acute rheumatism, and emphasizes the value of Coburn's massive doses of salicylates and sulphonamide prophylaxis as practised in the American Army. He then considers its relationship to chorea and the possibility of acute rheumatism and rheumatoid arthritis being variants of the same disease; his observations on the aetiology of the latter reveal how difficult the problem is. He advocates the sanatorium regime for the treatment of rheumatoid arthritis and gives a full account of gold therapy. He then discusses the nodule and its significance, minutely describing the variety with the necrotic centre, which is characteristic of both rheumatism and rheumatoid arthritis. Writing of osteoarthritis he does not favour the infective theory of its origin. The injection of joints with lipiodol may be beneficial. The author attaches more importance to osteoarthritis of the spine as causing obscure pain than do some authorities.

Discussing fibrositis Copeman points out that the establishment in the course of any infection of "trigger points," which may in some cases persist and be reactivated, may explain its manifestations. He also describes his investigations into tender irradiated fat lobules. The specific arthritides and gout are adequately discussed and there are excellent chapters on the possible causes of sciatic and brachial neuralgia, for which the author on the whole prefers conservative treatment. There are also discussions on pain and stiffness in the shoulder, back, and foot, and a final chapter on physical treatment. Spa treatment is only briefly mentioned for fibrositis and not at all for chronic gout. This book is a credit to British rheumatology and indispensable to specialists in the subject.

R. G. GORDON.

SYMPATHETIC NERVE INFILTRATION

Les Infiltrations du Sympathique. Physiologie—Indications—Techniques. By Maurice Luzuy. Preface by Prof. René Leriche. (Pp. 200; 24 figures. 375 francs.) Paris: Masson et Cie. 1946.

Dr. Luzuy records in this book his study of the effects of cocaine (novocain) on sympathetic nerves. He discusses in detail the technique of and indications for sympathetic block, and the deductions which he has made and applied to the theory of sympathetic, cardiovascular, and visceral physiology and pathology. Prof. Leriche contributes a happily worded preface—and most suitably, for the methods and opinions of the book correspond closely to his own.

The technique described for the infiltration of each sympathetic area accords in general with the usual Anglo-American practice, but the author advocates a lateral path for the approach to the stellate ganglion, an anterior method for the infiltration of the carotid sinus, and Cotte's transvaginal approach for the injection of the hypogastric ganglion. Arnulf's method of infiltrating the preaortic plexus from the roof of the neck, fully described, is not yet widely practised in this country. The first section of the book covers the effects of trauma. The author describes the efficacy of local infiltration anaesthesia in permanently relieving sprains of joints to an interruption in those

antidromic sympathetic vasodilatation influences which are said to be responsible for the symptoms of a sprain, and he attributes the later effects of trauma, including post-traumatic cyanosis, oedema, osteoporosis, and hypercalcification, to sympathetic disturbance and treats them successfully also by sympathetic block, though at a higher level, by infiltration of the appropriate sympathetic ganglion. The field covered by the second section, the application of sympathetic block to vascular disease, is that in which, more than in any other perhaps, surgery has been advanced by the school of Leriche, and Dr. Luzuy's arguments are well considered.

The evidence offered in the third section of the effect of splanchnic block in congenital pyloric stenosis, megaduodenum, acute dilatation of the stomach, gastric ptosis and atony, peptic ulcer, gall-bladder stasis, constipation, intestinal obstruction and strangulation, acute pancreatitis, and diabetes will not unreservedly convince all readers; and the records of the six patients treated by infiltration of the preaortic plexus for coronary disease do not fully prove the efficacy of that measure. The book ends with a description of the method of intravenous procaine injection and its success in the treatment of asthma. As Prof. Leriche explains in his preface, Dr. Luzuy is an enthusiast, and this book gains by that quality in vivacity what it loses in detachment.

IAN AIRD.

THE ROTUNDA

The Rotunda Hospital, 1745-1945. By O'Donell T. D. Browne, M.B., M.A.O., F.R.C.P., F.R.C.O.G. (Pp. 296; 44 illustrations, a synopsis, and graph. 42s.) Edinburgh: E. and S. Livingstone. 1947.

Bartholomew Mosse opened the Dublin Lying-in Hospital for Poor Women on March 15, 1745. He died suddenly in 1759 at the age of 47. He had envisaged a "large impressive and suitable place of entertainment" alongside the hospital, but did not live to see the completion of the Round Room in 1767. From then on the name "Rotunda" was adopted, and the Rotunda Hospital embarks next week on the bicentenary celebrations which the war postponed.

Dr. O'Donell Browne has given a detailed account of the development of the hospital and of the contributions to obstetrics made by its Masters, setting his local theme against the wider background of the general history of midwifery. His book has six sections, each with its own references: the first 100 years; the second 100 years; the struggle against puerperal fever; operative midwifery; anaesthesia and gynaecology; eclampsia. This arbitrary division is unfortunate, and a great deal of dull detail makes the first two parts of the book heavy going. It involves repetition in each section, and it makes it difficult to assess the standing of any one Master, since his activities and the changes he brought about may be discussed under six different headings. This criticism may have been made at an earlier stage and may account for a final chapter listing the outstanding Masters. No one would quarrel with Dr. Browne's view that Mosse was the greatest Rotunda Master, and Fielding Ould, Clarke, Labatt, Collins, Maçan, Smyly, and Tweed worthy successors. It is good to know that there were once 72 gallons of whiskey in one hospital, and at a cost of only £9 15s., but salaries and allowances for officers and servants are of less interest, and no one can make the minutiae of redecorations and extensions lively reading.

The section on eclampsia is better, and so is that on puerperal fever, though it is difficult to justify the equal emphasis on Oliver Wendell Holmes and Ignaz Semmelweis. Discussing operative midwifery and gynaecology, Dr. Browne has assessed fairly those fields in which the Rotunda advanced steadily and those in which it lagged through excessive conservatism. In his account of the application of anaesthesia to midwifery Dr. Browne has been uncritical. For much of his material he has obviously gone back to the original documents. Here he has copied a venerable error. "Simpson was knighted in 1870. His friend, Sir Walter Scott, wrote advising him that he should have as coat-of-arms 'a wee naked bairn' with the inscription: 'Does your mother know you're out?'" Sir Walter Scott died in 1832. These are minor criticisms of a book so well produced that it deserved better proof-reading. There may be argument about Dupey or Dupuy and about Ségault or Sigault, but the first Assistant Master to perform a successful caesarean hysterectomy in a patient's home ought not to be Bagot on one page

and Baggot later. There is probably nothing significant in the history of the Rotunda not included in Dr. Browne's story or in his excellent synopsis. His illustrations are numerous, well chosen, and well reproduced. Medical historians will find his book useful, but a shorter version with more carefully selected and differently presented material would appeal to a much wider circle of readers.

THE N.H.S. ACT

The National Health Service Act, 1946. Being the Complete Text of the National Health Service Act, 1946, with an Introductory Explanation of the Act. By J. A. Scott, M.D., D.P.H. Together with an Index to the Act compiled by H. A. C. Sturgess. (Pp. 93. 9s. 6d.) London: Eyre and Spottiswoode (Publishers), Ltd.

Two-thirds of this volume reproduce the text of the Act, the remaining third being shared equally by an introductory section, a summary of the Act, and an index to the Act. In the introductory section the author briefly considers the Government's social legislation for preventing individual poverty, and he sketches the main principles of the National Insurance, the National Insurance (Industrial Injuries), and the Family Allowance Act. Under the title "The planning proposals of the medical profession" he includes a paragraph on the B.M.A. proposals for a General Medical Service for the Nation and a summary of the Draft Interim Report of the Medical Planning Commission (1942). There follows a section in which health centres, including the model centre suggested by the Commission, are discussed at some length, and with the author's personal observations on the health centre concept thrown in. He stresses two trends in modern medicine: first, a strong desire to combine preventive and therapeutic work, and secondly a tendency for child health and maternal care to become separate specialties in the hands of different sections of the profession. In discussing the staffing of the "public health" part of health centres he contemplates that many of the whole-time officers engaged in maternity and child welfare and school medicine will wish to continue with their present work, and to that extent both general practitioners and specialists may only gradually have the opportunity to take part in the work, but "there is no inherent reason why the general practitioner with suitable experience should not undertake it, as he wishes to do." Notes on (1) the areas of Regional Hospital Boards, (2) the regional hospital surveys, and (3) the original White Paper on a national health service issued by the Coalition Government, in this somewhat topsy-turvy order, complete the introductory section.

In Part II he summarizes objectively and concisely the main provisions of the Act. It will be welcomed by those who seek a broad picture of the scheme. For the most part he avoids the pitfalls inherent in the translation of the Act's legal terminology into lighter and less tiresome reading. In two minor instances, however, the summarized version may be misconstrued in relation to the text of the Act. On page 25 it is stated: "Lists of medical practitioners providing general medical services will be published, and every doctor (who is not a paid assistant) in practice before the appointed day who duly applies is entitled to have his name on the list." The right of the practising doctor to have his name on the list is limited to the list of "the Executive Council for any area in which he is practising." On page 26 it is stated: "It is a duty of every Executive Council to arrange for the supply of drugs, medicines, and appliances from health centres or otherwise to everyone in the area entitled to general medical and dental services." The terms of clause 38 of the Act do not extend to everyone in the area entitled to general medical or dental services but to persons in the area receiving those services. From clause 38 (2) it appears that the Executive Council's arrangements are to ensure for those persons the supply of "proper and sufficient drugs and medicines and prescribed appliances" if ordered by the medical practitioner rendering general medical services (or by the dental practitioner in the case of general dental services). The index is masterly and certainly the most valuable part of the book.

The 1947 edition of the *Medical Register* has recently been published (22s., post free). Particulars given in tabular form reveal that on Dec. 31, 1946, there were 76,292 names on the Register—nearly half as many again as in 1927, when there were 53,591. In 1946 2,237 names were added and 1,092 removed for various reasons.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Diseases of Children's Eyes. By J. H. Doggart, M.A., M.D., F.R.C.S. (Pp. 288. 42s.) London: Henry Kimpton. 1947.

After discussing principles of examination, anatomy, developmental errors, and methods of treatment, the author considers eye diseases in children and their treatment. Many coloured illustrations.

Old Age and How to Make the Best of It. By R. A. Bennett, M.D. (Pp. 23. 2s. 6d.) Bristol: John Wright and Sons. 1947.

Comments, with quotations from the classics, on growing old.

Current Therapies of Personality Disorders. Ed. by Bernard Glueck, M.D. (Pp. 296. 17s. 6d.) London: William Heinemann. 1946.

Evaluation of various methods of psychotherapy by a number of different authors.

History of the Abolition of State Regulation of Prostitution. By Mme. Legrand-Falco. (Pp. 30. 1s. 6d.) London: The Association for Moral and Social Hygiene. 1946.

The history in France is referred to particularly.

Laboratory Instructions in Biochemistry. By I. S. Kleiner, Ph.D., and L. B. Doti, Ph.D. 2nd ed. (Pp. 245. 12s. 6d.) London: Henry Kimpton. 1946.

A manual of practical biochemistry for use in the laboratory, with space for notes.

Nozioni di Immunologia. By Prof. E. Carlinfanti. (Pp. 760. No price given.) Milan: Istituto Sieroterapico Milanese Serafino Belfanti Editore.

An account of antigen-antibody reactions in diagnosis, therapy, and prophylaxis.

Recopilacion de Leyes, Reglamentaciones, Decretos y Resoluciones Sanitarias. Published by the Argentine Ministry of the Interior, Direccion Nacional de Salud Publica. (Pp. 928. No price.) Buenos Aires: Imprenta de la Camara de Diputados. 1945.

Laws relating to public health in Argentina.

Jubilee Volume. Dedicated to Emil Christoph Barell by the Scientific Workers of the Roche Companies. (Pp. 468. No price.) Basle: F. Hoffmann-La Roche. 1946.

Includes papers on the synthesis of certain vitamins and other compounds, on the furans, and on antibiotics.

Dolores Mortales. By Dr. Miguel Lopez Esnaurrizar. (Pp. 65. \$15 M.M.) Ueha, Mexico: Editorial Gonzalez Porto. 1947.

A monograph on the conduction of pain impulses by the autonomic nervous system.

La Douleur. By Dr. Paul Chauchard. (Pp. 128. No price.) Paris: Presses Universitaires de France. 1947.

A study of pain as a protective mechanism.

Food Inspection Notes. By H. Hill, F.R.San.I., and E. Dods-worth, M.R.San.I. 2nd ed. (Pp. 125. 6s.) London: H. K. Lewis. 1947.

A summary for public health students of the properties of healthy and diseased foodstuffs.

The Problem of Fertility. Ed. by Earl T. Engle. (Pp. 254. 21s.) Princeton University Press (London: Geoffrey Cumberlege). 1947.

A collection of papers on the factors affecting fertility in man and in animals.

Textbook of Surgical Treatment. Ed. by C. F. W. Illingworth, C.B.E., M.D., Ch.M., F.R.C.S. Ed. 3rd ed. (Pp. 644. 32s. 6d.) Edinburgh: E. and S. Livingstone. 1947.

Includes new sections on wound infections, penicillin in surgery, plastic surgery, facio-maxillary injuries, the use of protein in surgery, and the anticoagulant treatment of thrombosis.

Notes on Clinical Laboratory Methods By the Standing Committee on Laboratory Methods, University of Glasgow. 5th ed. revised. (Pp. 95. 3s. 6d.) Glasgow: John Smith. 1947.

An outline of laboratory methods in clinical medicine for medical students.

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THE SPREAD OF STAPHYLOCOCCAL
INFECTION

It is a truism that the control of epidemic infection must be based on exact knowledge of the paths of its spread. These have been fairly well known for many years in connexion with some infections. At the opposite extreme they remain conjectural even now in the case of certain virus diseases, because the presence of the agent in different materials cannot be demonstrated by any simple test. A special position is occupied by infections due to common bacteria of wide distribution, because their mere presence is not necessarily connected with a particular epidemic. Unless the epidemic strain has some special characteristic, it is impossible to decide whether, for instance, a carrier of the species concerned is to be incriminated. It is here that the definition of individual "types" within species has been found so valuable. The separation of such types, and epidemiological studies based on them, form a profitable pursuit in which workers in this country have led the world. Almost all that we know with certainty about the epidemiology of streptococcal infections is based on the determination of types defined by the late Frederick Griffith. McLeod's types of *C. diphtheriae* have also been helpful, and recently the phage typing of *Salmonella typhi* and of *Staphylococcus aureus* have enabled other workers to trace the sources of epidemics which could not otherwise have been elucidated.

Perhaps the most forbidding task of all has been to disentangle the migrations of staphylococci, particularly under institutional conditions. These organisms are so widespread that it might seem impossible to trace them to their source, even under conditions of epidemic spread. An opportunity for attempting this is furnished by outbreaks of pemphigus neonatorum among infants in maternity homes. These are not uncommon, and they are usually followed by wholesale swabbing and the resultant discovery of numerous carriers among patients and staff. Anyone who, having obtained such information, has then been somewhat at a loss to know how to interpret or act on it will be grateful to V. D. Allison and Betty C. Hobbs, whose paper appears in the opening pages of this issue, for having pursued such an investigation so thoroughly as to reach definite conclusions about the mode of spread of the epidemic. To enable such conclusions to be drawn, typing of the strains isolated was essential. The method employed was serological, based on the original types defined by Cowan, and the identity of a number of strains defined by this method was confirmed by phage typing.

This study was pursued over a period of two years in a large maternity home at Cardiff, and during this time in

three outbreaks there were 107 cases of pemphigus and 21 of staphylococcal conjunctivitis. The majority of cases in each outbreak were due to a single serological type; possible sources of infection could therefore be identified with some certainty. The organism concerned was found to be exceedingly widespread. It was recovered sometimes from air or dust, and from blankets and clothing. Among human sources the mothers could be excluded in the majority of cases, only 6 out of 15 being found to harbour the same type of staphylococcus. On the other hand, swabbing of the nursery staff on several occasions revealed a large proportion of nasal carriers, many of whom were infected with the same type as that producing pemphigus in the infants. Whether this state of affairs was a cause or an effect might have been uncertain had not swabs been taken from the staff at the beginning of the third epidemic, when only a single case of pemphigus had occurred. At this early stage no fewer than 18 (37.5%) of the nursery staff were already nasal carriers of type 1 *Staph. pyogenes*, the cause of the epidemic which followed. As the authors remark, this observation strongly suggests that a "build-up of nasal carriers of a potentially infective strain occurs among the staff before the appearance of cases of pemphigus." If this is indeed the mechanism underlying such outbreaks, it is at least practicable to define appropriate precautions. It is noteworthy that among the staff there was no skin carrier who was not also a nasal carrier; in other words, the ultimate source in the carrier is nearly always the nose, and the most elementary of all precautions is to obviate contamination of the hands from that source. Is it yet generally understood among nurses that the use of a handkerchief should be followed by thorough washing of the hands?

Other measures which may materially assist in protecting infants from infection are discussed in this paper. Overcrowding, which was evidently a factor in the first of the outbreaks described here, must obviously be avoided, and good ventilation and lighting are necessary. Measures to allay dust are important, as in cross-infection of almost all kinds; in particular ordinary dry sweeping is to be condemned and a vacuum cleaner or damp dusting substituted. Then there are many technical details connected with the nursing care of infants which require regulation with the possibilities of cross-infection in mind, such as the sterilization of baths, and the use of separate toilet outfits and towels for each infant. The highly trained nurse will instinctively conform to such practices; for pupils the rules need to be precise and rigidly enforced. The authors make the interesting suggestion that infants would perhaps be better off with their mothers than congregated in a room separate from them, a system which can be commended from other points of view (see page 20). The treatment of carriers with sulphathiazole snuff has proved disappointing, and it is apparently concluded that attempts to clear up carriers by such means are not worth while. The addition of calcium penicillin to sulphathiazole used as snuff greatly reinforces its action, and the use of this mixture is worth considering if in any individual case it is deemed important to abolish the carrier condition. This paper with its very practical conclusions will be welcomed by those who have had to deal with such troubles in maternity

homes. So elaborate a form of investigation is rarely possible, but when once carried out with such thoroughness it almost removes the necessity for further efforts on the same lines.

NEONATAL INFECTIONS

The stress which is now placed upon the prevention of ill-health, especially in young children, has caused renewed attention to be given to certain diseases and abnormalities which in the past have received only sporadic consideration in medical literature and have seldom aroused more than a local and temporary interest. Neonatal infection is a case in point; and the recent Report¹ prepared by a highly competent subcommittee of the Scientific Advisory Committee to the Department of Health for Scotland is an important document, not only for its detailed and very practical recommendations for the prevention of such infections but because it focuses attention upon the conditions which endanger newly born babies, especially in maternity institutions, and upon the characteristic features of infective processes in the early weeks of life. There is no period in the whole life of man, from fertilization of the ovum to old age, when he is safe from the threat of bacterial assault; but the circumstances in which the warfare begins and is pursued, the constitution of the armies engaged, and the probable course of the battle vary materially from phase to phase of the person's life. In so far as neonatal infection is concerned it is well known that unhygienic conditions in the baby's environment, overcrowding, faulty nursing care, and the contact of the child with infected adults are the most important sources of danger; and it is unfortunately true that despite anxious efforts by the medical staffs and lay committees of maternity institutions to reduce these risks in the nurseries and wards of their hospitals the babies born in many institutions are seriously threatened. Most of our maternity hospitals were built at a time when it was the custom to house the babies in large nurseries, where the danger of cross-infection is considerable; and the increased demand by mothers to have their babies in hospital has accentuated conditions of overcrowding. But probable that faulty nursing care is a greater danger than faulty architectural design. Such a statement should be interpreted as a criticism of the student nurses, who are for the most part conscientious, enthusiastic, and hard-working; indeed, our sympathy goes out to them in their daily struggle to achieve the impossible. Insufficient in numbers, harassed by examinations which stress theoretical book knowledge rather than practical proficiency, and sometimes irritated by rules and regulations long outdated, these women are driven to adopt a nursery technique which places a premium upon speed. The Report states that the preventive measure of greatest importance in dealing with neonatal infection is the routine observance of an orderly and unhurried basic nursing technique by a staff adequate in number and quality; and it recommends that a ratio of two nurses to three cots should be aimed at as a minimum in the nurseries. In the larger maternity hospitals and units there should be a basic permanent staff of trained nurses,

especially in the units for premature infants, sick infants, and infected infants, and there should be a trained nurse always on duty and an experienced sister, or sisters, in charge. At least one-third of the nursery staff should consist of permanent trained personnel, the remainder being trainees. These recommendations are in general agreement with those put forward by a subcommittee of the British Paediatric Association on neonatal mortality and on arrangements for newly born babies in maternity hospitals.² During the present shortage of nurses it is suggested that nursery nurses be recruited, where possible, as helpers in the nurseries, with appropriate scales of remuneration. Useful suggestions are made regarding the training of midwives, and Appendix 2 provides a detailed description of nursery technique as practised in the Aberdeen Maternity Hospital. It is interesting to compare this Appendix with the technique adopted by Beryl Corner.³ A suggestion likely to meet with the approval of paediatricians is that part of the training of a sick children's nurse might be obtained in the nursery of a maternity hospital or unit for a period of, say, three months. In regard to architecture, the Report recommends that large nurseries should be replaced by a suite of smaller wards, preferably containing from four to six cots each. Special provision is needed for (a) sick infants (10 cots per 100 maternity beds); (b) premature infants born in the hospital or admitted from the district (10 cots per 100 maternity beds); and (c) the isolation of infants suffering from infective conditions (5 to 10 cots per 100 maternity beds). Some of these special wards should be capable of holding 4 cots each, and some should be single cubicles. It may be questioned whether the Report goes far enough in this section, and a strong case can be made by those who hold that mothers should have their babies beside them: when this is done "with simple precautions not only is the danger of neonatal infection less than it otherwise would be, but breast feeding and the relationship between mother and child are firmly and safely established in a physiologically natural manner."⁴

The most dangerous of the commoner types of neonatal infection are pneumonia and epidemic diarrhoea; but even "minor" infections such as conjunctivitis, septic spots on the skin, and the common cold are liable to develop into more serious infections, and are a source of danger to other infants. The pathologists of the two maternity hospitals mentioned in the Report considered that at least 30.7% and 16.1% of the total neonatal deaths in their hospitals were due to infection. These conclusions are in line with an earlier report by J. N. Cruickshank,⁵ who in a survey of 800 neonatal deaths in a maternity hospital found that 29.75% were caused by infection. Premature infants, and those who suffer an injury at birth or neonatal asphyxia, are especially liable to fall victims, and the infection may then be a terminal complication. The clinical recognition of some types of neonatal infection presents difficulties, which probably accounted for the fact that in the two series of cases

² *Arch. Dis. Childh.*, 1943, 18, 62, 159.

³ *Proc. roy. Soc. Med.*, 1946, 39, 383.

⁴ *Spence, J. C., British Medical Journal*, 1947, 1, 125.

⁵ *Med. Res. Cncl. Sp. Rep. Ser.*, No. 145, 1930, London.

mentioned above the diagnosis was made during life in only 16.1% and 17.6%, respectively. There is, however, a general feeling among paediatricians that the higher figure is a more accurate estimate of the prevalence of neonatal infection in institutions.

Other subjects which receive consideration are the importance of breast feeding; the value of mothercraft instruction, and of better co-operation between hospital, health visitor, and family doctor; the paediatric staffing of maternity hospitals; record keeping and annual reports; the milk kitchen; and the prevention of infection when artificial feeding is essential.

SURGERY OF THE GALL-BLADDER

It is a salutary if somewhat humiliating thought that in spite of the advancement of surgery the gall-bladder continues to present many unsolved problems. Thanks to a combination of more accurate diagnostic methods, more detailed planning of pre-operative treatment, improved technique, and the development of preventive measures against post-operative complications, the mortality of gall-bladder operations has fallen in a period of 20 years from about 4% to 1% or less. Nevertheless, there is still no agreement on whether a gall-bladder should be removed from the fundus downwards—as recommended by such a sound and experienced surgeon as Allen,¹ of Boston—or from the ducts upwards. The latter method is that usually taught in this country—the former probably the more commonly practised. On page 11 of this issue Love describes a refinement of cholecystectomy based on the partial removal of the gall-bladder, combined with electrocoagulation of the residual strip left on the liver bed, which he terms diathermy dissection. This procedure allows the raw area of the liver bed to be covered either directly by peritoneal flaps or by a pad of omentum or falciform ligament. If this effects, as is claimed, sufficient sealing of blood and bile vessels to prevent post-operative drainage there is no doubt the consequent avoidance of chest complications would render cholecystectomy a safer procedure.

The author's account in the same article of an abnormal duct from the gall-bladder to the liver draws attention to the well-known multiplicity of variations in the anatomical arrangement of the bile ducts and accompanying vessels, which, combined with difficulty of access, makes the more mechanical side of gall-bladder surgery so difficult. The recent spate of articles on repair of damaged bile ducts is unfortunately not all the result of war injuries. Here again the many ingenious methods of anastomosis described show that no general agreement prevails. Another important practical consideration arises from Love's article: should the common bile duct be opened as a routine during cholecystectomy or not? The pendulum appears to be swinging towards a more conservative approach to this problem, and most surgeons would probably consider a routine cholechohogram during operation an unnecessary procedure.

Battles are still being fought over the aetiology of cholelithiasis. The advocates of stasis and infection have recently met a doughty opponent in Robertson,² of the Mayo Clinic, who has produced a convincingly argued hormonal (sex-hormone) theory for gallstone formation. The contribution from Majoor and Suren on page 8 of this issue exhibits another aspect of this evergreen subject and may throw light on it. These Dutch workers, collecting their information during the difficult days of the

"occupation," draw their interesting deductions from their post-gastrectomy cases, in some of which gallstones have developed within six months to three years after operation. Their surmise that the interruption of normal duodenal flow leads to such changes in biliary physiology that cholesterol is precipitated in abnormal quantities has both practical and theoretical significance. The biliary apparatus and its contents—physiological and pathological—still offer a wide field for research.

ANTISEPTIC TREATMENT

It is a source of enduring wonder to anyone who has followed the development of bacterial chemotherapy in the past fifteen years that the major forms of septic infection can now be treated more successfully than the minor. In the presence of a spreading cellulitis or septicaemia the indications for treatment are clear, and the results almost uniformly good. On the other hand, local septic infection, whether in a wound or elsewhere, cannot be overcome with anything like the same facility by the same or any other means. There are several reasons for this, among them the frequent presence of penicillin-resistant types of bacteria, such as Gram-negative bacilli, the relative inactivity of sulphonamides in wound exudates, and the relative inactivity of the bacteria themselves, their susceptibility to either of these agents being greatest only during active multiplication. Used intelligently, and only in the presence of susceptible infection, penicillin is of course an ideal antiseptic, but it is by no means applicable to every case, and the search continues for some other agent which will fill the gap left by its deficiencies.

A very considerable variety of antiseptics is still being experimented with, and to judge by the present literature on the subject the field is as open as it was fifteen years ago, though there is now a much firmer conviction that such treatment, properly applied, can be effective. Most of this literature is American, and it deals with almost every conceivable type of substance except the acridines. It is not easy to understand why workers in the U.S.A. disregard proflavine and the newer compounds such as 5-aminoacridine, the use of which for combating sepsis has received strong support from sources in Great Britain, the British Army, and Australia. It would be interesting if the mixture¹ or compound² of proflavine and sulphathiazole which has found favour here were included in some of the trials now proceeding in the U.S.A. An example of this type of work is that described by E. L. Howes,³ who submitted various antiseptics first to tests for toxicity, which included addition to tissue cultures, application to the eye, intramuscular and intraperitoneal injection, and observations on effect on wound healing. Zephiran, parachlorophenol, and tyrothricin were eliminated from further trials as being too toxic. The substances surviving this stage were penicillin, streptomycin, and "sulfamilon" (better known as "marfanil"). These were submitted to tests of bactericidal activity and finally to clinical trial for wound treatment.

The technique employed for testing bactericidal activity in the presence of blood was the application of the antiseptic solution on a piece of filter paper for ten minutes to a heavily inoculated blood agar plate previously incubated for three hours. This method is open to criticism, because its results do not reflect capacity to kill various species of bacteria within ten minutes, as the author appears to suggest, but rather diffusibility into the medium and subsequent bacteriostatic action. As judged in this way

¹ *Ann. Surg.*, 1945, 121, 412.

² *Surg. Gynec. Obstet.*, 1945, 80, 1.

¹ McIntosh, J., and Selbie, F. R., *Lancet*, 1944, 1, 591.

² McIntosh, J., Robinson, R. H. M., and Selbie, F. R., *ibid.*, 1945, 2, 97.

³ *Surg. Gynec. Obstet.*, 1946, 83, 1.

penicillin failed against Gram-negative bacilli and streptomycin against streptococci, but "sulfamylon" inhibited all species of organisms tested. The upshot of all these tests, together with some clinical trials, was to place "sulfamylon" first in order of merit, streptomycin second, and penicillin third, with a recommendation that the first two be used in combination.

Tyrothricin is the subject of an extensive clinical study by D. D. Kozoll and others,⁴ who illustrate the effects of applying it as a wet dressing to septic wounds: some of these were conveniently bilateral, one side being treated and the other used as a control. The results in coccal infections were good; the growth of diphtheroids and *Ps. pyocyanea* appeared to be "encouraged." E. A. Brown and his colleagues⁵ introduce a solution of carbamide peroxide in glycerine, which they propose to call "thenardol" after J. L. Thénard, the discoverer of hydrogen peroxide, as an antiseptic for various types of local infection. The main evidence presented in this paper comprises tests by the agar cup technique, a proceeding which does not in itself carry conviction even of potential *in vivo* activity, but favourable clinical results are also briefly mentioned.

POLLEN ALLERGY

Reports of air-borne allergens causing dermatitis have appeared from time to time since 1918.⁶ Such allergens may give rise to a contact dermatitis or, if inhaled, to an atopic dermatitis. Pollens are especially suitable for investigation as possible causes, since they are potent allergens and the times of their seasonal occurrences are known. Rowe in 1937⁷ presented statistical data on 30 cases of allergic (atopic) dermatitis in which inhalant allergy was the chief or only cause, pollens being the dominant influence in 27. More recently Rowe⁸ has described for the first time 6 cases of atopic dermatitis (eczema) of the hands as the sole or major manifestation of inhalant pollen allergy. He found 16 such cases out of 180 of atopic dermatitis of the hands that he has studied during the last eight years. The rash usually occurs on the backs of the hands and on the backs and sides of the fingers, less often on the palms and round the wrists. It is usually bilateral and fairly symmetrical. Often after the dermatitis of the hands has recurred for several years other areas of the skin—the face, the neck, the extremities, and very occasionally the body—may become involved. Rowe points out that, in all cases of clinical allergy, the only evidence of sensitivity may be that obtained from the history, the onset or aggravation of the rash during the pollen season being especially suggestive. The skin tests may or may not be positive; treatment confirms or disproves the diagnosis. Other causes such as other inhalants, drugs, and foods must be excluded, as must the so-called "id" reactions and especially contact dermatitis.

The treatment is perennial desensitization with minute doses of all the pollens encountered during the months when the dermatitis persists, usually using 20 to 50 types. Since the skin tests do not indicate which pollens are the cause of the eczema, all the possible causative pollens are included in the desensitizing solution in order to be certain of including the offending ones. The initial dose is 0.1 ml. of an extract varying in dilution from 1:5,000,000 to 1:5,000,000,000. Injections are given every one to three days. An increase of the itching and dermatitis usually indicates an excessive dose, while with proper dosage there

is a decrease of the rash and the itching in two to three weeks. When there is a distinct improvement the dose can be gradually increased, especially after the pollen in the air has decreased. The dermatitis of the hands in the cases recorded had existed from 3 to 18 years, with an average of 9.3 years. Satisfactory results were obtained in all 6 cases. Rowe appears not to have used inhalation to test any of his patients, and we wonder whether this might not have given a clearer indication of sensitivity than the skin tests. However, his studies are of considerable interest in this most difficult field, and his previous contributions to clinical allergy are such that his views merit the most careful consideration.

SUNFLOWER-SEED PROTEIN

The sunflower, though grown in this country mainly for decorative purposes, is in many parts of the world a valuable source of food. The seeds are rich in oil, which is edible and readily extracted. The residual meal contains up to 50% of proteins, and should therefore be a valuable food for livestock if its constituent amino-acids are such as to endow it with a high biological value. Doubts on this point were recently expressed by Day and Levin,¹ who concluded that sunflower meal is more important as a source of the vitamin B complex than of protein. In support of this view the biological value of the protein was found by Mitchell, Hamilton, and Beadles² to be inferior to that of the soya bean, and in the same low class as that of oats, wheat, and barley. Block and Bolling, however, agreed with Grau and Almquist⁴ in claiming that the amino-acid analysis of the meal compares very favourably with that of beef muscle. Which of these conflicting views was to be believed? Experiments to clear up this point have now been reported by Grau and Almquist.⁵ In this work the growth rates of chicks given South American sunflower meal as a source of protein were compared with the rates of others given casein or sardin meal. As a result the sunflower meal was found to be fully equal to these excellent sources of protein. Its biological value, moreover, was not improved by adding lysine—an amino-acid which is deficient in many cereal and oil-seed proteins. When given at a level equivalent to 20% of protein in the diet the sunflower meal was satisfactory as a complete source of amino-acids for the young chick.

If these results are duly confirmed the sunflower must rank high in nutritive value, particularly among vegetable foodstuffs. In a practical way its excellence has already been recognized in Soviet Russia and other parts of the world, where it is grown in large quantities. In our own country, however, its value as a possible alternative to more familiar crops must obviously depend not only on the food value per unit weight of seed but on numerous other factors, including the yield of seed per acre. Whether sunflowers deserve more attention than that already given by the backyard poultry-keeper, and could profitably take the place of other crops in well-tilled soil, is a question which only the expert agriculturist can decide. A plant which yields both oil and good quality protein, and which does not require tropical warmth or moisture for its cultivation, is, however, certainly worth intensive investigation. The plant-breeder should inquire into the possibility of evolving improved strains with larger seeds and higher oil content. The colonial administrator should not neglect the possibilities of the sunflower when faced with unpromising soil which is unsuitable for other crops.

¹ *Surg. Gynec. Obstet.*, 1946, 63, 323.

² *New Engl. J. Med.*, 1946, 243, 468.

³ Walker, I. C., *J. Amer. med. Ass.*, 1918, 70, 897.

⁴ *Clinical Allergy*, 1937, Baillière, Tindall and Cox, London.

⁵ *Arch. Derm. Syph.*, 1946, 53, 437.

¹ *Science*, 1945, 101, 438.

² *J. Nutrit.*, 1945, 29, 13.

³ *Arch. Biochem.*, 1945, 6, 277.

⁴ *Ibid.*, 1945, 6, 287.

⁵ *Proc. Soc. exp. Biol. N.Y.*, 1945, 60, 373.

THE FOUNDLING HOSPITAL CHILD WELFARE SCHEME

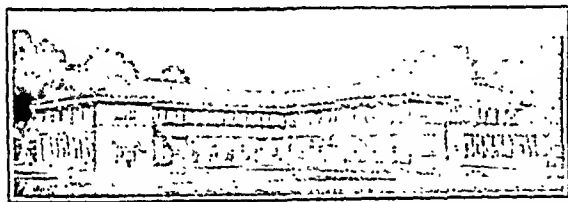
BY

D. H. GEFFEN, M.D., D.P.H.

M.O.H., Metropolitan Borough of St. Pancras

In the early part of the 18th century a certain Capt. Thomas Coram travelled the seas in the Merchant Navy, and during his voyages he was so shocked at the sight of the deplorable conditions under which children were living that he determined when he retired to do something to better their lot in his own country. In 1739 he found the means to achieve his purpose and in 1741 he rented a house in Hutton Gardens for destitute children. In 1745 he completed the building of the Foundling Hospital in Brunswick Square. Hogarth was one of the earliest governors and Handel was also a benefactor. Many will remember this building, which was pulled down within the last few years. It had charm of design and was one of the remaining features of early 18th century London. It was not, however, entirely suitable for the care of children. In 1926 the governors sold the site and buildings and moved temporarily to Redhill, later finding their permanent home at Berkhamsted.

Much controversy ensued on the future of the Brunswick Square site, and at one time it appeared as though St. Pancras would lose this open space, which would be utilized for building purposes. It was largely due to the efforts of Mrs. G. M. Trevelyan that nine acres of the area were made available as playing fields, and the governors were able to repurchase 100,000 sq. ft., to be known as Coram's Gardens, which they determined to use for the benefit of young children. They erected a residential nursery and a day nursery (see Fig.) for



children of the neighbourhood as a memorial to Capt. Coram on the site where he built the original Foundling Hospital, and together with these a model nursery school for some 80 children with a series of large rooms for the instruction of pupils in the care of babies and children. All the arrangements for the residential and day nurseries and the nursery school are ideal, providing ample playing space, a southern aspect, hygienic walls and floors, the most modern toilet arrangements particularly suited to young children, and window space of ideal proportions in a building of beautiful design.

When all these preparations were completed the war broke out in 1939, and it was decided that London was unsuitable for keeping a large number of children together in an area likely to be attacked by enemy action. The premises were requisitioned by the St. Pancras Borough Council and used as a rest centre, in which capacity they were of inestimable value. A year or two later, however, the need for day nurseries in London became of paramount importance to enable women to work. By arrangement with the governors the ground floor of the residential nursery was utilized by the St. Pancras Borough Council as a wartime day nursery, and the governors made available to the Council their furniture and equipment. At the end of the war it was possible to derequisition that part of the premises used as a rest centre, and in due course the nursery school block was opened and is now administered by the St. Leonard's Nursery School Committee with the help and support of the governors.

The next development was the need to find residential accommodation for babies, and by arrangement with the St. Pancras Borough Council the first floor of the day nursery has been made available for this purpose. A scheme has been agreed between the governors of the Foundling Hospital and the St. Pancras Borough Council whereby there shall be one matron, one doctor, and one kitchen staff for both the day and the residential nurseries, but the nursing staff will be separate. It

is hoped that within a matter of weeks the residential nursery will be open and receiving its first young residents. There will then be on the site a day nursery, a residential nursery, a nursery school, and teaching quarters ideal in design and efficiency.

Teaching Centre

It became obvious that here was not only an opportunity for caring for young children by the many means now considered appropriate, but an excellent opportunity for teaching, for over the road is the Great Ormond Street Hospital for Sick Children with the Nuffield Institute of Child Health, and nearby is the London School of Hygiene and Tropical Medicine, both bodies keenly interested in teaching child welfare to doctors from both Britain and the Empire. The friendly help of Col. Nichols, secretary of the Foundling Hospital, made it easy for Prof. Alan Moncrieff, as Director, and for me, as lecturer on Public Health at the Institute of Child Health, to place a plan before the governors to complete their scheme for the care of children.

We suggested that the war-damaged building originally used as a canteen and later as a laundry should be repaired and converted to form a maternity and child welfare centre, with ultimate provision for a minor ailment clinic for school-children. A tentative ground plan was prepared by the architect. At this stage the governors are prepared to carry out the work to convert this derelict building into a maternity and child welfare centre provided the local authority will be responsible for its maintenance, staffing, and upkeep.

The governors of the Foundling Hospital placed this proposition before the St. Pancras Borough Council, and it received their immediate and whole-hearted support. The scheme links the governors' welfare work on the Foundling site with local authority activities and co-ordinates it with the Institute of Child Health at Great Ormond Street Hospital. It is anticipated that the staffing of the welfare clinic, and possibly even of the residential nursery, may in due course be carried out in conjunction with that hospital. In addition, this site would provide a training ground for postgraduate teaching at the Institute of Child Health for doctors studying for the Diploma in Child Health and for nurses as well. Co-operation already exists between the Institute and the St. Pancras Borough Council, for the medical officer of health of St. Pancras is lecturer at the Institute, the assistant medical officers of the Council are external tutors, and there is interchange of staff between the Institute and the Council's welfare medical officers—a scheme suggested in the report of the British Paediatric Association. This proposal to build a welfare centre will be placed before the Ministry of Health for approval and will be considered by them in conjunction with the L.C.C., which is the new health authority and will be responsible for child welfare in the near future.

Associated with the child welfare activities of the governors on this site there exist the residential schools at Berkhamsted and homes which they are administering for the care of women and children. Furthermore, a large area adjoining the site has been scheduled for the erection of one of the L.C.C.'s new schools, and the St. Pancras Borough Council has acquired many acres on which it has already begun to build blocks of modern flats. If this scheme is adopted there will be on this site and in the vicinity modern flats, a modern school, a nursery school, a residential nursery, a day nursery, a maternity and child welfare centre, a school clinic (possibly with a dental clinic), a swimming pool, nine acres of playing fields, and perhaps one of the clinics envisaged in the new Act for general practitioners—and this in the heart of London and in the centre of London's teaching district. It will indeed be a centre of health and health teaching, and an example of the finest type of co-operation between the Government, local authorities, teaching bodies, and voluntary associations.

The Board of Registration of Medical Auxiliaries has recently published the seventh edition of its *National Register of Medical Auxiliary Services*, which gives the names and addresses of persons engaged in work ancillary to medical science and practice. Medical practitioners may obtain a copy free from the Registrar, Board of Registration of Medical Auxiliaries, Tavistock House North, Tavistock Square, London, W.C.1.

BARTHOLOMEW MOSSE

FOUNDER OF THE ROTUNDA HOSPITAL

Next week the Rotunda Hospital is celebrating its bicentenary. An International Congress of Obstetricians and Gynaecologists will discuss such subjects as puerperal sepsis, eclampsia, and obstetric shock. There will be receptions, dinners, and sherry parties. Ireland always does these things well, and Dublin outstandingly so. According to Oliver St. John Gogarty, Dublin is "a state of mind," but it is a state of mind best appreciated within easy reach of O'Connell Street.

In the course of the celebrations, which the war prevented being held in 1945, the Congress will hear addresses by Mahfouz Pasha, from Egypt; Prof. Bernhard Zondek, from the Hadassah Hospital in Jerusalem; and many distinguished guests from the U.S.A., France, Belgium, Scandinavia, India, South Africa, Australia, Canada, and Great Britain. These and other notable visitors will in their turn be sure to hear some mention of Bartholomew Mosse. They will see his bust in the front hall of the Rotunda Hospital and the portrait which hangs in the board room. There is also an engraving, here reproduced, which he signed and which is in the possession of the Royal College of Physicians of Ireland.

Curran (1945) says that "Dr. Mosse was a man of quite unusual initiative," and that he showed "a magnificent recklessness . . . in the way he risked his reputation and personal fortune in his philanthropic venture." O'Donel Browne (1947), whose recent book is reviewed elsewhere in this issue (p. 17), pays tribute to "his dauntless courage and clear vision." Kirkpatrick in his book, and more recently (1945), has described how Mosse "boldly embarked on his great design." These three authors have told, from different points of view, the history of the Rotunda Hospital.

For the first full account of its remarkable founder it is necessary to go back to an unsigned article published in the *Dublin Quarterly Journal of Medical Science* at the time of the hospital's centenary. Its opening sentences could not, and should not, be paraphrased.

"Men will labour diligently for their own advancement, either directly or indirectly, and will even contribute liberally to the relief of distress; but how seldom do we see an individual devoting his time, his talents, bodily and mental labour, and his wealth, to the sole purpose of raising up an asylum for the relief of suffering, and, at the same time, for the improvement of his own profession, without the prospect—nay, we may say, without the possibility—of an adequate reward? And yet this was what was done, simply and without display, and, as will appear by the following memoir, under circumstances of unparalleled difficulty, by the founder and builder of the Lying-in Hospital in this city."

Early Days

The Rev. Thomas Mosse, rector of Maryborough, Queen's County, gave his son, Bartholomew, who was born in 1712, a "genteel education." The young man was then apprenticed to John Stone, a Dublin surgeon. By the time he was 21 Bartholomew Mosse was said by the Surgeon-General to be "very well qualified to practise the art of surgery." For a while he had medical charge of men "drafted from Ireland to complete the regiments in Minorca," and later he studied midwifery in England, France, and Holland. Returning to Dublin,

he was admitted a licentiate in midwifery of the King's and Queen's College of Physicians on May 22, 1742. A year later he married his first cousin, Jane, a daughter of the Venerable Charles Whittingham, Archdeacon of Dublin. His first wife had died childless in 1734.

"In the course of his practice charity often demanded his assistance; and he hath often declared, that the misery of the poor women of the city of Dublin, at the time of their lying-in, would scarcely be conceived by any one who had not been an eye witness of their wretched circumstances; that their lodgings were generally in cold garrets open to every wind, or in damp cellars, subject to floods from excessive rains; destitute of attendance, medicines, an often of proper food, by which hundreds perished with their fruit infants.

"These distresses excited his compassion, and he resolved no longer to delay his endeavours to establish an hospital for poor lying-in women. Having communicated this humane and charitable

intention to a few particular friends who highly approved of his scheme he took a large house in George Lane, which he furnished with bed and other necessities, and opened the same on the 15th of March 1745, continuing to support chiefly at his own expense, and constantly attending it in person until the apparent usefulness of induced several well-disposed persons to encourage the undertaking by benefactions and yearly subscriptions, which encouraged him to enlarge his plan."

It was obvious that any enlargement would cost a great deal of money. Mosse proceeded to raise the money by "plays, lottery schemes, concert oratorios, etc.;" and we mention that he brought over Castrucci, the last pupil of Corelli, as an attraction to the concerts." It should perhaps also be mentioned that the first play arranged by Mosse for the benefit of the Lying-in Hospital was *The Conscious Lovers*. In August, 1748, he had a lease of £70 a year of the present site and a plan for a new hospital. The original Dublin Lying-in Hospital for Poor Women in existence had dealt with 3,900 deliveries at a total cost



Bartholomew Mosse

£3,913 13s. The maternal death rate was slightly more than 1%, the stillbirth rate 1 in 34, and the neonatal death rate 1 in 17. On the new site "he first, at the risk of his whole fortune, laid out and furnished a garden, with an orchard, coffee-room, and decorations, for the entertainment of the public in the manner of Vauxhall, near London, whereon he expended about £2,000. He then employed a band of music and soon found his expectations fulfilled by a constant resort of company during the summer season which produced near £400 annually."

The New Hospital

The foundation-stone of the new hospital was laid by the Lord Mayor of Dublin on June 4, 1751. At this time, in his own words, Mosse was "barely worth £500" and well aware that the hospital would cost £20,000. So he promoted a lottery and sold many tickets, but "the Lords Justices would not allow the drawing." He went to London with a similar project in mind, and "his enemies raised many scandalous and fresh reports giving out that he had absconded for debt and could never return." Another lottery caused further difficulties and ended in his arrest at Holyhead. Nothing daunted, Mosse escaped through a window, persuaded two boatmen to take him some distance away, and "remained in a poor cabin on the wild mountains of Wales for some weeks before he would venture home."

Despite these and other difficulties the building of the new hospital proceeded. Though not completed, it was opened on Dec. 8, 1757, and immediately admitted "fifty-two poor women, great with child, who attended in the hall with proper certificates for admission, and were all decently clothed in uniform at the expense of the hospital, each in a blue calimanco gown and petticoat, shift, handkerchief, cap, and apron." The Round Room, whose name has gradually passed to the hospital itself, had yet to be built, but Mosse was a sick man.

"Having greatly impaired his health by intense study and application of mind, by his close attention to the business of the hospital, by constantly superintending the building, and by several fatiguing journeys to London, to forward his schemes, he did not long enjoy the pleasure arising from the success of his labours, for he grew so ill in the beginning of the winter of 1758, that he was obliged for the most part to confine himself to his chamber. Several physicians attended him, but, finding all their endeavours ineffectual, they advised him to return into the country. On this occasion Alderman Peter Barre made him the kind offer of his house at Cullenswood (about a mile from town), which the Doctor readily accepted; and there, on the 16th of February following, he departed this life in the 47th year of his age, and was interred at Donnybrook, leaving the new hospital a monument to posterity of his surprising perseverance, diligence, and ingenuity, and indeed one of the most superb architectural ornaments of the great and elegant city of Dublin."

Bartholomew Mosse was followed as Master by Fielding Ould. In a brief lifetime he succeeded in accomplishing what he set out to accomplish.

We are indebted to the Royal College of Physicians of Ireland for permission to reproduce the engraving of Bartholomew Mosse

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SEPTCENTENARY OF BETHLEM

Bethlem mental hospital, which was discussed in these columns last week (June 28, p. 935), celebrated the 700th anniversary of its foundation on June 28. A commemoration service was held in the Lady Wakefield Chapel, conducted by the Bishop of Croydon and attended by the Lord Mayor of London as senior governor. The association of Bethlem with the City of London was further emphasized at a luncheon when the principal speech was made by Mr. Ralph Assheton, Member of Parliament for the City, who, recalling the fact that Bethlem began its existence in the reign of Henry III as a monastery, said that formerly the physician of the soul and the physician of the body were often one and the same person, and suggested that the separation of these functions which modern science had brought about was in many respects unfortunate. Sir Arthur Rucker, deputy secretary of the Ministry of Health, responded for the guests. Later in the afternoon a garden party in the grounds of the hospital was attended by H.M. Queen Mary, who planted a tree to mark the occasion. Demonstrations were given in the occupational therapy department and in the Lord Wakefield treatment and research unit. The visitors included many psychiatrists from various parts of the country.

CLINICAL TRIALS OF STREPTOMYCIN

Doctors in southern England, including the London area, wishing to propose cases of acute military tuberculosis or tuberculous meningitis for admission to a Medical Research Council trials centre for streptomycin treatment should, from July 4, make their request through the Emergency Bed Service, London (Monarch 8515: day and night service). The Service will be kept fully informed of the number and type of cases which can be admitted to each centre, and where a bed is available will direct the inquiry to the appropriate medical officer. It should be emphasized that the number of cases which it will be possible to admit for treatment during the period of the present tests is still limited. Trials of streptomycin in tuberculous meningitis in children aged up to 8 are also being made, under the Council's authority, at the Alder Hey Children's Hospital, Liverpool, and the Royal Hospital for Sick Children, Glasgow, as was indicated in a recent annotation (June 7, p. 814).

DR. ANGELUS

A NEW PLAY BY JAMES BRIDIE

The work of a medical playwright always holds a special interest for his colleagues. James Bridie's new play, *Dr. Angelus*, was given its first performance in Edinburgh last week. Ranging over the medical curriculum, Bridie has shown us the romance of the dissecting-room in *The Anatomist* and, while the clergyman slept, has drawn in heroic lines the drama of the laboratory and tilted at some theories of eugenics. *Dr. Angelus* takes us through the medium of the far-from-chromium-plated consulting-room of a Glasgow general practitioner (of Edinburgh training) into the realms of psychopathology. This eccentric gentleman successfully murders his mother-in-law and his wife on the entirely logical grounds that women of their mediocre intellectual and other qualities are a handicap to the full development of his capacities and are at the same time insured for useful sums of money. This he accomplishes by the simple expedient of persuading them that they are ill and "treating" them with spectacular doses of antimony. As part of the "build-up" designed to prevent any unenlightened interference with his plan he takes into partnership an earnest and simple-minded young Englishman, a product of Durham University and St. Thomas's Hospital, and cajoles him into signing the death certificates. As a further precaution he calls in, at a last-minute consultation, Sir Gregory Butt, whom he endeavours to deceive with details of careful clinical investigation and an appearance of affectionate solicitude, albeit perfunctorily and contemptuously, since he shrewdly guesses that worldly considerations will ensure that Sir Gregory will take none but evasive action in the face of a very fishy and unsavoury business. In the end his schemes suffer the frequent fate of those of mice and other men. Fate steps in, taking the shape of the Glasgow C.I.D. and a lady patient, who conceives a dislike for Dr. Angelus and an affection for the young doctor, largely because he recites the Hippocratic Oath to her at the psychological moment. Mrs. Corcoran, the patient, happens most inconveniently to be the wife of an insurance agent.

These contrivances provide full scope for the familiar pawky satire. The poor young Sassenach, Dr. Johnson, barely misses an abrupt and early termination to his career by innocently telling Sir Gregory Butt that his experience in Glasgow has not impressed him with "provincial medicine." The pompous, sanctimonious humbug that is the outward sign of the Angelus megalomania provides a whole rack of pegs on which to hang verbose latinity. The mother-in-law is not "dying" but "hovering on the brink of dissolution." The acting of every one of the small cast of eight is of a high order. Mr. Alistair Sim, one fancies, may well have been in the author's mind when he wrote the play. The appearance, gestures, and diction which gave such a fascinating twist to the parts of the detective in the film *Green for Danger* and the author in *Hue and Cry* are turned to good account in portraying the unctuous insincerity of Dr. Angelus. The one really dramatic incident in the play occurs almost at its end when Angelus is trapped and arrested, and Mr. Sim rose to it magnificently. The dawning realization by the maniac that the whole concept of a super-intelligence mastering Fate was but an illusion, finally shattered by a pair of handcuffs, is brilliantly acted. It reflects in no way on the other members of the cast to mention the admirable performance of Mr. George Cole as young Dr. Johnson and that of Mr. Archie Duncan in the smaller part of the police inspector, more representative perhaps of Scotland than of Scotland Yard.

The play, which is first-class entertainment, is described in the programme as a "psychological thriller." How the author regards it is not easy to guess from his whimsical reference to it in a first-night speech as "this wholesome little play." One suspects parody. However that may be, its main appeal is cerebral and not thalamic, and those who go expecting flesh-creeping thrills will be disappointed. The doctor who sees it will appreciate the professional touch in the clever and subtle picture of a psychopathic type and the not too unkindly flits at the foibles he often notes in his colleagues.

Nova et Vetera

PAEDIATRICS FOUR HUNDRED YEARS AGO

Those who have followed the latest development and plans in paediatrics and child health may find it enlightening to study a work on children's diseases first published in 1545. It is *The Regiment of life, whereunto is added a treatise of the pestilence, with the Booke of children*, by Thomas Phaier. Like Shakespeare's, the name has several variations. Sir Frederic Still in his *History of Paediatrics* gives the following: Phaer, Phayer, Phayre, etc. The volume from which these extracts are taken is a later edition which is in the medical library of Bristol University. It is stated on the title page to be, "newly corrected and enlarged," and was "Imprinted at London, by Ihon Kyngston and Henry Sutton, dwelling in Paules Church-yard. Anno Domini 1553." It is the first work on paediatrics written by an Englishman, and one of the first medical books to be published in English. The author finds it necessary to apologize for not using Latin:

"But my purpose is here to doo them good that have most neede, that is to saye children: and to shewe the remedies that God hath created for the use of man, to distribute in englyshe to them that are unlearned parte of the treasure that is in other languages, to provoke the [them] that are of better learning, to utter their knowledge in suche lyke attempts: fynally to declare that to the use of many, whyche oughte not to be secrete for lucre of a fewe.

I intend in this boke . . . to treate only of the thyngs necessary, as to remove the sicknesses, wherewith the tender babes are oftentimes afflicted, and desolate of remedye, for so much as many do suppose that there is no cure to be ministred unto the by reason of their weakenes. And by yr [their] wayne opinion, yea rather by a foolish feare, they forsake many that myght be well recovered, as it shall appeare by the grace of God hereafter in this lytl treatyse, when we come to the declaration of the medicines."

Phaier strongly advocates breast-feeding, not only on his own account but also as a part of traditional wisdom.

"The Poet Virgyl . . . being thoroughly expert in the priuities of nature understode right wel how great an alteracion everyting taketh of the humoure by whiche it hath his alymente and nourishing in the youthe: whiche thing also was considered and alleged of many wyse Philosophers: Plato, Thophrastus, Xenophon, Aristotle, and Plinie, who did al ascribe unto the nourcement as muche effect or more, as to the generation. . . .

Wherefore as it is agreeing to nature, so is it also necessary and comly for the own mother to nource the owne child. Whiche if it maye be done, it shall be moste commendable and hoisome, if not ye must be well advised in takyng of a nource, not of ill complexion and of worse maners: but suche as shalbe sobre, honeste and chaste, well fourmed, amiable and chearefull, so that she may accustome the infant unto mirth, no dronkarde, vicious nor fluttyshc, for suche corrupteth the nature of the chylde."

His "Remedies appropriate to the encreasing of milke in brestes" are very much like the formulae of some of the modern proprietary lactagogues:

"Parsneppe rotes, and fenelle rotes, sodden in broth of chickens, & afterwarde eaten with a little fresh butter." Or, "The poudre of earth wormes dried and dronken in the brothe of a neates tongue." "These thynges have propertie to augment the milke, dylle, anyse seede, fenelle, cristal, hore-hounde, fresh chese, hony, lettuse, beetes, myntes, carette rotes, parsneppe, the dugges or udder of a cowe or a shepe, goates milke, blaunched almondes, ryce porrage, a coves toungue dried and made in poudre, potched egges, saffron, and the uice of roasted yeale dronken."

The list of diseases mentioned is fairly comprehensive:

Apostumes of the brayne, Swellyng of the head, Scalles of the head, Watchyng out of measure, Terrible dreames and feare in the slepe, the falling evyll called in the greke tonge epilepsy, the Palsey or shakyng of members, the Crampe or spasmus, Styfnesse of limmes, Bloud-shotten eyes, Wateryng eyes, Scabbynesse and yche, Disease in the eares, Neasing out of measure, Bredyng of teeth, Canker in the mouth, Quinsie, or swellenge of the throte, Cough, Streynesse of wynde, Feblenesse of the stomake and vomiting, Yeaxing or hicket, Colyke and rumbling in the guttes, Fluxe of the belly, Stopping of the belly, Wormes, Swellyng of the navill, the Stone, Pyssyng in bedde, Brustyng, Fallyng of the fundament, Chafyng of the skynne, Smal pockes and measilles, Feuers, Swellyng of the coddess, Sacer ignis or chingles, Burnyng and scaldyng, Kybbes, Consumption, Leanenesse, Gogle eyes.

Many of his descriptions reveal a keen observation, for instance:

"Of Wormes. There be divers kinds of wormes in the belly, as long, short, round, flat, and some small as lice. . . . In the long & rouid the paciēt commonly hath a drie cough, paine in the belly and about ye guttes, somtyme yeaxing [hiccough], and trembling in ye nighte, & starte sodainly and fal aslepe agayne, other whiles they gnasshe and grynd their teeth together, the eies waxe hollowe with an eygre loke, & have great delyte in slombring and silence, very loth when they are awaked. . . . Many have but small desyre to meate, and when they desyre they eate very gredelye . . . the hole body cōsumeth and waxeth lcanne the face pale or blew: somtyme a fluxe, sometimes vomite and in some the bellye is swollen as stiffe as a taberet.

The long and brode wormes are known by the signs that is to say yellownesse or whittishnesse of the eyes, intollerable hunger, great gnawynge and grypyng in the belly, specially after meate, water commyng out at the mouth, or at the fundament, continuall yche and rubbing at the nosethrilles, sonken eies and a stinkyng breath, also when the person doth his easement there appeareth in the donge litle flat substances muche like the seedes of cucumers or gourdes.

The other lesser sorte are engendred in the great gutte and may well be known by the excedyng yche in the fundament within, and are oftentimes sene commyng out with the excrementes: they be called of phisicians ascarydes."

The treatments recommended are scolitabotan² or herbe coralline, gall of a bull, colocinch, aloes, and wormeseede.

Again, of Chafyng of the skynne: "In the flankes, arme-holes and under the eares, it chaunceth oftentimes that the skynne fretteth either by the chyldes owne uryne or for the defeaute of wasshyng or els by wrapping and keeping to hote." Of "Watching out of measure," or sleeplessness, Phaier says:

"Slepe is the nouryshment and foode of a sucking child, and as much requisite as ye very teate, wherefore whā it is deprived of the naturall rest, all the hole body falleth in distemper: cruditie and weakenes, it procedeth commonly by corrupcion of the mylke, or to muche abundance, whiche overladeth the stomake, and for lacke of good dygestion, vapours and fumes aryse into the head, and infect the braine, by rason wherof the child can not slepe, but turneth and vexeth it self wth crying."

The treatment which he recommends would not find favour nowadays: "If you can gette any syrupe of popye, geve it to the chylde to lick . . . also an oyntment made of seede of popy and the heades." Of Terrible dreames and feare in the slepe:

"Oftentimes it happneth that the chylde is afraid in ye slepe, & somtymes waketh sodainly, & sterreth, somtymes shrieketh and trembleth, whiche effect commeth of the arysing of stynkyng vapours out of ye stomake into the fantasie, and senses of the brayne." The prevention of this: "take hede that the chylde slepe not with a full stomake, but to beare it about wakyng, tyl part bee dygested, and whan that it is layde, not to rocke it muche for overmuch shaking letteth digestion and maketh the childe many tymes to vomite."

Other treatments are, for Brustyng (i.e., hernia), caused by "greate cryeng and stoppyng of the breath, byndyng to straighte, or by a fall or of to greate rockyng and such like . . . the guttes fall downe into the cod, which if it be not utterly incurable, may be healed after this forte. First laie the pacient so upon hys backe, that his heade maye be lower than his heeles, than take and reduce the bowles with your hande into the due place, afterwarde ye shall make a plaister to be layde upon the coddess, & bounde with a lace roun about the backe."

Fallyng of the fundament: "The gut called of the latine: rectum intestinum, falleth out at the fundament, and can not be gotten in agayne without peine and labour . . . let the child sit in a hote bath made of the decoction of mallowes holyhocke, lyneseede, and the rootes of lylyes, wherein ye shall bathe the fundament with a softe cloute or a sponge and whan the place is supplied thruste it in agayne."

Finally, for Smal pockes and Measilles, Phaier gives advice which can scarcely be bettered even now: "The best and most sure helpe in this case is not to meddle with anye kynde of medicines, but to let nature work her operacion."

H. R. E. WALLIS.

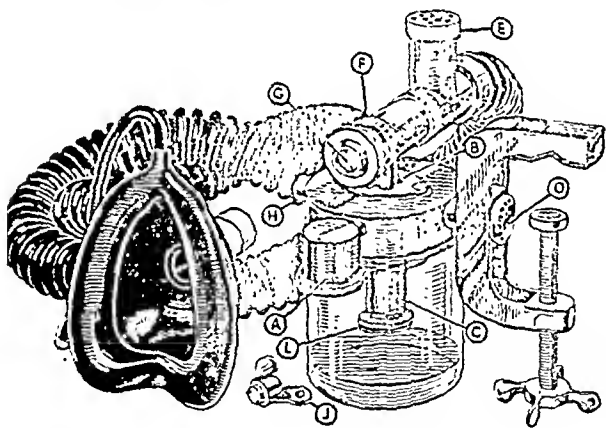
Preparations and Appliances

SAFETY APPARATUS FOR ADMINISTERING TRILENE-AND-AIR ANALGESIA

DRS. A. L. HYATT, T. H. GARDENIER, and JOHN ELAM write: trichloroethylene ("trilene"), which has proved a satisfactory anaesthetic agent in general surgery, has a special value in obstetrics for obtaining both anaesthesia and analgesia. Trilene, in therapeutic doses, is pleasant to inhale, causes little or no nausea or vomiting, does not interfere with the normal contractions of the uterus, and, so far as our experience goes, does not appear to have any harmful effect on mother or baby. Its chemical formula is somewhat akin to that of chloroform, and it is possible that "delayed chloroform poisoning" may occur after the administration of trilene, though no cases have yet been reported. Cardiac irregularities have been noticed with some frequency under full trilene anaesthesia, but not when trilene is administered to obtain analgesia in obstetrics.

Given a safe apparatus, it appears that trilene analgesia can be safely administered by the midwife. Dr. Hyatt, of Barnet, as designed such a machine, which is produced by Messrs. Eiba Gorman and Co., Davis Road, Folworth, Surrey, and which is described below.

Description of Apparatus.—Trilene is poured through the liter-cap, A, while the apparatus is held in an inverted position. Air is inspired through four air-holes, B, passes down through an outer tube, C, and then over the surface of the trilene and up another tube inside the tube C, thence to the rubber tubing and facepiece. D shows a spring ratchet; E is an expiratory valve; F shows variable air adjustment and G a locking device for extra air. H is a locking device for the bottle; J a key to fit and K, and L shows an anti-siphon device.



The special advantages associated with the new apparatus are: (1) it cannot be overfilled; (2) liquid trilene cannot reach the patient; (3) the bottle cannot be unscrewed except by using the key; (4) the midwife could not make the percentage of trilene too strong, as this is prevented by a locking device; (5) the proportion of air over trilene is always a constant factor, owing to the air inlet design, and is not altered by depth of inspiration; (6) the clamp is designed on a spring ratchet and is perfectly stable in any position; (7) a graduated scale of extra air* is calculated from 0-10 and set to an arrow.

Two of us (T. H. G. and A. L. H.) have administered trilene to 300 patients in their own homes without once failing to obtain adequate analgesia, and without the slightest harm to mother or baby. At Wellhouse Hospital, Barnet, trilene-and-air analgesia has been in use since the autumn of 1941. The number of cases receiving this form of analgesia has been limited by the necessity for training midwives in gas-and-air analgesia. Dr. Canwarden, of St. Luke's Hospital, Guildford, reports, after having two of Dr. Hyatt's machines in use at this hospital: "The patients are most enthusiastic about trilene analgesia, and I have done a matter of a dozen forceps deliveries, with the patient giving her own anaesthetic."

* This does not mean percentage of trilene to air.

Drs. Greig and Goodheart, of St. Helier Hospital, Marshallington, have kindly carried out an investigation to enable a comparison to be made between the degree of analgesia obtained from trilene and air (from the new machine) and that given from the standard Minnitt apparatus. They consider that the results obtained are not yet convincing from the obstetric angle, as the number of cases was too small. The midwives in charge noted no effect on labour contractions from trilene. Drs. Greig and Goodheart conclude: "We are very pleased, and would always elect to have a trilene machine for convenience of transport, convenience of maintenance, and cheapness; and, of course, the trilene machine scores over anything else of the kind in being capable of different concentration, especially in being capable of concentration to full anaesthesia. We want to do a lot more of these cases rather quickly."

Reports of Societies

ACUTE OTITIS MEDIA

At a meeting of the Section of Laryngology and Otology of the Royal Academy of Medicine in Ireland on May 15, the President, Dr. T. G. WILSON, welcomed Mr. GEOFFREY H. BATMAN, of St. Thomas's Hospital, London, who read a paper on "The Place of Chemotherapy and Penicillin in the Treatment of Acute Otitis Media."

He said that for years he had been sceptical of the claims made for chemotherapy, and cited cases in which mastoid operations were necessary after the otitis media had apparently been cured. He showed statistics to illustrate the difference in the results of those cases treated with the sulphonamides and penicillin and those untreated. In the sulphonamide group the incidence of mastoid operations was higher and the duration of stay in hospital longer, but there was a reduction in the number of cases with dry ears that later developed otorrhoea. He thought that sulphonamide therapy had little effect on the course of otitis media, but would frequently cause an ear to become dry even in the presence of an infected mastoid. It was therefore necessary not to pronounce a cure until the hearing had completely returned, with full lustre of the membrane. He recommended x-ray examination if response to treatment was not satisfactory after three to four days, since this would be invaluable as a control if skiagrams were later required.

Dr. T. O. GRAHAM said he was a strong supporter of the use of sulphonamides and penicillin in the prevention of complications in otitis media. In their hospitals to-day a mastoid operation was rare, due to the fact that the general practitioners were well tutored in the use of penicillin and sulphonamide and gave them adequately and early. Their very low figure of mastoid operations might possibly be due also to the fact that their organisms were less virulent, but he considered it a dangerous thing to preach that sulphonamides and penicillin should not be used in cases of otitis media.

Dr. A. FAGAN said that in his earlier days myringotomy was quite common, but since the advent of the sulphonamides and penicillin that operation had practically disappeared. However, though the advent of sulphonamide had lessened the occurrence of acute otitis media here, it should be borne in mind that this had coincided with the compulsory examination of school-children. Dr. R. R. WOODS said that the incidence of the mastoid operation had always been much higher in England than in Ireland, and suggested this might be due to different bacteria or different types of ears. Since the advent of chemotherapy the incidence of mastoid operations had diminished to about one-fifth of what they previously were. On the whole he did not think the speaker's figures comparable with those in Ireland.

Health Bulletin, issued by the Chief Medical Officer of the Department of Health for Scotland, appears for the first time in its 54 years' existence free of its confidential cover. It records an address on infantile cerebral palsy by Dr. Earl Carlson, of New York, an article on the psychosomatic aspects of chronic sickness by Dr. J. L. Halliday, a lecture on anaemia in infancy and childhood by Dr. G. B. Fleming, as well as an interesting review of influenza in Scotland.

Correspondence

General Knowledge and General Practice

SIR,—As one who has been for some time seriously concerned about the matter which Dr. D. N. Baron raises (June 21, p. 902) and has even endeavoured, in a recent book, to provide some small means to help the doctor to fill the important gaps which Dr. Baron mentions, I am glad to see the subject brought out into the open in your columns. For the successful conduct of medical practice in a living society among patients whose lives must be fitted into the social pattern it ought to be abundantly clear that the doctor must know something about the anatomy, the physiology, and the pathology of society, as well as having some conception of the manifold incidentals—the arts, the humanities, and the philosophies—which colour his patients' lives. The possession of such knowledge is one of the characteristics of the good doctor. It often distinguished the "old-fashioned" G.P. from his scientific successor, however much the latter might tend to feel superior to the former, and it may well be one of the reasons why, even nowadays, academic prowess does not always presage success in the daily work of medicine.

It is all to the good that we should wake up to the fact that the medical school, even where it is nominally part of a university, tends to isolate its students from those in other faculties. It is inevitable that those in the later stages of a six-year course should mix little with those taking a three-year course in other subjects, but even in his first preclinical years the medical student's first allegiance is usually given to the hospital in which his future lies rather than to the university or college in which he is spending his present. Where the hospital medical school contains its own pre-clinical department, so that the student not only loses the need to be associated with a university but is even robbed of contact with students who are doing biology or physiology for a B.Sc. degree, the position is obviously worse.

An important contribution to the present situation has been the custom by which the youngster takes his first M.B. before leaving school. It may be in keeping with the baser materialism of to-day to regard the two years between matriculation at 16 and university entrance at 18 as wasted unless they are used in anticipating the first university year, but it is in those years that the young man or woman could not only learn the beginnings of the arts, the humanities, and economics but could develop that interest in them which would enable him, or her, to make full use of any incidental opportunities which might turn up during the medical student years.

It might be a useful immediate remedy to insist on the last two years at school being spent in real education; most good schoolmasters would co-operate. At the same time there is every reason why throughout the medical curriculum some attention should be given to these ancillary subjects. They are, in the full sense, part of social medicine, and it is encouraging to know that one British university at least is planning to teach a little sociology to both preclinical and clinical medical students. What we must avoid is the pretence that the individual who is interested can learn this sort of thing after he qualifies. He will be too busy at the wrong hours, and there is always some little constraint and restraint which hedges in the doctor. He is separated from his fellows on the human plane by the actual or potential professional relationship which subsists between the doctor and the layman. Most of all, unless he has learnt something of the elementary grammar of humanity before he is 25, he is going to find it hard to read profitably in the book of mankind. Shaw had a phrase for us in *Man and Superman*: "Not educated—only college pass-men." Surely the doctor is the last of all men who should merit such a description.—I am, etc.,

Colchester.

JOHN D. KERSHAW.

SIR,—Is it too much to hope that the advocates of the mass production of medical practitioners—I use the designation deliberately—will ponder the letter of Dr. D. N. Baron (June 21, p. 902)? There must be a considerable number of doctors who feel as Dr. Baron does, and from time to time attention has been drawn in the *British Medical Journal* to the need for a wider general education among the entrants into the profession. I go further than Dr. Baron and maintain that, in the

case of the medical specialist even more than of the general practitioner, the first prerequisite is, in his own words, "the broad cultural background." Perhaps I may be permitted to quote from an unpublished essay which I wrote some five years ago:

"Let us pass to another aspect of the place in human affairs of biology and medicine. With the tendency to reduce all life to equations or formulae, we are apt to move along in one direction and develop one-track minds. In particular I refer to the cult of specialization which is growing. I do not decry specialization in science or medicine because for present-day civilization such specialization fills local or momentary needs; but, if I may be allowed to borrow a military expression, such specialization should be regarded merely as the 'tactics' of life, and more and more attention will need to be paid to the broader 'strategy' of life towards which we should bring a broader mental equipment."

Medical men have been accused in the past, and still continue to be accused, of narrowness of outlook, of extreme professionalism; it is a charge which it is difficult for us to answer and one which is not wholly unmerited. This is all the more remarkable when medical education and training have been thought to be the most liberal education of all. But it is not only medicine which has to face up to this charge. As Prof. Whitehead once wrote:

"The fixed person for the fixed duties, who in older societies was such a godsend, in the future will be a public danger. In the second place, the modern professionalism in knowledge works in the opposite direction so far as the intellectual sphere is concerned. The modern chemist is likely to be weak in zoology, weaker still in his general knowledge of the Elizabethan drama, and completely ignorant of the principles of rhythm in English versification. It is probably safe to ignore his knowledge of ancient history. Effective knowledge is professionalized knowledge, supported by restricted acquaintance with useful subjects subservient to it. This situation has its dangers. It produces minds in a groove. Each profession makes progress but it is progress in its own groove."

"The effect of scientific thought during the nineteenth century was to attempt to subject all phenomena to measurement and classification: this has been the result of centuries of the growth and perfection of mathematics, and we passed from mysticism and philosophy to the cult of exactitude."

It is small wonder, therefore, that one of our sanest present-day medical writers, Prof. Major Greenwood, was impelled to write in his *Epidemics and Crowd Diseases*:

"I suppose the man who first exposed an animal to a high pressure of life-giving and life-sustaining oxygen and saw it go into convulsions and die had a shock. Perhaps the great biochemist, who a quarter of a century ago showed that animals supplied with all the necessary energy and building stones in the form of chemically pure proteins, fat, and carbohydrate, and the appropriate inorganic material—everything Victorian scientific hearts could desire—did not thrive may have passed through a moment of painful perplexity."

And now what next? We are still at the stage where we are unable to measure or classify all the aspects of *existence*, and so we are in danger of falling back upon philosophy once more for our explanations, as witness the growth of new and specialized sciences and philosophies. Perhaps we may be reaching a stage of regression or stagnation such as has occurred in the past, and this may even be a good thing to enable us fully to assimilate and use the plethora of "scientific" food set before us and to avoid the obvious danger of scientific indigestion. If I am right in thinking this, the need for a broader based education for us all—doctors and scientists alike—becomes more important.—I am, etc.,

Elton, Notts.

V. L. FERGUSON.

Care and Treatment of Elderly and Infirm

SIR,—The report of the B.M.A. Committee on the Care and Treatment of the Elderly and Infirm (*Supplement*, June 21, p. 133) is a promising but somewhat utopian document. One or two rather pressing questions remain totally unanswered by it. The first of these—Who is going to organize and run the geriatric departments?—will be hard to answer, since there are as yet only a mere handful of geriatric specialists. A second follows logically: How and where are we going to train our future workers in this field?

At present the average medical and nursing standards in the chronic and senile hospitals are low. Many changes will be necessary to give them either the equipment, the atmosphere, or the prestige which should belong to training schools. To

one practical example: many chronic hospitals have no physiotherapy department, yet physiotherapy is one of the corner-stones in the treatment and rehabilitation of the aged. In such a department, properly run, the famous 40, 40, 20 is not difficult to attain; without it the physician is blinded. This has been my own experience.

Similarly, specialists must be easily accessible. An orthopedic surgeon, an ophthalmic surgeon, and a neurologist are vital. I cannot recollect any mention of this vital need for team work being stressed in the report. Finally the mechanism for admission and discharge of patients, with arrangements for following them up, will need careful attention. Present municipal hospital practice is far from satisfactory in this respect, so that special machinery must be created with new long-stay annexes when they are formed. One last point: most of this report is concerned with the 5% of old folk in hospitals or institutions. Will it help the general practitioners who look after the remaining 95%?—I am, etc..

Reigate, Surrey.

TREVOR H. HOWELL

Health of Young Workers

SIR,—In the leading article entitled "Whither Industrial Medicine?" (June 14, p. 853) mention is made of the importance of health supervision of juveniles in industry. "In this alone," you state, "industrial medicine could make a significant contribution to positive health." It may therefore be of interest to note certain recommendations recently made by the Central Advisory Council for Education (England) in its publication *School and Life* (H.M.S.O., 1947). This Advisory Council was appointed by the Minister of Education under Section 4 of the Education Act, 1944, to advise "upon such matters connected with educational theory and practice as they think fit." By agreement with the Minister the Advisory Council addressed itself first to the transition from life at school to independent life, and, in this connexion, proposed measures for supervising health during the early years of employment; medical examination on entry should apply to all boys and girls up to the age of 18, and should lead to treatment, supervision, and guidance for all those found to be unfit; and to give effect to this the duty of making such an examination should be transferred to the school health service, which should also be responsible for treatment and supervision. In view of the definite challenge to industrial medicine so clearly presented in your leader it would be of value to hear your opinions on the subject from those both interested and personally taking part in health supervision of young persons at school, in the home, and at work.—I am, etc.,

Leeds, Birmingham.

C. H. HOSKYN.

Treatment of the Maladjusted Child

SIR,—Even if the statistics of the paper by Drs. Elizabeth W. Barker and W. Liddell Milligan (June 7, p. 805) are good, nevertheless I do not doubt the sincerity of their work and I am sure they are getting results. But two questions arise from their excellent work—namely: (a) Is a mental hospital better than schools or hostels for maladjusted children? (b) Do the children not come into contact through patients with psychological "mechanisms" and attitudes to which will cause more serious maladjustment in later life?

The authors did not state what conclusion they drew from the fact that they were receiving requests for admissions from all over England. Three conclusions will be difficult to exclude—namely, (a) ignorance by the source of the most modern methods of treating maladjustment; (b) correct knowledge at the source but absence of any place, such as schools or hostels, to put them; (c) economy. As things stand at present the Portsmouth people to be congratulated, but would a villa for the children alone be much better than the convalescent female villa? It would be logically difficult to put the convalescent females among children.

So-called psychosis in children (of normal intelligence) is practically always the result of provocation, overstimulation, or frustration in different directions, but it reacts well to association with normal adults in an environment where provocation and frustration are removed, even in cases with poor heredity. Uneducated and parents excepted, there can be few people more provocative to children than psychotic females.

In my opinion the best methods of training the maladjusted child (of normal intelligence) are in this order: (a) Out-patient attendance by father, mother, and child at child guidance clinic; (b) removal of father, mother, and children to a hostel (with the father going out to work from the hostel) for short periods, to be repeated in association with attendance at a child guidance clinic for longer periods; (c) removal of child to a residential school for maladjusted children accepted by the Ministry of Education; (d) removal of the child to a hostel (but local authority hostels have a long way to go before they reach the standard of efficiency of staffing, organization, and of material at the disposal of the good mental hospitals); (e) mental hospitals as an expedient or emergency.—I am, etc.,

Westcliff, Essex.

JOHN A. MCCLUSKIE.

Health of Children Attending Day Nurseries

SIR,—I am certain that Dr. F. Gray's letter (June 21, p. 899) will have inspired many medical women to take up their pens. I had hoped that the time had come when we could be accepted by our male colleagues as useful members of the profession. There are many women who believe they have a useful social function outside the home. Why such women should be denied the pleasure of marriage and children is something I cannot understand. I will not take time to refute Dr. Gray's conclusions, but I consider that those medical men who have worked with women doctors, nurses, pharmacists, etc., will know that they are neither "masculine" nor "irresponsible," and I am disgusted that a responsible journal like the *B.M.J.* has thought fit to publish such a letter.—I am, etc.,

London, N.W.5

BARBARA SIMONDS.

SIR,—From the business-like description of the masculine woman and her failings one may infer that Dr. F. Gray (June 21, p. 899) is in no position to appreciate the emotional difficulties experienced by one who has been trained for a "man's" job and is condemned by nature and society to reverse all her training and attempt the art of home-building and child-rearing. Certain women cannot help their lack of femininity any more than some men can remedy their lack of typically masculine characteristics. Each can only find out by experience what he or she can do competently, and in doing it make a true contribution to the sum of human happiness. Women are often acutely aware of their incompetence to understand a child's outlook, and they are not necessarily "irresponsible" in making a decision to place the children in the care of others who are willing, or are qualified by the State, to undertake part of the training that as mothers they have not been taught to understand.

If housework were considered by men to be a dignified occupation and child-rearing looked upon as a creative art, then the weaker members of the so-called stronger sex might find themselves eminently qualified to be home-builders, while their more robust wives became wage-earners. A good deal of masculine "ill-health and laziness" would thus be avoided, and the need for day nurseries considerably lessened.

A wife's lack of ability to be a "good mother" is the husband's greater opportunity to be a "good father." Marriage is a complementary status, each partner requiring of the other something necessary to the expression of individuality. If the true spirit of marriage is maintained, a right outlet for the energies of both should be established with no prejudice attaching itself to any job that either partner undertakes, so long as the aim and object of both is to create and maintain a home for their offspring. Zealots of health unfortunately lay themselves open to the error of putting asunder those whom a creative force has joined together, thereby lowering the strength of compassion to a nebulous pity which drains away mankind's capacity to evolve a higher form of life.—I am, etc.,

Newcastle-upon-Tyne.

G. M. LANGHAM-HOBART.

SIR,—The flood of letters abusing the day nurseries that Dr. Margaret E. McLaughlin's paper (May 3 and 10) has unleashed require a close scrutiny. I feel that the majority of them are inspired by a ferocity arising from a political prejudice and that they are much out of line when compared with the

usually well-conceived publications that are so characteristic of the English medical man's sane outlook.

Dr. McLaughlin's careful paper collapses on two most important points:

(a) The control group of children are those who live at home. Now these children come from a better type of home both from the point of view of mother's character and also financial stability, and they are therefore not true controls. Nobody is going to deny that the children living at home under the care of their mothers will be finer and fitter than the poor little soul bundled out of home at 7.30 a.m. come sun, come rain, inadequately washed, and often inadequately fed. But what are we going to do with the illegitimate child of the mother "forced to go to work"? These represent the majority of the children in day nurseries of which I have experience, not the absurd picture of the masculine mother in Dr. F. Gray's letter (June 21, p. 899). The "business executive" does not send her child to the day nursery. The day nursery children are certainly much better looked after in the nursery than allowed to run riot in the streets with the penny bun for lunch, or looked after by an already overworked neighbour.

(b) It is of course agreed that children *en masse* are more prone to infections one from the other. Why not, therefore, agitate against the kindergarten that the middle-class parents use? Obviously because it is unnecessary—unnecessary because those children come from a healthier and wealthier home than their more unfortunate brothers and sisters and can therefore withstand the onslaughts of infectious illness. Yet the day nursery and the kindergarten are strikingly similar. This, to my mind, proves that it is not the day nurseries that are at fault but rather the homes from which the nursery children are drawn.

I come now to my final point. In no papers that I have seen has there been an attempt to stamp out nasopharyngeal infections in the day nursery. Surely a healthy nose and throat will give the child a greater chance of avoiding infectious illnesses. Why not administer a routine nose drop as soon as the ubiquitous mucopurulent stream is seen tracking down the upper lip?

I should like to end with an appeal for a saner and less prejudiced outlook on the question of the children of the mother "forced to go to work." It will become even more urgent in the future as more and more women go into industry. —I am, etc.,

London, W.C.2.

J. Z. GARSON.

Treatment of Acute Mastitis

SIR,—While agreeing with Dr. J. MacLeod's treatment of acute mastitis (June 14, p. 865) by penicillin intramuscularly, I feel that routine stilboestrol is neither necessary nor desirable. I avoid using stilboestrol unless a milk fistula is present and the mother has stopped breast-feeding. From the figures given below the result is gratifying. The value of breast-feeding cannot be overrated, and we must avoid using any method whereby milk production is likely to be curtailed. The breasts can be adequately emptied by a breast pump.

The prevention of acute mastitis begins before the baby is born. Although the hygiene of the nipple is well known to the profession, it is sadly neglected in certain areas. In the majority of cases the aetiological factor is ascending infection from the nipple through the ductal system by *Staphylococcus aureus*, probably originating in the patient's skin. The use of penicillin cream during lactation is not desirable. It may have detrimental effects upon the baby, producing stomatitis and interfering with sucking. The introduction of penicillin has revolutionized the treatment of acute mastitis. It is no longer necessary to make large radial incisions into the breast to break down loculi to produce one abscess cavity from which pus can freely discharge on to the surface. The complications occurring after this method are haemorrhage, secondary wound infection delaying healing, and milk fistula. Frequent and repeated dressings are, both painful and tiring for the patient. Secondary suture means another operation and anaesthetic.

The principles of treatment of mastitis by penicillin are based on the pathology of the condition. All cases of mastitis and breast abscesses commence either as a diffuse suppurative or segmental mastitis. Penicillin acts by producing a localized suppurative mastitis. Depending on the quantity of pus present, either complete resolution or a chronic pyogenic abscess may occur. Thus, penicillin produces changes of chronicity, and when nature fails in severe cases to absorb the pus it is essential to realize this early and evacuate the abscess. I have used several methods to evacuate

the pus, having localized it in necessary cases by giving penicillin, 100,000 units in 1 ml. saline, twice daily for two to three days.

Penicillin Given I.M. b.d. in All Cases	No. of Cases	Organisms	Average No. of Days for Healing to Occur	Remarks
Incision and open drainage	20	<i>Staph. aureus</i>	16	1 milk fistula, 2 haemorrhage, 1 secondary infection with <i>Bact. coli</i> Slow healing of incision
Incision, with primary suture of wound, with corrugated rubber drain through it	3	" "	14	1 recurrent abscess
Incision, evacuation of pus, instillation of penicillin solution, and primary suture	2	" "	12	1 recurrent abscess
Incision, dependent drainage, and primary suture of wound	3	" "	12	Low grade infection of healthy area Residual induration
Incision, instillation of penicillin through penicillin tube, and primary suture around tube	3	" "	10	Low grade infection in healthy skin
Incision, penicillin tube through dependent area, and primary suture of wound	3	" "	11	Induration
Tenotomy incision and penicillin tube	20	" "	7	"
Multiple tenotomy incisions and penicillin tubes	1	" "	7	"
Secondary suture	Nil			

As the results of tenotomy incisions and penicillin tubes have been uniformly good in the 21 cases, I trust you will allow me more space to describe the methods. The smallest possible incision is made over the centre of the abscess with either a tenotomy knife or a narrow Bard Parker scalpel. The pus is gently expressed, and a narrow rubber tube stretched on sinus forceps is introduced into the abscess cavity. No suture is required to hold the tube in position, as the skin contracts tightly on it. Penicillin solution, 2,000 units per ml., is injected down the tube until the abscess cavity is filled. The tube is then spigoted. Penicillin, 100,000 units per ml. in saline, is given i.m. twice daily. The contents of the abscess cavity are aspirated twice daily and replaced by penicillin solution. After two to three days the aspirated fluid is clear and usually sterile. The tube is then removed and a penicillin dressing applied. In the event of the resulting cavity filling up again the contents can be gently expressed through the resulting sinus. Healing is generally complete on the sixth day, leaving a residual thickening in the breast. A good support is all that is now required, and after one to two weeks the thickening will have completely disappeared. If desired, short-wave diathermy will hasten this process.

In the presence of multiple abscesses separate tenotomy incisions and penicillin tubes for each abscess treated as above will give similar results.

I wish to thank Mr. Hugh Reid and Mr. A. C. Brewer for allowing me to carry out this treatment on their patients.—I am, etc.,

Liverpool.

R. MARCUS.

Treatment of Acute Osteomyelitis in Children

SIR,—It would appear from the letter of Drs. J. Trueta and M. Agerholm (June 21, p. 899) on the treatment of acute osteomyelitis in children by penicillin that they have approached the paper by Messrs. T. Twistington Higgins and Denis Browne and Dr. Martin Bodian (May 31, p. 757) with an air of complete disbelief. Having seen some of the results obtained at the Hospital for Sick Children, Great Ormond Street, and at Oxford, I am convinced of the efficacy of both the methods that are being advocated, but "each in its own place." It would seem to be wiser to take this broader view rather than to read more into the text than is apparent. Many of the remarks of Trueta and Agerholm appear rather out of context, especially those relating to surgery. Only two, or possibly three, of the Great Ormond Street cases warrant classification as "open surgery"; two could properly be described as cases of incision of superficial abscesses in an area in which the Oxford method is hardly applicable—as examples, in fact, of the time-honoured method of "free incision and free drainage" of a pointing abscess.

Aspiration is difficult, but the fact that repeated aspirations were needed does not imply that the method was unsuccessful. Many aspirations were needed in order that the amount of pus

present should constantly be minimal. Is it indeed certain that new pus does not form after drilling of a bone? With regard to dosage of penicillin: That advocated by Great Ormond Street does seem to be unnecessarily low. Presumably this is because the series was begun at a time when there was a dearth of the drug, and the dosage was continued because it was found to be adequate. It is a fact that immediate improvement occurred (i.e., within 24 hours) in the majority of the cases. Penicillin must obviously be given to infants by intermittent injection, and the fewer these are the better, provided that an adequate concentration be obtained and the best possible results, for trauma undoubtedly upsets infants and makes handling of them more difficult as regards feeding, etc.

Mobilization does not really form a large part in the treatment recommended. It is rather a suggestion that complete immobilization is unnecessary, and that simple methods are adequate in the acute stage. Certainly there would be little weight-bearing in the infant age group, and it is probable that the risk of pathological fracture is less than the dangers and difficulties involved in plaster immobilization in infants. With regard to positive blood cultures: this may be rather a false percentage, for no doubt some difficulties were experienced in obtaining some or sufficient blood in all cases. This point is not made clear in the article.

It would seem reasonable to accept, with reservations, the principles both of the Great Ormond Street and the Oxford series. It might be wise to use the Oxford method in older patients with severe infections, while the Great Ormond Street technique seems certainly to be adequate in the less severe cases, and in all infants in whom operations should not be undertaken too lightly, and in whom the difficulties of feeding, hydration, and so on have such an important bearing on the ultimate recovery. A dosage scheme dependent upon body weight would appear to be rational and desirable. Such a scheme has been started by Great Ormond Street in this series, and, though it has not yet attained general acceptance, it would seem to be more reasonable than a mere routine dosage for any patient of any weight and any age.—I am, etc.,

London, W.1.

IAN P. TODD.

Myiasis of Palpebral Conjunctiva

SIR,—I was interested to read Dr. T. E. M. Wardill's letter (May 3, p. 615) regarding myiasis of the palpebral conjunctiva. The following case came to my notice recently and may be of interest.

CASE REPORT

A soldier aged 20 reported sick on the evening of May 27 with an inflamed eye of a few hours' duration. He told the medical orderly that he could feel something moving about under the lid, and as the orderly could see something moving on the conjunctival surface he informed me.

On examination an acute conjunctivitis of the affected eye was evident, and on evertng the lids, to my surprise, a number of very tiny maggots were just visible. With characteristic dislike of light they wriggled away into the conjunctival fornices, but eventually half a dozen maggots were removed by wiping the palpebral conjunctiva with cotton-wool. One maggot was examined on the point of a needle, and its form was then clearly discernible. On questioning the man he stated that a fly had buzzed into his eye at 10 o'clock that morning, and the eye had become inflamed in the afternoon.

Following removal of the maggots his eye became more comfortable and the following day was quite normal.

The predominant fly around here is *Musca domestica*, but I am unable to say whether this might be the culprit or not.

I am indebted to Lieut.-Col. D. B. Seymour-Price, R.A.M.C., for permission to publish this case report.—I am, etc.,

P. DRANSFIELD,
Lieutenant, R.A.M.C.

M.E.L.F.

Acute Non-specific Diarrhoea and Dysentery

SIR,—I read the article by Dr. G. R. Kershaw on the above subject (May 24, p. 717) with pleasant anticipation, hoping to gain some new light on this difficult subject. I was disappointed to find that he appears to have drawn his conclusions after a few years' clinical observation, controlled by only a few full pathological investigations, and with an incomplete knowledge of the extensive literature already published. I have been investigating these cases at sea, as occasion offered, over the last twenty years. In most epidemics I have plated out the faeces, picked off non-lactose-fermenters, and put them through the appropriate sugar media, and tested their agglutination with

standard dysentery and salmonella antisera. I have never identified any pathogen from these cases.

In my paper in the *Lancet* (1938) reviewing this subject the question of chills, cold drinks, etc., was considered, but, after careful investigation, was not thought to be the whole answer, and no pathogen was found. My bacterial results were checked by the late Prof. Eyre, of Guy's Hospital. Drinking water was excluded after a research on the *Bact. coli* content of water in ships' tanks extending over a period of 18 months (Royds Jones, 1936). I note that Dr. Kershaw also exonerates water (after two analyses). Knowledge gained during the war when carrying troops in convoy allowed us to go a stage further (Royds Jones, 1943) and exclude food, water, and a food handler "carrier." It was due to this last letter that I was asked to meet the Director-General of Hygiene at the War Office, who kindly supplied me with a large quantity of media for an extensive research. Unfortunately owing to the progress of the war our route was changed, and we never again got these large epidemics in which 400 to 600 men were affected in one night, and I have not been able to proceed further. Incidentally, the majority of men affected were those sleeping in mess decks, both in hammocks and on the deck, and not those sleeping on open decks, where chilling would have been greatest, although some patients came from each.

My tentative suggestions at the time were either (1) a virus as the cause, or (2) a saprophyte becoming pathogenic at this temperature, for which there is some experimental evidence—Kligler, I. J. (1936), and Robertson and Weld (1932). I discussed the virus theory with a few first-class virus workers, and they at that time were inclined to discredit the suggestion. However, both American and Canadian workers had published papers suggesting a virus as the cause. Now British authorities are more inclined to favour this theory, as witness several articles published recently and your own annotation (Feb. 1, p. 187) about six months ago. I regret that I cannot give exact references to the recent literature, as I am now at sea.—I am, etc.,

Banbury, Oxford.

H. M. ROYDS JONES.

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Primary Malaria in London

SIR,—The article by Drs. C. Blaxland Levick and M. E. MacGregor (May 31, p. 764) on "Primary Malaria in London Children" prompts me to write and bring to your notice a further case of this illness in an adult which I encountered during the week of publication of the original article.

The patient was a woman, aged 36, residing in Kensington and a Foreign Office Civil Servant employed at Eastcote. I saw her at home first on Thursday, May 22, 1947, when she was complaining of nausea with frequent vomiting, frontal headache, and lacrimation, back pain, and sweating. It was her belief that she had some form of "gastric flu." Her temperature was 101.4° F. (38.5° C.). The following day she was little better, and her temperature had dropped to 99° F. (37.2° C.).

On Saturday, May 24, she was moved to friends in Hampstead who were able to look after her better. She was feeling very much better, apyrexial, and thought she had recovered. Sunday evening, however, she developed a recurrence of her symptoms, which were now very much more definite in character and followed the typical stages of malaria, the temperature rising to 102.4° F. (39.1° C.).

Blood slides which were taken the following day when she was apyrexial proved negative; but those taken next day in the middle of a rigor were kindly examined for me by Dr. H. O. Hughes at the Middlesex Hospital, who reports that the films showed scanty trophozoite ring and amoeboid forms, and gametocytes of *Plasmodium vivax* (benign tertian malaria). She has since been given mepracine and remained free of symptoms.

Her history is interesting. Apart from travelling to and from her work daily she had not been out of London since last Christmas. She was born in India and resided in Calcutta till 1937, when she came to this country, and never had any form of antimalarial therapy given her at any time. The only illness in the past had been German measles, and 3-day fever when she was a schoolgirl aged 12—that is, 24 years ago, and a most unlikely factor in this illness. Her only contact with malaria

was this March, when a friend staying with her had a relapse in her home.

I hope that this case will help further in stressing the fact that primary malaria can be a factor in diagnosis in this country at the present time, where malarial carriers are more numerous and the *Anopheles maculipennis* known to be present.—I am, etc.,

London, W.11.

DAVID A. FERMONT.

Congenital Hepatic-duct Malformation

SIR,—The case of congenital hepatic-duct malformation recorded by Dr. Frank Riggall (June 7, p. 824) emphasizes the fact that children born without bile ducts, or with the bile ducts so malformed that they do not communicate with the intestine, survive much longer than one would expect. In Riggall's case the child lived for ten months, and in a large series of these cases reviewed by Stolkind¹ there was one where the child survived for 15 months. The question of operation is worth while considering in cases of atresia, for it may be found that sufficient of the common duct is present to allow of anastomosis to the duodenum. In these cases jaundice is usually present at birth or shortly afterwards, but according to Ladd and Gross² 2-3 weeks may elapse before the icteric tinge appears, "whereas the stools are always clay coloured or white from birth." Further, they state that if operation is delayed for 4-6 weeks from the date of birth there is little chance of error in differential diagnosis.

Anastomosis of the duct to the duodenum is carried out over a small piece of tubing—somewhat after the method of Sir James Walton³—and silk is used for suturing. Vitamin K and ox bile salts are administered beforehand in the hope of diminishing oozing.

Ladd and Gross emphasize the danger of post-operative disruption of the wound, and advise the use of silk and silkworm gut for stitching the abdominal wall. In 45 of their cases nine patients were found to have a patent hepatic or common bile duct connected with the intrahepatic ductal system but not with the duodenum; 6 out of 9 cases survived the operation and were in excellent health 12, 8, 7, 5, 4, and 3 years respectively after operation.

Dr. Frank Riggall is to be congratulated on taking the trouble of publishing his interesting case in the *British Medical Journal*.—I am, etc.,

London, W.1.

MICHAEL J. SMYTH.

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E.C.T.

SIR,—Your correspondent who explains (June 14, p. 858) his reactions to E.C.T. is to be highly congratulated for the enlightened description of his experience, and his article should do much towards alleviating the acrimony at present being expressed on the subject. His important contribution lies in the cognizance that the treatment produced a psychosomatic reaction which he himself "identified as the physical reactions to fear," as it is likely that it is through such identity that he escaped from his troubles. His "memory images" are obviously symbolic expression, which would have been better to have undergone elucidation at the time.

I hope I conflict with neither physicist nor psychiatrist when I understand that E.C.T. in this particular case acted by bringing wholly repressed material to a nearer level to conscious appreciation, and that it is probable that it is through such measures that benefit is obtained in all cases that respond to such treatment. Your correspondent's observations emphasize the further benefit to be obtained by the attendance of a psychiatrist to take advantage of the probability of such response.—I am, etc.,

Tipton, Staffs.

L. H. EUNSON.

Causalgia of the Face

SIR,—I read with interest Mr. J. A. W. Bingham's report of two patients suffering from causalgia of the face (June 7, p. 804). Our knowledge of this condition is so incomplete that individual experience is well worth recording. I cannot agree, however,

with his conclusion, "that when sympathectomy relieves causalgic pain and tenderness it does so by interrupting the sensory pathway." It is not proved that sensory (afferent) fibres travel to the spinal cord by way of the sympathetic chain, and secondly one can see that pressure on the superior cervical ganglion can stimulate efferent fibres passing through. "Novocain" block of these fibres at a lower level would produce a temporary paralysis in their peripheral course and distribution and so prevent the occurrence of pain as noted.—I am, etc.,

Sale, Cheshire.

C. H. CULLEN.

Reiter's Disease

SIR,—The annotation on Reiter's disease (Dec. 7, 1946, p. 865) summarizes the present state of the knowledge of this condition very well. A few points noted in four cases by me (subject of communication elsewhere) are worth mentioning. Though you have quoted several writers as correlating the disease with bacillary dysentery, Jackson's contrary opinion, which has also been quoted by you, seems to be confirmed by my four cases, none of which had any relationship with bacillary dysentery. Further, in India we see bacillary dysentery cases literally by thousands, and yet there are no authentic records of Reiter's disease. Had the two conditions been aetiologically related there would surely have been more cases of Reiter's disease in this country.

The categorical statement made by you that "... there is no relation to sexual intercourse" is not wholly correct. Kristjansen¹ described his case in detail in 1930 where the infection was traced to a girl of 16 who for two years had had a yellow vaginal discharge. This girl had also infected another man at about the same time, and the second victim developed only an uncomplicated urethritis lasting three months. In neither man was the gonococcus or any other organism found. The girl herself was examined and found to have had only an inflamed vagina, but gonococci were not demonstrated in her either. The sexual relationship in these two cases is clear. One of my four cases also developed the condition after extramarital coitus.

Neutrophil leucocytosis has been reported in all the cases, but one of my cases had an eosinophilia of 4 to 7% in a total leucocyte count of 11,000 to 13,000. This may mean that allergy is a factor in the disease. This case went through the gamut of bilateral conjunctivitis and polyarthritis, and the eosinophilia persisted over the earlier part of the illness. The patient did not have any parasitic infection or infestation. The possibility of allergy being aetiologically responsible is strengthened by the observation of Forbes² that his case was associated with dental sepsis. Junghans³ tells about a case in conjunction with a furuncle in the upper lip, while Frühwald⁴ described two cases, in one of which the first sign was urethritis and, in the other, joint pain in the left foot. The example of erythema nodosum being the result of a variety of infective processes may be mentioned as a possible parallel to the incidence of Reiter's disease following upon non-specific infections.

In none of the four cases observed was the complement fixation test for gonococci done, but gonococci were not found in any of the exudates by the usual staining methods. The tests were repeated many times and under varying clinical conditions.—I am, etc.,

Bangalore.

P. N. BARDHAN.

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Physical Therapy of Mental Disorder

SIR,—It seems to the mind of an ordinary physician a great pity that there should be a need for bitter and violent controversies on the subject of psychiatry; I refer to the article written by Dr. D. W. Winnicott (May 17, p. 688) and to the replies by Drs. W. Malcolm Millar, Dr. A. Spencer Paterson, Dr. A. Lionel Rowson, Dr. A. N. Hardcastle, and Dr. E. E. Feldmesser (June 14, pp. 861 and 862). Whatever the rights and wrongs of it all may be, it seems to me that always should we be able safely to look to, and to accept, the findings and dicta of fully recognized and really experienced psychiatrists.

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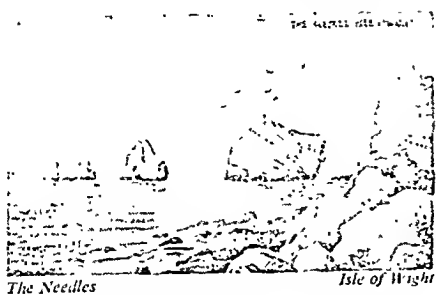
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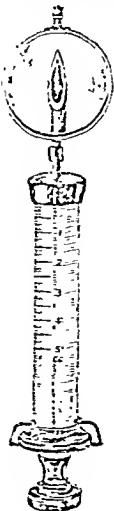
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In my opinion, for what it is worth (I am not a psychiatrist), Dr. Winnicott's article is full of flaws, of wishful thinking, and of aggression. He condemns absolutely the modern physical methods of psychological medicine and is severely taken to task for it, as he should be. If I, practising my own methods of dealing with the emotional problems and upsets in children and in their parents, do not accept the principles of child guidance, and if I disagree in the main, as I certainly do, with most child psychiatrists and do not recognize the need for many of these, I am entitled to my opinion and quite free to say so. But if out of hand I condemn the whole movement and paint it as quite absurd, I think I should expect to be regarded as aggressive and, in all probability, somewhat frustrated: and I should certainly be incredibly foolish.

I scarcely think that Dr. Winnicott would be prepared to accept without retort my own condemnation (which, however, I do not offer) of the use of psycho-analysis in children, save in those cases which I personally would regard as uncommon. I think I should expect him automatically to express the view that I knew nothing about it.—I am, etc.,

London, W.1.

MAURICE L. YOUNG.

After-care of Psychiatric Casualties

SIR,—Most doctors are aware of the establishment about three years ago of the official after-care scheme for men and women discharged from the Services for psychiatric reasons. This scheme has been organized by the National Association for Mental Health at the request of the Ministry of Health with the co-operation of the Service Departments, and has provided social supervision for psychiatric casualties as part of an attempt to help them to readjust to civilian life—for 11,500 patients up to date. The original procedure was that the Service hospitals notified the after-care scheme of those patients who agreed to accept after-care, at the same time informing the patient's own civilian doctor. Subsequently many discharged ex-Service men and women have been brought into the scheme from a wide variety of hospitals and social agencies. In recent months, in response to many requests from other social agencies, Ministry of Labour, Pensions, and Health officials the scheme has accepted responsibility for a number of civilians who are in difficulties in ordinary life because of psychiatric disabilities. It is hoped that the experience gained in this social service will eventually be integrated into the official medical services of the State.

Whereas every effort has been made to see that the general practitioner has been fully aware of the interest of the social workers in his patient, this has not always proved possible. For instance, many patients on discharge from the service have moved to new districts and have not arranged for medical attention for many months after moving: some belong to that floating population which never remains for long with any individual doctor; others belong to the psychotic fringe hostile to any form of medical attention, yet nevertheless much in need of help. It has occasionally happened that doctors have felt that their relationship with a patient has been encroached upon by the social worker, of whose credentials they have not always been aware. In the great majority of cases doctors have been happy to use the services of our psychiatric social workers and have co-operated actively, but misunderstandings have occasionally arisen.

May I emphasize that this service is intended as an ancillary to medical measures, to aid in the patients' readjustment to life; and we regard it as of the utmost importance that good relationships should be maintained with general practitioners. Clearly, if misunderstandings occur, it hampers the efforts of both parties, and it is the patients who suffer. We have therefore arranged that each new patient referred to the scheme will be the subject of a letter written by the social worker to the doctor concerned. If the doctor has any comment to make or objection to raise he can do so at the outset, bearing in mind that after-care is a voluntary arrangement entered into by the patient himself. If doctors feel any doubts or questions about the validity of the work which the social workers are undertaking, we should be glad if they would ask the social worker concerned to call on them at their convenience to give a full explanation of what the service can offer. If further explana-

tion is needed, I and others of my medical colleagues who are active in this Association will be only too glad to get in touch with the doctors concerned.—I am, etc.,

KENNETH SODDY,

Medical Director,

London, W.1.

National Association for Mental Health.

Factors in the Aetiology of Skin Cancer

SIR,—I should like to ask Prof. J. A. Ryle and Dr. W. T. Russell whether the conclusions to be drawn from their interesting and instructive paper (June 21, p. 873) may not be subject to certain qualifications. Their figures refer to deaths from skin cancer, but the mortality rate from that disease is very low, probably less than 2%, while the disease itself is very common and accounts for a high proportion of all primary cancers.

Prognosis in skin cancer depends largely upon the size of the lesion, and negligence is probably an important factor in relation to death from this cause. I should, in the ordinary course of events, expect neglect of a symptomless lesion to be higher in unskilled workers and labourers (IV and V of the Registrar-General's social classes) than in the other groups. Do these figures therefore review a fair sample from which to assess the social or occupational factors in the aetiology of skin cancer?—I am, etc.,

Leeds

JOHN T. INGRAM.

Ulcerated Nasal Septum

SIR,—As medical officer to a large engineering firm, and during routine examinations of men who were working on a pickling vat containing sulphuric acid, I found that eight men were suffering from ulceration of the nasal septa. For treatment I tried petroleum jelly and lanolin, but the result was far from satisfactory. I changed the treatment after four days to cremor penicillin with "phenoxetol," and within forty-eight hours there was a definite improvement, and in twelve days with the exception of one case, the other cases were completely cured.—I am, etc.,

Birmingham.

JOSEPH RADNOR.

Calculation of the Colour Index

SIR,—It was inevitable that the publication of Dr. R. Elsdon Dew's paper (May 24, p. 723) would lead to your receipt of at least one letter calling for the abolition of the colour index. Admirable and well-meaning though Dr. H. Levy's intention may be, the widespread adoption of his suggestions (June 21, p. 903) in routine haematology would be regrettable, as not only does the use of the haematocrit involve vein puncture in a case where the life of the patient may later depend on the integrity of that vein for blood transfusion, but it tends to convert the haematologist into a mathematical robot. Haematology, no less than clinical medicine, is a science, and diagnosis should depend on the observation and experience of the haematologist, who, noticing for example marked polychromasia, "ghost-cells," scanty platelets, and other abnormalities in a routine blood count, then proceeds to carry out reticulocyte counts, fragility and haematocrit determination and so forth as his judgment backed by his clinical findings may dictate.

During the war years, when the country was flooded with innumerable varieties of lend-lease colour standards, each with its own level of normality, the use of the term "grammes" was probably justifiable and even desirable. The colour index of the Haldane scale is ideally suited for routine purposes, and with certain well-known exceptions normality is represented by unity and values outside the range 0.9 to 1.05 are—give accurate counting—probably pathological and certainly worth further investigation. The colour index is also a valuable guide to treatment of anaemias, where to subject the patient to repeated vein punctures would be wholly unjustifiable. Any improvements in the science of haematology should follow the lines of establishing specialist haematology departments in hospital laboratories, where the worker recognizes the abnormality by reason of his or her wide experience of the limits of normality.

Finally, the use of nomograms is to be condemned. The laboratory worker, whether he holds qualifications in medicine, science, or laboratory technology, is essentially a scientist, and any attempt to convert him into an automatic machine should be resisted at all costs. The slide rule and the centrifuge must not replace the microscope.—I am, etc.,

Liverpool.

WILLIAM K. TAYLOR.

Temporary Hydronephrosis

SIR.—The rate at which a hydronephrosis develops is an observation which can rarely be made, but I can assure Drs. Bruce Fowler and Eric Frankel (June 21, p. 887) that recovery from hydronephrosis does occur even when it results from chronic obstruction to the outflow of urine. This is well illustrated by one of my cases of carcinoma of the prostate, which on routine pyelography was found to have a bilateral hydronephrosis of considerable size.

Difficulty in micturition had been observed by the patient for several months, and acute retention had supervened, so that it is unlikely that the hydronephrosis was of recent development when it was discovered. It was actually demonstrated ten days before a suprapubic cystotomy was performed, and the diagnosis confirmed by section. Drainage of the bladder was continued for two months, after which time, under the influence of stilboestrol, he was able to pass urine freely. Intravenous pyelograms showed no trace of the hydronephrosis, and the suprapubic opening was allowed to close.

This case was originally seen at the end of 1943, and he still remains quite well on a maintenance dose of stilboestrol, with no evidence of renal damage.—I am, etc.,

Farnborough, Kent.

C. C. COOKSON.

State Medical Service in New Zealand

SIR.—May I, in fairness to both sides, be allowed the courtesy of your columns to add a footnote to the quotation of your correspondent, Sir Ernest Graham-Little (May 3, p. 611), from the *St. Mary's Hospital Gazette*?

I should like, in turn, to quote from a letter of Mr. Aleck Bourne which appeared in the *St. Mary's Hospital Gazette* of April-May, 1947. In this he said: "I predict that in twenty years' time the profession will look back on these past years and ask themselves how the present system of unco-ordinated muddle could ever have been allowed to exist so long as it has." This is the judgment of one of our most distinguished doctors and social reformers, who has perhaps contributed more in a practical way to the improvement of our health services than the great majority of people concerned with the new Act, whether in favour or otherwise.—I am, etc.,

E. C. LIVINGSTON,

Co-Editor, *St. Mary's Hospital Gazette*.

London, W.2.

Another Name

SIR.—It gives me great joy to see a letter from Dr. M. C. T. Reilly (June 21, p. 903) redolent of all his "mylophobia"—if I may coin a term to describe the mental attitude of those addicted to tilting at windmills. I feel as he does about the word "abmngnosia," but I am uncertain whether it is my mattering of the classics that is responsible. I feel that a word has no claim to be added to the language of Shakespeare if it is clumsy or ugly, no matter how pure its descent from nose of Plato and Cicero; and conversely that words, like poses, should not be condemned simply because they are hybrids. And "abmngnosia" seems to me to be both clumsy and ugly.

It is hard to suggest an alternative term. I for one would like occasionally to abandon Greek and Latin, and draw on our own literature: the term "Cheshire Cat Complex," conveniently abbreviated to "C.C.C.," might describe the condition. If we must stick to the classics, could we not give up the German habit of stringing words together until the resulting error is like a train of empty goods wagons, a thing without beauty, unity, or grace? A phrase is necessary to describe his state of mind, and I suggest *Mens sibi conscia sententiae*, which seems simple enough and is already three parts familiar.—I am, etc.,

J. N. FELL.

Colchester.

* * This correspondence is now closed.—Ed., B.M.J.

POINTS FROM LETTERS

The Tsetse Fly

Dr. G. PRENTICE (Fort Jameson, N. Rhodesia) writes: In the *Journal* of March 22 I turned to the letter (p. 388) on groundnuts in East Africa—not because specially interested in groundnuts but because it appeared to be from my old friend, Dr. J. B. Davey—to find that it dealt with another matter in which I have great interest, to wit, the tsetse fly problem. . . . Unless game can be driven to an altitude considerably over 4,000 ft. (1,220 m.), to drive them from one area into another (unless an unpeopled area) is sheer folly. They will only increase and multiply and sooner or later repeat the spread-out we have seen under protection whenever the costly measures required to hold them back are relaxed. At an altitude of 6,000 ft. (1,829 m.) I have never seen a tsetse fly, and there are excellent and extensive areas at about that height within the tropical belt. This great adventure in the production of fats for Britain deserves everything that can be done to make it a success. The animals destroyed to make success possible need not be wasted. In place of the "anthropological experts" I suggest canning experts, and that all meat not essential to the maintenance of the workers be canned or made into biltong and shipped home. Why search the Antarctic for whale meat when Britain owns the largest ranch probably in the world? . . . In Southern Rhodesia there are those who decry the policy there pursued, feeling as they do that the slaughter of wild animals is a very sorry business. But this extensive slaughter need never have taken place had the clean territories left us by the rinderpest epidemic been retained; and early warning was given that, when the time did come for indiscriminate slaughter to save human beings and domestic stock, the blame would lie not with those who opposed protection but upon those who put sport above everything else. There are two great scourges in Africa that, left to themselves to fight it out, might do so to the benefit of mankind in the long run. One is trypanosomiasis, which kills human beings and domestic animals. The other is rinderpest, which kills domestic animals and wipes out big game. Where it sweeps a district clean of game not a tsetse is to be seen. Now, our authorities have done everything in their power to prevent or eradicate rinderpest, which only slightly affects man, and I have never known of a fatal infection. Wild animals bring along tsetse; tsetse spreads trypanosomiasis; industries are impeded and human lives lost. . . . I fancy anyone clamouring for big game protection to the present Government would be barking up the wrong tree. Well then, why not add meat to the fat which the nut scheme envisages? Pack all the meat at present on the hoof where the clearings are to be, and to save the workers and feed the home folk do the same for ten miles around the groundnut areas—a first-rate health measure for home and here.

Shortage of Nurses

MISS JOAN MCCALLUM (London, S.W.19) writes: With reference to the letter of "Surgeon Commander, R.N." (May 24, p. 740) on the shortage of nurses: During seven years in Q.A.R.N.N.S. I frequently carried out instructional duties. I should like to point out the following facts to the Commander. (1) The orderly after his initial six weeks' training did not always enter the wards for practical experience but was allotted to non-nursing duties—i.e., pushing trolleys of medical stores, fire-watching, and messenger duties. This spoiled and deadened the enthusiasm of my keenest pupils. (2) When the orderly did enter the wards, he was at once taught to tremble and kneel down before the all-powerful god of paperwork, and so again missed practical experience. How can these men be suitable for inclusion on the *Register*? . . .

Financial Independence

Dr. W. CRAIG (Halifax) writes: The interests of the public and the interests of medical men already in State service (this is often overlooked) depend upon a strong independent profession. Independence in the long run is only possible if this includes financial independence, and the latter disappears the moment one's total remuneration comes from one source. This explains the paradox that, while N.H.I. has on the whole been a good thing for public and profession, its 100% extension would not be a good thing, as it would mean a profession not independent but wage-slave in type. Beware of attractive initial terms!

Tobacco

Dr. D. A. HERD (Leeds) writes: Allow me to congratulate Dr. Lennox Johnston on his excellent letter "Tobacco" (June 7, p. 827). Nowadays one sees health posters: "Spitting Spreads Disease," "Don't Cough," "Don't Spit," etc. If the public were advised "Smoke less," or better, "Don't smoke at all (except in your own house)," a great deal of the unpleasantness of smoking and spitting would be eliminated, and the benefit to health and mankind immeasurable.

Obituary

WILLIAM FIELDING ADDEY, M.D., F.R.C.P.

Dr. W. F. Addey died on June 20 at Otley, near Ipswich. He was born on April 23, 1872, the son of an Irish farmer; his mother was an Englishwoman. He was educated privately in Lanchester, and after leaving school was taken abroad by his mother, who was then a widow. He lived in Belgium, Germany, and France, and acquired a good working knowledge of both French and German. He was in Paris during the year when the hundredth anniversary of the fall of the Bastille was celebrated. The scenes he witnessed there made a deep impression on his youthful mind and did much to confirm the liberal outlook on social questions which was characteristic of him. In 1893 he matriculated at University College. Here he came into contact with, and was influenced by, E. V. Lucas, G. K. Chesterton, and A. E. Housman.

He soon decided that the profession of medicine would offer him the opportunities he sought for service to his fellows. He obtained the degrees of M.B., with honours in medicine, in 1900, B.S. in 1901, and M.D. in 1902; in 1925 he took the F.R.C.P. and ten years later was elected to the Fellowship. Addey acted as house-physician to Sir Frederick Roberts and as house-surgeon to Sir Rickman Godlee. His period of training before he went into general practice lasted for nine years, and he then joined a group of practitioners in Croydon with Dr. Parsons-Smith as the senior member. During the first world war he served for two years with the R.A.M.C. in France. When he was demobilized in 1919 he began to practise in Ipswich, where he found ample scope for applying his skill as a general and consulting practitioner. He was elected to the staff of the Suffolk and Ipswich Hospital, and later became consulting physician to it. He had been a member of the British Medical Association since 1903; and among other posts he held the office of president of the Suffolk Branch, 1932-3; representative in the Representative Body, 1934; and chairman, East Suffolk Division, 1935-6.

The claims of practice left him little time for engaging in his hobbies, the chief of which was sailing. These of his friends whom chance favoured will not soon forget the delightful experience of sailing with him in his yacht from the village of Pinmill near Ipswich to Harwich Harbour and back again between the wooded banks of the Orwell Estuary. He was fond of music, and he had a good collection of sets of the English classical authors, for he early acquired a love of literature. He keenly enjoyed foreign travel.

A friend writes, on behalf of his colleagues in Ipswich: We wish to give expression to our sense of the worth of the late Dr. Addey and of the loss we have sustained by his death. He came among us in middle life and soon made his presence felt in a way that was wholly acceptable to us. His advice was widely sought, particularly in cases of affections of the heart; he had made a special study of electrocardiography and had contributed valuable papers on the subject to the medical Press. His quick perceptions, his habit of thorough investigation, and his calm, considered judgment made him a helpful consultant. He had delightful personal attributes, including a keen sense of humour, which endeared him to all. A charming host and an equally charming guest, he combined the qualities of a great gentleman and of an able doctor. The efforts he made to carry on his work during the trying years of the recent war stand out as a shining example of tireless self-sacrifice. A serious illness about two years ago compelled him to retire from work, but after a gallant struggle he regained sufficient strength to resume his consulting practice. His end came suddenly and peacefully; after the busy life he led he has well earned his rest. We offer our sincere sympathy to his widow and two daughters in their bereavement.

Mr. DAVID JOHN EVANS, or "D.J." as he was known to so many of his associates, died on May 20. He was in his early fifties, but an extremely active clinical life had for the last ten years been interfered with by ill-health; periods of intense surgical activity, which in earlier days had been his routine, were followed by recurrences of his complaint, and yet he bore

these setbacks cheerfully. After receiving his medical education at Birmingham University, where he qualified in 1913, he served in the R.A.M.C. and then went to China. From 1922 he was assistant professor of oto-laryngology at Shantung Christian University. He returned to England after five years, but his work in the mission field had left its stamp on "D.J." and moulded his manner of life. After obtaining the F.R.C.S. in 1927 he joined the staff of the Birmingham and Midland Ear and Throat Hospital, and a year afterwards that of the Queen's and United Hospital; ill health caused him to give up the latter appointment. For many years he was aural surgeon to the Birmingham education committee and a consultant to several charitable institutions. He was honorary secretary of the Birmingham Central Division of the British Medical Association from 1930-5, and chairman of the Division in 1935-6. He had been an active member of the Association for twenty-eight years.

Dr. FREDERICK CANT, who was 85, died on May 22 at his home in Woodley, near Stockport. At the age of 22 he came from London as an assistant to Dr. Smith of Woodley after being apprenticed to Dr. New for four years. A student of Owen's College, Manchester, he qualified in 1888, and was for twelve months a resident at Stockport Infirmary. During his apprenticeship he had attended more than 200 midwifery cases, an experience which proved invaluable in his long career as a family doctor. On the death of his principal, he took over Dr. Smith's practice. In those early days he paid all his visits on horseback but was one of the first to take to motoring. He was medical officer of health for Bredbury and Romily U.D.C. for 48 years, retiring when a full-time M.O.H. was appointed in 1938. He was also district medical officer to the Board of Guardians and the Post Office, and served as medical officer for one part of the Manchester Ship Canal during its construction. Dr. Cant joined the British Medical Association in 1890 and was also at one time president of the Stockport and District Medical Society. In 1915 he was elected the second chairman of the newly formed Hyde Division, a division inaugurated on the eve of the first world war. He held office for three years and gave valuable service as chairman of the Local Medical War Committee. He acted as M.O. to the 6th Battalion of the Cheshire Volunteers. Dr. Cant was a devout churchman and for many years a churchwarden of St. Mark's Church, Bredbury.

Mr. WILLIAM EVERETT died suddenly at the Royal Hants County Hospital on June 15 at the age of 56. Mr. Everett qualified M.B., Ch.B. at Edinburgh University in 1917 and took the F.R.C.S. Ed. two years later. He had been house-surgeon at the Edinburgh Royal Infirmary and demonstrator of anatomy at the University. He was later R.S.O. at Bradford Royal Infirmary and had contributed a number of articles on surgical subjects to this and other journals. He had been a member of the British Medical Association for twenty-seven years.

K. M. R. writes: By the sudden death of William Everett, the profession has been severely hit, for his technical skill and his wise and often inspired judgment placed him in the front rank. It will be difficult to replace him in the county where his work was done. For nearly twenty years he had served on the honorary staff of the Royal Hants County Hospital, Winchester, and his long and ever lengthening waiting-list spoke eloquently of his popularity. A wide circle of professional friends had grown to know his skill and ability, and to depend upon him in a way that is not often experienced. These will feel his loss acutely. This confidence was shared in a high degree by his patients, for he had in generous abundance the power to instil confidence at very short notice. His surgical judgment was unflinching, and his technical ability was of a very high order. He was a joy to watch, and a model worthy of the closest emulation. Those who have had the good fortune to work as his house-surgeons have recorded with pride and gratitude their lasting indebtedness to him. His appetite for work was hard to satisfy and remained with him even when indifferent health made his long operating lists a heavy burden. His loyalty to colleagues who had sent patients to him made it difficult for him to delegate work, and he strove to the very end to reduce the grotesque numbers on his waiting-lists, a struggle which was doomed to failure, for his popularity never ceased from growing, and as the years passed he became more and more in demand. He was a great surgeon and one who would have found himself in the front rank wherever his work was done. But he will be mourned and missed for more than professional qualities. So many will recall with gratitude his outspoken opposition to injustice. Many more will recall his loyal friendship and the ease with which he gave the benefit of the doubt to what was good, rejecting the less good. His interests were wide. In earlier days he had played golf from

scratch and could hit a tennis ball hard and straight. He loved his garden, and it was a joy to behold, while his knowledge of pewter and his personal collection were outstanding. He seemed happiest in his home, and watched with great pride the promise of his son and daughter, while his constant care of a wife who had been through a long illness was good to see. It will be a long time before the gap his death has made will be filled, for he had made for himself a unique position in the professional and social life of his city. He was as dearly loved as he was admired, and the writer's feeling of deep personal loss will be shared by many.

Mr. L. Z. Cosin writes: Although the obituary notices of Prof. NOAH MORRIS have paid due praise to much of his work, I do not think it is sufficiently widely known how great his interest in the medical care and general welfare of all old people had been latterly. In addition to stimulating general interest in the geriatric work in his own hospital, Prof. Noah Morris had instituted several interesting and original approaches to research in this subject. Meeting him regularly at a small Ministry Committee considering this problem, we were all struck by the warm humanity and medical skill he brought to bear on this pressing subject.

V. A. writes: It was with the deepest regret I saw the death of Prof. A. F. BERNARD SHAW reported in the *Journal* of June 21 (p. 904). To Durham students who had the privilege of his teaching during the years when his health was relatively good, he will be unforgettable. He combined a passion for his subject which he endowed with almost the grandeur of the heroic saga, with an intense hatred of all that was petty and slovenly. We will remember him with gratitude for the inspiration which he gave us as a teacher, for the kindness and encouragement which he gave us individually, and for his refusal to compromise with anything falling short of the highest standards of our profession.

Medico-Legal

A LONG GESTATION PERIOD

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

English law dislikes rigid rules of evidence binding the court to presumptions of fact. For instance, whereas the law of several foreign countries lays down limits for the possible period of gestation, our law knows no such limits and our courts have consistently refused to fix one. In the case of *Clark v. Clark*¹ the President, Lord Merriman, refused to hold that a child was illegitimate which survived after an apparent pregnancy of 174 days. At the other end of the scale the court held in *Gaskill v. Gaskill*² that 331 days was not too long a pregnancy to admit as possible. Even this record was broken in the recent case of *Wood v. Wood*.³

A wife summoned her husband before the justices for desertion. The husband's defence was that he was not bound to continue to live with his wife because she had committed adultery. Evidence was given of the last date on which the couple actually cohabited, and of the birth of a child, fully grown and somewhat over the average weight, 346 days afterwards. The husband called no evidence of any association between the wife and other men, but maintained solely in view of the length of the gestation that the child could not be his. The magistrates, rightly considering that the allegation of adultery is serious and must be strictly proved, refused to assume adultery on the gestation period alone, but accepted the evidence of the wife denying it.

The president of the Divorce Court, hearing the husband's appeal, agreed that there must come a point at which any judge must take judicial knowledge of the fact that the period is altogether outside what is possible, and also that one case or another must be on the wrong side of any line that can possibly be drawn. He absolutely declined, however, on the information before the court, to say that it was bound to hold that 346 days was on the wrong side of any line that could possibly be drawn and that the wife had committed adultery. The court also held

that, although the husband believed that the wife had committed adultery and that he was not the father of her child, he had nevertheless deserted her, because his belief was not induced by such an act on her part as would lead a reasonable person to believe that she was guilty of adultery. It therefore upheld the order of the justices requiring the husband to maintain the wife.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

On June 12 the honorary degree of D.Sc. was conferred on Sir Edward Mellanby, K.C.B., M.D., F.R.S., Honorary Fellow of Emmanuel College and Secretary of the Medical Research Council. On June 17 the degree of M.D. was conferred on M. S. M. Fordham.

The following candidates have been approved at the examination indicated:

FINAL M.B.—Part II (*Principles and Practice of Physic, Pathology, and Pharmacology*): A. Ackroyd, W. E. C. Astle, A. P. C. Bacon, W. H. Barker, H. B. Barlow, W. Beattyman, S. B. Bennett, G. A. Bracewell, R. W. Brown, M. A. J. Browne, J. H. S. Buchanan, J. D. Burion, H. W. Cornford, A. F. Crick, M. de B. Daly, R. J. Dickson, A. B. Douglas, M. C. Edmond, D. M. Evans, G. R. Faber, A. S. Fairbairn, A. W. Ferguson, N. B. Finter, D. K. Ford, W. D. Foster, A. G. Freeman, J. H. Garson, K. O. George, R. V. Gibson, J. G. Goodhart, C. L. Grandage, J. L. Hansell, P. A. S. Hargrove, M. Harington, J. L. Harris, R. E. D. Harvey-Samuel, F. G. Herman, C. F. Hingston, C. W. Hollingsworth, S. H. F. Howard, G. W. C. Johnson, H. B. Kidd, R. G. Law, I. S. Longmuir, J. M. S. McCoy, J. McFie, L. E. McGee, I. C. K. Mackenzie, I. D. Mackichan, G. T. B. Mackinnell-Childs, K. M. McNicol, G. C. Manning, J. L. Moffatt, D. C. Morley, T. G. Osmond, J. M. Palmer, J. K. P. Perera, E. E. Philipp, G. S. Plaut, R. C. S. Pointon, R. H. B. Protheroe, P. K. Pybus, R. C. Read, D. H. Richards, E. T. Roberts, A. W. Robinson, R. A. Robinson, M. G. Rolfe, A. J. Russell, E. Sherrah-Davies, E. P. H. Shortt, R. S. Smylie, W. Spector, M. P. Spence, F. C. Siallybrass, I. W. Stoddart, G. W. Sykes, N. Tate, G. E. Thomas, P. G. Trehan, J. A. Tutton, M. H. D. Veale, L. G. R. Wand, A. P. Waterson, J. S. W. Whitehead, A. J. W. Woodroffe, P. M. Yap, P. M. Yeoman, R. E. V. B. Young. *Women*: J. M. Cockrell, J. Crossley, P. E. Davis, L. A. Farquharson, J. K. Goodacre, H. A. Jaques, I. Kane, Mrs. P. D. Kilner, R. M. Licence, Mrs. M. R. Simpson, S. G. Wills.

UNIVERSITY OF LONDON

Sir Francis Fraser, M.D., F.R.C.P., director of the British Postgraduate Medical Federation, has been appointed Deputy Vice-Chancellor of the University for 1947-8.

Kenneth James Franklin, D.M., F.R.C.P., has been appointed to the University Chair of Physiology tenable at St. Bartholomew's Hospital Medical College, from Oct. 1.

The degree of D.Sc. has been conferred on W. J. Martin, an internal student of Birkbeck College and of the London School of Hygiene and Tropical Medicine.

Sir Herbert Eason has been reappointed to represent the University on the General Medical Council for a further period of three years from November, 1947.

Prof. Hamilton Hartridge, M.D., Sc.D., F.R.S., resigns from the Chair of Physiology at St. Bartholomew's Hospital Medical College, as from Sept. 30.

The following have been recognized as Teachers of the University in the subjects indicated in parentheses. *London Hospital Medical College*: Mr. A. Bowen-Davies (Oto-Rhino-Laryngology); Mr. H. Osmond Clarke (Orthopaedics); Mr. A. J. King (Venereal Diseases); Dr. K. M. A. Perry (Medicine); Dr. W. S. Tegner (Physical Medicine); Mr. V. C. Thompson (Surgery). *Guy's Hospital Medical School*: Dr. P. M. F. Bishop (Medicine). *St. George's Hospital Medical School*: Mr. A. H. Charles (Obstetrics and Gynaecology); Dr. T. Crawford (Pathology); Dr. J. F. Dow (Medicine); Dr. E. Miller (Mental Diseases); Mr. A. H. M. Siddons and Mr. E. R. Smith (Surgery); Dr. D. J. Williams (Medicine); Mr. R. H. Young (Orthopaedics). *Royal Free Hospital School of Medicine*: Miss Dorothy J. Collier (Oto-Rhino-Laryngology); Dr. Katharine G. Lloyd-Williams (Anaesthetics); Dr. Dulcie C. Staveley and Dr. E. U. Williams (Radiology); Mr. R. H. Maingot (Surgery). *University College*: Dr. W. A. Fell (Anatomy). *University College Hospital Medical School*: Dr. W. Moodie and Dr. F. Dillon (Mental Diseases); Dr. E. E. Pochin (Medicine). *National Institute for Medical Research*: Dr. A. A. Miles (Bacteriology, Immunology, and Hygiene). Dr. D. C. Shields has been granted probationary recognition as a Teacher of Physical Medicine at St. George's Hospital Medical School for two years from February, 1947.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Dr. W. K. Livingston, professor of surgery in the University of Oregon, will deliver a Moynihan Lecture at the College (Lincoln's Inn Fields, W.C.) on Tuesday, July 8, at 6.15 p.m. His subject is "Physiological Responses to Wounding."

¹ (1939) P. 228.

² (1921) P. 425.

³ (1947) 2 All E.R. 95.



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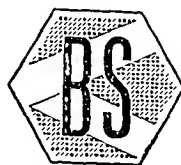
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References: Shortage of space precludes list of references, but full documentation may be obtained on application to Clinical Research Dept. 26 B.



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At an ordinary meeting of the Council of the College, held on June 12, with Sir Alfred Webb-Johnson, Bt., President, in the chair, it was announced that a Supplemental Charter had been granted to the College, giving power, among other things, to co-opt additional members of the Council, to conduct a special Final Fellowship examination in ophthalmology and otolaryngology, to grant a Fellowship in Dental Surgery, and to institute faculties in the College.

The following were co-opted members of the Council for the ensuing year: Dr. H. Guy Dain (General Practice), Mr. G. F. Stebbing (Radiology), Mr. V. E. Negus (Otolaryngology), Dr. A. D. Marston (Anaesthetics), Mr. George Black (Ophthalmology), Mr. R. V. Bradlaw (Dental Surgery), Mr. L. Carnac Rivett, subject to the result of the Council election (Gynaecology and Obstetrics).

Mr. R. J. McNeill Love was appointed as representative of the College on the British Social Hygiene Council.

Diplomas of Fellowship were granted to the following successful candidates:

allough, R. Petticrew, K. G. Rotter, A. W. L. St. J. M. C. Birt, J. V. Crawford, G. R. Crawshaw, Birmingham, F. B. Cockett, R. E. Shaw, H. M. Lewis, M. T. Phelps, J. J. Shipman, J. G. Taylor, F. T. Wheelton, K. W. Wilkinson, B. B. Milstein, D. J. Robertson, S. G. Tuffill, D. P. Choyce, R. Anthonis, D. B. Brown, R. T. Campbell, M. Chaudhuri, L. P. Clark, R. L. Cooke, J. B. Curtis, E. T. Dick, J. L. Dowling, Marjorie O. Dunster, S. M. Ghosh, N. O. K. Gibbon, W. Girdwood, A. J. P. Graham, R. T. Grime, W. G. Hendry, J. P. Herdman, C. Hollenberg, B. Lewin, G. M. Lewis, E. T. McCartney, S. T. McCollum, D. McIntosh, A. M. Lair, H. L. C. Maitland, P. E. Marchand, R. P. Melville, H. D. Moore, E. J. Nangle, S. M. Nawab, G. E. Nevill, J. S. Peters, S. F. Reid, R. B. Scott, R. A. Stephen, H. D. A. Sutherland, R. A. R. Taylor, G. J. Walley.

Diplomas in Anaesthetics were granted, jointly with the Royal College of Physicians of London, to the following successful candidates:

D. V. Bateman, O. H. Belam, C. H. Boyd, W. H. F. Boyd, P. R. Bromage, E. K. Brownrigg, R. Bryce-Smith, J. E. Bulow, D. Canter, A. A. Cithers, R. B. Clayton, F. E. Clynick, S. W. Collin, E. R. Coleman, P. B. Conroy, C. J. Corcoran, G. Curd, R. M. de Gregory, A. B. Eastwood, I. C. W. English, J. A. Forbes, A. Fraser, Eileen McC. Gibson, L. J. Goggin, J. Gordon, A. H. Grace, P. W. S. Gray, H. Grenville, J. H. G. Halliday, J. K. Harper, J. W. Hind, A. C. Holmes, H. R. Hudd, G. Hughes, R. McD. S. Keir, J. Lapraik, C. H. Levick, J. K. Lewis, Mary E. Lloyd, R. E. Loder, J. M. MacCormack, R. M. Mackenzie, R. L. McMillan, S. A. Mason, J. G. Matheson, E. T. Moersch, P. H. Moore, W. B. Neff, G. S. Osler, W. J. Patterson, J. Psaila, H. J. Richardson, Hilda Roberts, J. D. Robertson, F. R. Russell, C. F. Seurr, E. Thomas, T. C. Thorne, C. E. Tudor, Ambrosine B. Vaughan, Patricia E. Wallace, Mary Watson, H. L. J. Wilson, G. P. Williams, T. M. Williams, T. N. P. Wilson, E. H. Winterhoutom, Luise Wislicki, R. B. Wright.

A Diploma in Medical Radio-diagnosis was granted, jointly with the Royal College of Physicians of London, to R. L. T. Hill (Glasgow).

A Diploma in Child Health was granted, jointly with the Royal College of Physicians of London, to S. Ray (Calcutta Medical School).

A series of lectures on anatomy, applied physiology, and pathology will be delivered at the College from Monday, June 30, to Thursday, July 31, and from Monday, Sept. 1, to Tuesday, Sept. 16 (Saturdays and Sundays excepted), at 3.45 p.m. and 5 p.m. each day. The fee is £16 16s. Fellows and Members of the College and Licentiates in Dental Surgery will be admitted for £12 12s. Admission cards may be obtained from the assistant secretary of the College.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the meeting of the President and Fellows of the Royal College of Physicians of Ireland held on June 6 Dr. Eamonn de Valera and Dr. J. Browne Fleming were admitted Fellows and Dr. P. M. Alston, Leslie Doyle, Leslie Fridjohn, Alan P. Grant, George Gregg, John Hayes, P. D. J. Holland, W. Dillon Hughes, Sean D. McGrath, Harry O'Flanagan, and Bethel E. R. Solomons Members of the College.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council of the College, held on May 31 with the President, Mr. W. Gilliat, in the chair, it was announced that the Rt. Hon. Field Marshal Jan Smuts, P.C., had accepted an invitation to become an Honorary Fellow.

To mark the grant of the Royal Charter of Incorporation on March 21 the following four surviving signatories to the Articles of Association, whereby the College was founded, were elected to the Honorary Fellowship: Prof. J. M. Munro Kerr, Prof. C. G. Lowry, Sir Ewen Maclean, and Sir William Fletcher Shaw.

The following were elected to the Council to replace those retiring in statutory rotation: As Representatives of the Fellows, D. Baird (Aberdeen), Alice Bloomfield (London), G. I. Strachan (Cardiff). As Representatives of the Members, J. A. Sialworthy (Oxford), A. M. Sutherland (Glasgow), R. J. Wotherspoon (Glasgow).

A standing committee of the Council, to be known as the Australian Regional Council, has been set up in Australia, with Dr. F. A. Maguire (Sydney) as chairman, to act as a representative committee of the council of the College in discussions and negotiations affecting the practice of obstetrics and gynaecology in Australia.

Prof. B. T. Mayes (Sydney) will act as honorary secretary of the Australian Regional Council.

The following were admitted to the Fellowship of the College:

M. D. Black, J. S. Hovell, J. Jhirad, T. N. MacGregor, R. Newton, G. D. Shaw, G. S. Smyth, H. S. Walters, B. Williams.

The following were admitted to the Membership of the College:

D. Ballantine, Margaret R. Biggs, W. S. Campbell, J. B. Cochrane, S. J. Cohen, H. V. Corbett, A. Davis, J. R. Dickinson, Bessie Dodd, Morag Dods, R. C. Gill, Jean L. Hallum, R. S. Lawrence, T. H. Lawton, J. M. McBride, R. A. E. Magee, M. K. O'Driscoll, S. F. Pooley, L. J. Quinn, R. B. Salter, P. C. Thomas, Kathleen M. FitzG. Worrall, J. L. Wright.

Medical Notes in Parliament

V.D. in British Forces

Dr. SEGAL, on June 25, discussed the incidence of venereal disease in British Forces overseas. He said the British soldier was less prone to V.D. than the soldiers of any other Allied force. He believed statistics which had been given lately in the House of Lords (*Journal*, June 14, p. 867) were unreliable, because though they dealt with incidence of the disease over 12 months per 1,000 men in a Command they failed to take account that these men were in a mobile state through postings and replacements, so that their numbers were considerably increased. The real problem was how far risks of infection had been taken for every recorded case of disease. With wide dissemination of knowledge, with well-known methods of prophylaxis and early treatment, and with a relatively low proportion of relapses and recurrences, the figures actually given were symptomatic of a general loosening of moral ties which affected many countries beside our own. He asked how the Secretary for War explained a rate of incidence of V.D. in the Far East six times as high as in the Middle East. Why was the rate in Germany and Austria to-day almost five times as high as in the Middle East? More could be done in regard to the branches of the Services which dealt with the moral and cultural well-being of men in the Forces, and welfare activities by civilian agencies should be encouraged more, even in occupied territories.

Mr. JOHN FREEMAN, replying for the War Office, said Dr. Segal's approach to the problem was correct. The difficulty could only be overcome by making conditions in the Services overseas such that the temptation leading to this scourge was less likely to arise. There tended to be a periodic rise in the incidence of the disease after a war, and a peak period which the Forces had now perhaps passed. For the first quarter of 1946 the Rhine Army figures were 30.4 per 1,000; for the second quarter 41.8; for the third quarter 44.6; for the fourth quarter 41.8, and for the first quarter of 1947 30 per 1,000. He hoped the decline would be accelerated. The increase in the middle of 1946, the reduction at the end of last year, and in the beginning of this year were substantially reflected in the Commands. These were terrible figures, but lower than for a similar period after the first World War, although men were now more ready to report this disease. He could not give a clear answer to show why the incidence of the disease should be lower in the Middle East, but Service conditions there, substantially removing the men from female companionship, had a great deal to do with it. In Germany, Austria, and the Far East conditions were conducive to V.D., and its incidence among the civilian population was high. Only recently had the Army started to make progress in controlling sources of infection in the Far East. It had more civilians doing welfare work abroad than it had during the war. It was obvious that, although medical methods could limit the seriousness of the problem, the way to eliminate it was by a moral, educational, and welfare approach.

Central Purchase of Hospital Equipment

Mr. HAYDN DAVIES, on June 26, asked the Minister of Health to what extent it was proposed to obtain equipment and supplies for hospitals under the National Health Service by centralized purchase in place of the present system of purchase by individual hospitals; and whether a similar policy would be applied to installation and maintenance services.

Mr. BEVAN answered that hospital equipment and supplies covered a wide range. For some items, there might be advantage in central purchase. But where present methods of supply and servicing worked satisfactorily it was not proposed, at the outset of the new Service, to interfere with them. For the time being central purchase would be limited to major

equipment which was in short supply, and various other items which might be found to lend themselves to central purchase on grounds of economy or better efficiency.

Negotiations with the Minister

On June 26 Dr. SEGAL asked whether any interim report would be issued to the House on the progress of negotiations with the Negotiating Committee of the medical profession; and when this interim report could be expected.

Mr. BEVAN said there would be no such issue. He expected that these negotiations would remain confidential until the outcome was known.

Dr. SEGAL asked to be assured that if an interim report was received it would first be circulated to M.P.s rather than be issued for private circulation among 55,000 qualified members of the medical profession.

Mr. BEVAN said the negotiations were with the profession about the conditions under which they proposed to serve in a national service. They did not directly concern M.P.s. The matter was essentially one for the medical profession in the first instance and afterwards for the House of Commons if it wished.

EPIDEMIOLOGICAL NOTES

Food-poisoning at Birkenhead

Over a hundred people at five different parties in the Birkenhead and Wirral area were taken suddenly ill in the course of Saturday, June 28. All required treatment, and 72 were admitted to three hospitals. Except for a few cases all were discharged to their homes on the following day.

It was soon clear that the only item of food common to the four wedding parties and a child's birthday party was a large trifle. At one party 5 people in a group of 6 ate the trifle and were affected; the only one who did not eat the trifle was not affected. Further investigation showed that a woman and her child who ate the trifle after scraping off the cream which covered it were also affected. This suggested that it was the body of the trifle rather than the cream layer which was infected.

Bacteriological investigation revealed *Staph. aureus* as the organism probably responsible. It was recovered from the patients, from the trifle, and from a sty on the eye of one of the employees who prepared the trifle. Typing has not yet been completed.

Discussion of Table

In *England and Wales* there was a fall in the notifications of most infectious diseases; the decreases included measles 2,739, acute pneumonia 87, and cerebrospinal fever 14, and the only increase of any size was scarlet fever 103.

A small rise in the incidence of scarlet fever was recorded throughout the country; the largest increase was Glamorgan-shire 27. No change occurred in the local trends of diphtheria. The only variations in the returns for whooping-cough were an increase in London 31, and a decrease in Surrey 46.

There were large decreases in the notifications of measles in many areas; the largest falls were Essex 332, Lancashire 265, Yorkshire West Riding 261, London 166, Derbyshire 147, Southampton 137, Lincolnshire 130, Middlesex 124, and Surrey 111.

Of the 12 cases of paratyphoid fever, 10 were notified in Durham (Gateshead C.B. 4, Blaydon U.D. 5, Stanley U.D. 1). A new outbreak of dysentery in Berkshire involved 18 persons (Abingdon M.B. 11, Abingdon R.D. 6, and Hungerford R.D. 1).

In *Scotland* there was a decrease in the notifications of acute primary pneumonia 92, whooping-cough 37, scarlet fever 30, and diphtheria 8. Of the 39 cases of dysentery 19 were notified in Edinburgh.

In *Eire* a rise occurred in the incidence of diarrhoea and enteritis 29 and of measles 17. These rises were mainly due to the experience of Dublin C.B.

In *Northern Ireland* only slight changes were reported in the incidence of infectious diseases.

Week Ending June 21

The notifications of infectious diseases in *England and Wales* during the week included: scarlet fever 870, whooping-cough 2,107, diphtheria 220, measles 10,632, acute pneumonia 328, cerebrospinal fever 39, acute poliomyelitis 44, dysentery 47, smallpox 7, paratyphoid 11, typhoid 7.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 14.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947					1946 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	49	2	26	2	—	44	4	17	3	1
Deaths	—	—	1	—	—	—	—	—	—	—
Diphtheria	195	17	38	15	4	262	18	99	25	13
Deaths	2	—	—	—	—	1	—	1	—	—
Dysentery	48	5	39	1	—	146	20	48	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	—	—	3	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	1	21	4	1	—	—	34	13	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	83	6	24	47	6	41	6	9	24	5
Deaths	—	—	—	8	—	—	—	—	3	—
Measles*	10,796	515	151	149	16	4,415	1,081	660	36	23
Deaths	4	—	1	—	—	4	2	1	—	—
Ophthalmia neonatorum	68	4	16	—	—	63	7	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	12	—	—	—	—	4	—	1(A)	—	—
Deaths	—	—	—	—	—	—	—	1(B)	—	—
Pneumonia, influenzal ..	380	17	2	2	8	505	27	9	—	2
Deaths (from influenza)†	4	—	1	—	—	11	4	—	—	—
Pneumonia, primary ..	—	12	129	20	3	—	28	141	10	8
Deaths	—	—	6	—	—	—	—	11	—	—
Poli-encephalitis, acute	3	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	31	4	2	8	—	12	—	1	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	1	21	—	—	—	1	17	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡ ..	124	4	10	—	4	134	5	14	3	2
Deaths	1	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	833	73	96	21	30	866	85	187	24	20
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	4	—	—	1	—	7	—	1	7	3
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,062	262	108	51	13	1,625	150	86	28	27
Deaths	10	1	1	3	—	8	2	—	1	1
Deaths (0-1 year) ..	395	44	63	41	17	337	50	54	22	22
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	4,111	613	554	198	96	4,189	647	557	193	129
Annual death rate (per 1,000 persons living) ..	—	—	11.5	12.5	—	—	—	12.3	12.4	—
Live births	9,932	1660	1218	391	272	8,778	1371	1123	338	280
Annual rate per 1,000 persons living ..	—	—	24.5	24.7	—	—	—	22.6	21.7	—
Stillbirths	252	32	29	—	—	230	32	33	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	23	—	—	—	—	29	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Medical News

The Lister Institute

The report of the Governing Body of the Lister Institute of Preventive Medicine, which has just been published, records that the Council has re-elected to the Governing Body as its representatives Prof. H. R. Dean, F.R.C.P., Sir Paul Fildes, F.R.S., and Sir Henry Dale, F.R.S. Research units housed at the Institute are the Bacterial Chemistry Unit, the National Collection of Type Cultures, and the Blood Group Research Unit, all of the Medical Research Council, and the Blood Group Reference Laboratory of the Ministry of Health. A survey of the scientific work carried out during the year refers to Mr. Standfast's examination of the characteristics of *H. pertussis* to discover whether the organism undergoes dissociation due to inherent or environmental factors and whether these influence the potency of vaccines. Miss Spooner, studying the reactive substances found in transfusion material, has been concentrating chiefly on the liberation of histamine and adenosine from the perfused lung when such substances are given intravenously; and she and Dr. M. G. Macfarlane have been investigating the chemical changes in muscles during and after ischaemia. The results suggest that the changes leading to clinical shock after the release of a tourniquet may arise from the failure to re-establish the cycle of carbohydrate metabolism. Dr. Duthie, working with organisms of the subtilis group, has shown that the maximum production of penicillinase is obtained only when penicillin is added continuously during the growth phase of the bacteria, and he is investigating the possibility of producing an antiserum against staphylococcal penicillinase. Drs. Mackay and Kekwick have developed a procedure (suitable for large-scale production) for separating immune globulins from human plasma. Preliminary tests by the Medical Research Council indicate that the product is prophylactic against measles. Investigations into nicotinamide are being continued by Dr. Ellinger and his colleagues, who have published two papers in this *Journal* (Oct. 26, 1946, p. 611, and May 17, 1947, p. 672).

Ex-Service Nursing Orderlies

Correspondents in our columns have recently debated whether Service-trained nursing orderlies should be admitted as State registered nurses without obtaining civilian qualifications, with a view to mitigating the shortage of nurses. The Department of Health for Scotland now announces that opportunity will be given for ex-Service men and women nursing orderlies with first-class qualifications to become State registered nurses after an intensive course of one year's duration instead of the normal three years'. The General Nursing Council for Scotland will allow ex-Service men and women to sit for the examinations if they were Class I nursing orderlies, or the equivalent, in the Forces and had two years' experience of nursing under a State registered nurse. Three such courses have started at Stracathro Hospital, Angus, the Law Junction Hospital, Lanarkshire, and Ballochmyle Hospital, Ayrshire; a fourth is being planned. Temporary nursing employment before the opening of the course will be found for those who want it. Men and women in the Forces should apply through Service channels; those who have been demobilized should write to the Chief Nursing Officer, Department of Health for Scotland, St. Andrew's House, Edinburgh.

Buckston Browne Prize

The council of the Harveian Society of London has selected "The Mental and Physical Effects of Pain" as the subject for the next Buckston Browne Prize essay. The prize, consisting of a medal and £100, will be awarded for the best essay on the above subject and is open to any member of the medical profession, under 45 years of age, registered in the British Isles or the Dominions. Essays must be submitted by Oct. 1, 1948. Further particulars may be obtained from Sir Cecil Wakeley, K.B.E., C.B., D.Sc., F.R.C.S., 14, Devonshire Street, Portland Place, London, W.1.

B.C.G. in Norway

At a meeting of the Tuberculosis Association of Norwegian Doctors, a resolution, unanimously adopted, included this statement: "The Tuberculosis Association of Norwegian Doctors recommends to the Department for Social Affairs the promotion of proposals for a law dealing with general B.C.G. vaccination of school-children of the national schools at school-leaving age, army recruits, and other young people, as well as of other population groups which are particularly exposed to infection with tuberculosis."

Exhibition at the Bodleian

An exhibition of books and manuscripts on medicine, surgery, and physiology has been opened at the Bodleian Library, Oxford (admission free). An illustrated catalogue (price 1s.) is available. The manuscripts include works by Hippocrates, Galen, Isaac Judaeus, Albucasis, and Avicenna.

R.S.M. Awards and Elections

Sir Alexander Fleming and Sir Howard Florey were jointly awarded the Gold Medal of the Royal Society of Medicine on July 1. Prof. R. R. Macintosh was awarded the Hickman Medal in Anaesthesia. At the same meeting the following were elected Honorary Fellows: Sir Edward Mellanby, Dr. C. M. Wenyon, Prof. Naguib Mahfouz Pacha, of Cairo, and Prof. Einar Key, of Sweden. The following Officers were elected for the session 1947-8: president, Sir Maurice Cassidy; immediate past president, Sir Gordon Gordon-Taylor; hon. secretaries, Mr. W. A. Pool and Dr. A. T. M. Wilson; hon. treasurers, Dr. Charles Newman and Mr. L. R. Broster; hon. librarians, Mr. E. K. Martin and Dr. Thomas Hunt; hon. editors, Mr. Eric A. Crook and Dr. E. R. Cullinan.

Visit of Czech Pathologist

Prof. Herman Siki, Director of the Department of Morbid Anatomy at the University of Prague, is visiting this country under the auspices of the British Council, and delivered a lecture on "Lesser Known Histological Methods for Routine Use in the Laboratory" at the meeting of the Association of Clinical Pathologists at Cambridge on June 27. He is attending the meeting of the Pathological Society at Newcastle on July 4-5 and will then return to London.

Discoverers of Paludrine Honoured

Drs. F. H. S. Curd, D. G. Davey, and F. L. Rose were presented with the Gold Medal in Therapeutics of the Society of Apothecaries on June 17 at the Apothecaries' Hall by the Master of the Company Dr. C. Thackray Parsons, for the joint research which culminated in the discovery of paludrine. Dr. Davey has also been awarded the Chalmers Medal by the Royal Society of Tropical Medicine and Hygiene. At the age of 34 he is the youngest recipient of this medal.

For Discovery of BAL

Prof. Rudolph Peters, M.C., F.R.S., who produced BAL early in the recent war, has been presented with the United States Medal of Freedom and Silver Palm.

COMING EVENTS

Royal Medico-Psychological Association

The 106th annual meeting of the Royal Medico-Psychological Association will be held in the Winter Garden Lecture Hall, Eastbourne, on Wednesday, Thursday, and Friday, July 9, 10, and 11, under the presidency of Dr. W. Gordon Masefield. The proceedings will open with the annual general meeting on July 9, at 11 a.m., when the officers for 1947-8 will be elected and other business transacted. At 2.30 p.m., Dr. Masefield will be inducted to the office of president and will deliver an address, and at 7.30 p.m. for 8 p.m., the annual dinner will be held at the Gran Hotel. On July 10, at 10.15 a.m., Dr. Geoffrey Evans and Dr. Noel Harris will present papers on "The Place of Psychiatry in Medicine," and at 2.15 p.m. there will be papers by Dr. Donald Stewart on "The Relation of Society to Occupational Health," and by Dr. John Thwaites on "Psychiatry in Relation to General Practice." On July 11, at 10.15 a.m., a paper by Mr. F. C. Webster, Architect to the Board of Control, and Dr. J. J. O'Reill on "The Planning of Modern Psychiatric Units," will be presented and at 2 p.m. the Child Psychiatry Section will meet at Public Health House, The Avenue, Eastbourne.

Urology

The seventh congress of the International Society of Urology will be held at St. Moritz, Switzerland, from Aug. 25 to 28, with the following programme which shows in parentheses the names of the British contributors to the discussions. Aug. 25, "The Aetiology of Primary Renal Calculus" (Mr. H. P. Winsbury-White). Aug. 26, "The Diagnosis and Treatment of Renal Tuberculosis" (Mr. Hamilton Bailey, Dr. Cuthbert Dukes, Mr. David Band). "Transplantation of the Ureter" (Mr. Arthur Jacobs). Aug. 27, general excursion and meeting. Aug. 28, "The Use of Sulphonamides and Penicillin in Urology" (Mr. J. G. Yates and Mr. Clifford Morson); "Hormone Therapy in Cancer of the Prostate" (Mr. Clifford Morson, Mr. Hamilton Bailey). Aug. 29 there will be excursions to sanatoria. Further particulars of the congress may be obtained from Mr. Clifford Morson, O.B.E. F.R.C.S., 86, Brook Street, London, W.1.

Abernethian Society

Prof. John Fulton, Sterling Professor of Physiology in the University of Yale, will deliver an address on "Harvey Cushing and His Books" before the Abernethian Society in the Clinical Lecture Theatre of St. Bartholomew's Hospital, London, E.C., on Thursday, July 10, at 5.30 p.m.

Presentation of Prizes

Sir Frederick Ogilvie will present the prizes in the library of the London Hospital Medical College on Wednesday, July 9, at 3 p.m.

Pure and Applied Chemistry

The eleventh International Congress of Pure and Applied Chemistry, which the war prevented from being held in 1941, will be held in London on July 16-24, in conjunction with the also postponed Centenary Celebrations of the Chemical Society. Lord Overhulme will preside. Further information may be obtained from the Hon. Organizer, the 11th International Congress of Pure and Applied Chemistry, 56, Victoria Street, London, S.W.1.

Medical Hydrology

The annual meeting of the International Society of Medical Hydrology will be held at Rheinfelden, Switzerland, from Sept. 11 to 15, with the following programme: Sept. 11, first medical discussion, "Spa and Climatic Treatment for Children"; Sept. 12, papers on "Peripheral Vascular Disorder," followed by "Balneotherapy in Non-rheumatic Diseases," at Schinznach Bad; Sept. 13, "Spa treatment in Rehabilitation after Accidents and War Injuries," to be held at Baden; Sept. 14, Further papers, at Basle; Sept. 15, beginning of excursion through the Engadine, due to last eight days, with a supplemental three days in the Bernese Oberland, if so wished. Further details may be obtained from the honorary secretary, International Society of Medical Hydrology, 28, The Circus, Bath, England.

SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Tuesday, July 8, 6.15 p.m. Moynihan Lecture by Dr. W. K. Livingston (Professor of Surgery in the University of Oregon): Physiological Responses to Wounding. Thursday, July 10, 6.15 p.m. Hunterian Lecture by Prof. H. Jackson: Role of Anatomy in Symptomatology of Lumbar Disk Protrusions.

POSTGRADUATE DIARY

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330-2, Gray's Inn Road, W.C.—Tuesday, July 8, 5 p.m. Mr. V. E. Negus: The Nose, Nasopharynx, and Paranasal Sinuses.

APPOINTMENTS

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford.—Honorary Assistant *gynecologic* Surgeons, H. H. Fouracre Barns, F.R.C.S., M.R.C.O.G., B. G. Cers, F.R.C.S.Ed., M.R.C.O.G.

LONDON COUNTY COUNCIL.—The following appointments in the Council's vital health services are announced at the hospitals indicated in parentheses: *Assistant Medical Officers*, J. Aminoff, M.R.C.S., L.R.C.P. (Friern); M. W. near, M.R.C.S., L.R.C.P. (Cane Hill); P. R. A. May, M.B., B.Chir. (Kiley); R. M. Jones, M.B., B.S. (Long Grove).

LOUIS, F., F.R.C.S., Accident and Orthopaedic Surgeon, St. Margaret's Hospital and Great Western Hospital, Swindon.

BIRTHS, MARRIAGES, AND DEATHS

Charge for an insertion under this head is 10s. 6d. for 18 words or less, 1s. 6d. for each six or less. Payment should be forwarded with notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday evening.

BIRTHS

NES.—On June 22, 1947, at St. Anne's Nursing Home, Nottingham, to Edith (née Flinn), wife of Dr. H. G. Barnes, a daughter.

TCHER.—On June 23, 1947, at Cherisey Hill Nursing Home, Carlisle, to Edith, wife of Tom Fletcher, M.D., F.R.C.S., of Papcastle, Cockermouth, a son and brother for Gair and Nigel.

FEITH.—On June 22, 1947, at the North Oxford Nursing Home, Oxford, to Lucie, wife of Dr. R. C. L. Griffiths, of Newport Pagnell, a daughter.

E.—On June 22, 1947, at Newcastle-on-Tyne, to Marie Barbara (née Ivey), wife of Dr. Leonard H. Lake, of 79, Holly Avenue, Jesmond, Newcastle-on-Tyne, 2, a daughter—Janet Havelock.

LAREN.—On June 4, 1947, at Fernbrae Nursing Home, Dundee, to Pat (née Taylor), wife of Flt.-Lt. Bill McLaren, R.A.F., a son—Andrew Hood.

MARRIAGE

WFORO—SETON.—On June 18, 1947, at Kilmarnock, Ayrshire, W. Cowan Crawford, L.R.C.S., L.R.C.P., to Mary Stewart Seton, S.R.N.

DEATHS

YNALL.—On June 26, 1947, at Riversdale, Fielden Park, West Didsbury, Manchester, Charles Philip Brentnall, M.C., F.R.C.O.G., Honorary Surgeon to Mary's Hospitals, Manchester, aged 56 years. The very dearly loved husband of Muriel Young Brentnall.

BLAY.—On June 14, 1947, at Amarah, Lower Bourne, Farnham, Surrey, Leonard Findlay, M.D., D.Sc., F.R.C.P., in his 70th year. Funeral private. American and Canadian papers please copy.

PHILIS.—On June 17, 1947, at Bath, Francis Howard, Companion Order of St. John, Chevalier Order of Leopold I, M.D., F.R.C.P., M.R.C.S., R.C.P., D.M.R.E., L.M., formerly of 4, Stanhope Gate, Park Lane, London.

ATT.—On May 31, 1947, in Gloucester, Havelock Thos. Lippiatt, M.C., D.McGill, F.R.C.S.Ed.

E.—On June 22, 1947, at 60, Kewstoke Road, Bristol 9, Ethel, wife of John de Coverly Veale.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Stammering

Q.—A boy aged 10 stammers badly. He started stammering at the age of 4 after removal of tonsils and adenoids. He is not a mouth-breather, and had training by an elocutionist for about a year without improvement. He is very intelligent and good at studies and games. Will you kindly discuss in detail the examination and treatment, as stammering is not discussed in most textbooks?

A.—First, any remediable physical disorders should be attended to, particularly if they are in the ear, nose, or throat area. These latter troubles do not cause stammering but they may delay the patient's recovery. Then it is essential in a young child to determine by observation which hand Nature intended him to use for his most skilled actions, and to see to it that he writes with that hand, whether left or right. Do not attempt corrective training; there is no justification whatever for forcing him to conform with the majority. If, however, the habit of writing with the non-dominant hand has been well established, any change may cause too great an upheaval. Speaking generally, the reversal can be made without serious disturbance if the child is less than 12 years old, provided that he is blessed with reasonable educators.

The next step is to induce all those coming into contact with him—and particularly parents and school-teachers—to refrain from treating the child's stammer and to ignore it so far as is possible. The teaching of elocution is likely to make many stammerers worse and it is doubtful if it is ever a help. Speech treatment can be carried out satisfactorily only by qualified speech therapists, who now form a recognized branch of medical auxiliaries and undergo a three-years training and after their final examination receive a standard diploma. The family doctor rarely has the knowledge and never the time necessary to treat this disorder. The speech treatment consists in a fairly complete re-education of the whole speech process, beginning with a "detensing" of the patient by instruction in complete bodily—and if possible mental—relaxation. Further treatment varies with the case and is too technical and detailed to outline here. In every case, however, a psychiatric survey should be made to ensure that serious psychological factors are not perpetuating the stammer. When present their treatment should be attempted at the same time as that of the speech itself. A brief outline of the problem of stammering will be found in the *Survey of Child Psychiatry*, edited by R. G. Gordon and published by the Oxford University Press.

Psychology of Make-believe

Q.—Children between the ages of 2 and 5 are prone to pretend they are other children. My son, nearly 3, occasionally insists that he is his cousin, and that his name is Bobby and not David. He also pretends that his parents are his aunt and uncle respectively—Bobby's parents. Can this be explained by a psychologist; and is it wise to encourage this play-acting? In all other respects the child is normal and plays with friends of his own age.

A.—Young children who pretend that they are other people have a way of solving their difficulties by this means. Sometimes it is obvious how this is done; for example, when a child has an imaginary companion whom he invests with all his "naughty" characteristics, so escaping the uncomfortable sense of guilt which he would otherwise experience. In the same way it may be useful to have an extra imaginary set of parents, for children are often afraid that their angry wishes may do harm to the parents whom they love, and so they invent "whipping-boys" of various sorts. Certainly such make-believe is no sign of abnormality but a natural defence mechanism making for mental health.

Fat Injections for Scars

Q.—*Can you give me any information as to the use of injections of fat for the removal of unsightly scars?*

A.—Injection of fat for the improvement of depressed scars is commonly used by quacks. The result is not impressive. The fat is usually absorbed or becomes a hard fibrous mass which can be felt or seen beneath the scar. The result is rarely as good as that obtained by careful excision and resuture, attention being paid to the contour and light-catching properties of the scar by building up subcutaneous tissue to secure a smooth surface.

Fissured Lip

Q.—*A patient has suffered from a fissured lip at the angle of the mouth for six months. It heals for a few days but quickly breaks down. Lip salves and collodion have been tried without success. There is no oral sepsis (complete dentures), and the general health is good. Can you suggest a cure?*

A.—Fissures at the angle of the mouth which are infected may sometimes be induced to heal by the local use of penicillin. In intractable cases, however, where the fissure keeps breaking down, the only cure often is to excise the fissure and to suture, keeping the sutures in place for longer than the normal period to ensure that stretching of the mouth will not cause breakdown in the area before complete healing has taken place.

Increasing the Size of the Breasts

Q.—*A "show-girl" is anxious to increase her breast measurements; small doses of oestrogen and progesterone have no effect. Is this a safe treatment and is it likely to be effective? If so, what dosage should be given and at what intervals? There is a history of salpingectomy in 1932 when she was 19; both ovaries were left in situ. Would this influence the effect of the treatment?*

A.—It is usually possible to produce breast enlargement with oestrogens, providing the breast tissue is inherently capable of response and an adequate dose is given. The effect might be enhanced by giving progesterone in combination with oestrogen, but progesterone alone is unlikely to be of value. However, oestrogen therapy, either local or systemic, is not advised because its effect is temporary and when it is withdrawn the breasts not only return to their former size but tend to be less firm and shapely. The changes are rather like those occurring in pregnancy, including darkening of the areola and increased vascularity; afterwards the breasts assume the appearance of those of a multipara. Moreover, the increased size cannot be maintained by giving oestrogens for an indefinite period because ill effects, such as menstrual disturbances, endometrial hyperplasia, pituitary and ovarian depression, and breast changes similar to those of "chronic mastitis," may occur. As an alternative to hormones, physiotherapy should be tried, especially arm exercises to develop the pectoral muscles and increase the blood supply to the breasts. Swimming might be particularly effective. The advantage of this type of treatment is that it can be continued regularly for an indefinite period. Salpingectomy does not affect the breasts.

Scabies Infection of Anus

Q.—*Have scabies mites been noted in the rectum or urine? Inquiries show that most cases of infection in Natal are due to natives sleeping in sacking, and that the parasite is often found around the anus.*

A.—The scabies mite has only been found living in the horny layer of the skin and never in the internal organs. Very occasional dead and partly macerated specimens have been demonstrated in the urine and sputum, but this was almost certainly due to contamination. It would be interesting to know just what the questioner means when he states that "inquiries" reveal that infections with scabies in Natal are usually due to natives sleeping in sacking. All other investigators have shown that, while an occasional infection from fomites may occur, transmission is due in the majority of cases to personal contact. Coarse material like sacking would be most unlikely to harbour *Sarcoptes* in any numbers. Was the alleged heavy infection with parasites round the anus confirmed by finding the mites

themselves? Other investigators have found that, while impetiginous lesions are common in the buttocks, a comparatively small number of mites occur in this region, while much larger numbers, giving rise to few clinical symptoms, are seen on the hands and wrists.

Renal Function Tests

Q.—*Is it possible to correlate specific renal function tests with specific renal lesions; for example, the water concentration test with damage to the tubules?*

A.—Although renal function tests are helpful in assessing the state of the kidneys, our knowledge of renal function is not yet sufficient to allow of our correlating specific renal function tests with specific renal lesions. Too many imponderables exist to make this possible. Theoretically it would seem that the water concentration test would throw light on the state of the kidneys, but too much weight should not be attached to the findings. It is quite possible that, with an increase of knowledge of the physiology of the kidneys, what is now theoretical may become practical.

First Pregnancy after Nephrectomy

Q.—*A patient, aged 40, just married, is anxious to have a child. She had one kidney removed at an early age. What are the hazards of a first pregnancy under these conditions?*

A.—Although many women with only one kidney go through pregnancy without suffering any ill effect, the combination of conditions must always give rise to some anxiety because the safety margin is small. The outlook in any case depends to some extent on the indication for the nephrectomy, and especially on the health and efficiency of the remaining kidney. Before advising this woman, renal function tests and also pyelography should be carried out. If the results are satisfactory the patient should be told that in the event of her becoming pregnant she will require careful supervision. The chief risks are pyelitis and any sort of toxæmia, and if these occur and do not respond immediately to conservative measures the pregnancy should be terminated.

Hormones and Carcinoma of Prostate

Q.—*Is there any proof that testosterone has converted a benign growth of the prostate into a malignant one? In view of the fact that stilboestrol causes regression the possibility seems obvious.*

A.—There is no proof or indication, either clinical or experimental. The inhibitory action of stilboestrol on carcinoma of the prostate does perhaps raise the possibility, as do also the hypertrophy and hyperplasia of the prostatic epithelium which result from testosterone administration under certain conditions. However, apart from the absence of objective direct evidence, it is recognized that there is a malignant neoplastic stimulus (of uncertain character), as well as a hormone stimulus, involved in the induction of carcinoma of the prostate. Thus Huggins found that even when bilateral adrenalectomy was superimposed on bilateral orchidectomy, so that all androgenic stimulation was eliminated, a relapse from carcinoma of the prostate could not be halted indefinitely.

Urinary Incontinence

Q.—*A male aged 34 complains of urinary incontinence, which started four years ago. The condition was first noticed at night and has become progressively worse. Examination of urine, urinary tract, and bladder has proved negative. Belladonna and ergot pills have been of help; is there any danger in their prolonged administration? What further treatment and investigations do you advise?*

A.—The diagnosis in this case is obscure and little can be said about treatment until it has been elucidated. The symptoms might fit in with a prostatic lesion, but the patient's age makes the presence of an ordinary enlargement extremely improbable. It is possible, however, that he has what the American urologists call a "prostatic bar": this is generally missed by the inexperienced cystoscopist. It is important to know whether there is any residual urine, and a catheter should be passed after he has made every effort to empty his bladder.

It is quite likely that residual urine will be found and that this accounts for the lack of control. A small perurethral resection would then probably bring about great improvement. It is to be assumed that the possibility of a lesion of the central nervous system has been eliminated. In this case the incontinence first became marked by night, and it is unlikely, therefore, that it is functional. There is no objection to continuing the only treatment which so far has been effective.

Acute Rheumatism and the Heart

Q.—Cases have been reported in America of cardiac damage following acute rheumatism treated by salicylates. I understand that rheumatic fever in an adult does not cause permanent cardiac damage provided the heart was previously healthy. At what age can it be assumed that rheumatic fever is unlikely to inflict permanent damage on the heart?

A.—Cardiac involvement probably occurs in every case of acute rheumatic fever or acute rheumatism, and this may lead to permanent cardiac damage. Neither the incidence of cardiac involvement nor the tendency to permanent damage appears to be influenced by the administration of salicylates in any form. First attacks of rheumatic fever are less likely to inflict permanent damage in subjects over 15, and in subjects over 20 the risk is slight. However, any prognostic assessment on these grounds is unwarranted unless the full clinical picture is borne in mind. In addition, it would be unwise to assume that the benign course of adult cases will be an unchanging feature of the disease for all time.

Wassermann Reaction of Cadaver Blood

Q.—On admission to hospital a patient's Wassermann reaction was negative. At the subsequent necropsy a Wassermann test done on blood taken from the body gave a positive reaction. This result was held to be valueless, as blood from a cadaver is always Wassermann positive. If this is correct, what is the explanation?

A.—Cadaver blood occasionally, but not invariably, gives a false positive Wassermann reaction; not uncommonly serum obtained from a corpse is anticomplementary. There is no satisfactory explanation of either phenomenon. In view of the fact that the reaction was negative during life and positive after death, it should be borne in mind that a considerable proportion of false positive results of Wassermann tests done in this country are due to faulty technique or inexperience.

Sulphonamides and Mepacrine

Q.—What are the incompatibilities of the sulphonamides and of mepacrine when administered by the oral route? Do these drugs damage the liver? Can they be given together without fear of incompatibility or liver damage? If not, how can these risks be overcome?

A.—Para-aminobenzoic acid should not be given with sulphonamide drugs because of therapeutic interference, and it is advised that saline purges, thiopentone, phenazonum, amidopyrine, phenylhydrazine, gold, and arsenical compounds be avoided when sulphonamides are being given. Some recommend that pamaquin should not be given with mepacrine. In practice, however, there are few serious incompatibilities of sulphonamide drugs or mepacrine given orally. In therapeutic dosage their damaging effect on the liver is negligible. Sulphapyridine and mepacrine may be given together.

Eclampsia a Toxaemia?

Q.—What evidence is there for the toxaemia theory of eclampsia? Have samples of systemic or portal blood from such cases ever been given to other individuals, or to experimental animals, with the production of significant symptoms?

A.—The view that eclampsia is a manifestation of a toxaemia was elaborated during the late nineteenth and early twentieth centuries. It was based on observations such as the following: regenerative changes in various organs, especially liver and kidney, were rather similar to those produced by chemical poisons; the wide distribution of lesions suggested that the causal agent was in the circulation; the occasional finding of

what were considered similar lesions in the foetus was also thought to favour the idea of a toxin which had crossed the placenta; the organ most constantly found to be damaged was the liver. Nevertheless, a toxin has never been demonstrated and, if there is one, its origin remains unknown. Systemic blood, serum, urine, and extracts of placentae from eclamptic women have been injected into various laboratory animals, and numerous experiments of this kind are reviewed by J. Whitridge Williams in *Obstetrics*, 4th edition, 1920. What were at first thought to be significant effects in the animals were later shown to be serum and foreign-protein reactions. Further and better-controlled experiments of this kind did not provide evidence of the presence of any special toxin. Systemic blood from women suffering from eclampsia has also been transfused into women suffering from haemorrhage, without producing any special symptoms. J. B. deLee in the 4th edition of *The Principles and Practice of Obstetrics* mentions that Bumm carried out work of this kind in 1922.

NOTES AND COMMENTS

Leuconychia.—Dr. ALICE E. B. HARDING (London, S.W.) writes: Belatedly reading the *Journal* of May 17, I have seen the answer on leuconychia (p. 705) and find it unacceptable. Some years ago I noticed that though my finger nails are patterned to an unusual extent with transverse white marks, my toe nails show no linear deposits at all. I considered the question of exposure to light as one of the possible factors, and to test this theory I kept my finger nails painted with a deep-coloured nail varnish for three months. The varnish was removed as necessary with acetone and reapplied with the usual soft brush. The white markings gradually faded, and at the end of the three months had gone completely. During this time my cuticle toilet was carried out as usual each night. When I finally (and thankfully) discarded the varnish, many marks returned within a week; their number and size seem to vary with the general state of my health, and are greater during the winter than the summer, when, as is the case with every doctor, I am more apt to be "run down" and tired. It would seem that there is a constitutional factor concerned, but that the actual deposition is determined by exposure to light.

"Susceptibility" to Lousiness.—Dr. K. M. TOMLINSON (Leamington Spa) writes: In your expert's reply (June 14, p. 871) upon the above subject he postulates that those people who consider themselves more susceptible to flea bites are the more sensitive by nature and therefore more likely to notice bites. In Southern California in the dry season flea bites cause considerable and widespread distress to susceptible patients. Howard Eder reports that all susceptible patients treated with large doses of thiamine hydrochloride (he used 10 mg. three times a day to begin with, and then a maintenance dose of 10 mg. daily) obtained relief while so saturated. On desaturation he noted that their susceptibility returned, but relief was again obtained on further treatment. It was my intention to try the effect of thiamine saturation on patients with other infestations, such as scabies, to note whether the irritation became less. This would infer a similar distaste for thiamine on behalf of the acarus. The timely warning of the toxicity of thiamine hydrochloride by Reingold, Haley, Fleseher, and others dissuaded me from experiment in such a relatively simple and easily cured ailment as scabies. It might, however, be worth while for any medical man who is markedly susceptible to fleas, mosquitoes, etc., to try the effect of thiamine hydrochloride on himself. Fortunately I am not a suitable guinea-pig.

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Mills, C. A. (1941). *J. Amer. med. Ass.*, 116, 2101.
Reingold, I. M., and Webb, F. R. (1946). *Ibid.*, 130, 491.

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SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 5 1947

REGIONAL HOSPITAL BOARDS

CHAIRMEN AND MEMBERS

In December last (*Journal*, Dec. 28, 1946, p. 1000) the Minister of Health defined the areas for which Regional Hospital Boards would be responsible under the National Health Service Act. On June 27 he published an order setting out the constitution of these Boards. The Boards will organize and develop the hospital and specialist services in their respective areas, though ultimate control will remain with the Minister. The Boards will later appoint Hospital Management Committees for the local administration of all hospitals except teaching hospitals. The chairmen have been appointed for a period ending March, 1950; one-third of the other members will retire at the end of each year beginning in March, 1949. They will be eligible for reappointment, and the term of office of future members will be three years. All the appointments are honorary. We list below the chairmen and members of the Boards.

Chairmen

Newcastle Area: Sir Walter Thompson (chairman of Newcastle-upon-Tyne C. B. Health Committee). Leeds Area: Mr. J. E. Fattorini (chairman of Bradford Infirmary). Sheffield Area: Sir Basil Gibson (formerly Town Clerk of Sheffield). East Anglian Area: Lord Cranbrook (councillor, E. Suffolk C.C.). N.W. Metropolitan Area: Mr. F. Messer, M.P. (chairman of Middlesex C.C.). N.E. Metropolitan Area: Mr. J. W. Bowen (formerly chairman of Mental Hospitals Committee of the London C.C.). S.E. Metropolitan Area: Mr. K. I. Julian (chairman of Royal Sussex Hospital, Brighton). S.W. Metropolitan Area: Mr. F. H. Elliott (chairman of Surrey C.C. Public Health Committee). Oxford Area: Dr. A. Q. Wells (chairman of the Oxon C.C. Public Health Committee). South-western Area: Mr. H. G. Tanner (treasurer, University of Bristol). Welsh Area: Sir Frederick J. Alban (secretary and comptroller of the Welsh National Memorial Association). Birmingham Area: Mr. R. R. Adam (chairman of the Worcester C.C. Public Health Committee). Manchester Area: Sir John Stopford (Vice-chancellor of the University of Manchester). Liverpool Area: Mr. T. Keeling (chairman of the Management Committee of the Royal Southern Hospital).

Members

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MEDICAL ORGANIZATION IN DENMARK GENERAL PRACTICE

BY

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The development of medicine in Denmark has involved the working power of general practitioners being employed to a great extent in organizing out-patient care. The specialization of medical science, in itself likely to counteract this development, has resulted in an organized collaboration between the specialists and the general practitioners, the position of the latter being maintained as the bed-rock of out-patient care. The fact that the sickness benefit clubs, as supporters of the social sickness insurance, could already bring their influence to bear towards the end of the last century has been a determining factor of this development.

In 1892, with State approval, the sickness benefit clubs were obliged to grant their members *free* medical care by general practitioners, whereas medical care given by specialists was a voluntary benefit. The obligation to grant free medical care debarred the sickness benefit clubs from confining themselves to covering the expenses of the members in part according to the refundment scheme. This obligation forced them to enter into contracts with the doctors, and these contracts were made with the general practitioners. As the number of sickness benefit clubs increased—they now include three-quarters of the population—the position of the general practitioners became more important. One reason was that the number of specialists at the outset was so small that the out-patient care could base itself on their co-operation to a small extent only; besides, specialist care was more expensive than general-practitioner care.

The contract negotiations between sickness benefit clubs and doctors gave the latter a share in determining the organization of out-patient care. It was conducive to the general practitioners' keeping their central position, even after specialization within medical science had grown apace. To some extent, I suppose, it was due to the numerical superiority of the general practitioners—you could not do without them—but it was also due to systematic endeavours to organize the medical care service on the "family doctor" principle. This principle has been and is accepted unanimously by general practitioners and specialists as well as by the sickness benefit clubs.

The Family Doctor

According to the "family doctor" principle each family has its regular doctor, a general practitioner, to whom the members of the family always apply first for medical care. On his advice and reference a specialist may be consulted; when the specialist treatment has been finished, the patient is sent back to his family doctor with an account of examinations and treatment, if any. The same mode of procedure is adopted by hospitals and similar institutions in relation to the doctor admitting the patient to the hospital—normally the regular doctor of the family. This scheme has some advantages and some disadvantages. It limits specialist care to what is "necessary"; and it results in the family doctor's getting a thorough knowledge of his patients in the course of time, not only of their state of health but also of their social conditions, their milieu—knowledge of great medical importance which cannot easily be concentrated in one person if the service is not organized on the family doctor principle.

In contrast to the family doctor scheme is the medical care service, which does not attach importance to the establishment of a regular relationship between families and general practitioners, and which permits of free choice of doctor for each new case of illness and consultation with a specialist without reference to a general practitioner. Such a service does not make a point of limiting specialist care to what is "necessary"—i.e., to the difficult cases for which a non-specialist dare not be responsible. The result is that specialist care is given more frequently. This may at first sight appear an advantage. The fact that some cases will be treated by a specialist even when it is unnecessary may not change this view; nor

may the fact that some cases, although applying to a specialist, will not really be treated by one, for the same patient may have symptoms, and suffer from illnesses, coming under different specialties, and for practical reasons a corresponding number of specialists will not always be available to the patient.

The conclusive objection to such a service, however, is that the thorough knowledge of patient, family, and milieu, which in the family doctor scheme is concentrated in the regular doctor of the family, cannot be gathered by one person if the family doctor scheme is abandoned. Reports from hospitals and other health units, tuberculosis centres, medical laboratories, x-ray clinics, specialists, etc., which are now all collected in the family doctor's file, and which together with the family doctor's own observations constitute, when co-ordinated, immensely valuable material for judging the state of health of each patient, would be scattered to the four winds of heaven.

This is, in a nutshell, the supreme merit of the family doctor scheme, and it far exceeds anything that may be advanced in favour of its rival. At the same time I should like to point out that the family doctor scheme is the more rational, not only from a medical but also from an economic point of view. The education of the specialist is normally more prolonged than that of the general practitioner, and it is more difficult; in fact it cannot be obtained without a considerable contribution on the part of the doctor. So it is only reasonable that the services of the specialist should be more expensive than those of the general practitioner and that they should be employed only where "necessary."

Sickness Benefit Clubs

The sickness insurance of persons of small means is based upon voluntary membership of approved subsidized sickness benefit clubs. The total income of these clubs was in 1942 about Kr.107 million, about Kr.70 million of this being contributions and Kr.23.6 million State subsidies. The income limit for membership of sickness benefit clubs is at present Kr.6400 in Copenhagen, Kr.5700 in the provincial towns, and Kr.4700 in the country. The limit is based upon the taxable income. Children under the age of 15 years are insured in virtue of the contributions paid by their parents.

The benefits of the clubs are partly compulsory (provided by law): free medical care (not including specialist care, however), free hospital treatment, daily allowances according to special rules (up to Kr.6 a day against payment of a corresponding extra contribution), and free midwife and medical assistance on confinement. Other benefits are voluntary (to be fixed in the rules of the sickness benefit club): for instance, specialist care and medicine, dental care, nursing at home, etc. The voluntary benefits are often granted to a too small extent or not at all.

The payment of the sickness benefit clubs for general-practitioner care is made according to an agreement between the organizations of the clubs and the doctors. In all towns a fixed amount is paid per year per member, at present Kr.9.30 per member over the age of 15, nothing for children under that age. Married couples are considered as two members. The rates are now to be increased by about 50%. In the country the doctors are paid for services rendered—for instance, per consultation Kr.3.35, journeys up to 2 km. Kr.6, plus Kr.0.70 for each additional kilometre begun. Conveyance allowance is granted in the rural districts. Additional rates are allowed for special examinations and various surgical operations. The cost of medical care per member per year is somewhat higher in the sickness benefit clubs paying for services rendered than in those paying a fixed amount per year, at present on an average Kr.13 to Kr.14.

Patients have free choice of doctor. In Copenhagen the number of doctors participating in the sickness benefit club service is by contract limited to one doctor for 1,500 members. However, the proportion at present is 1 to 1,700. Outside Copenhagen the doctors' right to participate in the service is not limited; in the country, however, it is subject to the provision that the members must choose their doctor within a distance of 10 km. if practicable. The average number of members per doctor is somewhat lower in the country than in Copenhagen (about 1 to 1,200 to 1,300).

Practices may be bought and sold everywhere except in Copenhagen. The price of a practice amounts to approximately the gross income of one year.

Two Types of Club

We distinguish between class I sickness benefit clubs, which pay the doctors a fixed amount per year per member, and class II sickness benefit clubs, which pay for services rendered. In all class I clubs and in some class II clubs the members have to choose their doctor for a calendar year at a time, according to the agreement between sickness benefit clubs and doctors. A married couple must have the same doctor, and he then becomes the doctor for all the children too. It is the family doctor principle with the regular doctor-patient relationship that is operative here. It may be added that the relationship is not so regular that it cannot be broken in case of disagreement between doctor and patient. In some class II clubs, however, the members are entitled to change their doctor during the year. Few people avail themselves of this right, partly because these clubs are situated in country areas where the possibility of changing to a new doctor is small.

The method of payment of class I is that generally used in club practice, and in recent years it has had an ever-increasing extension at the expense of that of class II. It implies, too, the regular relationship between the insured persons and their doctor. It cannot be denied that the fixed annual amount is more closely related to the "family doctor fee" formerly much used in private practice. Nor can it be denied that the family doctor is more independent in his work when he is under no obligation to account for the number and nature of his services.

"Compulsory Reference" by General Practitioners

It is one of the most important assumptions of the family doctor scheme that specialist care can only be given through the sickness benefit club when the patient is referred by the general practitioner. This "compulsory reference" has been framed by sickness benefit clubs, general practitioners, and specialists in agreement. I am convinced that the sickness benefit clubs have realized the many advantages of the family doctor scheme, but it would not be unreasonable if economic factors had made themselves strongly felt. Specialist care is more expensive than general-practitioner care, and the clubs have wanted to grant only "necessary" specialist care, and have left the decision to the general practitioners.

This agreement between the three negotiating parties—sickness benefit clubs, specialists, and general practitioners—has in Denmark afforded a very firm basis for the family doctor scheme. In this connexion it has been a great help that the Danish sickness insurance from the start was planned as a family insurance automatically including children under the age of 15 years, and it has always been independent of whether or not the beneficiary was a wage-earner in a special employment. Insurance services in other countries did not permit of voluntary insurance of children and members of the family who were not wage-earners until much later. The balance of the Danish family doctor scheme has made it more viable. It has among other things involved the organization by central and local bodies of preventive tasks based on the family doctor scheme, in the first place assigning diphtheria vaccination to the general practitioners, later on general health care of expectant mothers, and now general health care of children from 0 to 7 years. In most other places these tasks are assigned to doctors and institutions specially appointed and set up for the purpose.

Regulations Governing Specialists

Besides the agreements between sickness benefit clubs and doctors the family doctor scheme has been consolidated by certain provisions in the collegiate rules of the Medical Association. Thus a doctor having a certificate of competence for a specialty and wanting to furnish specialist service is not allowed to render general-practitioner care. We have been aiming at a clear definition of general practitioners and specialists because we wanted organized collaboration on the family doctor principle. The provision does not apply to private patients, but they are treated less consistently on this principle than the club patients and must consequently put up with the draw-

backs of not having a regular doctor. In the Medical Association's rules is a provision to the effect that a specialist, when a patient is referred to him in writing, shall directly inform the referring doctor of the result of examination and treatment; he must not refer the patient to other doctors without the consent of the referring doctor; and he must leave the further treatment of the patient to the referring doctor as soon as the specialist treatment is finished.

It is hardly an exaggeration to say that the family doctor scheme has been carried through more consistently in Denmark than in most other places. This is partly due to the fact that the sickness benefit clubs have adopted this scheme and have given it a dominating position by their growth. It is also due to the fact that Denmark is well provided with general practitioners who have received a good and uniform education. The specialization of medical science has of course led to an adaptation of the family doctor scheme to the requirements of the age. Here we have been faced with the same problems which Great Britain is now trying to solve through reorganization.

Problems of a Health Service

1. *General practitioners must have sufficient time for their work and for continued studies.* It must be admitted that it has been somewhat difficult to attract the attention of the sickness benefit clubs to this requirement. The principal method of payment is, as mentioned, a fixed amount per year per member. This amount has hitherto been very small; with the present price level it is Kr.9.30 per member per year, any person over the age of 15 being regarded as one member, and children under 15 being covered by the breadwinner without additional fee. This has resulted in an expansion of practices to a higher level than desirable. The work itself has made greater demands—of quality as well as quantity—and the patients as well as the doctors have every reason to regret that generally the doctors have not the necessary time for their work.

However, some understanding of this state of affairs on the part of the sickness benefit clubs is now perceptible; recently it has been possible to carry on discussions on the basis that a practice of average size—i.e., about 1,500 patients—should yield a reasonable net income, which it has not done so far. At the same time the parties have agreed about appropriate measures to prevent excessive enlargement of practices. That means one step nearer the aim of sufficient time; and it will be possible to continue this development so far as the number of available doctors allows.

2. *Up-to-date laboratory services should be available to the general practitioners.* We are on the point of having solved this question in a way satisfactory to the doctors as well as to the population. As early as 1922 the general practitioners in Copenhagen established their own central laboratory, which since then has developed into a large institution rendering the general practitioners all the technical assistance they need for examinations. Doctors may send material for examination, or they may send their patients to the laboratory for investigation of metabolism, for electrocardiography, test meals, etc., and for production of material for examination (blood tests and the like), where this is best done at the laboratory.

The laboratory is operating to the complete satisfaction of everyone. At the outset we had a central laboratory with branches, but we found that the distances in Copenhagen (scarcely 1 million inhabitants) made it unnecessary, for the central laboratory in fact was situated in the centre. Outside the capital the numerous public hospitals are operating as laboratories for the doctors in a similar way.

The technical assistance rendered to the general practitioners by the laboratory seems in England to be one of the arguments for group practice. In Denmark we did not feel tempted to change over to this form of practice because we know from experience that a really efficient laboratory cannot nearly be utilized to its capacity by the ten doctors supposed to constitute a group; and a laboratory which is not quite efficient can hardly be adequate.

3. *X-ray services should be available to the general practitioners.* In Copenhagen the sickness benefit clubs pay for x-ray examinations on patients referred by general practitioners to the many private x-ray clinics, most of which are fully efficient. Outside the capital x-ray examinations are under-

taken at the public hospitals, which are situated within easy distance even of the country population. It seems as if in England this question is to be solved by health centres equipped with x-ray services, but in view of the above it will be understood that we have been under no temptation to try this solution. Here the same thing may be said to apply: ten doctors cannot nearly utilize a really efficient x-ray clinic to its capacity; and a clinic that is not fully efficient does not solve the problem.

4. *Clinical assistance by specialists, for examination as well as treatment, should be available to the general practitioners.* In this field the Danish National Health Service is still insufficient. This is due partly to the fact that we have not got the desirable number of specialists all over the country, partly to the fact that the sickness benefit clubs have been too reluctant to pay for the necessary specialist care, having to grant only free general-practitioner care under the Act. The sickness benefit clubs have shifted the expense of specialist care on to the public hospital service, apart from specialist care for eye diseases and diseases of ear, nose, and throat. For these specialties there is an ample number of specialists all over the country; and the sickness benefit clubs have an agreement with them according to which the members receive free specialist care when referred for such treatment by their family doctor.

So far as I can see, another argument for group practice is that it is easier to collaborate with specialists attached to the group. If the non-specialists of the group are to make a contribution themselves, however, ten doctors will not be able to utilize the specialists to their capacity. Ten doctors may utilize an eye specialist and an ear, nose, and throat specialist provided that they refer every case of illness within these specialties. As regards the other specialties it will not be possible according to Danish experience. All the talk about group practice in England has not failed to stir some minds in the small country over the North Sea; but outside the few who are always excited about anything that is brand new the idea has not met with enthusiasm.

Specialist Diagnosis for Out-patients

As regards the other specialties the doctors often have to send their patients to hospitals in order to have them examined and treated by specialists. Since in many cases this is done merely because the doctor, in spite of laboratory and x-ray facilities, cannot solve a diagnostic problem, the hospital service has considered allowing the hospital specialists to make the diagnosis and advise out-patient care so as to avoid the expense of hospital admissions. Only in the capital may the general practitioners to some extent be in consultative collaboration with the practising specialists.

The medical profession would prefer a further development and extension of this scheme, for we have some hesitation in contributing to the increase of out-patient departments by attaching specialist care to the hospitals. Even if the specialist care supposed to be afforded by hospitals in the form of out-patient service is meant merely to help doctors to make the diagnosis (after which the treatment is referred to the general practitioners), diagnosis often involves therapy; and then you are well on the way to the out-patient clinic or health centre. This development is hastened by the fact that some forms of treatment require hospital equipment and other auxiliary services, and are therefore already undertaken at the hospitals in the form of out-patient care. Apart from specialist care requiring the auxiliary services of the hospital, we want this care to be given by practising specialists, because in that way one can be sure that the patient is in fact treated by a specialist. The large out-patient departments will always have a considerable staff of young doctors completing their training. They very often have to work rather independently without the clinic's specially trained doctors' being able to supervise the work of each person. So it is somewhat problematic—as circumstances are in Denmark at least—to talk about specialist care in connexion with out-patient care. For that reason and because we are of opinion that the work of the specialist as well as that of the general practitioner in most cases is done best in private, we have so far as possible tried to avoid a development of actual out-patient departments—and with success in so far as there are out-patient departments in the capital only. They

are few, however, and in the form of closed departments which do not receive patients who have not been referred by their doctor. As the sickness benefit clubs in the capital are now more than willing to grant specialist care by practising specialists, it seems possible to have all specialist care (apart from that requiring hospital treatment) assigned to the practising specialists. It is to be hoped that a corresponding development will prove possible outside the capital.

Having a developed family doctor scheme—an organized collaboration between the general practitioners and the medical laboratories, the x-ray clinics, the practising specialists, and the hospitals. We consider this arrangement sound. Even if the system is far from being perfect in various points, we are under no temptation to change it. Nor do we feel any great pressure from the public or the politicians, though I dare say we are prepared for it. It is a consequence, I suppose, of our not being so anxious to "socialize" the doctors, which may be explained by the fact that Danish doctors have been subject to a gentle process of socialization over several years by their relation to the sickness benefit clubs. The final result has been that "few have too much and fewer too little."

Under these circumstances it has even been possible to plan a pension scheme for the Danish medical profession, a scheme which is now ready for implementation. It rests upon provisions in the agreements between the public hospital service and the hospital doctors and between the sickness benefit clubs and the doctors participating in the service, according to which pension contributions are paid by the hospital service and the sickness benefit clubs into the "Pension Fund of the Medical Association," which together with a financial body administers the subscriptions and the payment of old age and invalidity pensions. Being incorporated in these agreements, the scheme is compulsory for all the doctors covered by them—i.e., the great majority of Danish doctors.

It is evident that the problems involved in the organization of medical care differ in Britain and Denmark, but even so this account may be of interest to doctors in England. The ends aimed at in Britain—time for the doctors, technical assistance, clinical assistance by specialists, in brief, an effective medical scheme—may also be gained through the channels followed in Denmark without changing the form of practice from individual to group practice and without making a civil servant of the doctor, provided that a sufficient number of doctors is available. It does not matter then whether the sickness benefit club or the State is the doctor's employer.

RADIO-ACTIVE SUBSTANCES BILL

This Bill was recently discussed in the House of Lords (May 24, p. 747). Clause 5 prevents the use for therapeutic purposes of apparatus which produces radiation except under licence of the Minister of Health. The British Medical Association is advised that this would cover radio-active substances, deep x-ray therapy, short-wave therapy, ultra-violet and even radiant heat lamps. This restriction does not relate to the use of such apparatus for medical, surgical, or dental diagnosis, but it strikes a blow at the principle that once on the Register a practitioner should not be prevented by law from treating patients by any method without restriction.

In 1945 the Association appointed a special committee to consider this problem. That committee recommended to the Ministry that the use of radio-active substances should be restricted for an experimental period of, say, two years, after which these substances should be available, as other therapeutic substances are, to all registered medical practitioners. In brief, the restriction should operate only during an experimental period to enable adequate knowledge to be gained of the dangers and necessary protective measures. Representations are being made to this effect.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. M. P. Leahy, at 39, Harley Street, W.1 (Langham 4012); Mr. Harold Park, F.R.C.S., at 40, Wilbury Road, Hove, 3, Sussex; Dr. James S. Young, M.R.C.O.G., at 37, Harley Street, W.1 (Langham 3556).

HEARD AT HEADQUARTERS

Anonymity on the Air

About thirteen years ago the General Medical Council expressed the view that registered medical practitioners "should broadcast anonymously." The phrasing is a little ambiguous, but the meaning was that if registered medical practitioners felt compelled to take to the air they should not have their names announced. The appearance of television has reopened the question. May a medical practitioner allow his lineaments to be revealed on the television screen? Suppose by some extraordinary development that all broadcasting were accompanied by television, is a medical practitioner on facing the microphone plus the television camera to wear a mask or to have a coat dropped over his head like a criminal under public arrest? People naturally like to know who is talking to them, and the same applies in broadcasting. The Central Ethical Committee of the Association some time ago discussed this question and presented to the General Medical Council a considered case for permitting practitioners, when giving broadcast talks on medical subjects, to appear in television and to be announced by name. But two committees of the General Medical Council have now shaken their heads over the proposition and see no reason to modify the opinion expressed in 1934. Advertising by any professional man, of course, is to be deplored, but apparently other professions do not carry the embargo to this extent. It does seem a little anomalous when a Brains Trust or other debating team is on the wireless to have men in other professions duly announced while the medical representative, if there is one, is referred to mysteriously as a well-known physician (or surgeon, or psychiatrist, as the case may be). At one and the same time it gives the anonymous individual an undue importance and casts a slight slur upon him.

The Scottish House

It is interesting to learn that the Scottish Committee is considering an appropriate commemoration of the officers and officials, past and present, of the Association in Scotland in the Scottish House in Edinburgh. Scotland has produced some great leaders, several distinguished Presidents, and a number of men who have made their mark at Headquarters in London, including the present Chairman of the Representative Body. Dr. Craig's long and able Scottish secretaryship, which has lately ended, should have some outward and visible reminder in the place where he worked. The Scottish House of the Association was opened at almost the same time as the Tavistock Square premises in London. No. 6, Drumsheugh Gardens was first taken, and then, two years later, No. 7, and the two houses were turned into one at the first floor so as to provide an excellent conference room for 300 people. It is in this room that it would be interesting to have panels with the names of those who have served the Association in various official capacities north of the Tweed.

The G.M.C. Bill

The draft Medical Bill for a procedure reformed in many respects has passed through its final stage of approbation by the General Medical Council. There have been conferences between the B.M.A. committee and the Defence Societies on the one hand and the Legislation Committee of the G.M.C. on the other. Some of the points which the outsiders suggested have been accepted, and others have not been pressed because of the desirability of getting an agreed Bill if possible. Any considerable divergence of view would have spoiled the Bill's chances of success. The points incorporated in the Bill are mostly small but useful ones, as, for example, the requirement that if an appeal is lodged by a practitioner against the direction to erase his name the direction shall be suspended until the appeal is determined. Justice has, in the main, at least of late years, always been done by the G.M.C., but the new measure will help to ensure not only that justice is done but that justice appears to have been done.

Correspondence

Evidence for Spens Committee

SIR,—I am given to understand that the B.M.A. has lent its services in the form of the use of its address, and part of its secretariat, to further a wholly pernicious inquiry for the latest Spens "Gestapo committee." I must protest strongly against the terms of the document issued by this Evidence Committee. It would appear that the B.M.A., is rapidly descending the slippery slope towards becoming a collecting house for evidence for the enslavement of the profession.

Why should it be necessary to set a "ceiling" to the earnings of any person in a free service? Does not the profession realize that all the codification, classification, and Nazification in this and other documents can only lead to enslavement of the profession and populace? When are we as an Association going to realize the gravity of the situation whose coming we are assisting by these questionnaires, etc.? It is to be hoped that consultants will have nothing to do with this, and they will not be led by the usual timid *vis a tergo* of our so-called leaders.

There are still many doctors sufficiently alive to the dangers of National Socialism to deprecate the all too apparent eagerness of the Association to co-operate with the Government in the establishment of a bridge-head of the full-time salaried State service. The circular letter to consultants certainly did not make it clear that this information was sought solely for the benefit of whole-time servants of the State. It is high time that the mechanism of the Association was brought to bear wholeheartedly on protecting the independence of independent practitioners, by whom, and presumably for whom, the Association was founded.

Let us have a bold lead and less of the Duke of Plaza Toro and a little more resistance to encroachment on liberty.—I am, etc.,

London, W.1.

DAVID HALER.

** The Secretary of the B.M.A. comments: The new Spens Committee is concerned only with the range of remuneration of consultants and specialists engaged in a public service on a full-time basis, and not undertaking private practice. The Committee has been instructed to pay due regard to the financial expectations of consultants and specialists in the past; it must therefore obtain reliable information. The previous Evidence Committee carried out a similar inquiry to the satisfaction of general practitioners. The word "ceiling" does not imply that a practitioner will be unable to earn more than that figure.

Regional Hospital Boards: Salaries

SIR,—We are informed (*Supplement*, June 7, p. 116) that the Minister of Health proposes to offer salaries of between £2,000 and £2,500 for the appointments of chief administrative medical officers of the fourteen hospital boards. It is to be hoped that the Association will oppose these salaries, even to the extent of black-listing the posts if necessary. These fourteen appointments will be among the very highest in the field of medical administration. In other professions a man who reaches the top of the tree does not rest content with £2,500. Are these fourteen men who will administer the nation's hospitals to be considered of less value to the community than are judges? A judge receives £5,000 a year. The Association recently drew up a suggested scale of salaries for medical officers of health and other full-time salaried officers. On this suggested scale the M.O.H. of a large county or city would earn £3,000. The whole scale would be thrown out of focus if the administrative medical officer of a regional hospital board received only £2,500.

Although clinicians and administrators sometimes make the mistake of disparaging each other, the general public is—not unwisely—more and more tending to equate the two, to think that the doctor who specializes in paediatrics or neurology is worth about the same as the doctor who specializes in hygiene or administration. Consequently, if these low salaries are offered to the leading specialists in administration, we can expect sooner or later that similar salaries will be offered to

outstanding clinicians. Are the chief administrative officers of the National Coal Board paid as little as £2,500 per annum? If not, why should the medical administrator receive less than the administrator in other fields?—I am, etc.,

A MEDICAL ADMINISTRATOR.

Association Notices

Nathaniel Bishop Harman Prize

The Council of the British Medical Association is prepared to consider a first award of the Nathaniel Bishop Harman Prize in the year 1948. The value of the prize is approximately £100.

The purpose of the prize is the promotion of systematic observation and research among consultant members of the staffs of hospitals who are not attached to recognized medical schools. It will be awarded for the best essay submitted in open competition. The work submitted must include personal observations and experiences collected by the candidate in the course of his practice. A high order of excellence will be required. No study or essay that has previously been published in the medical Press or elsewhere will be considered eligible for the prize.

Any registered medical practitioner who is a consultant member of the staff of a hospital in Great Britain or N. Ireland and is not attached to a recognized medical school is eligible to compete. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay, the decision of the Council shall be final.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1948 but will be offered again the year next following this decision, and in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

Each essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address.

The writer of the essay to whom the prize is awarded may be requested to prepare a paper on the subject for publication in the *British Medical Journal* or for presentation to the appropriate section of the Annual Meeting of the Association.

Essays must be forwarded to reach the Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1947. The prize will be awarded at the Annual Meeting of the Association to be held in 1948. Inquiries relative to the prize should be addressed to the Secretary.

CHARLES HILL,
Secretary.

Diary of Central Meetings

JULY

- 22. Tues. Council, 11 a.m.
Annual Representative Meeting, 2 p.m.
- 23. Wed. Annual Representative Meeting, 10 a.m.
Annual General Meeting, 12.30 p.m.
- 24. Thurs. Annual Representative Meeting, 10 a.m.

Branch and Division Meetings to be Held

EAST HERTS DIVISION.—Wednesday, July 9, 2.30 p.m. Visit to Messrs. Allen and Hanbury's factory at Ware.

LANCASHIRE AND CHESHIRE BRANCH.—At Chester Town Hall, Thursday, July 10, 2.30 p.m. Annual meeting. Election of Officers, etc.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, W.C., Tuesday, July 8, 2.30 p.m. Eighty-ninth Annual General Meeting. Agenda: Report of Branch Council for the year 1946-7; report of Branch representatives on Central Council, 1946-7; report as to elections of officers for 1947-8; address by incoming President.

SHROPSHIRE AND MID-WALES BRANCH.—At Eye, Ear, and Throat Hospital, Shrewsbury, Tuesday, July 8, 3.15 p.m. Clinical meeting. Mr. S. W. G. Hargrove: "Hoarseness."

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—At Herefordshire General Hospital, Hereford, Thursday, July 10, 2.30 p.m. Annual meeting.

TRADE UNION MEMBERSHIP

The following amendment is made to the list of "closed shop" authorities:

County Borough Councils: Add Barnsley.

Non-County Borough Councils: Delete Barking.

LONDON SATURDAY JULY 12 1947

CHOICE OF DRUGS IN THE TREATMENT OF DUODENAL ULCER*

BY

A. H. DOUTHWAITE, M.D., F.R.C.P.

Physician to Guy's Hospital

Much has been written during the last quarter of a century on dietetic control of duodenal ulceration, whereas the rational use of drugs has been to a great extent ignored. It is on the latter therapeutic measure that I present the following observations.

Belladonna

The use of belladonna in the treatment of duodenal ulcer has been practised widely for 25 years. Experiments on animals, and later on human beings, led to the belief that the drug caused a considerable reduction in acid output by virtue of a paralysing action on the vagal nerve-endings. Thus Bennett (1922) emphasized the value in this respect of washing the stomach with a dilute solution of atropine before meals. It soon became standard practice to give belladonna or atropine, usually 5 minims (0.3 ml.) of tincture of belladonna before alternate two-hourly feeds (Ryle, 1923) and 1/100 gr. (0.65 mg.) of atropine sulphate hypodermically at night. Ryle stated that belladonna given in this way would cause dry mouth, relaxation of the pylorus and thus reflux of duodenal contents, and modification of the gastric acidity more than that produced by alkali. Schick (1910) declared that its chief value lay in overcoming pylorospasm, and Crohn (1918) refers to the transient and poor effects of atropine on gastric acidity.

No serious criticism of the use of belladonna as an acid depressant arose until in 1938 Davidson and Nicol communicated to a meeting of the Gastro-Enterological Club the results of experiments which showed that even toxic doses of atropine had no constant or marked influence on gastric acidity. Later Nicol (1939) published a paper reiterating that atropine failed to influence gastric secretion and that its value lay in its antispasmodic action.

If belladonna has in fact any action in reducing gastric secretion it can only be by virtue of its paralysing the vagal terminations. It follows, therefore, that only reflex secretion would be abolished, whereas the more important and lasting humoral secretion would be untouched. On theoretical grounds one would expect some diminution in acid output to be produced by belladonna, the degree of change being influenced by the character of the food—appetizing or monotonous—the personality of the subject, and the period of time following ingestion of food. It would be inconceivable that a therapeutically effective reduction of acidity could be produced by belladonna in any dosage.

In order to confirm Nicol's work I investigated the effect of *l*-hyoscyamine on the test-meal curves of 25 patients with hyperchlorhydria and duodenal ulcer. It will be

remembered that the action of belladonna is largely due to atropine, and that atropine is racemic hyoscyamine. Furthermore, the peripheral effect of atropine is almost entirely due to its *l*-hyoscyamine component. As it is this action which concerns us, and as the central stimulant effect of both *d*- and *l*-hyoscyamine is unwanted, the latter drug was clearly one of choice. Hyoscyamine sulphate, 1/80 gr. (0.8 mg.), was given by mouth night and morning for three days. On the fourth day, an hour after the morning dose had been taken, the test-meal was given. It will be appreciated that this is high dosage, equivalent in alkaloid value to 36 min. (2.1 ml.) of tr. belladonnae per dose. Within 36 hours it produced persistent dryness of the mouth, thirst, and dilatation of the pupils. Duodenal ulcer pain, if previously present, disappeared as soon as these signs were manifest, yet it will be seen from Figs. 1a, 1b, 2a, and 2b that the effect on acidity was so slight that it is highly improbable that it would have influenced the pain. Although in a few instances the depression of acidity was more than that shown in these graphs, in no case was it great or prolonged.

If, then, it be agreed that the effect of belladonna on gastric acidity can be disregarded, why is it that it does

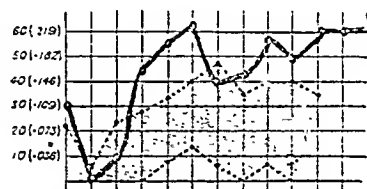


Fig. 1a.—Case of duodenal ulcer. Curve of free HCl during gruel test-meal.

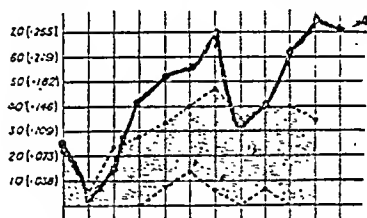


Fig. 1b.—Curve from same patient as Fig. 1a taking hyoscyamine.

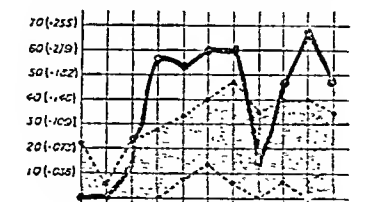


Fig. 2a.—Further case of duodenal ulcer. Gruel test-meal.

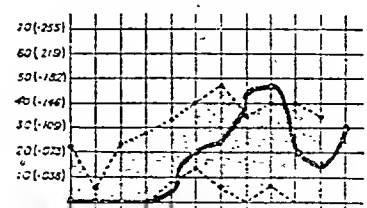


Fig. 2b.—The same as Fig. 2a during hyoscyamine treatment.

* Based on a communication to the Brighton and Sussex Medico-Chirurgical Society on April 3.

in fact relieve pain? Of such action there can be no question provided that adequate quantities be given. No benefit is derived from belladonna unless persistent dryness of the mouth is produced by it. The customary dosage is therefore useless. In practice it will be found that 30 min. (1.8 ml.) of the tincture of belladonna, 1/100 gr. (0.65 mg.) of atropine sulphate, or 22 min. (1.3 ml.) of liquid extract of hyoscyamus given four-hourly will be effective. Yet more efficacious is 1/120 gr. (0.54 mg.) of *l*-hyoscyamine twice daily (Douthwaite, 1939).

It is well known that the belladonna alkaloids have a pronounced effect on the motility of the gastro-intestinal tract, especially in the direction of quelling abnormal contractions. It is also usual to note excessive gastric peristalsis, often combined with pyloric spasm, in patients suffering from duodenal ulcer. Furthermore, rapid emptying of the stomach is common not only during the active phase but also during periods when healing of the ulcer seems to be established. Numerous observers have noted how this hypermotility is abolished by full doses of atropine. It can be demonstrated radiographically, and was noted by Wolf and Wolff (1943) in their experiments on a patient (Tom) with a gastric fistula. They showed, furthermore, that atropine resulted in a great prolongation of emptying time.

If it can be accepted that the pain of duodenal ulcer is due to abnormal contractions of muscle fibres in the stomach or duodenum, or both, the benefit conferred by belladonna can be understood. There are two schools of thought in regard to the pain-producing factor: the one favouring muscular contractions and increased tonus, resting on the observations of Bolton (1928), Christensen (1931), Hurst (1911), Ryle (1926), and Poulton (1928); the other stressing the importance of acidity, based on the work of Palmer (1926), and recently of Bonney and Pickering (1946). The evidence derived from careful clinical experiments by the latter school certainly presents convincing grounds for the belief that a certain level of acidity, varying from case to case, will, if reached, be directly responsible for ulcer pain.

It does not, however, exclude the possibility that the muscular contractions may also cause pain or, in fact, may be the usual excitant of pain production. An argument often put forward is that if an intragastric balloon fails to record a rise of tension coincident with pain, increased muscular tonus cannot be incriminated. Such a conclusion is not justified. Only if an increase of gastric tonus as a whole should occur would one expect it to be registrable manometrically. Localized spasm could not possibly influence the tension within the balloon, yet it might well give rise to pain.

The "acid hypothesis" fails to explain certain common features of pain in uncomplicated duodenal ulcer—namely: (1) Its occurrence at 2–3 a.m. and its spontaneous subsidence even if no food or alkali is taken. The chart of gastric acidity (Fig. 3) taken during sleep shows it to be lower at 2 a.m., which was the hour when pain usually awakened this patient.

(2) Its spontaneous subsidence before meals if the meal is postponed. (3) Its lessening or disappearance within half an hour of lying down. (4) Its relief from the application of heat to the abdomen. This is known to inhibit gastric

and intestinal peristalsis (Bisgard *et al.*, 1942). (5) Its rapid relief by CO₂—producing antacids, whose effect on acidity is transient as compared with the non-gas-producing antacids such as trisilicate. (6) The invariable relief afforded by full doses of belladonna alkaloids.

It is reasonable also to assume that the pain of gastric and duodenal ulcer has the same mechanism of production; yet in the former case gastric acidity is usually within normal limits and there may, in fact, be no free hydrochloric acid throughout digestion.

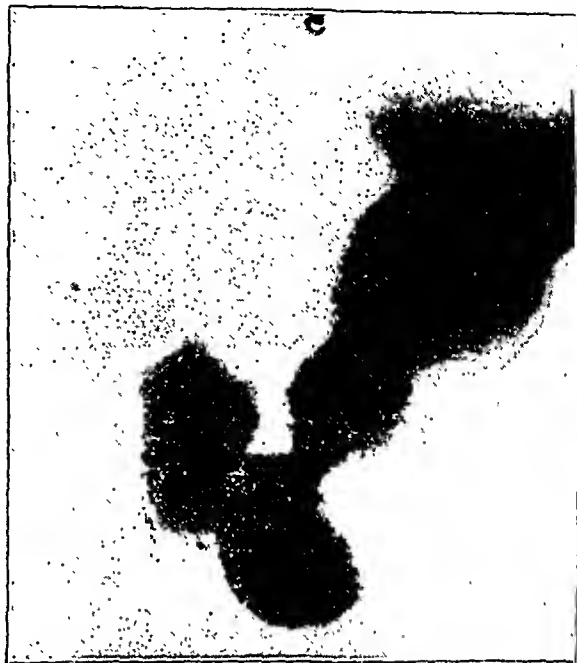


FIG. 4.—Chronic duodenal ulcer. Note hypertonicity and pronounced peristalsis after four weeks' milk-drip.



FIG. 5.—The same as Fig. 4, one day later, an hour after hyoscyamine sulphate, gr. 1/80 (0.3 mg.).

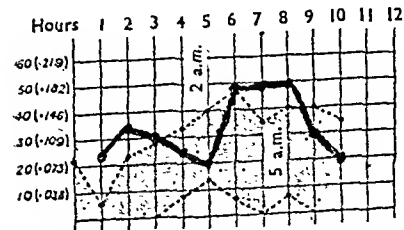


FIG. 3.—Duodenal ulcer. Free HCl curve during night. Samples removed hourly.

postponed. (3) Its lessening or disappearance within half an hour of lying down. (4) Its relief from the application of heat to the abdomen. This is known to inhibit gastric

Finally, a positive argument in favour of the muscular tension theory is afforded by radiographic observations. The radiographs (Figs. 4 and 5) of the stomach of a sufferer from duodenal ulcer were obtained within 24 hours of each other. Continuous pain was being experienced while

aking Fig. 4, in which a series of peristaltic waves are seen. In Fig. 5 gastric tone and motility are strikingly lessened as the result of 1/80 gr. (0.8 mg.) of hyoscyamine sulphate. The patient was entirely free from pain. Numerous observations have shown the same sequence of events. It follows from this that the operation of vagotomy or duodenal ulcer is wholly unjustifiable. Belladonna can achieve all the good results claimed for such surgery without the danger and permanent mutilation it entails. It is probable that two factors produce pain in peptic ulcer—abnormal muscular contractions, and a chemical stimulus provided by hydrochloric acid. The justification for the use of belladonna is thus established. We have now to consider the control of acidity.

Antacids

No matter what views are held on the mechanism of peptic ulcer pain production, it is common ground that free hydrochloric acid is of great importance in preventing the healing of the ulcer. It is reasonable, therefore, to seek to neutralize this acid so long as an ulcer is present. Once healing has been secured the need is far less, if indeed it exists at all. It should be noted here that Ryle and Bennett (1937), from a follow-up of 100 students subjected to test-meal analysis in 1921, concluded that there was no association between degrees of gastric acidity and the development of dyspeptic troubles.

In point of fact all the drugs commonly used to neutralize gastric hydrochloric acid have such a transient action as to be valueless. The fleeting action of sodium bicarbonate, calcium and magnesium carbonate, and tribasic phosphates is too well known to require further emphasis. Experiments carried out by E. B. French and myself on patients with peptic ulcer (Douthwaite, 1939) showed, furthermore, that aluminium hydroxide gel and magnesium trisilicate when given hourly failed to neutralize hydrochloric acid for more than a quarter of an hour. The former when given by continuous drip, 1 oz. (28 ml.) hourly, was likewise ineffective. Figs. 6a, 6b, and 6c illustrate the short action of these substances. It is true

One of the reasons for the transience of antacid action in cases of duodenal ulcer is that the stomach empties so quickly. The same conclusion was reached by Nicol (1939) in respect of the fact that hourly feeds of milk fail to produce neutralization. He also showed that neither hourly nor two-hourly feeds of milk foods, vegetable purée, eggs, and fish, in conjunction with carbonates, would cause lasting depression of gastric acidity; in fact, two-hourly feeds containing more protein are more effective than hourly milk meals.

The only satisfactory way to neutralize gastric hydrochloric acid for days on end is to give milk by drip-feed through a Ryle's tube passed into the stomach. Five pints (2.84 l.) in 24 hours may be completely effective, as is shown in Figs. 7a, 7b, and 7c. The patient is seldom intolerant of this treatment, especially if the tube be passed through the nose. It is withdrawn and cleaned twice a week, and the drip can be discontinued at the end of three to four weeks. When such treatment is impracticable the next-best measure is to give 1/2 oz. (14 ml.) of olive oil (this delays emptying and reduces acid output) and 1/2 oz. (15.5 g.) of magnesium trisilicate in 8 oz. (227 ml.) of milk two-hourly, between two-hourly main feeds. These should consist of porridge, egg, milky foods, bread-and-butter, fruit juices, purée of fruit and vegetable, fish, and chicken. In fact, if chemical irritants—for example, mustard, spices, vinegar, and alcohol—are avoided and if other food is free from gross roughage, all the common foods may be safely taken from the beginning of treatment. If a milk-drip is used, then three meals a day may be given in addition to the milk.

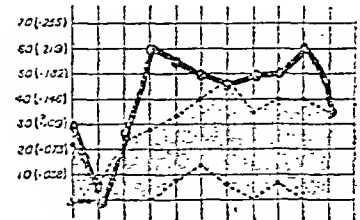


FIG. 7a.—Duodenal ulcer. Gruel test-meal (1/4-hour samples).

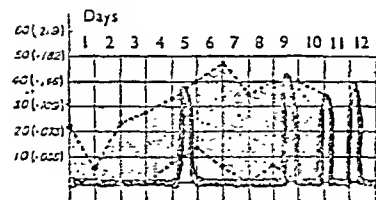


FIG. 7b.—Same case as 7a. Continuous milk-drip, 5 pints (2.84 l.) in 24 hours for eight days; thereafter in daytime only. First rise of acidity due to interruption of drip. The later rises coincided with nights when the drip was suspended.

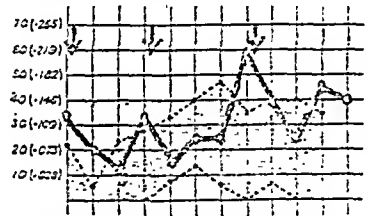


FIG. 7c.—Shows the feeble antacid effect of 5 oz. (142 ml.) of milk given hourly.

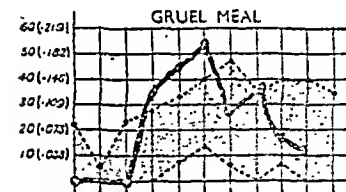


FIG. 6a.

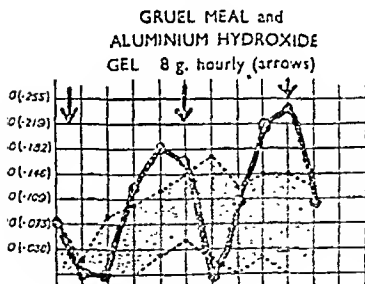


FIG. 6b.

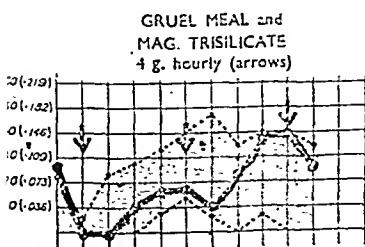


FIG. 6c.

FIGS. 6a, 6b, and 6c.—Free HCl curve showing the transient effect of aluminium hydroxide and magnesium trisilicate.

but in a long series one meets with instances in which one or other of the antacids appears to have a prolonged action, but it is the effect on the majority which is of importance.

Anxiety

After considering hypermotility and hyperacidity, our third and last problem is the control of anxiety, the effects of which are inimical to healing. This has already been done in part by blocking vagal impulses with hyoscyamine. The choice of a suitable cerebral sedative is not a matter of great difficulty. Phenobarbitone answers the purpose in the majority of cases. It may, however, prove unsuitable by causing skin rashes, fever, giddiness, and incoordination. More commonly it produces intense depression of spirits and disinclination to co-operate in the full treatment of peptic ulcer. Yet again, it may

completely fail to relieve anxiety and restlessness unless given in excessive doses. If 1 gr. (65 mg.) thrice daily fails to produce the desired effect it is wiser to change the drug than to increase the dosage. It should be borne in mind that phenobarbitone is an indifferent hypnotic, and that at night it is usually necessary to give a more potent soporific—for example, "sodium amytal," 3 gr. (0.2 g.).

When phenobarbitone fails a state of mental and muscular relaxation can be achieved by the use of cannabis indica. This drug has fallen into undeserved disrepute because of the danger of addiction, and even more because its preparations are often inert. The former risk is very slight when cannabis is used therapeutically for a limited period. It is certainly far less than that entailed by the use of opium and its derivatives. Taken by a patient resting in bed, and thus removed from any suggestion of conviviality, it produces a languorous state and sense of well-being, without the flights of imagination for which it is taken by the addict. Furthermore, it does not cause constipation, and the appetite is unimpaired. In fact, it may lend enchantment to the dietary.

Extractum cannabis (*B.P.C.*) is the preparation of choice; the tincture has a most unpleasant taste, and its resin is precipitated by the addition of water. The recommended dose of 1 gr. (65 mg.) is too small to be effective. Four times this amount should be given in capsules four times daily. The frequency of administration is adjusted to the result. It will allow of continuous drip-feeding in patients who would otherwise be intolerant of it. It is seldom necessary to give the drug for longer than two weeks, and a supply should never be left in the patient's charge. I have used the physiologically tested extract and have found it to be active, but it is as well to procure only a small stock at a time and to keep it at a low temperature—10° C. The effectiveness of the drug in inducing, presumably by central action, relaxation of the stomach is well illustrated by Figs. 8a and 8b. Symptomatically this patient suffered

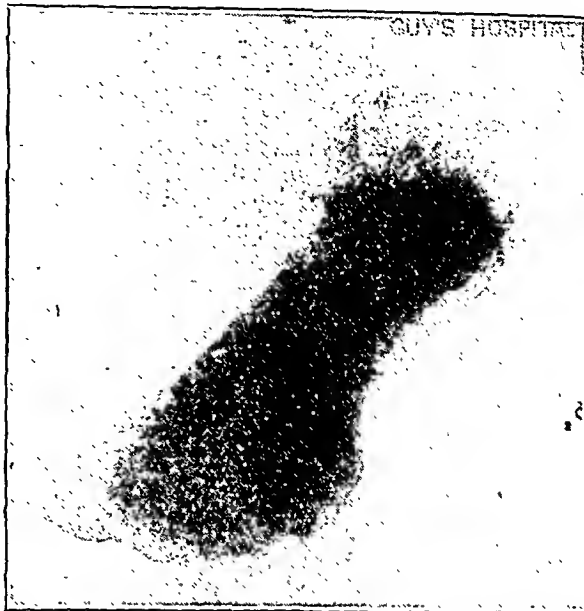


Fig. 8b.—Same case as 8a when taking 4 gr. (114 ml.) of ext. cannabis four times daily. Stomach relaxed; stenosis revealed.

Harmful Drugs

In conclusion a brief reference to chemical substances which may aggravate symptoms of ulcer should be made.

Tobacco.—Experimental evidence favours harmlessness of smoking to patients with chronic ulcer. Neither rate of emptying of the stomach nor acidity can be shown to be appreciably affected. As against this it is a spontaneous observation of countless sufferers from duodenal ulcer that the pain, in the active phase of the disease, will always be produced or, present, aggravated by the smoking of a single cigarette. Again on inquiring into change of habits preceding a relapse, how often does one find that the only prophylactic measure which has lapsed has been abstinence from tobacco. It may well be that direct irritation of the gastric and duodenal mucosa is set up by pyridine, furfural, and acrolein, which are present in tobacco smoke and which are swallowed in saliva. I have no doubt that smoking should be limited—a pipe after breakfast and another after dinner—throughout the life of the patient.

Mustard, vinegar, curry, and strong alcoholic drinks and the like are chemical irritants and should clearly be avoided. For the same reason chloral hydrate is an unsuitable hypnotic for the sufferer from peptic ulcer.

Aspirin.—The possibility that aspirin might act as an irritant to the gastric mucosa, and thus cause melaena, was raised by me some years ago (Douthwaite, 1938). Later, Lintott and (Douthwaite and Lintott, 1938) carried out gastroscopic observations to determine whether this was in fact the case. We were able to show that an inflammatory reaction developed around particles of aspirin lying on the lesser curvature in 80% of subjects. The greater-curvature mucosa failed to show this change, no doubt because it is more protected by mucus. The failure of Wolf and Wolff to produce an aspirin reaction in the mucosa of Tom may be attributed to this fact or to their subject's belonging to the 20% resistant group. Since our communication on this matter confirmatory evidence has been plentiful. We were able to show that calcium aspirin in solution was entirely free from harmful effects. When the drug is indicated it is this form which should be prescribed.

After-treatment

Drugs have but little place in therapy once the ulcer has healed. That is to say, after two months of thorough treatment it is seldom necessary to add drugs to the advice we give for the regulation of the patient's habits. Adequate time for meals, thorough mastication, extra food between meals, avoidance of chemical irritants, nine hours in bed nightly, and the refusal to attend to the telephone during

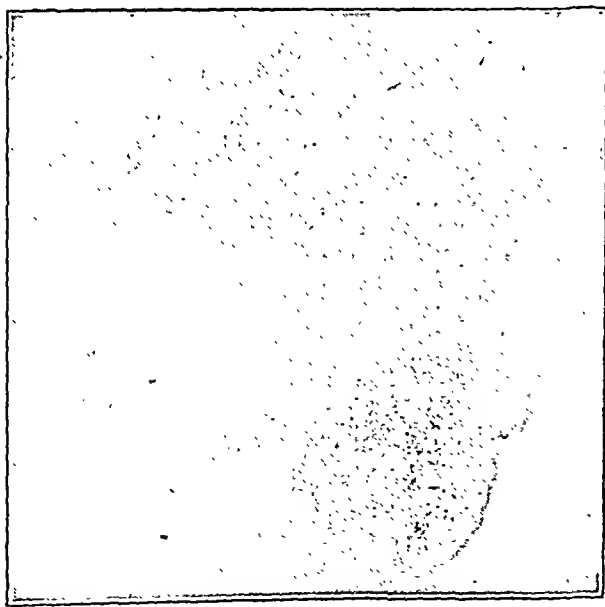


Fig. 8a.—Chronic duodenal ulcer with clinical signs of stenosis. This is masked in the radiograph because of powerful peristalsis.

from pyloric obstruction, yet the emptying rate, determined radiologically, was rapid. The second radiograph (Fig. 8b), taken after treatment with cannabis at the same time, after a barium meal, shows that the rapid emptying was the result of hyperperistalsis and that true obstruction was present. This was confirmed at operation.

meals or at night are far more important than dietary schemes, which are unnecessary, and drugs.

We know that the high gastric acidity persists and that the exaggerated peristalsis often subsides if the patient is free from worry and stress. The first sign that it is returning is usually that of vague discomfort before food or of waking in the night for no apparent reason. I believe that this gastric unrest precedes duodenal ulceration. If I am right its prompt control should prevent the relapses which hitherto have been a reproach to our therapeutics. Therefore, when such early symptoms are noticed, or again during periods of mental fatigue, worry, and stress, the administration of belladonna alkaloids should be resumed and be continued until the patient has been symptomless for a week. It is especially the night dose which is of value. Alkaline or antacid preparations have no place in therapeutics at this stage: they mask symptoms and encourage relapse.

Summary and Conclusions

The value of belladonna and its correct administration in treatment of duodenal ulcer are described. The relationship of ulcer pain to acidity and hypermotility is discussed. The use of antacids is considered. The value of phenobarbitone and cannabis indica is described. Reference is made to certain substances in common use which aggravate peptic ulceration.

Belladonna reduces gastric and duodenal spasm and the emptying rate of the stomach. It does not affect acidity. To be effective the dose must be large enough to cause persistent dryness of the mouth. The operation of vagotomy is unjustifiable. Alkalis and other antacids have such a transient and variable effect on gastric acidity that they might well be discarded as of little value. If given they should be combined with the administration of olive oil. Their danger lies in the masking of symptoms while the disease progresses. Continuous milk-drip-feeding often completely neutralizes free hydrochloric acid in the stomach. Cannabis indica is a valuable sedative for use in the acute phase.

The cannabis indica used in these experiments was kindly supplied by British Drug Houses, Ltd.

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Dr. Simon Flexner, who was born in 1863 and died in 1946, is commemorated in a pamphlet issued by the Rockefeller Institute for Medical Research, printing speeches delivered on June 12, 1946, at a memorial meeting. In 1902 the Board of Directors requested Dr. Flexner to state his views on the establishment of a research institute, and in 1903 he went to New York to take charge of the Rockefeller Institute's pathological laboratories, becoming Director of the Institute in the same year. One of the speakers quotes from a speech he made in 1933: "There are no closed compartments in nature into which man, animals, and plants can be separately placed. All are related organically and, as we may say, united physiologically and pathologically. . . . If, therefore, we would learn, and through learning grow more powerful and effective to prevent and cure disease, to lengthen life and to increase happiness through security in all its various forms, then we should endeavour to advance in biological knowledge, which alone can free us still further from the evils of disease."

BORNHOLM DISEASE IN THE TROPICS

BY

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An outbreak of Bornholm disease occurred at Aden in the late hot season of 1946. Between Aug. 17 and Oct. 25 we saw 35 cases. This malady has at various times been reported from Northern Europe, U.S.A., Britain, Southern Australia, and more recently from Egypt. So far as we are aware only one previous outbreak of the disease has been reported in the Tropics (McDaniel, 1944), although conversation with Service colleagues has indicated that it is not unknown in parts of tropical India and in Singapore. Aden, although a busy port of call on the East-West routes by sea and air, is nevertheless a relatively small and well-defined community, or rather collection of communities, and eminently suitable for studying an epidemic. All our cases were treated in the R.A.F. hospital, with the exception of two admitted to neighbouring sick quarters, two seen at their home (family of an R.A.F. officer), and one Arab taxi-driver who attended as an out-patient.

The same basic syndrome, with minor variations, has been described under many titles—"epidemic muscular rheumatism," "devil's grip," "epidemic myalgia," "Bornholm disease," "epidemic myositis," "epidemic pleurodynia," and "acute benign dry pleurisy." The condition is infective in origin and almost certainly primarily a lesion of the diaphragm, the exact nature of which is not clear. In view of this we have preferred to retain, for the present at least, the somewhat meaningless title first given to the syndrome by Sylvest (1934)—namely, "Bornholm disease."

With the exception of one case (the Arab taxi-driver) the outbreak was confined to personnel of the Services and their families. The age incidence, therefore, was such as might be expected from any condition affecting the Forces (Table 1). The incidence among officers and other ranks was: officers,

TABLE 1.—Age and Sex Incidence

Age:	0-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45+	Total
Males	0	1	6	16	3	2	0	2	0	30
Females	0	1	0	1	1	1	1	0	0	5
Total	0	2	6	17	4	3	1	2	0	35

6; officers' families, 3; other ranks, 24; other ranks' families, 2. The ratio of British officers to other ranks in Aden is approximately 1:13. The relatively high incidence of the disease found in officers is thus in accordance with the Egyptian experience of Scadding (1946), who noted a "more common incidence among officers than among other ranks."

Clinical Features

Mode of Onset.—The onset was usually abrupt, with pain, headache, and some degree of fever as the most constant features. Only five cases suffered from upper respiratory tract catarrh, for periods varying between a few days and three weeks, before the onset of classical symptoms. Two cases had prodromal colic and diarrhoea, while a further two complained of lumbar backache for a few days previous to the attack. It is difficult to assess the significance of these various prodromata, since the commonest ailments seen in Aden are probably upper respiratory tract

infection, non-specific diarrhoea, and short-term fevers giving rise to various combinations of aches and pains.

The Pain.—The onset of pain was usually sudden and came on either at rest or after exercise. Thus one patient attributed his pain to the fact that he had spent an afternoon on the beach throwing stones. Another was seized with pain after riding, while several had been taking more violent exercise—for example, soccer and hockey. It seems most likely that these were all *post hoc ergo propter hoc*. As a rule the most acute pain was felt at the onset, although in a few cases (see below) an equally if not more severe attack was experienced in a recurrence. Two types of pain were observed. The first and most common was described as "sharp," "cutting," or "knife-like," while the second was of a constrictive nature, one patient saying that the sensation was like having "tight webbing strapped round the lower chest." The pain was always worsened by respiratory effort, as in deep breathing, coughing, and yawning, and even by movement in bed. The position of greatest comfort in bed varied. Quite a number preferred lying on the affected side, while an equal number preferred to lie flat on the back. A few cases achieved comfort from being propped up in bed, and some from lying on the sound side. The pain was felt along the right or left costal margin, in the epigastrium, or in various combinations of these sites. In a few cases tightness across the anterior chest was present. Two cases had no complaint of pain, but only a febrile upset consistent with the disease, and both developed orchitis in convalescence. The actual site of pain at the onset is shown in Table II. It will be seen from this table

TABLE II.—Distribution of Pain at Onset

Site of Pain	No. of Cases
Right costal margin	6
Left	4
Epigastrium	8
Right and left costal margin	4
Right costal margin and epigastrium	3
Left	3
Right and left costal margin and epigastrium	Nil
Tightness, anterior chest	2
Febrile upset only " + epigastrium	3
Febrile upset only	2
Total	35

that there was no particular predilection for any one of the sites usually involved. Spread of pain was observed in 11 cases. Of these, eight showed final involvement of both costal margins and epigastrium, while two showed spread from the epigastrium to one side, and one from one side to the epigastrium. Referred pain was relatively common, being present in 11 cases. In several instances this was actually more severe than the pain around the lower chest. The sites affected were: shoulder-tip (bilateral), 3 cases; shoulder-tip (unilateral), 5; interscapular, 2; umbilicus to groin, 1 case. The shoulder affected was in direct relation to the side of the lower chest affected. The duration of the pain is given in Table III. It will be seen that 24 of the 33

TABLE III.—Duration of Pain in Days

Days:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	23
Cases:	—	4	8	2	4	1	5	—	2	—	2	1	—	1	1	—	1	1

cases were entirely free from pain in from two to seven days. The longest recovery time was 23 days. It should be noted that these times are for *complete* clearance of the pain. Exacerbations were of frequent occurrence, but there was no real instance of relapse. In several cases the initial pain had almost, but never entirely, disappeared before recurring in an equally and sometimes more severe form.

Headache.—Headache was present in 18 of the 35 cases. In 11 it occurred at the onset, while in the remaining seven it came on in from two to seven days. The post-onset headaches were always more severe than the others, and almost amounted to a definite complication. The pain was excruciating, being frontal in three instances and generalized in four. In one case (D. M. P.—see below) the headache was associated with signs of meningeal irritation and was severe enough to warrant lumbar puncture. The cerebrospinal fluid, although showing a very slight increase in pressure, was normal in every other respect. The duration of the headache in its severe phase varied from one to four days, but occasionally the patient was left with a "heaviness" or dull ache for several days longer.

Pyrexia.—With one exception every case was pyrexial at the onset. Twenty-two had temperatures not exceeding 100° F. (37.8° C.), seven between 100° and 102° F. (37.8° and 38.9° C.), and five over 102° F. The highest temperature noted was 105° F. (40.6° C.), but the higher temperatures were never sustained beyond a single recording. The chart usually showed a fairly rapid return to normal, 28 cases being normal within four days, 32 within seven days, and 34 within 12 days. The pulse rate for the most part was in accordance with the temperature.

Sore Throat.—Fourteen patients complained of soreness of the throat in the initial phase. All of these presented a generalized inflammation of the fauces without exudate. Throat swabs were examined in six of these, with the following cultural results: *Staph. albus*, 1 case; *Staph. aureus*, 1; non-haemolytic streptococcus, 1; haemolytic streptococcus and *Str. viridans*, 1; *Staph. albus*, non-haemolytic streptococcus, and *Str. viridans*, 1; no growth, 1. Throat swabs were also examined in six cases without sore throat, the result being: *Staph. albus* and non-haemolytic streptococcus, 3 cases; non-haemolytic streptococcus, 2; *Staph. albus*, 1 case.

Other Symptoms.—Anorexia was fairly common (21 cases). Nausea was present in two cases, vomiting in one. In two cases cough with sputum was troublesome in the acute phase. Pain in the lower limbs was observed in one case. The bowels showed no great change from the normal, diarrhoea being present in six cases, constipation in five.

Physical Signs.—Examination of the chest revealed no abnormal signs, except in one case in which a very distinct pleural rub developed on the sixth day of the disease and lasted for eight days. The rub was unusual both in its intensity and in its wide distribution over the chest, and it could be demonstrated by palpation as well as by auscultation. It seems probable that it was due to a super-added fibrinous pleurisy. Repeated clinical and radiological examination showed no signs of any effusion. Subcostal tenderness was present in 16 patients—unilateral in 10, bilateral in three, and epigastric in three. Upper abdominal guarding and rigidity were noted in only four cases. Cutaneous hyperaesthesia was not a feature of this outbreak, but was observed in four cases. It was localized to the costal margin and corresponding lower part of the chest.

Radiological Findings.—X-ray films of the chest were taken in 25 of the cases, while 21 were screened in the acute phase of the illness. The diaphragm was freely mobile in every case, and no abnormality was found in the lung fields.

Haematology.—Twenty-four cases were subjected to blood examination, comprising red cell count and haemoglobin estimation, white cell and differential count, and erythrocyte sedimentation rate. The red cells varied between 4.2 and 5 millions per c.mm. and the haemoglobin between 80% and 100% (Sahli). The colour index was

invariably around 1. There was no abnormality in the red cells, and no abnormal cells were present. These findings are in accordance with those obtained in healthy persons in Aden. The white cell counts were: Under 8,000 per c.mm., 2 cases; 8,000-10,000, 10; 10,000-12,000, 10; 12,000-13,000, 2. Differential counts showed that any increase in cells was in the polymorphonuclears. Lymphocytes, monocytes, and eosinophils showed no departure from normal. The erythrocyte sedimentation rates (Westergren method) in the acute stage of the illness were:

0-15 mm. in 1st hour	No. of Cases
15-20	5
20-30	4
30-40	6
40-50	2
50-60	4
60-70	1

The erythrocyte sedimentation rate, noted at weekly intervals, showed a return to normal in periods varying between seven and 21 days, thus revealing a very distinct lag behind clinical clearance. In the cases developing orchitis in convalescence (see below) a distinct rise in the E.S.R. was noted in six instances, while in a further six the progress of the E.S.R. to the normal figure was uninterrupted. (Note: 0-15 mm. in the first hour was regarded as a normal figure for men in Aden.) Blood culture was carried out in only one case. The culture remained sterile.

Complications.—Orchitis was by far the most outstanding complication, occurring in 12 of the 30 male cases. It was always unilateral, and affected the right and left sides equally. There was usually an accompanying mild febrile reaction. The day of disease on which the orchitis developed is shown in Table IV. The orchitis cleared for

TABLE IV.—Development of Orchitis in Relation to Day of Disease

		Day of Disease												
		1-7	8	9	10	11	12	13	14	15	16	27	39	
No. of cases	..	—	1	—	1	—	3	1	—	—	4	1	1	

the most part in two to six days, only one case lasting as long as 10 days. There was no apparent corresponding ovaritis in any of the female patients. Headache developing after the onset was, as already stated, of such intensity as to be classed as a complication, and was present in seven cases. Actual encephalitis or meningo-encephalitis, which has been reported in other outbreaks, was not observed by us. Pleurisy has also been described as a complication. One case (see above) developed a marked pleural rub, which we considered to be due to a fibrinous pleurisy. Physical signs disappeared in eight days and x-ray findings were normal.

A Personal Account of the Disease

One of us (D.M.P.) developed the disease, and it is considered worth while to include his personal account of the illness.

"The first sign of illness was noticed in the morning of Sept. 2, 1946, when upper abdominal pain commenced. The pain was quite localized in the central epigastrium; it was of a constant aching character and slowly progressive in severity, aggravated by movement as a whole. By 2 p.m. there was so much discomfort that I was unable to walk about, had no appetite, and felt ill. Aspirin was taken without effect. By 6 p.m. the pain had moved to the right costal margin and was definitely affected by movements of the diaphragm. There was also a constant aching sensation in the right shoulder-tip. The temperature was 101.8° F. (38.8° C.). A slight irritating cough appeared and there were the usual pyrexial symptoms of headache, giddiness, etc. Later that night there was a short rigor

followed by profuse sweating. Sleep was impossible owing to general discomfort.

"The next morning the temperature was 103.8° F. (39.9° C.) and the pain was severe in the right lower chest and back. There was marked cutaneous hyperaesthesia of the anterior chest and upper abdomen. During the day the temperature fell to 101.8° F. (38.8° C.) and pain subsided, being noticeable only in the lumbar region. On Sept. 4 I felt perfectly well again. My appetite returned, the cough disappeared, and apart from slight backache there was no discomfort. The temperature was normal.

"In the early hours of the 5th the pain in the right side of the chest returned, exactly the same as before. The temperature was 99.4° F. (37.4° C.). By midday the pain in the right side ceased and was replaced by a similar pain in the left lower chest, with aching in the left shoulder-tip, and aggravation of the symptoms occurred with diaphragmatic movements. By 2 p.m. the temperature was 101° F. (38.3° C.), and the pain, particularly in the left shoulder area, was very severe. A hypodermic injection of morphine, 1/4 gr. (16 mg.), gave relief. At about 8 o'clock the same night headache over the vertex began. It was quite the worst headache I have ever experienced, and lasted until the middle of next day. Recovery started on Sept. 7 and was uneventful apart from persistent right-sided headache and vague right chest pain, which lasted for a further week."

Physical examination revealed no abnormal signs other than tenderness, present at first in the epigastrium and along the right costal margin, and later along the left costal margin. X-ray examination and screening of the chest showed no abnormality. *Staph. albus* and a non-haemolytic streptococcus were cultured from the throat. On Sept. 9 the E.S.R. was 21 mm. in one hour and the total white cell count 12,000 per c.mm. (78.1% neutrophils). On Sept. 18 the E.S.R. was 7 mm. in one hour and the total white cell count 10,200 per c.mm. Lumbar puncture on Sept. 6—that is, at the height of the headache—showed the cerebrospinal fluid to be completely normal.

Treatment

Treatment was performed symptomatic. The milder analgesics such as codeine and aspirin were largely used and found of some value. Likewise the salicylate group of drugs often gave relief, and these combined with a nightly barbiturate became the routine line of treatment, with the hypodermic injection of morphine, 1/4 gr. (16 mg.), reserved for especially severe cases. The patient was made comfortable in bed in the position he himself chose, and he had what he wished to eat. The appetite usually recovered quite quickly. The headache was often of such severity as to justify the prescribing of morphine. Orchitis was treated simply by rest in bed and the use of a suspensory bandage.

Differential Diagnosis

In its epidemic form Bornholm disease is unlikely to be confused with other conditions, but sporadic cases or cases occurring at the start of an epidemic may give rise to considerable difficulty.

(a) *Pleurisy* has obviously to be considered, but the unilateral nature of this condition, together with the absence of chest signs in Bornholm disease, is usually sufficient differentiation. Scadding (1946), however, detected a pleural rub in 11 of his 20 cases, and indeed used the name "acute benign dry pleurisy" for the disease.

(b) *Upper abdominal emergency* has been reported as being simulated by Bornholm disease. Although a few of our cases presented upper abdominal tenderness and muscular guarding there was never any great difficulty in deciding that the case was not an acute abdomen.

(c) *Infective hepatitis* in the pre-icteric stage can give rise to real difficulty. Here we have an illness characterized by pain, tenderness, and sometimes muscular guarding below the right costal margin, by pyrexia, and by general upset. The pain, however, has never the same relation to respiratory effort, and nausea and vomiting are much more constant. The development

of jaundice and the presence of bile in the urine about the fourth to seventh day finally clinch the diagnosis.

(d) *Malaria* was an occasional difficulty, especially those cases showing pyrexial symptoms with pain in the left side and tenderness on palpation below the left costal margin without obvious splenic enlargement. The practice of examining blood films for malaria parasites in all cases of pyrexial illness usually, but not always, provided the answer.

Epidemiology

The outbreak reported here occurred in the late hot season in Aden, and the weekly incidence of cases, in terms of onset, is shown in Table V. A study of meteorological charts revealed no significant climatic changes from previous years.

TABLE V.—Weekly Incidence of Cases (in terms of onset)

Week ending	No. of Cases	Week ending	No. of Cases
Aug. 23	3	Sept. 27	3
" 30	3	Oct. 4	1
Sept. 6	9	" 11	0
" 13	7	" 18	1
" 20	4	" 25	1

The causal agent has never been discovered. The clinical picture, the nature of the complications, and the failure to demonstrate any constant bacterial agent suggest a virus infection, although the mild leucocytosis encountered invariably showed an increase in the polymorphonuclears. The mode of spread, too, is somewhat vague. The various modes postulated have been direct by droplet infection and indirect by infected water, infected food, or insects. In Aden there are several well-defined communities. These include the British Services, Indian Services, European civilians, Indian civilians, and the local native population (chiefly Arabs and Somalis). As previously stated, the outbreak was confined to the British Services, with the exception of the single case in an Arab. The water supply is derived from deep wells and is very pure. It is examined bacteriologically at regular intervals at many points and has always been satisfactory. Moreover, the supply is common to the entire population, and it is difficult to conceive why, if the infection were water-borne, virtually the Services alone should be affected. The native population use goats' milk chiefly. The Europeans use cows' milk, drawing their supplies from two main sources—a civilian dairy-farm and a Services dairy-farm—but there is considerable interchange between the two. No cases of the disease occurred in the staffs of the respective dairies, and bacteriological examination of the milks was satisfactory at the time of the outbreak. Food-borne infection was considered, since food supplies to the British Services, civilians, Indian Services, and natives were all from different sources. An interesting feature in this respect was seen in one camp where a unit of Cingalese troops were living in proximity to an Indian unit. The Cingalese were on British Service rations, while the Indians had their own special dietary. Two of the Cingalese detachment developed the disease, while no cases occurred among the Indians. It must be stated, however, that in spite of the close proximity of these units there was practically no "mixing" between the two. Another most interesting fact was that while the medical staff of the Indian hospital in Aden saw no cases of Bornholm disease, they did have an outbreak of mumps among Indian personnel at that time. The R.A.F. and civilian authorities did not have a single case of mumps. The importance of this will be realized when one states that the Indian authorities had several cases admitted with orchitis which they presumed, in view of their epidemic, to be complications of "missed" cases of mumps. Insect-borne disease is unlikely, since Aden is comparatively free from most of the usual pathogen-carrying insects.

While infection conveyed by milk or food cannot be excluded, it seems more likely that the spread is direct by droplet infection. The disease is known to occur in Egypt (Scadding, 1946), and Aden is reached in less than 24 hours from there by the usual air route, thus making the introduction of infection, even with the shortest incubation period, easy. There is surprisingly little "mixing" between Service and civilian personnel in Aden, so that an epidemic in one would not necessarily pass readily to the other. The case of the Arab taxi-driver may be significant, for he was a native, having his own particular diet including goats' milk, who developed the disease in a fairly severe form. Droplet infection would seem the most obvious mode of spread in this instance. There was one example of family infection—an R.A.F. officer, his wife, and two children—all developing the disease at varying times within eleven days. At the height of the outbreak five of the hospital staff, including one medical officer, one nursing sister, and three nursing orderlies, all in close contact with cases developed the disease. Furthermore, one patient, who was in hospital with a left-sided pleural effusion for about three months, contracted Bornholm disease affecting chiefly the right side and complicated by the later development of orchitis. He had been nursed in a general ward which included several cases of the disease, and was almost certainly cross-infected. Lastly, the incidence of faucial inflammation at the onset in 14 cases would seem to lend support to the view that the mode of spread is direct from case to case by droplet infection. The incubation period appears to be a short one. Huss (1934) found it to be about four days, and such evidence as we had agreed with this finding.

Summary

An outbreak comprising 35 cases of Bornholm disease occurring in Aden in the late hot season is described.

The clinical picture, with minor variations, approximated to the classical syndrome.

Blood examination showed only a slight polymorphonuclear leucocytosis and a raised E.S.R.

Radiological examination showed no deviation from normal.

Orchitis was the most outstanding complication, being present in 12 of the 30 male cases. Dry pleurisy complicated one case, while headache of such severity as to be classed as a complication was present in seven.

The epidemiology is discussed. Direct droplet infection is considered the most likely mode of spread, although food or milk-borne infection cannot be excluded.

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The beliefs and rituals of primitive races, by their remoteness from our experience, the obscurity of their significance, and their monotony, are sometimes dull to read about to any but anthropologists; the beat of distant drums, exciting at first, falls on soon-tired ears. Mr. Lewis Litt, in *Savage Tales* (Wadley and Ginn, Dominion House, Bartholomew Close, London, E.C.1: 8s. 6d.), has adopted the form of the short story and used it with considerable imagination to record the myths and customs of some of the Papuan tribes. From many years' experience of living among them he has acquired a remarkable facility at penetrating the native mind and reveals its passions, fears, and aspirations in the setting of the natives' daily life and as part of the characters of individual men and women. His book is the more valuable in that he records in an attractive manner a way of life that is gradually disappearing as the white man's civilization encroaches upon it. The opportunities for intimate contact with the Papuans that he has enjoyed will never recur.

A NOTE ON THE CAUSATION OF SUDDEN DEATH

BY

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One of the duties of a procurator-fiscal in Scotland is to investigate all cases of death from any form of violence, as well as all sudden deaths and deaths from unknown or suspicious causes. In most cases this is done by private inquiry—though provision is made by statute for fuller inquiry into certain deaths from industrial accidents and other causes—a procedure possessing certain advantages over the coroner's inquest. Part of the procedure initiated by the procurator-fiscal is an examination of the body by the casualty police surgeon, with or without a necropsy, and this note is based on an investigation to elucidate the cause of 1,694 cases of sudden, violent, and suspicious death from 1931 to 1945.

These cases fall into two groups—those in which the actual cause was definitely ascertained post mortem (572) and those in which external examination alone was carried out (1,122). From the former I have deducted 45 cases of newly born children, many of them stillbirths, or non-viable foetuses. On the other hand, many cases of suicide were not subjected to post-mortem examination because the cause of death was obvious—hanging, gunshot wound, cut throat, etc. In suicide, wherever there was doubt as to the cause, a necropsy was done; so all suicides are added to the number of cases where the cause was definitely ascertained. This gives a total of 823 (post-mortem cases (572 less 45), 527; cases of suicide not coming to necropsy, 296), or nearly one-half the total cases, over a period of 14 years. An analysis of these is detailed below.

Non-violent Group

Of the 823 cases 200 were due to non-violent causes, with the addition of 24 cases of infants under 2 years which have been considered separately because of a tendency to certain special types of death they exhibit. The remaining 599 were due to external agencies, suicide accounting for 365 cases and other external causes (accidental or intentional) for 234. The non-violent group consisted of:

	Cases	Infants
Deaths due to cardiovascular degeneration ..	104 (52%)	
Deaths due to diseases of the respiratory system ..	26 (13%)	17
Deaths due to diseases of the nervous system ..	33 (16.5%)	2
Deaths due to diseases of the gastro-intestinal system ..	15 (7.5%)	
Deaths associated with pregnancy ..	9 (4.5%)	
Other causes ..	13 (6.5%)	5
	200	24

Diseases of the Cardiovascular System.—The cardiovascular cases—104 (52% of the total)—form much the largest group, though not so large as in some previously reported lists of causes of sudden deaths. They were grouped as follows:

Coronary atheroma and thrombosis ..	51	} 39.5% of total
Rupture of heart ..	3	
Myocarditis—fibrous or fatty ..	25	
V.D.H. ..	4	
Intracerebral haemorrhage ..	13	
Ruptured aortic aneurysms ..	6	
Pulmonary embolism ..	2	

The first three groups may be considered together. Many cases showed gross atheromatous changes of the coronary arteries, so that these could only with difficulty be cut with a knife; others showed localized atheromatous changes in the arteries, and still others only small isolated plaques—

in all causing such narrowing of the lumen that in some an acute cardiac ischaemia and death, probably from ventricular fibrillation, resulted and in others the narrowed area formed a nidus for thrombus formation and cardiac infarction. If death did not occur at once it might follow in a few days from rupture of the heart through the softened area supplied by the thrombosed vessel, as in the three cases mentioned. Cases showing temporary recovery resulted in myocardial changes, diffuse or localized, with impaired cardiac function. In four cases this fibrosis resulted in a cardiac aneurysm, but in no instance did this rupture. Included in this group are four cases of gross enlargement of the heart which on section showed fatty degeneration of the muscles. One case of coronary embolism was seen in which there were many vegetations on the aortic cusps and a raw area where one of these had become detached; it was found plugged in the right coronary artery, and was about the size of a grain of rice. In four others the main lesion was valvular—two mitral stenosis and two aortic stenosis and incompetence. These also showed evidence of fibrosis of the myocardium. There were 13 cases of cerebral haemorrhage (apart from subarachnoid haemorrhage), and all of them gave evidence of arteriosclerosis with concomitant enlargement of the heart. Eight showed that the haemorrhage arose in the neighbourhood of the internal capsule and five were cases of pontine haemorrhage. Possibly the more rapid termination in cases of pontine haemorrhage resulted in a greater proportion of those being investigated as sudden deaths than in the ordinary cases, which are usually seen by a doctor before death occurs. Of the six cases of ruptured aneurysm three were saccular aneurysms of the aorta; the other three were dissecting aneurysms arising from atheromatous ulceration. Of two cases of pulmonary embolism which came to necropsy one resulted from a thrombosis of varicose veins extending into the iliac veins; the other followed 10 days after a confinement.

Diseases of the Respiratory System (26 Cases).—Of these deaths 19 resulted from pneumonia, mainly of the fulminant influenzal haemorrhagic type, which in two cases caused death within four hours of apparent onset; two were due to bronchiolitis and one to status asthmaticus. Four were the result of haemorrhage from tuberculosis, death being due to asphyxia from intrabronchial clotting rather than to the actual blood loss.

Diseases of the Nervous System (33 Cases).—Cases of subarachnoid haemorrhage form more than one-third of this group. In only a few was it possible to demonstrate the actual congenital aneurysmal dilatation of the vessel—though it is interesting to note the finding of an unruptured aneurysm the size of a hazel-nut in a case in which death was due to violence. The youngest subject in this series was 10 years and the oldest 59. The following table shows the usual age distribution of cases of this type.

	Present Cases	Magee's 150 Cases
Under 20 years ..	3	9
20-30 ..	1	76
30-40 ..	2	56
40-50 ..	5	9
Over 50 ..	2	—

Six cases occurred in asylum inmates and were due to exhaustion from acute mania, five were cases of cerebral softening from cerebral thrombosis, and three were brain tumours with acute oedema of the brain. There were three cases of fulminant cerebrospinal meningitis—two in brothers who took ill within two days of each other, each dying after less than one night's illness. The third died after eight hours' illness and showed the typical

Waterhouse-Friderichsen syndrome with gross haemorrhage into both adrenals. Of the others, one was a case of general paralysis of the insane in which death was due to idiosyncrasy to arsenical drugs, one of status epilepticus, and one of hydrocephalus.

Diseases of the Gastro-intestinal System (15 Cases).—Acute perforations accounted for nine cases, intestinal obstruction for four cases. One case resulted from haemorrhage from a gastric ulcer, and one from colitis which suggested mercurial poisoning, but all analyses were negative.

Diseases Associated with Pregnancy (9 Cases).—Four of these resulted from toxæmias of pregnancy; four were the result of abortions—three from sepsis and one from air embolism; and one was an ectopic gestation.

Other Causes (13 Cases).—The only interest of these 13 cases lies in one case of Addison's disease, two where starvation was the cause, and two others where in the presence of lymphatism and absence of any other apparent cause the deaths were attributed to status lymphaticus.

Infant Cases.—In addition to the 200 cases above listed there were 24 post-mortem examinations on infants. These have been kept separate because the majority of these are of one type. The usual history is that a young child is put to bed after a feed, either apparently quite well or with only a mild catarrhal cold, and in the morning is found dead in its cot. These infants are frequently proved to have died from pneumonia. A dramatic occurrence was in twins 4 months old. Twin A had a very mild cold the previous day, and there was no history of any further illness. Twin B had no history of illness at all. At 8.30 a.m. the mother tucked both children in their cot, apparently well, and went to her washing-house to soak in her clothes. On her return at 9.30 both twins were dead. At necropsy both were found to have had pneumonia, Twin A in a more advanced stage than Twin B. Of the 24 cases in this group 12 had pneumonia: four were due to asphyxia, probably overlaying; two to cerebrospinal meningitis; one to a hepatoma, and one to total infarct of the kidney. The other four were one case each due to cerebral haemorrhage (from labour), colitis, bronchitis, and status lymphaticus.

Deaths due to External Agencies

This group of deaths, numbering 599, occurred from the following causes:

Suicides (necropsy)	69
Suicides—examined externally only	296
Injuries, wounds, and burns	150
Associated with anaesthetics	32
Asphyxias, drowning, strangulation, etc.	21
Poisonings	20
Other causes	11

Suicides (365 Cases).—It will be seen that suicides form a large proportion of the total. The interest of this group lies in the method chosen and in the evidence of imitation in the recurrence of similar methods of self-destruction about the same time, especially noticeable in the coal-gas and precipitation groups. "How oft the sight of means to do ill deeds makes ill deeds done." The following is an analysis of the methods adopted:

Coal-gas	144 (40%)	Hanging	14 (3.8%)
Drowning	123 (33.6%)	Cut throat	14 (3.8%)
Poisoning	37 (10.2%)	Gunshot wounds	12 (3.2%)
Precipitation	18 (4.9%)	Trains	3 (0.8%)

As is usually seen, coal-gas provides the majority of cases, though cases of drowning approach the same figure, perhaps from the proximity of harbour, sea, and rivers in the area. Of the 37 cases of poisoning, lysol caused 18, again illustrating the usual habit, 11 were due to narcotics (barbiturates, chloral, bromides, and chloroform), three to prussic acid (occurring in two chemists and a laboratory

attendant), two to corrosive sublimate, and one each arsenic, strychnine, and aspirin. The other types of suicide for no comment.

Deaths due to Injuries and Wounds (150 Cases).—These generally are of little pathological interest. Head injury was responsible for 90, rupture of organs for 28, multiple limb injuries for 12, and fracture of the spine for 6; in all the cases in these groups were caused by motor accidents.

Deaths Associated with Anaesthetics (32 Cases).—Of these cases 17 could be attributed directly to the disease which created the necessity for operation or to post-operative shock—for example, gangrene of leg, two cases (one with aortic thrombosis); cancer of breast and stomach, uterus, and prostate; toxæmia from pelvic abscess and gangrenous appendicitis; and post-operative haemorrhage from a venous cyst and from gastrectomy. Of the cases where the anaesthetic played a major part in the cause of death three followed the inhalation of blood in throat and nose cases and two from the inhalation of vomit. One was a case of circumcision with status lymphaticus and one with hydrocephalus which collapsed on being given 1/2 (14 ml.) of ether for the purpose of taking an encephalogram. In six cases—two of tonsillitis, one of mastoiditis, one tuberculous nodes of the neck, one of antral suppuration and one for the change of a plaster casing—the anaesthetic alone appeared to be responsible for the collapse. Three cases followed the application of a 2% amethocaine hydrochloride (decicain) spray—one a tumour of the lung and the other a case of bronchiectasis. The anaesthetic was given to permit of a bronchoscopy, and in both cases generalized convulsions set in within a few minutes and death occurred very shortly afterwards.

Deaths from Poisoning (21 Cases).—Six of these were accidental deaths from carbon monoxide from stoves (coal-gas); seven were the result of asphyxia in alcohol coma; four were caused by drinking the synthetic methanol; and one each from phosphorus (rat paste used as an abortifacient), hydrocyanic gas (in a ship fumigator), quinine (also used as an abortifacient), and lysol applied externally as a dressing in mistake for eusol.

Asphyxias, Drowning, etc. (20 Cases).—These include 11 cases of accidental drowning, one accidental strangulation and four cases of choking on foreign bodies—two in lunatics (a bun and an oatmeal pudding being the offending agents) and two in children from a bean and a particle of food.

Other Causes (11 Cases).—Of the 11 cases so classified two resulted from tetanus, two from pyæmia, and two from septic abortion. One case of oedema of the glottis occurred in a schoolboy who was kicked on the neck in a game of football and died within 20 minutes.

An interesting feature of this group is that in 16 of these cases of death from all classes of violence a charge of murder or culpable homicide followed. Three were in children murdered by an insane mother by coal-gas; three were head injuries; three resulted from strangulation—two manual and one with a handkerchief; two from cut throats; and one each from fracture of the spine, stabbing, shot-gun wound, and lysol—this last in a child murdered by its mother, who also committed suicide with lysol.

Cases Not Examined Post Mortem

Of the 1,122 cases in which external examination alone was carried out, 296 suicides have already been dealt with; 12 others related to newly born children and are discounted for reasons previously stated. This leaves 814 cases, of which 404 were cases of sudden death, 305 cases of injury, etc., and 105 infant cases. In a great number the cause of

death was not conclusive, so it is undesirable to base any conclusions on the figures; but experience of large numbers of these cases allows an examiner to group the probable causes of death with reasonable accuracy for registration purposes.

Cases of sudden death	404 cases
Cardiovascular group	357
Respiratory diseases	21
Nervous system diseases	8
Gastro-intestinal diseases	3
Miscellaneous causes	15

Here the outstanding feature is the proportion of deaths (85%) attributed to cardiovascular causes. This is not surprising when one considers that most of these were of people collapsing in the street or at work, or found dead in bed. In ordinary times many of these cases would have come to necropsy, but as nearly half occurred during the war years, when post-mortem examinations were reduced to a minimum, they were ascribed to the most likely cause as adjudged from the previous history and mode of death. In all, 318 deaths were thus considered to be due to coronary thrombosis and myocarditis; 11 to valvular diseases; 22 to cerebral haemorrhage; one to ruptured aneurysm, and five to pulmonary embolism.

Deaths from External Agencies (305 Cases).—These deaths were due to the following causes:

Injuries:	
Fractured skulls	101
Ruptured organs	25
Fractured limbs and spine	25
Burns	14
Exposure	2
Other causes	4
Drowning	70
Accidental carbon monoxide asphyxias	22
Associated with anaesthetics	36
Poisons	6

The first point of interest here is the comparison of the accidental deaths from inhalation of carbon monoxide—22 cases plus six that came to necropsy, 28 (16%) in all—with the 144 (84%) such cases due to suicide. The six poison cases were all due to alcohol. Nearly all of the 36 deaths associated with anaesthetics were due to the condition necessitating anaesthesia or to post-operative shock or haemorrhage—hence necropsy (especially in the war years) was not done. For example, 13 were cases of malignant disease and 7 were abdominal emergencies. Three special cases may be noted: one of tetanus which ended in death during a spasm while receiving chloroform; another that of a child of 23 months with a tuberculous lesion of the skull who received 40 ml. of a 0.5% solution of "novocain," followed by a nitrous oxide, oxygen, and ether anaesthesia, in which the local anaesthetic was certainly in excess of a safe dosage; and a third case, that of a man suffering from a deflected septum who had this treated locally with a swab of adrenaline dipped in cocaine crystals and died in convulsions within a few minutes, presumably from poisoning by cocaine owing to idiosyncrasy to the drug.

Infant Cases.—The 105 infant cases show the same tendency as the post-mortem cases: 55 were regarded as due to respiratory causes—50 to pneumonia and 5 to bronchitis—21 were asphyxial deaths, mostly accidental overlaying; 13 were due to convulsions, nine to prematurity, and five to acute infections—measles (three) and whooping-cough (two).

Conclusion

Exact inferences may not be drawn from the figures given, but there seem to be three points which deserve some emphasis: (1) the outstanding predominance of cases of cardiovascular degeneration as a cause of sudden death—461 (76%) out of 604 cases; (2) the frequency of coal-gas as a suicidal agent; and (3) the frequency of pneumonia (50%) as a cause of sudden death in young infants.

HEMIPLEGIA IN YOUNG ADULTS

BY

G. JOLY DIXON, M.A., M.D., M.R.C.P.

Strokes in the elderly are usually regarded as a manifestation of cerebral vascular disease, while in the young adult they are usually thought to be due to some extraneous cause. The purpose of this paper is to emphasize both the obscurity of aetiology and the frequency of strokes in young adults.

The cases selected for study are all instances of unilateral pyramidal palsy seen in Service personnel between the ages of 20 and 40 at the E.M.S. Neurological Centre, Winwick, between 1940 and 1946, and also four civilians of the same age group admitted to the Warrington General Hospital between 1944 and 1946; in all 35. Nineteen of these patients had only minor degrees of hemiparesis, and in these a convincing cause was found. Thus, seven occurred among 30 consecutive cases of cerebral tumour, six among 30 consecutive cases of disseminated sclerosis, three cases of congenital hemiparesis had been accepted by the recruitment board, and two cases of hysteria and a hemiparesis due to syringomyelia completed the total. It so happened that the onset of the palsy in all these 19 patients was insidious.

The remaining 16 patients with more severe palsies all had a sudden stroke; of these, two men suffered cerebral emboli during the course of rheumatic mitral stenosis with pulmonary infarcts (Case 20) and bacterial endocarditis (Case 21). Another in retrospect presumably had suffered a Herxheimer reaction during the treatment of secondary syphilis (Case 22); a fourth must have had a cerebral aneurysm, as his stroke occurred 10 days after a sub-arachnoid haemorrhage; and a woman (Case 24) aged 29 developed a hemiplegia whenever an overdose of insulin was administered in treatment of her diabetes mellitus. A case similar to this last was described by Fischer and Florman (1943), though their patient eventually suffered from a cerebral embolus. It is of interest that Case 21 eventually recovered from the endocarditis after treatment with penicillin, though he was left with an almost useless left hand and spastic leg and auricular fibrillation; while Case 22 recovered sufficiently to be conscripted three years after his stroke.

Eleven of the severely palsied cases were not so readily diagnosed. Of these, two convalescent Service men (Cases 25 and 26) who had no pyramidal signs were at first labelled hysteria; however, they both claimed unilateral loss of sense of position and a field defect on the same side. An almost identical Service case was described by Stewart, Randall, and Riesenman (1943) and diagnosed by them as hysteria. However, in reconsidering these three patients it appeared remarkable that all of them should have mimicked so closely the symptomatology of a vascular lesion in the posterior portion of the internal capsule, and when Case 25 was re-examined two years later the signs were unaltered, except that he had developed choreiform athetotic movements of the affected shoulder and a pneumocephalogram demonstrated localized cortical atrophy. Six months after his stroke Case 26 wrote that his condition was stationary. It seems possible that had the frequency of strokes in young adults been appreciated at the time both Cases 25 and 26 would have been differently labelled.

Three of the cases under review had sepsis in the jugular vascular bed on the same side as the brain was affected—namely, in Case 27 a tuberculous gland on the right side of the neck, in Case 28 a Vincent's ulcer on the left tonsil, and in Case 29 a right-sided chronic otitis media. Dowman

(1926) and Purdon Martin (1944) have described strokes in this age group due to cerebral venous thrombosis, and Symonds (1937, 1940) has stressed the importance of sepsis in the middle ear and nasopharynx as a cause of thrombophlebitis of the Rolandic veins. Another soldier (Case 30) gave a history of an unexplained femoral phlebitis six years previously, and at the time of his stroke he was under investigation for an obscure painful lesion in the left lung.

Elkington (1935) described the cases of three young adults whom he concluded to be suffering from cerebral haemorrhage because of the site of the lesion, the suddenness of the onset, and the finding of slightly xanthochromic fluid on lumbar puncture in two who had no other signs of subarachnoid haemorrhage. He compared them with a woman of 27 who died from a pontocerebellar haemorrhage resulting from telangiectasis in this region and another woman, described by Gordon Holmes (1931), who developed a left homonymous hemianopia from an arteriovenous aneurysm in the calcarine fissure. The cases here examined resembled Elkington's in the sudden onset and the site of the lesion, and resembled other vascular accidents in the fact that their condition has changed very little during the period of one to four years they have been under observation. However, abnormality of cerebrospinal fluid was a rarity. Case 25 had a slight increase in globulin and a gold curve of 1221110000, and Case 31 had seven lymphocytes per c.mm. in the cerebrospinal fluid.

It seems probable that Case 31 had a cerebral haemorrhage, as at the time of his stroke he suffered a transient glycosuria and albuminuria. This patient, a soldier aged 30, is of interest as two months previously he had suffered from infective hepatitis. Lescher (1944) and Stokes, Owen, and Holmes (1945) describe four cases of cerebral haemorrhage complicating this disease. In Lescher's case the same time interval occurred as in Case 31. The neurological signs in Case 31 were consistent with a lesion in the right internal capsule, but this lesion was presumably more extensive, as he developed epileptiform convulsions and a pneumo-encephalogram seven months after the stroke showed extensive atrophy of the right cerebral cortex. Stokes *et al.* in describing the necropsy of their Case A state: "The brain contained an area of softening lateral to the right lateral ventricle and a large haemorrhage into the right caudate nucleus." Had this patient survived he would presumably have presented an almost identical clinical picture to Case 31, except for the site of the palsy.

No other patient showed evidence that the vascular atrophy was due to haemorrhage. One patient at least, a housewife aged 26, presumably had a cerebral embolus, for on admission she was found to have a cloudy wedge-shaped area lying on either side of a pair of vessels in the upper temporal sector of the left retina. These vessels were somewhat obscured near the disk; peripherally, the artery was seen to be empty and the vein normal. It is suggested that this woman's sudden loss of consciousness the day before admission had resulted from an embolus which had broken up in the left internal carotid artery. The smaller part lodged in the retina and the larger part occluded branches of the left middle cerebral artery. The patient had prolonged unconsciousness, which after about ten days gave place to complete aphasia, right-sided spastic paralysis of face, arm, and leg, and loss of sense of position in these limbs. Later, absence of the nasal field was demonstrated in the right eye, presumably due to the local lesion in the retina.

None of these nine obscure cases had any abnormality of the urine, and the cardiovascular systems appeared healthy except that in three Service men when stress was shown during examination a high blood pressure was found

(150/100 in Case 25, 150/100 in Case 26, and 140/100 in Case 31), normal pressures being recorded at other times in these patients. Another associated finding was recent evidence of pulmonary disease; thus, Case 25 was at the time of his stroke convalescent from pneumonia, and Case 31 during the month preceding his stroke had had three attacks of left-sided pleurisy and was found to have x-ray evidence of infiltration of the left mid-lung zone. A patient not previously mentioned was found to have radiological evidence of spreading though symptomless pulmonary tuberculosis and another stated that two years previously he had had pneumonia. French authors, such as Hartenberg (1930), Trotot (1935), and Vidal (1942), stress the occurrence of hemiplegias during artificial pneumothorax refills, but the transient nature of these catastrophes argues a different aetiology from that in the group under review.

Summary and Conclusion

It would seem that strokes resulting in permanent hemiplegia are not such a very uncommon accident in young adult life. Although many of these patients show evidence of cardiac disease likely to give rise to emboli, the majority have no such condition. It would appear that this phenomenon may be due to either a venous thrombosis in the Rolandic system of vein or a haemorrhage, thrombosis, or embolus in the cerebral arterial system. Sepsis in the jugular vascular bed, recent pulmonary disease, and a tendency to abnormal elevation of the blood pressure are frequent associated findings.

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The first number of *Nutrition, Dietetics, Catering* is an attractive illustrated journal, to appear quarterly, issued by the British Dietetic Association and the Food Education Society (annual subscription 10s.: Newman Books, Ltd., 356-366, Oxford Street, London, W.1). It is intended to provide the latest news on dietetics for catering managers, canteen supervisors, and others responsible for the preparation of food, as well as medical men, and Sir Jack Drummond hopes, in a foreword, that it will contribute to banishing sodden cabbage and the other evils of bad cooking from our tables. As he points out, the standard of cooking in many of our hotels, hospitals, and institutions is deplorably low and we should be more ashamed of it than we are. Prof. Marraek draws attention to the fact that foods may have a nutritive value not apparent from the content of their various nutrients, and comments that the moral of recent investigations is that "animals, human or other, need food—not vitamins or other separate nutrients." An interesting observation made by Prof. Yudkin is that adolescence in the West African is delayed longer than is commonly believed. The psychological changes associated with puberty in girls occur at the age of about 16 or 17, and he thinks it likely that unsatisfactory nutrition is a possible cause. Mrs. Palmström, comparing Norwegian food with English, remarks that though it is similar it is often prepared differently and is eaten at different times of the day. There is no sign of war weariness in Norway. The people are strong and healthy—the women in fact probably working harder than they do in England. She points out that there are many factors contributing to this state of affairs, and wonders if the diet plays any part, in particular the relatively high consumption of meat and fish in conjunction with bread. The journal also includes news items, book reviews, and schemes for training in dietetics.

STRESS FRACTURE OF A METATARSAL IN A YOUNG CHILD

BY

LEWIS D. RUTTER, M.B., Ch.B.

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The following case is reported because of the early age of incidence.

Case Report

On July 23, 1946, a woman brought her child aged 4 years months to hospital, stating that until the previous day the child had been well; she then complained of pain in her right foot on walking, and it was noticed that she limped. No history of trauma was elicited. There was nothing of note in the child's previous history; walking had never troubled her before.

On examination the right foot was mildly swollen but not red, and there was tenderness along the shaft of the second metatarsal. The appearance of the left foot was normal. There was a mild genu valgum. There was no clinical evidence of systemic disease. A skiagram (Fig. 1) showed: (1) A cuff

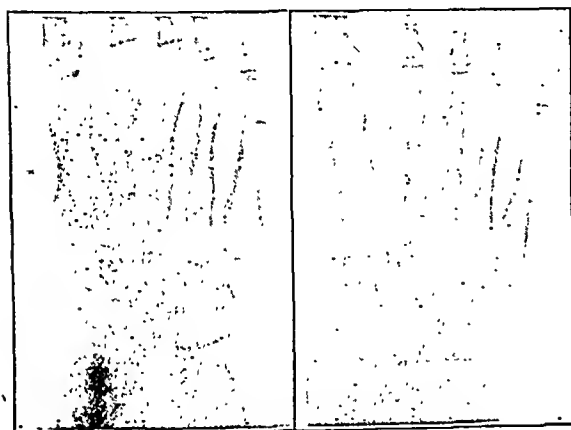


FIG. 1.—Skiagrams taken on day of admission, showing appearance of the second metatarsal shaft.

A fine new bone formation around the mid-shaft of the second metatarsal except for a small annular area of absence of bone in contact with the cortex. It appeared as if the bone was surrounded by a ring of tissue translucent to x rays.

This appearance has been noted by Sayle Creer (personal communication) in a number of cases of stress fracture of the metatarsal, and he wonders if it masks a very small crack. (2) New subperiosteal bone formation in contact with the whole length of the metatarsal shaft except for the annular area described in (1).

In view of the patient's age a tentative diagnosis of periostitis, possibly tuberculous in origin, was made and a short leg unpadded plaster cast was applied.

On Aug. 30 the plaster was removed and the appearance of the child's foot was normal, the swelling and tenderness having disappeared. A skiagram revealed a clear fracture line across the metatarsal shaft with some separation of the fragments. The fracture showed good union. On Sept. 2, after a fortnight out of plaster, the foot appeared normal and a skiagram showed consolidation of the fracture with nothing to distinguish it from an ordinary "traumatic" fracture.

Discussion

The condition was regarded as one of stress fracture of the metatarsal on the following grounds: (1) The sudden onset of pain on walking without previous trauma. (2) Swelling of the foot (but no bruising) and tenderness of the affected metatarsal shaft. (3) X-ray appearances: the solution of continuity of the shaft and the consolidation of the fracture seen on Aug. 30, and the initial annular area of absence of bone in contact with the metatarsal shaft surrounded by a cuff of new bone. No cortical "nick" or hair-line fissure was seen: both were suggested as criteria for diagnosis by Hartley (1943), but as the skiagram on Aug. 30 showed a fracture line it is probable that the hair-line fissure was visible at some earlier stage. There is little doubt that had there been no displacement of the fragments the final skiagram would have shown complete restoration to normal architecture—said to be characteristic of "march fracture." (4) It occurred as a single lesion in the commonest bone affected by stress fracture; the other bones showed no lesion, nor was there evidence of general bone disease. (5) There was no evidence of systemic disease. No previous report of a case of stress fracture of a metatarsal occurring at such an early age was discovered in the literature. Several cases of stress fracture of the tibial shaft have been recorded in young children (Hartley, 1942); and Roberts and Vogt (1939) reported a case in a child aged 4. Stress metatarsal fractures have their maximal incidence in adolescents and young men, particularly soldiers—the incidence being so great in soldiers that the condition has been described as an occupational disease associated with military training.

My thanks are due to Mr. R. Ollerenshaw and Mr. W. Sayle Creer for their assistance and advice in the publication of this case.

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Medical Memoranda

Prevention of Peritoneal Adhesions by Transplantation of Amnion

Various procedures have been suggested to prevent adhesions following repeated laparotomy. The main object is to secure normal peristalsis. Glinn, Hoehne, and other authors recommended the intraperitoneal administration of soft paraffin and similar substances; for a time camphor was employed. It was established, however, that the mixture of fats and chemical compounds was noxious. Some workers, believing adhesions to be due to the absence of fibrinolytic ferments, suggested administering Pregel's pepsin solution or "leucoferment." Mayert and Feldmann tried to prevent adhesions by air insufflation. All these procedures have been criticized.

A case is reported here in which defective peritoneum has been replaced by sterile amnion to prevent new adhesions. For this operation only those cases should be considered in which deficiencies of the peritoneum, with severe adhesions, cannot be repaired by the older procedures because they are so extensive and deep that the body itself is incapable of repair. The transplantation of amnion is intended to provide a moist gliding surface ensuring natural bowel movements. Four suitable patients have been found in the course of four years whose condition necessitated the operation.

Though the problem of adhesion formation has been clarified, there is no reliable method of prevention or treatment. It has, however, been shown that besides a sepsis, control of bleeding, and delicate manipulation of the tissues, the replacement of peritoneal defects is the most important factor in prevention. We believe that sterile amnion fulfils these requirements. Transplantation of sterile amnion in the course of gynaecological operations was performed in this country

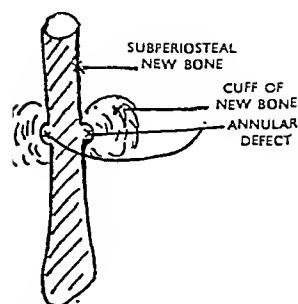


FIG. 2.—Diagram of the second metatarsal shaft as seen in Fig. 1.

as early as 1937 by K. Burger. Only intact amnion obtained in the first stage of labour should be used for this purpose. Histological examination has shown that there is a close relation between human peritoneum and amnion. To investigate the question of how long sterile amnion can be preserved, pieces of sterile amnion were put in Ringer's solution at 2° C. and then removed severally at six-hour periods and histologically examined. No change occurred in the peritoneum or in the amnion at the end of the first six hours. Nevertheless we performed our laparotomies simultaneously with the caesarean sections in the same operating theatre; thus the amnion remained in the physiological solution only for a few minutes.

We treated four cases with amnion transplantation. The first patient attempted suicide by shooting himself in the belly. In two cases eventration due to a war injury has caused adhesions. The fourth patient had a stomach perforation followed by hernia of the abdominal wall.

CASE REPORT

He was 32 years old in 1940 when his ulcer perforated. The perforation was sutured 18 hours later. The wound separated, and secondary healing lasting many weeks occurred. One year later reconstruction of the abdominal wall was tried, but unfortunately the bowel was injured during this operation. A faecal fistula formed through which faeces were continuously passed. He suffered severe pain, and a chronic ileus developed. Two further operations were performed to relieve the ileus and to close the fistula.

He came to our ward in 1943 with a marked intestinal obstruction which could be relieved by conservative measures. He had constipation lasting for 4 to 5 days at a time and responding only to the simultaneous administration of hypertonic sodium chloride, "doryl," and "prostigmin." A pregnant woman belonging to the same blood group and having a contracted pelvis, with no other indication for caesarean section, was available. Operation was performed on the man simultaneously with the caesarean section. We removed the scar and liberated the intestinal adhesions. In the vicinity of the fistula there were a peritoneal defect measuring about 40 cm. in length and two other defects measuring 15 cm. each. These areas were covered with pieces of amnion, which were held in place by catgut stitches. Primary healing ensued, and the patient left the ward on the twelfth post-operative day. He has been followed up. He is a journeyman mason and has fully recovered.

We have operated similarly on three other patients with small peritoneal defects. They also healed by primary intention. One of them still complains at times. The patients have been followed up for 2 to 3 years. Amnion transplantation should be performed rarely, and only in cases which cannot be repaired by any other method.

ANDREW KUBANYI,
Budapest.

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Bilateral Chronic Suppurative Otitis Media with Complications

Mrs. R., aged 34, was admitted to hospital on Nov. 18, 1946, with a diagnosis of bilateral chronic suppurative otitis media complicated on the left side by: (1) Mastoiditis. Sclerotic mastoid (no swelling or oedema over mastoid). (2) Polypi, granulations, and cholesteatomata of the middle ear cavity. (3) Extradural abscess of the middle fossa. (4) Fistula of the external semicircular canal. (5) Lateral sinus thrombosis, extending down the jugular vein.

CASE HISTORY

Past History.—Known to have had attacks of bilateral otorrhoea since the age of 12. Attacks had lasted 3-6 months, with remissions of up to three months between. Not accompanied by pain or giddiness. Had measles, scarlet fever, and chicken-pox during childhood; not known whether complicated by otitis media. Scarlet fever aet. 10. "Rheumatic chill" lasting three weeks aet. 19. "Nervous breakdown" aet. 19.

Present History.—Six weeks before admission she was taken ill with giddiness and generalized headache. After 2-3 days pain in her left ear began and with it otorrhoea and giddiness on pressure over the tragus. All this subsided in a week, but during the next four weeks she did not feel too well and had attacks of giddiness. The ear continued to discharge and her head "felt queer" although there was no severe headache and no earache.

Seven days before admission she was taken ill with sudden severe pain in the ear and considerable headache and giddiness. During

the next seven days she felt hot and had repeated "shivering attacks." No vomiting. During the first week of the illness, however, she had vomited repeatedly.

On Admission.—Giddiness on pressure over tragus. Polypi and granulations removed from meatal wall and roof of attic. Lumbar puncture: Normal fluid; pressure normal; culture sterile. There were some signs of meningism but these were not very marked. High fever. Drowsy. Nystagmus, particularly on looking to right.

Put on penicillin 20,000 units three-hourly (total: 1,440,000 units) and sulphathiazole 1 g. four-hourly for three days (total: 18 g.)

X-ray Report.—Acellular type of mastoids and therefore difficult to assess degree of infection, but some infection is present in left mastoid. No cholesteatoma.

Ophthalmologist's Report.—No signs of any papilloedema. Disks normal.

By Nov. 24 she had failed to respond to treatment despite the fact that the temperature fell dramatically during the first 24 hours. Still showed signs of meningism. Lumbar puncture: Clear fluid; pressure 120 mm.; Queckenstedt test normal on both sides though sluggish—no great difference between the two sides; fluid sterile on culture and containing only 5 cells per c.mm. Blood count: W.B.C., total 19,200; polymorphs 66%, lymphocytes 25%, monocytes 9%. Smear normal.

Operation.—Nov. 25. Left radical mastoidectomy. Hard sclerotic type of mastoid. Caries found in mastoid antrum and middle ear, which was full of cholesteatomata. Extradural abscess of middle fossa and fistula of wall of external semicircular canal. Forward lateral sinus exposed and considered doubtful but not opened. Wound left open.

On Nov. 27 she still had a high swinging temperature. Mastoid reopened. Bone removed posteriorly more than half-way to occiput. Sinus found thrombosed for 1 in. (2.54 cm.) posteriorly to upper knee. Septic clot removed and sinus opened until free bleeding was obtained. Internal jugular and common facial veins ligatured in neck.

Culture of pus obtained at first operation now showed a pure growth of *Proteus*. She was therefore put on sulphathiazole 1 g. four-hourly for six days (total: 42 g.). Three days later the temperature, which was still high and swinging, fell to normal and remained down. Signs of meningism disappeared after the mastoidectomy. The nystagmus disappeared slowly after the second operation and the general condition gradually improved. The ear still discharges. She left hospital on Dec. 24, 1946, with the wound completely healed but a slight serous discharge from the meatal cavity.

DISCUSSION

Although the patient was severely ill there was no swelling or oedema over the mastoid process because she had an acellular sclerotic mastoid. In these cases the infection spreads inwards and backwards and so she developed an extradural abscess, fistula of the external semicircular canal, and lateral sinus thrombosis.

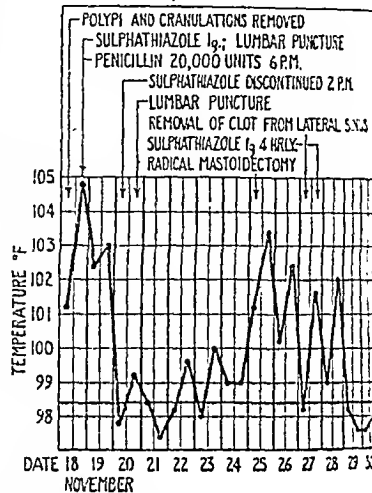
As meningitis was suspected she was put on full doses of penicillin and sulphathiazole, but these failed to arrest the progress of the disease. The mastoid was of the acellular sclerotic type, and when entrance to the antrum was effected pus gushed out and was obviously under great tension. Culture of pus showed the organism to be *Proteus*, which is penicillin-resistant.

A very anterior lateral sinus—hence more ready infection of sinus. When the sinus was opened and septic clot removed the patient made a steady but sure recovery.

CONCLUSION

Chronic otorrhoea is a common malady. When intracranial complications develop treatment with penicillin alone or in combination with the sulphonamides does not arrest the disease, and surgical intervention is necessary.

A. MACKENZIE ROSS, M.D., D.L.O.



Reviews

TWO HEALTH SERVICES

Health Reform in New Zealand. By Douglas Robb. (Pp. 104. No price.) London: Whitcombe and Tombs.

The Doctor and Tomorrow. The Future of Medical Service in Australia. By Arthur E. Brown, M.B., B.Ch., F.R.A.C.S. (Pp. 136. 3s.) Sydney: F. H. Johnston Publishing Company Pty., Ltd., 34, Jamieson Street.

These two books from the Antipodes are timely and welcome because they are very relevant to the problems which our profession is facing here. Australia is proposing to nationalize medicine; New Zealand did it, more or less, over five years ago. Dr. Robb and Dr. Brown write with authority, for they both occupy prominent positions in the practice and organization of their profession. Both are firm believers in the need for a full medical service freely available to every citizen. Dr. Brown carefully examines the various ways in which Australia might do this; Dr. Robb regretfully comes to the conclusion that the New Zealand way has proved to be a very expensive failure.

The New Zealand Social Security Act of 1938 provided for everybody a free general practitioner service and part payment of hospital treatment. From the outset there was friction between the Government and the B.M.A., and there seems to be no prospect of any early agreement. Dr. Robb ascribes the effects of the scheme largely to the fact that "its impetus was political and its conception almost entirely so." Much of the friction has arisen over the amount and method of medical remuneration. There are no fewer than five ways in which the citizen can obtain medical service. (1) In a few rural areas the doctor is paid by whole-time salary. (2) If the doctor is willing to accept the method he can be paid by a capitation fee of 15s. a year with no limitation of his list. This method, though making some progress, has always been strongly opposed by the B.M.A.; in the first six months after the Act came into operation only some 50 doctors out of nearly 800 had accepted patients under this method. (3) "Fee for service." Here the patient signs a form acknowledging that he has received a service, and the doctor collects monthly from the fund 7s. 6d. for each form. Though not approved by the B.M.A. this method is being freely used. (4) "Refund" plan. The patient pays the doctor his private fee (usually 10s. 6d.), for which he is given a receipt, and with this he gets a refund of 7s. 6d. at the post office. (5) "Token" plan. Here the patient pays the doctor a token fee of 3s. and the latter collects the refund of 7s. 6d. It is not the financial side of the system which makes Dr. Robb so dissatisfied with it, for he believes the general practitioner under any of these arrangements to be better off than he was in the days of bad debts. He dislikes the "fee for service" because it "results in many trifling things being done by the doctor at 7s. 6d. a time that ought to have been done by a nurse or secretary." His fundamental complaint about the service is that it is uncoordinated and far from comprehensive. He grants that some few remote areas formerly under-doctored are now better off, but the tendency still is for doctors to gravitate to the cities. A curious factor in the constantly mounting cost of the service is the great proportion of the income of the fund that is spent on drugs and appliances. It is now 13s. 6d. a head, compared with 16s. 10d. for the general medical service. It would be interesting to know if this "free for all" supply of medicine has lessened the demand at the chemists for proprietary medicines.

Dr. Robb realizes that a country so thinly populated as New Zealand has many difficulties in providing a really full service as compared with Britain. He alludes with envy to some of the features of our new Health Service Act, but he is still hopeful that a really good service may emerge in his country. He is confident that with genuine co-operation between the Government and the profession something infinitely better than the present system could be evolved. He does not absolve the doctors from a share of the blame for the present situation: they should have shown more initiative instead of leaving the politicians to take all the credit (if any). This book is intended mainly for the New Zealand layman, and the author reminds

his readers that "the profession did not conceive or initiate the present system."

Dr. Brown's book deserves the earnest attention of all who are interested in the future of the profession, and especially of those who are concerned with the negotiations on the new National Health Service. The author is convinced that the world-wide movement towards a medical service freely available for all is one which, far from being resisted or thwarted by the profession, should be warmly welcomed. There is much information in the book about the gradual approach of Australia to this problem, but to the reviewer the most striking feature is Dr. Brown's analysis of the various methods of remunerating the profession—not because Dr. Brown is unduly concerned with finance, for he is an idealist and enthusiast, but because he believes that the success or failure of any scheme will greatly depend on the method of remuneration of the doctor. There is no other so cool, logical, and lucid an examination of the methods available known to the reviewer. The fact that the author decisively approves of payment by salary makes it all the more desirable that those who have come to a different conclusion should consider the opposing arguments, especially when they are maintained so competently and so modestly as they are here. There is no ideological nonsense about Dr. Brown. He says that he has been driven inexorably to the conclusion that only by this method can doctors be distributed "in accordance with public needs." He rules out capitation because it profits the doctor to take on more patients than he can manage and does nothing towards solving the distribution problem. As for payment per service, he rejects "any form of practice which leaves medical men and women as private traders in competition with each other."

Dr. Brown is concerned entirely with a future in which free medical service will be available to all. He does not hide his fears of a bureaucracy which fosters uniformity; he does not regard lay control as a serious danger. His main fear is of the politician, and he says, "the prospect of an inferior, badly conceived, politically devised service is a far more dangerous prospect for the public than it could ever be for the medical practitioner." Dr. Brown is to be congratulated on a courageous and lucid examination of a thorny subject. There will doubtless be many attracted, as the reviewer has been, by the logic of his advocacy who will feel that he has not given sufficient weight to the pressure which the politician will be tempted to bring to bear on a profession, no matter how or how well paid, once it has surrendered its status as a free profession.

ALFRED COX.

GENETICS

Human Genetics. By Reginald Ruggles Gates. Volumes I and II. (Pp. 1518; illustrated. £5 for the two volumes.) New York: The Macmillan Company. 1946.

Probably no one except Prof. Gates could have written this book, but, fine though the result is in some ways, we wonder whether anyone, even Prof. Gates, should ever have made the attempt. He covers the whole field chapter by chapter, and there can be few human inherited abnormalities, as well as many other inherited differences, that he does not describe. His knowledge is encyclopaedic and the 5,500 references successfully guide the reader to the key papers and books on each subject. There is an admirable index of 90 pages with full cross-references. It is the text that raises the suggestion whether the author has been too ambitious.

When Prof. Gates is discussing subjects especially familiar to him, and to which he himself has contributed, he presents us with a lucid, balanced, and well-digested summary. The chapter on the blood groups, for example, is excellent. When he was writing the book our knowledge of the rhesus factor had not attained its present clarity, but he explicitly recognized that a successful synthesis was imminent and few outside the ranks of the professional serologists could have achieved so much. One man, however, can have only a second-hand acquaintance with most of this vast subject and its scattered literature, and in many chapters the sureness of touch seen in that on the blood groups is lacking. The running commentary is often a complex and exhausting mixture of the historical, the pathological, the clinical, the genetical, the purely descriptive and the statistical. Some out-of-date opinions seem to have been included from

the previous version of 1929. Sometimes erroneous or fantastic speculations are given the same emphasis as thorough and competent researches and surveys. For example, the account of spina bifida starts with a consideration of experimental work on the frog, followed by a reference to its anatomical features. The author then refers to an instance of three cases in one sibship and a theory of the relationship of the occult to the manifest condition. After that he digresses to its possible relation to the erect posture, with a remark on sex limitation. Next he discusses a study of its relation to nocturnal enuresis, the author of which considered this latter condition to be a simple recessive. Finally he mentions some other deformities with which spina bifida may be associated, and interpolates a paragraph on its frequency in the population. The inquirer who wishes to know whether spina bifida is inherited and, if so, how will not be much wiser, though his attention is directed to useful references from which he may find the answer for himself. In the chapter on the inheritance of normal mental differences, after a few brief references, Prof. Gates starts with an account of Hurst's hypothesis of six factor pairs, but does not point out that a scheme involving six factor pairs would fit almost anything and would be difficult enough to establish even with many thousands of observations on a self-fertilized plant.

One opinion should not be allowed to pass without challenge. On p. 213, in dealing with the usual recessive form of retinitis pigmentosa, Prof. Gates says: "Obviously those transmitting this very serious defect should not have children." If he means that a couple who have had an affected child have a one-in-four chance that any further child will also be affected and would therefore be wise to refrain from having more, many will agree with him, but presumably he means that an affected person or a known carrier should not have children; yet for every such person at least 100 others, quite unsuspected, are carrying and transmitting the gene. The eugenic effect of such abstinence is negligible and there is a far stronger case for the opposite opinion: that a sufferer from a rare recessive defect or a known carrier should not be deterred from parenthood provided he does not marry a blood relative and—as will nearly always be the case—so long as no affected child appears.

In some places this book is clear and authoritative, in others obscure, and in a few misleading. It is unsuitable for the student, but the expert will value it highly.

J. A. FRASER ROBERTS.

EXAMINING THE EYE

Clinical Methods of Neuro-Ophthalmologic Examination. By Alfred Kestenbaum, M.D. (Pp. 384. \$6.75.) New York: Grune and Stratton. 1946.

This well-produced book, an important and welcome addition to the rather limited literature on the subject, contains a large amount of clearly presented and accurately classified information not generally available in textbooks. The author considers clinical entities only incidentally; he concentrates on methods of examination and on the interpretation of findings. An introductory chapter on the optic pathway is followed by one on the field of vision, in which he discusses in detail both methods and field defects. Three successive chapters deal with physical signs in lesions of the optic nerve, chiasma, and retrochiasmal pathways respectively. A further three chapters are devoted to eye muscle palsy, gaze movement, and nystagmus. He gives an account of the different modes of disturbance in symmetrical eye movement in the succeeding chapter, and then discusses abnormalities in the reaction of the pupil; in the concluding three chapters he deals with miscellaneous physical signs, palpebral fissure, and functional disturbances, giving a general survey of the routine neuro-ophthalmological examination.

The text is not easy reading, but this is not the author's fault. His subject has received less attention in the past than it merits; in consequence there is much here that is unfamiliar, though it ought to be widely known. The logical division and subdivision of the text should help the reader considerably, though it is unfortunate that it contains many unusual abbreviations. The book should do much to further the systematic study of ophthalmic neurology.

ARNOLD SORSBY.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Vitamins and Hormones. Ed. by Robert S. Harris and Kenneth V. Thimann. Vol. IV. (Pp. 406. \$6.80.) New York: Academic Press. 1946.

Papers on recent advances of vitamin and hormone investigations.

The Intelligent Use of the Microscope. By C. W. Olliver, A.M.I.E.E., F.R.M.S. (Pp. 182. 12s. 6d.) London: Chapman and Hall. 1947.

Describes how to get the best out of a microscope and includes a chapter on photomicrography; for the student.

La Silicosis Pulmonar. By Dr. Hugo Dooner. (Pp. 195. No price.) Santiago, Chile: Zig-Zag, S.A. 1944.

An account of silicosis with a historical introduction, skiagraphs, and bibliography.

Preventive Medicine and Public Health. By Wilson G. Smillic, A.B., M.D., D.P.H. (Pp. 607. 30s.) New York: The Macmillan Company. 1947.

The technique of hygiene and public health for the medical practitioner and student.

Tuberculosis Reference Statistical Yearbook. By the New York Tuberculosis and Health Association. (No price.) New York. 1946.

A summary with tables of tuberculosis morbidity and mortality in New York with comparative figures from the United States and other countries.

The Louse. By Patrick A. Buxton, F.R.S. 2nd ed. (Pp. 164. 10s. 6d.) London: Edward Arnold. 1947.

An account of the lice that infest man, their medical significance and control.

Medical Services by Government, Local, State, and Federal. By Bernhard J. Stern, Ph.D. (Pp. 208. 8s. 6d.) New York: The Commonwealth Fund (London: Geoffrey Cumberlege). 1946.

A monograph on the Government Medical Services of the United States.

Una Epidemia de Peste Bubonica en el Siglo XVI. By Dr. Don Jose Viñes Ibarrola. (Pp. 133. No price.) Pamplona: Editorial Aramburu. 1947.

An account of a plague epidemic in Spain in the 16th century, with reference to original sources.

The Glean. By Warren Chetham Strode. (Pp. 90. 6s.) London: Sampson Low, Marston and Co. 1947.

A National Health Service drama which was reviewed on Dec. 14, 1946 (p. 914).

The Microscope. By Theodore Stephanides, M.D. (Pp. 160. 10s. 6d.) London: Faber and Faber. 1947.

An account of the microscope and its use; for students.

La Désinsertion Extra-plénrale des Symphyses Pulmonaires sous Contrôle de la Pleuroscopie. By Dr. Jean Brailion. (Pp. 120. 210 francs.) Paris: Librairie Maloine. 1947.

An account of Michetti's operation for pleural adhesions in collapse therapy.

The Personality of Man. By G. N. M. Tyrrell. (Pp. 295. 1s.) Harmondsworth, Middx.: Penguin Books. 1946.

Discusses paranormal phenomena, including telepathy, and their significance to man.

Massage and Remedial Exercises in Medical and Surgical Conditions. By Noel M. Tidy, M.C.S.P. 7th ed. (Pp. 480. 25s.) Bristol: John Wright. London: Simpkin Marshall. 1947.

This edition includes a short description of carbachol ionization.

Medical Diseases in Tropical and Sub-Tropical Areas. By the War Office. 8th ed. (Pp. 396. 7s. 6d.) London: His Majesty's Stationery Office. 1946.

This edition includes new articles on infective hepatitis, leprosy, nutritional diseases, tropical eosinophilia, and D.D.T. Many other sections have been rewritten.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JULY 12 1947

A CENTURY OF CHEMISTRY

The antiquity of medicine as an art should not obscure the fact that the origin of medicine as a science dates chiefly from the development of chemistry. An important stage in that development will be celebrated in London on July 15-17: the foundation on Feb. 23, 1841, of the Chemical Society, the first organization in the world to make the study of chemical science its specific province. The centenary celebrations were postponed from their original date on account of the war, as also was the Eleventh Congress of Pure and Applied Chemistry, which it had been planned from the beginning should be held in London, as a compliment to the Society. The medical man may see some compensation in the delay, for in the interval his debt to the chemist has become even more evident. Environmental medicine has benefited, in temperate as well as in tropical conditions, from the new insecticides. Blood storage, with its background of chemical experiment and preservatives, has given a new flexibility to emergency surgery; and penicillin, to which the chemist also contributed, has increased confidence in the result. The physician, confronted for the first time in modern medicine with the prospect of widespread malaria and empty quinine bottles, found his position in the end to be stronger and not weaker as a result of the chemist's work.

To concentrate on recent events such as these would nevertheless be to miss the real nature of the chemist's contribution; for these advances, however important in themselves, have been on the surface, whereas the whole structure of physiology has depended on the insight which chemistry alone could provide. Without recognition of the individual nature of different gases, and the power to make their properties the subject of experiment, we could not have understood the function of breathing. Without knowledge of combustion, physiological meaning could not have been attached to the circulation of the blood, nor could even the crudest approach to nutrition have been made. From these necessary beginnings succeeding discoveries have branched out ever more widely; and, as the President of the Royal Society has pointed out,¹ chemistry has benefited in turn from the reciprocal stimulus which biological studies provided. A classic example was the synthesis of urea by Wöhler in 1828, and it may be worth emphasizing that this was only thirteen years before the foundation of the Society. Wöhler's work represented rather the removal of a barrier than the beginning of synthesis in the ordered and modern sense, but, as has since been stated, it provided "a charter of liberty for organic chemists."

Synthetic chemistry proper is generally dated from the work of Berthelot in France, about 1853, on glycerides and fats. The chance discovery of synthetic mauve by Perkins (later President of the Society) in 1856 may seem, however, to have exercised a greater immediate influence on the course of medicine. Apart from its distressing effect on Victorian taste and the obvious stimulus which it gave to the development of a dyestuffs industry it may be said to have paved the way for the introduction of staining techniques in cytology and bacteriology and thus to have provided the technical means for the development of two branches of medical science. Add to this the importance of the methylene blue test in the examination of milk, the many colour indicators now taken for granted, and the development of modern chemotherapy from the partly mistaken doctrine of dyestuff absorption, and some measure of medicine's debt to Perkins's discovery is obtained. To the same period, although obviously unconnected with Perkins's work, belongs the synthesis of the first salicylate. Finally, as one example of an incidental discovery, we may recall that the first use of anaesthetics in surgery falls also within the period covered by the Chemical Society's history.

Contemporary interconnexions between medicine and chemistry are most conveniently illustrated from the Congress programme. Out of the fourteen sections three of particular interest are devoted to biochemistry, food and nutrition, and chemistry in relation to medicine and therapeutics. The biochemists will meet under the presidency of Prof. Tiselius, of Uppsala. He has made many contributions to both protein and carbohydrate chemistry, and both these divisions are well represented, as also is the now rapidly growing chemistry of enzymes. Further subjects include the preparation of purified antibodies, Stacey's work on bacterial polysaccharides, and the nature of the combination of bacterial enzymes with their substrates. All these are investigations of probable importance, and the same may be said also of the first attempt by Francis and Wormald to apply radio-active tracers to the study of immunological reactions. A useful joint symposium on nutrition has been arranged with the section of applied zoology. Recent experience has shown that farm animals, owing to the greater localization of their natural diet, afford opportunities not easily found in human beings for the study of both trace mineral elements and mineral antagonisms. Another recent development has been the recognition that knowledge of calorie requirements, and particularly of physiological adaptation to a low calorie intake, is still incomplete. It is common knowledge among nutritionists that work in the occupied countries of Europe has led to a number of fundamental advances; but, so far as the present Congress is concerned, we must be content with information from France, Belgium, Bengal, and the Far East, and with learning the lessons to be drawn from the Minnesota rehabilitation experiment.

In the medical section chemotherapy occupies, inevitably, the place of honour. Sir Howard Florey will give a general introduction, and Waksman will follow with an account of streptomycin. Shannon's summary of anti-malarial research in the United States may be expected to add something to existing knowledge, particular interest

¹ Robinson, Sir R., *British Medical Journal*, 1946, 1, 943.

attaching to those investigations aimed at producing a less toxic substitute for pamaquin. Papers on the natural formation of thyroxine and on the synthetic oestrogens remind us of the chemist's contributions to endocrinology. On the other hand, chemical carcinogenesis, together with the newer experimental methods used in its study, is perhaps less fully represented than might have been expected. Finally, there is a symposium on industrial toxicology, on which also there have been recent advances in knowledge.

One effect of the centenary celebrations and of the Congress should be to bring home to the medical man a more lively appreciation of the close relation between the two disciplines. In chemistry and physics research has been notably assisted by a comparatively small number of laboratory workers who have so far become biologists as to obtain a real insight into the structure and functions of the living material which they have chiefly investigated. There is no less need, as we have pointed out on another occasion,² for medical men themselves to gain some understanding of the chemist's methods and limitations. It is not enough to learn, usually under duress, the names of the principal chemical elements and radicals or the rudiments of systematic analysis, for these accomplishments as such imply no more than that the medical man is an inferior chemist. It is more important for his proper contribution to the partnership that he should understand how chemists think, and, in particular, the ideas and methods which they use in working out structural constitution. In addition it is desirable that he should know something of the powers and limitations of the newer chemical techniques, including, for example, chromatography,³ micro-analysis,⁴ and the research uses of radio-isotopes.⁵⁻⁷ He need not himself be a chemist, but he should know enough to understand the sort of questions that may usefully be asked.

FAT ABSORPTION AND METABOLISM

The intervention of seven years of war has broken many of the threads of international co-operation in research, so that accumulated data, new techniques, and fresh conceptions now await integration. As the pattern of post-war developments in research becomes clearer it is apparent that the problem of fat absorption and metabolism has been and is being energetically studied in both the laboratory and the clinical fields in many countries. The striking advances in our knowledge of fat metabolism during the last decade have accentuated the need for an adequate understanding of the mechanism of intestinal absorption of fat.⁸ The lipolytic hypothesis of fat absorption,⁹ which was generally accepted ten years ago, does not adequately explain many subsequent observations,¹⁰ nor has it formed a satisfactory basis for the investigation of defective fat absorption in human subjects. The problem must be re-

examined in every detail. If the fundamental mechanism of fat absorption can be elucidated in experimental animal and human subjects, it may be possible not only to correlate the absorption and metabolism of fat but also to gain a clearer conception of the process of absorption in general. A more detailed approach to these problems, tracing each step in the passage of fat from the lumen of the intestine to its ultimate destination in the body, combined with the application of new techniques, should soon clarify our views.

Study of the clinical aspects of fat absorption was intensified during the war because of the high incidence of tropical sprue among British troops overseas¹¹ and non-tropical sprue among the civilian population in Britain and these cases were an invaluable means of studying the fat absorption mechanism in human subjects. It is essential, however, that investigations should be carried out on a quantitative basis¹² and that further methods should be devised for the more detailed study of aetiological factors. Best and his colleagues¹³ at Toronto opened up a new field of investigation in fat metabolism by demonstrating the lipotropic action of choline. Subsequently other substances affecting the deposition and mobilization of fat from cells have been described. Further experimental studies are required to establish the relationships between these substances and to elucidate their mode of action and their role in normal metabolism. The observations so far made in clinical medicine have given anomalous results. There does not seem to be sufficient information at present on the action and effects of lipotropes in human subjects.

The study of adipose tissue remains largely neglected although Schoenheimer and his collaborators¹⁴ have introduced a new conception of its dynamic nature. Little is known of the mechanism of fat deposition or its removal from the depots. While cases of obesity have been studied and the application of Newburgh's views¹⁵ has been attended by success in many cases, it is unlikely that clinical problems involving the metabolism and deposition of fat will be solved until the fundamental physiological facts about adipose tissue have been determined. Contributions have been made to many other aspects of fat metabolism. Progress has been achieved in the study of fat oxidation, and a revision of ideas on the relationships of carbohydrate and fat metabolism is leading to a more rational view of ketogenesis. Some years ago Burr and his colleagues¹⁶ demonstrated the importance of certain fatty acids in the diet in animals. The application of these findings to human subjects has been somewhat disappointing, but, again, therapeutic trials have been carried out without any clear conception of the physiological significance of these essential fatty acids in man.

Animal proteins are usually associated with lipoids, and in many instances this association is fundamental to the normal biological activity of the protein material. The nature of these associations and the factors concerned in their stability are largely unknown. Work is in progress in several laboratories, using modern chemical and physical

² *British Medical Journal*, 1946, 1, 957.

³ Williams, T. L., *An Introduction to Chromatography*, 1946, London.

⁴ Pregl, F., revised and edited Grant, J., 1945, *Quantitative Organic Micro-analysis* (4th English ed.), London.

⁵ Chadwick, Sir J., *British Medical Journal*, 1947, 1, 263.

⁶ Mitchell, J. S., *Brit. J. Radiol.*, 1946, 19, 431.

⁷ *British Medical Journal*, 1947, 1, 894.

⁸ Best, C. H., *Amer. J. Digest. Dis.*, 1946, 13, 155.

⁹ Vedrle, F., and McDougall, E. J., *Absorption from the Intestine*, Longmans, Green & Co., 1936.

¹⁰ Frazer, A. C., *Physiol. Rev.*, 1946, 26, 103.

¹¹ Black, D. A. K., Fourman, L. P. R., and Trinder, P., *Lancet*, 1946, 1, 574.

¹² Cooke, W. T., et al., *Quart. J. Med.*, 1946, 15, 141.

¹³ Best, C. H., and Lucas, C. C., *Vitamins and Hormones*, 1943, 1, 1.

¹⁴ Rittenberg, D., and Schoenheimer, R., *J. biol. Chem.*, 1938, 121, 235.

¹⁵ *Physiol. Rev.*, 1944, 24, 18.

¹⁶ *Fed. Proc.*, 1942, 1, 224.

techniques, to determine the essential data. Since lipoprotein association is concerned in fat transport, membrane structure, blood coagulation, nerve structure, immunological reactions, and probably fatty degenerative changes, the importance of investigations in this field to physiology, pathology, and clinical medicine is likely to be considerable. The absorption and metabolism of fat presents a fascinating research field. It requires the co-operation of chemists, physicists, physiologists, and clinicians. As new facts come to light it is hoped that an adequate physiological basis will be established in human subjects as well as in experimental animals before attempts are made to apply the facts therapeutically, for it is only by building on a sound foundation of proved experimental data that successful clinical application can be achieved.

INTERNATIONAL MICROBIOLOGY

The fourth International Congress of Microbiology, which before the war was triennial, is to be held in Copenhagen at the end of this month. The Permanent International Commission for the organization of these congresses has been reconstituted and will also meet in Copenhagen to consider the future policy of the International Association of Microbiologists in relation to other scientific bodies. This Permanent Commission consists of representatives of twenty-eight countries. The British representative is Sir Alexander Fleming; the United States is represented by Dr. Stuart Mudd, of the University of Pennsylvania; Denmark by Prof. Th. Madsen; Belgium by Prof. Jules Bordet; Canada by Prof. E. G. D. Murray, of McGill; Eire by Prof. J. W. Bigger, of Trinity College, Dublin; and India by Sir S. S. Sokhey, director of the Haffkine Institute, Bombay. The question for decision will be whether the International Association should ally itself with the International Union of Biological Sciences, forming a section within that body, or should become a separate union in the International Council of Scientific Unions. Through either of these organizations it would be linked with Unesco, and both courses have their advantages. A decision either way would mean only a formal change of status and no surrender of independence. If it is decided to become a section within the International Union of Biological Sciences the advantage would be in the organic connexion of microbiology with other aspects of biology—botany, zoology, genetics, and experimental cytology, and so all these sciences would be under one international umbrella. Apparently the International Union would also publish the reports of the international congresses of its sections with the help of Unesco. On the other hand, there are such strong links between microbiology and the medical sciences that some may think there should be a separate union within the International Council for Scientific Unions. The British and American representatives favour the first of these alternatives.

One of the reasons for the re-establishment of international microbiology is the need for restoring the various collections of type cultures throughout the world and for preparing a world catalogue of the available strains. A new central collection of type cultures has lately been organized at Lausanne under the direction of Prof. Paul Hauduroy, and proposals will come forward at Copenhagen for the association of this centre with the others. Dr. Joseph Needham, head of the Division of Natural Sciences of Unesco, has stated the interest which his organization takes in the furtherance of international scientific unions.

Such unions will serve three primary purposes—as machinery for the exchange of information, as organizers of international congresses, and as channels for the funds which Unesco may provide for international scientific undertakings.

ETHER IMPURITIES

From the earliest days of anaesthesia the importance of using chemically pure and unadulterated ether has been stressed. The demand for pure ether has not appreciably altered through a century of anaesthesia, and to-day the pharmacopoeias of almost every country lay down stringent chemical and physical criteria for ether which is to be used for anaesthetic purposes. These precautions, however, by obviating impurities which derive from the process of manufacture, do no more than ensure pure ether in the unopened bottles as supplied by the manufacturers. There are other impurities, of which the most important is ether peroxide, that make their appearance as a result of autoxidation during storage. There is still some doubt as to how important these impurities are. From the physical point of view it seems that the presence of ether peroxide renders spontaneous explosion possible. But their effect on the human organism is less certain. In the literature of ether anaesthesia, anaesthetists have repeatedly made them the scapegoat for any complication or mishap which they could not explain without implicating their own human fallibility. Sudden death on the table, post-operative pulmonary complications, vomiting, convulsions, and every sort of difficulty during induction and maintenance of anaesthesia have all been attributed to impurities. In fact, there has been enough feeling on the matter, even without much scientific evidence, to make manufacturers and pharmacists use considerable effort to ensure that ether for anaesthesia is supplied as pure as possible.

In the extensive literature on ether impurities the monograph of Reimers,¹ dealing with the chemical aspect, stands out as a most important contribution. Lindgren² now carries Reimers's work a stage further by investigating not only the factors which enhance autoxidation but the biological and clinical effects of using autoxidized ether for anaesthesia. He found that autoxidation is dependent on such factors as the ether storage temperature and the nature and thickness of the glass in which the ether is kept. Lindgren also determined the effectiveness of various inhibitors of autoxidation, particularly diphenylamine. Ether to which such a stabilizer is added shows no appreciable oxidation over long periods of time. Biological tests revealed a close relationship between induction time and peroxide content; the greater the peroxide content the weaker the ether as an anaesthetic and the longer the induction time.

Of even greater interest are the results of clinical tests which Lindgren carried out on over two thousand patients. A clinical comparison with statistical tests was made between samples of pure anaesthetic ether complying with pharmacopoeial standards, autoxidized ether, and ether stabilized by the addition of diphenylamine but kept under conditions which would normally result in much autoxidation. Observations on the ether consumption, induction time, excitement and vomiting during induction, circulatory disturbances, convulsions, and post-operative pulmonary complications were carefully made. In summing up, Lindgren states that there was no significant difference in the actual course of the anaesthesia or in the frequency of post-operative pulmonary complications between the samples of ether used.

¹ *Acta til Narkose*, 1943, Munksgaards, Copenhagen.
² *Acta chir. scand.*, Suppl., 110, 1946.

The work of Reimers and of Lindgren is of importance when, as in the recent war, large stocks of ether are accumulated and the problem of their disposal arises. It is probable that much needless waste of such stocks took place, on the ground that possible autoxidation constituted a hazard to patients. The use of autoxidized ether is nevertheless undesirable, and the question of preventing this process must be seriously considered by ether manufacturers in this country. When a pure ether supply to the patient is ensured the real or imaginary bogey of ether impurities as a cause of bad anaesthesia may at last be laid.

SPINAL PUMPING

The iron curtain which has become so familiar to the political student of Europe is an effective barrier to the spread of scientific ideas. Behind it, untouched by what we consider the main stream of contemporary medical thought, the Soviet system of medicine has been growing up; the occasional glimpses vouchsafed to us have done little but confirm the belief that it is developing along lines different from ours. Often these glimpses have revealed views which we have been unable to accept and notions which would not fit into the framework of our methodology. Such reasons give an added interest to any paper concerning itself with Soviet medical thought or practice and ensure that a recent publication by Gillman and Gillman,¹ of Johannesburg, will be read with careful attention. These authors report their experiences with Speransky's method of "spinal pumping" in the treatment of rheumatic fever and rheumatoid arthritis.

Speransky, a pupil of Pavlov, believes that the nervous system plays an important part in the genesis of acute and subacute arthritis. The reasons for his belief and the steps that led him to adopt this bizarre method of treatment remain buried in the Russian tongue. To carry out his method a thin lumbar puncture needle is introduced with the patient lying on one side; a 10 ml. syringe is attached to it when cerebrospinal fluid is flowing freely. The process of "spinal pumping" consists of withdrawing 10 ml. of fluid and re-injecting it into the theca; this is repeated about twenty times; it is usually followed by considerable autonomic disturbance, particularly sweating and cutaneous vasodilatation. Seventy cases were treated; 42 of 48 patients with acute or subacute arthritis were distinctly improved—38 indeed recovered completely; 12 of 22 chronic cases were improved. The results are of great interest, and it is to be hoped that others will give this method a trial. Nevertheless the Gillmans' paper is not wholly satisfying. We are told that from "a series of brilliant experiments" Speransky concluded that the nervous system played a major part in the pathogenesis of inflammatory processes, but we are not told what drove him to devise the procedure of "spinal pumping." Our ignorance of these steps does not indicate that the method is without a logical basis, but without this knowledge it is unlikely to appeal to the British physician until its efficacy is established.

GLUTAMIC ACID

Glutamic acid is an important constituent of brain tissue. It is the only amino-acid known to be metabolized by the brain, in which it increases oxygen consumption. Wheat gluten contains glutamic acid in abundance. The connexion between our daily bread and the functioning of the brain has recently been brought into the foreground of speculation by Mellanby's experiments with dogs.² Feed-

ing dogs of the same litter at one time on untreated flour and at another time on flour commercially bleached at "improved" by nitrogen trichloride, he found that dogs fed on the improved flour developed canine hysteria, from which they remained free while on a diet of untreated flour. It is at least possible that it was the glutamic acid of the flour gluten which had been chemically altered and made toxic.

In the United States interest in these questions was first focused on the feeding of glutamic acid to rats, from which it was found that their powers of maze learning were improved. Zimmerman, Burgemeister, and Putnam³ have now reported an experiment in which glutamic acid was fed to nine children of whom seven were epileptic and two mentally retarded. Their ages ranged from 16 months to 17 years. Sufficient glutamic acid was given to produce noticeable increase in motor activity, the dose varying from 6 to 24 grammes a day by mouth; this dosage was maintained for six months. The children were investigated before and at the end of this period by intelligence tests. In every one of the epileptic children there was clinical improvement, five of the seven ceasing to have fits; but treatment by phenobarbitone and other drugs had been continued, and the improvement cannot be attributed with any certainty to the glutamic acid. Apart from the two youngest children, aged 16 months and 2 years, both of whom were seriously retarded, all the remaining children showed a greater improvement in intelligence than could be expected from lapse of time alone. There were improvements in the intelligence quotient of from 5 to 13 points with an average of 9. The question arises whether the improvements could be accounted for by the great reduction in the severity of the epileptic fits. After discussing the literature and the results in a control group of epileptic children under treatment but not with glutamic acid the authors conclude that their findings cannot be explained in this way. They also believe that the practice effect of testing is negligible in their experimental group. Though the smallness of the experimental group imposes caution they conclude that glutamic acid may have a genuine facilitating effect on mental functioning in human subjects as it does in rats.

It is perhaps permissible to speculate whether the improvements in intelligence were due not to a direct action of the extra glutamic acid but to its protective action against the subclinical ill-effects of the children's normal diet of bread made from treated flour.

COAGULATION TIME AND ANTIBIOTICS

Apart from allergic manifestations there have been few records of any serious reactions resulting from the repeated administration of penicillin. There is, however, considerable evidence to show that both penicillin and streptomycin may produce changes in the coagulation time of the blood. In 1943 Moldavsky, Hasselbrook, and Cateno⁴ found that in patients under treatment with penicillin the clotting time was materially shortened after an injection. These observations have been confirmed by Macht and Ostro,⁵ who observed also that when injections of penicillin were given to two patients suffering from haemophilia no shortening of the coagulation time resulted.

The specimens of penicillin on which the original observations were made were probably impure. The whole question has therefore been investigated again by Macht. With amorphous penicillin of a dozen or more brands

¹ *Amer. J. med. Sci.*, 1946, 211, 443.

² *British Medical Journal*, 1946, 2, 835.

³ *Arch. Neurol. Psychiat.*, Chicago, 1946, 56, 439.

⁴ *Science*, 1945, 102, 36.

⁵ *Ibid.*, 1946, 103, 402.

⁶ *Ibid.*, 1947, 105, 313.

marked acceleration of clotting time was found both in man and in animals. The increase in the time of clotting as usually noted within fifteen to twenty minutes of the injection but was often most pronounced about one hour later; the effect persisted for several hours in every case. The route of administration appeared to make little difference; the reduction in clotting time was noted after intravenous or intramuscular injection and when the penicillin was given by stomach tube. With a highly purified sodium salt, consisting almost entirely of penicillin G, the thrombotic effect was much less striking. Relatively pure specimens of the four penicillins were then studied. Penicillin X (hydroxybenzyl penicillin) was found to be the most active in reducing the coagulation time; then came K (n-propyl penicillin), F (pentyl penicillin), and G (benzyl penicillin). A curious finding was that the addition of a small dose of penicillin X to penicillin G apparently had a synergistic effect, producing an increase in coagulation time greater than that following a much larger dose of penicillin G alone. Streptomycin, too, has the effect of increasing the coagulation time of the blood in cats and rabbits. Rabbits which had received a number of injections of penicillin the coagulation time of the blood remained shortened for a considerable period, so that fresh experimental animals had to be employed. Both in rabbits and in cats the thromboplastic action of penicillin can be overcome by suitable doses of dicoumarol.

Since nature has provided generous checks and balances in the higher animals, as well as compensatory and reserve faculties, the danger of thrombosis in clinical practice is probably small. Nevertheless such cases are already being recorded. Frada⁷ described in four patients embolic accidents which he attributed—in the light of recent findings—probably correctly—to the action of penicillin in increasing the coagulability of the blood.

CRIMINAL LAW IN THE NEW ORDER

As society evolves, the law is one of the last institutions to change. Criminal law changes even more slowly than the other branches. This fact is likely to prove extremely important in the near future, and unless conscious and successful efforts are made to bring our criminal law into line with present-day fact and sentiment the existing disrepute for all law, already dangerous, may increase to a disastrous extent. The treatment of the criminal has received a good deal of attention during the last fifty years; the criminal law itself has hardly been touched. As set out in his recent book,⁸ Dr. Mannheim's thesis—and it seems self-evident—is that before we begin to consider how convicted law-breakers should be treated an analysis should be made of those actions of which a prison sentence or a probation order may be the legal consequence. In criminal law, unless it is to lose its meaning, must reflect more or less faithfully the fundamental values on which contemporary society rests. Dr. Mannheim's idea is therefore to consider the repercussions on the criminal law which have been produced by the present crisis in values, and the practical consequences which must flow from them. He points out that in any attempt to reconstruct criminal law two basic problems must be faced: those of defining the most important values of the present world, and of deciding whether those values should be protected by the criminal law or by some other agency. This investigation has led him over a very wide field and into a number of paths which at first sight seem to have little connexion with criminal law. His first section, on the

protection of human life, considers first the individualistic aspect, under the headings of homicide, suicide, and euthanasia; and then the collective aspect, including birth control, abortion, and the extermination of the socially useless or restriction of their reproduction. Under the protection of sexual and family life he ranges over the field of sexual offences and offences against the family. He then deals with the even larger subject of economic crime, which has undergone much more rapid change than has crime against persons. He criticizes the traditional approach to the protection of property and sketches what he considers the necessary new approach. In his study of offences against property (usury, profiteering, fraud against the revenue, monopoly), and of protection of and against labour (strikes and absenteeism), he is even less conventional. Having surveyed present values, he makes a series of recommendations which have already found wide support but of the fulfilment of which there is at present no prospect: they include the abolition of punishment for suicide, the legalization of euthanasia, the introduction of degrees in murder, the legalization (within limits) of sterilization and abortion, and many other controversial suggestions.

In the second half of his book Dr. Mannheim draws up a blueprint for the criminal justice of the future, with a view to making it more scientific and more democratic, and to introducing more international co-operation and more planning. Briefly, he advocates a more modern type of legal draftsmanship; greater facilities for permanent observation of the working, and frequent improvement in the wording, of law; and better integration of the work of experts in criminal cases. He would have a "treatment tribunal" to advise the courts before a prison sentence is passed; he would prohibit short sentences and extend the scope of the indeterminate sentence. He would set up summary courts with a stipendiary chairman and lay assessors; he would abolish trial by jury except in political cases. Naturally, he advocates the extension of legal aid for defendants. He wrote before the publication of the Rushcliffe report but broadly agrees with its findings. He calls for a comprehensive planning programme to co-ordinate all the interested agencies, public and private. This is a profoundly interesting and imaginative piece of social research by a highly experienced and qualified expert, and deserves a prominent place in the attention of reformers.

HONORARY PHYSICIANS TO THE KING

The following have been appointed Honorary Physicians to the King for a period of three years: Dr. James Boyd, F.R.C.P.I., Chief Medical Officer, Ministry of Health and Local Government and Ministry of Labour, Northern Ireland; Sir William Allen Daley, M.D., F.R.C.P., Medical Officer of Health and School Medical Officer, London County Council; Dr. Alexander Mackenzie Fraser, Medical Officer of Health of the Burgh and County of Inverness (Highlands and Islands Medical Service); Sir Walter Haward, O.B.E., M.B., B.S., Director-General of Medical Services, Ministry of Pensions; Sir William Wilson Jameson, K.C.B., M.D., F.R.C.P., F.R.C.O.G., Chief Medical Officer, Ministry of Health and Ministry of Education; and Dr. Norman Tattersall, Principal Medical Officer, Welsh National Memorial Association, Cathays Park, Cardiff. The following have now completed their term of office as Honorary Physicians to the King: Dr. J. A. Charles, F.R.C.P., Sir Andrew Davidson, M.D. Glas., F.R.C.P.Ed., Dr. H. M. C. Macaulay, Dr. E. R. A. Merewether, F.R.C.P., Dr. W. Rees Thomas, F.R.C.P., and Prof. G. S. Wilson, F.R.C.P.

⁷ *Glor. Med.*, 1943, 3, 95.

⁸ *Criminal Justice and Social Reconstruction*. By Hermann Mannheim, trans. by J. E. G. G. Paul, Trench, Trubner and Co., Ltd., London, 1955.

A.M.A. CENTENARY EXHIBITS AND PAPERS

A general account of the Centenary Meeting of the A.M.A. has already been given in leading articles in the *Journal* of June 7 and 28, and in the former issue appeared an article on the history of the A.M.A. by Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*. We print below a summary of the proceedings of the meeting. In the space available it is possible to refer to only a few of the many interesting exhibits and papers. Eighteen different sections were holding simultaneous meetings; the House of Delegates was conducting its business at the same time; and on top of this there were the superb scientific exhibits to visit.

Scientific Exhibits

The scientific exhibits were assembled under the general direction of Dr. Thomas G. Hull in the Convention Hall in Atlantic City—the largest hall for this purpose in the U.S.A. The general layout of the exhibits was similar to that of some of those housed in the Wellcome Museum. Each consisted of a booth whose back and side walls were used for the exhibition of charts, diagrams, maps, x-ray films, photographs, mounted specimens, and anatomical models. Pamphlets describing the work of the exhibits were obtainable, and the exhibitors themselves were on duty most of the day to demonstrate and discuss the work shown.

The majority of the exhibits were competitive. A gold and a silver medal and other awards were given for two classes of entry. Drs. George E. Burch and Paul Reaser, of the Tulane Medical School, New Orleans, won the gold medal for original work with their exhibit entitled "Radio Elements and Mechanism of Congestive Heart Failure: Radiosodium (Na^{24} and Na^{22}). This work showed that in patients with congestive heart failure "there was a much more prolonged retention of sodium than in the normal subject." The awards in the second group were for exhibits which "do not exemplify purely experimental studies but are judged on the basis of excellence of correlating facts and in their presentation." The gold medal in this case went to Drs. George F. Cahill and Meyer M. Melicow, of the Squier Urological Clinic, Presbyterian Hospital, New York, for the exhibit on tumours of the adrenal gland.

In addition to entries falling into these two groups the committee sponsored four special exhibits: on cardiovascular diseases, fractures, fresh pathological material, and physical medicine. The cardiovascular exhibit under the guidance of Paul Dudley White, of Boston, covered an amazingly wide range, and included a fine selection of historical works on the heart and the circulation. Under the chairmanship of Kellogg Speed, of Chicago, the fracture exhibit was accompanied by continuous demonstrations throughout the week; in order to make this possible no fewer than thirty orthopaedic surgeons assisted the committee.

A group of workers from the University of Minnesota presented an interesting exhibit on the physiological problems of bulbar poliomyelitis. The epidemic of last year, the largest since 1916, attacked 25,191 persons throughout the U.S.A. There were 2,875 cases in Minnesota alone, and the exhibit was based on the experience obtained in treating 183 patients suffering from bulbar poliomyelitis, classified by the Minnesota group thus: (1) *Cranial Nerve Nuclei Type*, with the symptom of difficulty in swallowing. (2) *Respiratory Centre Type*, with deficient oxygenation of the blood. (3) *Circulatory Centre Type*, with changes in pulse rate, rapid fall of blood pressure, and the general symptoms of shock. (4) *Encephalitic Type*. "Many patients with involvement of the bulb of the brain show signs of confusion, apprehension, and anxiety. These symptoms are chiefly due to the lack of oxygen in the brain. Only rarely is there actually virus infection of the cortex of the brain producing these typical encephalitic symptoms." (5) *Bulbar-cervical Spinal Type*. Patients have a mixture of the above symptoms and also may show paralysis of the muscles of respiration. Treatment includes nasal tube feeding, tracheotomy, and oxygen therapy. The exhibit included the oximeter—an electronic device which, clipped on the patient's

ear, immediately records the amount of oxygen circulating the blood stream.

Another exhibit on poliomyelitis was presented by the National Foundation for Infantile Paralysis. With modern methods of treatment, it was stated, approximately 50% of cases of poliomyelitis recover completely; approximately 20% suffer severe and another 20% mild paralysis; the mortality rate is 5-10%. According to maps showing the distribution of poliomyelitis throughout the world, the first sizable European epidemic appeared in Norway and Sweden in 1905; the first sizable epidemic in the U.S.A. occurred in New York City in 1907. Severe epidemics did not arise in Japan until 1938 and 1940.

Before leaving the subject of these exhibits some mention must be made of the motion pictures. The scope and variety of these can best be suggested by the fact that three theatres were in continuous operation, and each was showing something in the neighbourhood of twenty films a day.

The enormous size of the Convention Hall (its floor space would engulf St. Paul's Churchyard), and the equally enormous wealth of many of the firms exhibiting, combined with native American flair for advertising, produce an impression of colour and luxury which would be startling, even shocking to post-war English eyes. It is of course impossible to know the total amount of money spent to produce these stands but unofficial estimates varied between three and five million dollars.

One firm demonstrated the advances in a century of anaesthesia by means of a mechanical puppet show, complete with drop curtains and instrumental overture. The curtain gave up upon an operating theatre where an anaesthetist explained the progress of anaesthesia to one of the original A.M. delegates who has returned to this world for a brief look round. The demonstration is remarkably complete, even to the movement of the puppet's arms, head, and lips, and the lecture illustrated upon a miniature screen. The manufacturers state that it is "the expressed opinion of many of the visiting surgeons that this exhibit is a museum piece." It seems fitting comment.

Summaries of Papers

NITROGEN MUSTARDS

Drs. Leon O. Jacobson and Charles L. Spurr, of the University of Chicago, read a paper on nitrogen mustards in the treatment of disease. Developed originally as poison gases, nitrogen mustards have been used with encouraging results in the treatment of Hodgkin's disease. Fever, pruritus, and malaise are frequently relieved within a few days of treatment, and there is slow regression in the size of the liver and spleen and the enlarged lymph glands. Nitrogen mustards, according to Drs. Jacobson and Spurr, have produced significant clinical remissions in Hodgkin's disease, lymphosarcoma, chronic lymphatic leukaemia, chronic myelogenous leukaemia, and polycythaemia rubra. The drug was without effect in acute leukaemia and multiple myeloma.

CANCER OF THE STOMACH

Dr. Owen H. Wangensteen, of Minneapolis, observed that (1) cancer of the stomach was the most frequent of all malignancies; (2) that the death rate from it was high in almost all countries, comprising 25-40% of all deaths from cancer; (3) that in the U.S.A. cancer as a cause of death ranked next to heart disease and that of the 150,000 annual deaths from cancer approximately 40,000 resulted from cancer of the stomach; (4) that at present the only worthwhile treatment was surgery. Many patients with cancer of the stomach were inoperable when they first consulted the physician; only 25% were "suitable candidates for a curative type of operation." Dr. Wangensteen considered the problem was to persuade men and women who had reached the "cancer years" to undergo periodic examination. Figures indicated that one woman out of every five past 40 years of age would die of cancer and one man out of every six past 50. He urged the setting up of cancer detection clinics at strategic places manned by competent specialists in the various branches of medicine and surgery.

VIRUS DISEASES

Dr. Edwin W. Schultz, Professor of Bacteriology at Stanford University, California, said that viruses had a wide variety of hosts. The discovery by Dr. E. W. Goodpasture that the developing egg could be used as a growth medium for viruses was a milestone in the study of these organisms. Also of great importance was the electron microscope and the use of colloid filters for classifying viruses according to size. The difficulty of treating virus disease in man lay in the fact that a virus particle, once lodged in a cell, was apparently out of reach of drugs which might be carried by the blood stream, while antibodies were too large to follow the virus into the cell. Recently reported results following administration of sulphonamides and penicillin in certain individual virus and rickettsial infections suggest that such an approach may not be entirely out of the question," he said. Effective immunization against many virus diseases seemed to require the use of active virus, but strains safe enough for use as vaccines were few in number. Vaccine virus, fixed rabies virus, and strain 17D yellow-fever virus were three outstanding examples.

In a paper on the electron microscope Dr. Ralph W. G. Wyckoff said that magnification by as much as 100,000 times could be obtained. "The largest viruses have distinctive shapes. Some are brick-like, like the poxes. Some bacteriophages are perm-like with heads that show characteristic internal structures and tails whose appearance depends on the strain. All the very small animal viruses and most of the plant viruses thus far photographed are spherical or nearly spherical particles."

IDIOSYNCRASY TO DRUGS

Dr. Carl A. Dragstedt, of Northwestern University Medical School, Chicago, in a paper read before the Section on Experimental Medicine and Therapeutics, said that idiosyncrasy to certain drugs represented one of the most challenging of all problems in medicinal therapeutics. There was no satisfactory explanation as to why some people became allergic to certain drugs and some people did not. "Experience has taught us that idiosyncrasies to aspirin, aminopyrine, the organic arsenicals, the sulphonamides, thiouracil, quinine, and many others, are considerably more frequent than to alcohol, amphetamine, ascaral, chloral hydrate, digitalis, and the like; but there is little ground for any generalization that would have prophetic value as to the potentiality of idiosyncrasy for a hitherto unknown drug."

X RAYS AND WOUND INFECTION

Dr. James F. Kelly, of the Creighton University School of Medicine, considered there was no justifiable reason for not using x-ray irradiation for the prevention and treatment of wound infection. It was simple, and cost little. The dangers from such application of the rays were less than the dangers associated with many other forms of prophylaxis or therapy. The application of x rays in acute infection was followed by favourable clinical reactions—decrease of pain, localization of the infection, conservation of tissue, prevention of secondary infections, and shortening of the course of the disease. He claimed that x rays had proved very effective in the treatment of gas gangrene: in a group of 46 cases treated by x rays but receiving no serum the mortality was 4.34%.

PEPTIC ULCER

Sir Heneage Ogilvie, reviewing the treatment of peptic ulcer, observed that "whatever we wish to believe regarding stomach ulcers, we can find evidence in experimental work to prove theory." The only factor on which there was unanimity of opinion was the part played by hydrochloric acid. Peptic ulcers were common where hydrochloric was high, rare where it was low, and unknown where it was absent. It had been estimated that in the U.S.A. 6,500,000 persons suffer from peptic ulcer.

Dr. Samuel F. Marshall, of the Lahey Clinic, Boston, said that over a 10-year period there had been in his clinic approximately 8,000 peptic ulcers with a ratio of 10 duodenal ulcers to one gastric. He urged that operation should be performed whenever a diagnosis of gastric ulcer was in doubt. "We believe that all patients with chronic or recurring gastric ulcers

should be operated on without delay because of the considerable percentage of diagnostic error and because resection can be done with so great a margin of safety." Early recognition of cancer of the stomach presented a challenge to the medical profession, because in many cases the diagnosis was made too late.

Dr. Maurice Feldman, of Baltimore, in a paper entitled "A Statistical Study of the Life Cycle of 1,154 Cases of Duodenal Ulcer," stated that although the cause was still debatable there was no doubt about the association of psychogenic factors. In the majority of cases of duodenal ulcer symptoms began between the ages of 20 and 35.

The psychogenic factor in peptic ulcer was stressed by Drs. Jurgen Ruesch and Karl M. Bowman in a paper on personality and chronic illness. "We have been able to show," they stated, "that in chronic disease in general, in duodenal ulcers, and in thyroid patients, there is an unusual number of social climbers and strainers. . . . In ulcer and thyroid patients in particular there was an unusual incidence of foreign-born and native-born persons of foreign parentage. This fact would indicate that culture change and the resulting conflict of values were a source of stress and strain in these patients."

PSYCHOTHERAPY IN PRACTICE

The importance of psychotherapy in general practice was emphasized in papers read by Dr. Edward Weiss, of Philadelphia, and by Dr. Walter C. Alvarez, of the Mayo Clinic. Dr. Weiss defined psychosomatic medicine as "the simultaneous application of a study of the patient's mental and physical life." Although "psychosomatic" was a new term it described an approach to medicine as old as the art of healing itself. "In our elaborate medical institutions," Dr. Weiss observed, "with a lack of knowledge of the patient's background, we over-emphasize the so-called scientific aspects of medicine and relegate to the background the social and emotional factors that may enter into illness. As a consequence our methods of taking a patient's medical and personal history have not kept pace with general progress in medical science." He emphasized the value of the service given by "the old family doctor" who "relied heavily on psychosomatic techniques even if he didn't know it." He urged that the doctor intending to go into general practice should have more training in psychiatry.

LIQUID OXYGEN

The use of liquid oxygen in skin disease was discussed in a paper read by Drs. Roy L. Kile and Asbton L. Welsh. Liquid oxygen was applied by cotton wrapped around a wood applicator. Liquid oxygen was inexpensive and, with reasonable care, safe to use. It was easier to handle than was carbon dioxide. Liquid oxygen was so cold that the lesion rapidly turned white. A thorough freezing of the lesion occurred in a few seconds. With it they had treated warts, haemangiomas, leucoplakia, seborrheic and senile types of keratosis.

LONGEVITY AND MORTALITY OF AMERICAN DOCTORS

A preliminary report on the longevity and mortality of American physicians from 1938-42 was made by Dr. Louis I. Dublin and Mr. Mortimer Spiegelman, of the Metropolitan Life Insurance Company. According to these two statisticians the average young physician entering the profession at the age of 25 has 43½ years of life in front of him. On reaching the age of 35 the physician on an average has almost as many years remaining as he has already lived. At the age of 45 he may expect a further 25 years of life. "Almost 12 additional years of life remain to the average physician attaining the age of 65, a frequent age for retirement."

The insurance company's study is based on records of living physicians and on the deaths of active and retired physicians for the period 1938-42. The general conclusion was that "physicians experience practically the same longevity and mortality as white males of the same ages in the general population." Knowledge of hazards to health give physicians an advantage. "Evidence in this direction is found in the favourable mortality for most infectious diseases and surgical conditions and from accidents. The death rate from tuberculosis among male physicians is less than half that of white males of the same ages in the general population; for syphilis the ratio

is only one-third. The death rate from cancer among male physicians is four-fifths of that for white males of the same ages; in the case of appendicitis, hernia, and intestinal obstruction the ratio is three-quarters. . . . These advantages are offset by a relatively high mortality from the cardiovascular conditions. In particular the recorded death rate from diseases of the coronary arteries among male physicians is $1\frac{1}{2}$ times that of white males of the same ages in the general population." Mortality from leukaemia among male physicians was found to be $1\frac{1}{2}$ times that of white males generally. Dr. Dublin and Mr. Spiegelman repeated the opinion recently expressed that physicians may have acquired the disease as a result of exposure to x rays. "Far outstanding on the mortality list are diseases of the heart and coronary arteries, with 40.7% of the total deaths."

CANCER DETECTION IN AMERICA

[FROM A CORRESPONDENT]

The very high proportion of cases of malignant disease which are inoperable when seen for the first time in a hospital out-patient department is surely a challenge to the medical profession, whose responsibility it is to take all possible steps to improve this state of affairs. In the United States of America this challenge has been accepted and an attempt is being made in many parts of the country to extend the principles of preventive medicine to the control of cancer.

There are two complementary efforts: first, an educational campaign to bring to the notice of the public the early signs and symptoms of the more commonly occurring types of cancer; secondly, the provision of clinics at which people whose interest has been aroused may be given a thorough examination. The object of the publicity campaign is not only to persuade people who have signs or symptoms suggestive of malignant disease to seek immediate medical advice, but equally to persuade apparently healthy people to undergo periodic physical examinations as the best means of achieving early diagnosis and treatment of malignant lesions. The clinics are usually known as Cancer Detection or Prevention Clinics, and are held at fully equipped general hospitals which provide radiological and laboratory services and, most important of all, well-trained clinicians. They are in most instances run quite separately from the established tumour diagnostic clinics in order to encourage regular visits from normal or presumably normal individuals.

The patient, after a detailed clinical history has been obtained, is given a complete physical examination which includes the mouth and nose, the rectum, and in women patients the vagina. Laboratory tests such as a urine examination, a complete blood count, and a Wassermann reaction are routine. X-ray examinations are carried out whenever the slightest symptom suggests their need, and in many clinics it is hoped to make an x-ray examination of the chest and alimentary tract a routine when wartime shortages of material and staff have been overcome. The clinics do not undertake treatment; if the examination reveals a malignant lesion or some constitutional disease the patient is referred with a full report to his medical practitioner or, if he so prefers, to the proper department of the hospital. Patients in whom no malignant lesion is discovered are instructed to return for re-examination in from six to twelve months or earlier if any unusual symptom appears.

Results of the Scheme

The success of the publicity campaign is shown in the published figures of the patients attending the Strang Cancer Prevention Clinic at the Memorial Hospital, New York: 40% were referred from the New York City Cancer Committee, 30% through various types of publicity such as lectures or demonstrations, 16% were referred by former patients, and 10% came from the Memorial Hospital clinics. From the medical point of view the results of the experiment are equally encouraging. It was found that out of a total of 1,103 cases attending the Strang Cancer Prevention Clinic 7% had malignant tumours. In the group of patients reporting without symptoms and apparently healthy 1% were discovered to have malignant tumours. A considerable proportion were found to have other

diseases which required treatment. Dr. L'Esperance, Director of the Strang Clinics, insists, not without reason, that in discovering unsuspected lesions such as rectal adenomata and cervical tears and erosions the clinics are helping to prevent the development of cancer. These clinics are now well established in the public esteem and they have received the official blessing of the American Cancer Committee. In New York the medical students at the Cornell Medical Centre attend the Cancer Prevention Clinic at the Memorial Hospital as part of their studies in preventive medicine.

These are the bare facts. Armchair criticism may be levelled at many aspects of the scheme, but it cannot be denied that essentially the scheme provides the only way in which the medical profession can hope to discover an increasing proportion of cases of malignant disease at a stage in which a cure is not only possible but probable. It may be rather terrifying to contemplate the snowball growth of these clinics, but in return we may hope for an increasing number of patients who have been cured of cancer and are not afraid to tell their friends about it.

RADIOTHERAPY OF CANCER

Radiotherapy centres are still suffering from the dislocation caused by the war and from uncertainty as to future developments under the National Health Service Act. The National Radium Commission in its report¹ for 1945-6 urges strongly that in every region there should be a cancer organization, under the regional hospital board, to provide facilities for early diagnosis readily available to every general practitioner, and for immediate treatment planned and carried out by experienced specialists. Every patient suffering from cancer, whether seen in the early stage or in the late stages of the disease, should be followed up at intervals until death from whatever cause.

The report points out that these regional cancer services should not be difficult to set up as the Commission had such schemes in view from its inception. Some regional planning has been done already in the areas where national or regional radium centres exist, namely, Birmingham, Bristol, Bradford, Cambridge, Cardiff, Leeds, Liverpool, Manchester, Newcastle, Sheffield, and Southampton. For other parts of the country it will be more difficult because of the scarcity of specialists and the difficulty of persuading some surgeons "to abandon the present haphazard method by which one surgeon tries to deal with a great variety of types of cancer."

The Commission has paid special attention to the position of the general practitioner in such a service and to local organization designed to facilitate early diagnosis. The British Empire Cancer Campaign has been asked to arrange for lectures to general practitioners. The record cards which have always been insisted on as a condition for the loan of national radium have now been taken over by the General Register Office at Somerset House.

The report contains short summaries of annual reports from most of the centres connected with the National Radium Commission. If these are compared year by year it will be seen that the Commission has had a profound influence on local organizations for the diagnosis and treatment of cancer, the good effect of which is just becoming obvious.

¹ *Seventeenth Annual Report of the National Radium Trust and Radium Commission*. Cmd. 7127. H.M.S.O., London. 6d.

Diabetes: A Concise Presentation. By Henry J. John, M.D., F.A.C.P. (Pp. 300; illustrated. 17s.) London: Henry Kimpton. 1946. Consisting of a series of papers on diabetes, this book will not satisfy the student seeking a clinical description of the disease, for symptoms are regarded as belonging to the pre-insulin era, and reinitis, a complication seen only too often in patients having the best modern treatment, is not mentioned. The calculations necessary for the generous diets advocated are too complex for use in countries where food is rationed and leisure small, and the author does not describe recent work on carbohydrate metabolism. Though his observations—based on wide experience—are interesting, this book cannot be classed with standard works on the subject. However, he discusses with homely wisdom the special problems of the diabetic patient, and is at his best in writing of the diabetic child.

Nova et Vetera

AMATEUR BODY SNATCHERS

William Merritt Hartlebury Day, M.D., qualified at St. Peter's Hospital, Bristol, and was a student there from 1834 to 41. Dr. Day was surgeon at Wells County Asylum in 50 and later medical superintendent at Stapleton (Bristol) Asylum. He died on Aug. 9, 1871. Recently his granddaughter, Miss Kathleen Tittle (Director of Music at Howell's School, Denbigh, N. Wales), sent us a manuscript in his handwriting. This is signed "W. M. H. D." and dated March 10, 1835. It is given in full below and has been altered only by punctuating and paragraphing.

A Visit to the Tombs

Being one evening in a pensive and thoughtful mood with nothing to do I sat me down with a determination of writing particulars of my first visit to the tombs. My fellow apprentice and myself having determined upon having a subject for dissection we accordingly prepared for our adventure, which with ourselves a friend and a man we hired to dig we proceeded. Having got every thing that our share required—mean tools, spade, sack, etc., and with two bottles of shrub and a small stick—we thought ourselves a match for any harley or charleys that by chance we should happen to meet. Having a good tuck in and plenty of strong beer we thought about 11 o'clock time to start, so off we sallied to the churchyard merry and not fainthearted. But I, unlucky fellow as I was, was, and so will be till the end of my days, lost the cork of one of our grog bottles, which occasioned us to drink on our passage. We all arrived without further interruption in the churchyard, when we waited close by in a convenient place while one of our company proceeded to the churchyard and having looked about him and seeing all was favourable he came back and we all sallied in together. The man then commenced digging, I and another was watching at a distance and the other was waiting by the man to help him when he wanted help.

Soon after our arrival a shower of mist began to fall which greatly favoured our work. I felt myself quite warm and without any dread or feeling in the place I was in. I walked about when it was time to watch with the greatest composure. The clock struck 12 and we all stepped back to the hedge and waited. I forgot to state that there was a path through the churchyard which the watchman had to walk through in going round every half hour. So you must think it was bold proceeding for four young chaps who was never out before or had an idea as to the manner in which such work was performed. So waiting nearly half an hour for the watchman the man then began to swear and said he would not wait any longer, so he accordingly went to the grave which was by the short path and recommenced digging.

The clock struck one, two, then three. No hopes of finding anything like a coffin. The grave was two feet deep in water. The man then began to swear in a horrid manner and said he would not go on, but at last with frequent tips at the shrub and doing a bit now and then ourselves got the better of him. We at last came to a coffin, which to our great disappointment was a child's; it had intact coverings with a silver edge to it. We accordingly commenced lift the lid, which we found was like a bit of soaked leather, resisted the chisels and very effort which we tried to move it. We accordingly after

long time made a small opening, which with our hands we were bit after bit till at last we made an aperture big enough to pull the little dog through; he looked more like a drowned rat when I got hold of him to pull him out of the grave. We accordingly put him in the sack and we recommenced the business of filling up the grave.

There was a watchbox adjoining the wall of the churchyard, in which two watchmen. One of our company went up to the watchbox to listen if he could hear the men digging, which he said he could quite plain. While he was standing there two cats came upon the wall and commenced caterwauling in a dreadful

manner, which made him run off. During the time we was there the weathercock kept veering round with a terrible noise as if angry at our proceedings. After we had put the subject in the bag we commenced filling the grave, which the time we was there, the time of the morning, and the disappointment we had felt in not finding a full-grown subject, after we had filled the grave we determined upon leaving the grave half filled up and returning home. We got all our things in order and left the churchyard, and as we got outside the gate, the man carrying the body and I last with the spade, to our utter astonishment and terror we beheld two watchmen standing staring us in the face, but they, although they must have seen us as plain as I see the paper I am now writing upon, never offered to move. We expected to hear them spring their rattles every minute; we accordingly without further interruption proceeded homewards, and when we arrived the person that was to wait up for us that went to sleep and we accordingly, because we should not make too much noise as the watchmen were going their rounds, we placed the body in the niche of our door and the spade in another. We placed our backs against the door and in it went. We brought in the body and things and found it was six o'clock. So we had been five hours in the churchyard.

About eight o'clock I and the man and my fellow apprentice proceeded homewards with the body, which we had in a sack, the people staring at us as we went along the street. We left the man about half way and we went ourselves with the body; the shops were by this time opened and the business of the day had begun. We were covered from head to foot with churchyard dirt, which made us look very suspicious; every person that passed staring at us well as much as if they suspected we were murderers. When we arrived home no one was up and we had to wait till we had knocked them up. Our fears had not ended then, for by the time we had arrived a dog was took ill with convulsions and began moaning in a dreadful manner and a crowd soon collected round the door, which looked more at us than at the dog. I should have done the same myself seeing two young fellows standing at a surgeon's door with a sack on their back covered with red mud from head to foot looked damned suspicious. At last the door was opened and went in with our sack. Thus ended my first visit to the tombs.

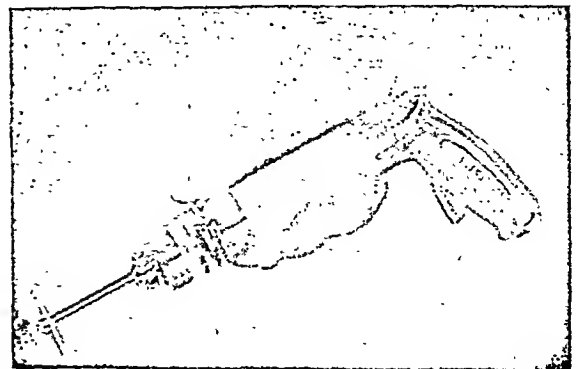
March 10, 1835.

W. M. H. D.

Preparations and Appliances

PNEUMATIC BONE SAW

A pneumatic bone saw made by Desoutter Brothers Ltd. is now more freely available. This is not a new instrument. It has been used at selected orthopaedic centres for some years, and with increasing experience a number of minor modifications and improvements have been made. Experiments with this



"Mighty Atom" pneumatic bone saw were first undertaken because of the wartime shortage of imported American electrical bone saws. The pneumatic motor used in the instrument is a development of that used in a series of aircraft tools.

All gears and rotating parts are made from chrome-nickel steel, hardened and tempered, and every bearing is a ball or roller bearing. The bone saw is supplied in a wooden case with a 10-ft. length of special high-pressure hose and a quick-coupling unit, chuck key, three stainless steel spindles fitted with stainless steel saws (1 in., 1½ in., and 1¾ in. in diameter), and a spanner for changing saw blades. The tool weighs 1½ lb. and will cut bone grafts with single or double saws. The speed is controlled by a trigger in the pistol-grip handle and the range is from a few rotations to the full speed of 2,000 r.p.m. The saw has to be sterilized by hot air and cannot be boiled or sterilized in the normal steam autoclave. It is worked from compressed-air cylinders with a reducing valve, and a 100 cu. ft. capacity cylinder will give approximately 20 minutes' continuous running—sufficient, that is, for several operations. Over fifty of these instruments have been in use now for a considerable period, and independent orthopaedic surgeons have referred to the pneumatic bone saw as "first-class" and of "proved merit."

Reports of Societies

PHYSIOLOGY OF THE BREAST

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on June 20, with Dr. JAMES WYATT in the chair, three papers were read dealing with recent developments in the knowledge of the physiology of the breast.

Dr. S. ENGEL, discussing the anatomy of the female breast in its relation to hormonal response, said that anatomical and histological investigations had been carried out on some 80 breasts in the resting and active stage. In many cases large sections through whole breasts had been used on account of the variations in any single breast. It could be shown that the mammary gland in man differed from that in animals. In animals the breast was filled to capacity with glandular tissue when lactating, whereas in man there occurred many variations, ranging from almost nothing to animal-like abundance. Approximately one-third of the breasts examined had proved to be well equipped; about one-third were below the average, and the remainder showed many transitional stages. Clinical experience of lactating capacity accorded with the anatomical figures.

Badly equipped resting breasts showed primitive and badly differentiated glands. These glands responded poorly or not at all to hormonal stimulus, as could easily be seen in menstruation. Well or less well differentiated glands of the same organ showed different reactions—that was to say, rich sprouting in the first case, and no reaction, or almost none, in the second. This behaviour accounted for the divided opinion on the changes of the resting breast in the menstrual cycle, illustrating the fact that women with well-equipped breasts showed clinical and anatomical changes, whereas others remained indolent. The conclusion was that menstrual changes in the breast might or might not occur. In pregnancy the development depended on the congenital nature of the breast, since hormonal stimulus could not do more than mature what was present in the resting breast. The hormonal treatment of hypogalactic women was therefore limited, for it could only help to bring the mammary gland to its maximal production; it could not convert a poor breast into a good one. Briefly it could be said that the mammary gland in man differed so greatly that its variations had to be taken into account when speaking of hormonal influences. The badly equipped breast would not respond at all, or very little, in menstruation. The presence or absence of clinical symptoms in menstruation would serve to estimate and predict the capacity of lactation in individual cases.

Dr. J. S. FOLLEY said that the first requisite for successful lactation was the existence of adequately developed mammary glands, which presupposed the presence of sufficient histologically normal alveolar tissue. Mammary growth was under the control of the ovarian hormones, oestrogen and progesterone, but it was not possible to make any satisfactory generalization regarding their respective roles in mammary growth, since experiments on various species had revealed striking differences.

To summarize the main experimental findings: it was seen in some species, such as the mouse, rat, and rabbit, that oestrogen alone, in physiological doses, evoked growth of the duct system but little or no alveolar development. In order to produce the latter, combined treatment with progesterone and oestrogen was necessary. In species such as the guinea-pig oestrogen alone was capable of evoking the growth of duct and alveolar tissue alike; it could develop a gland which, under suitable conditions, was able to produce considerable quantities of milk, as shown by the fact that male guinea-pigs in which mammary growth had been brought about by treatment with oestrogen would rear young. The most spectacular results in this category had been obtained in ruminants. In 1938 De Fremery had shown that treatment with natural oestrogens would produce considerable udder development in virgin goats, and it had since been discovered that in the virgin heifer suitable oestrogen treatment would cause the growth of udders capable in many cases of secreting economically important yields of milk. Later experiments done on ovariectomized ruminants indicated that successful results did not depend on the presence of the ovary. In general the response was not quantitatively comparable to a normal lactation, which at once raised the question of whether such experimentally developed glands were normal in structure, and it seemed possible that some additional endocrine stimulus acting in conjunction with the administered oestrogen was necessary for the artificial development of glands capable of yielding amounts of milk such as would be obtained in a normal lactation.

"Galactopoiesis"

So far consideration had been confined to the phenomenon which might be described as lactogenesis, or the initiation of lactation. There was an allied but not necessarily identical phenomenon, the stimulation or augmentation of lactation already established, which it had been suggested might be described as galactopoiesis. It seemed probable that the treatment of deficient lactation in women fell under the latter heading, since in most of such cases lactation had been initiated but the milk yield had failed to reach a level necessary for the adequate suckling of the infant. The discovery of the anterior pituitary lactogenic hormone, prolactin, by Stricker and Gruete in 1928, and its subsequent characterization by Riddle and his collaborators as a pituitary hormone distinct from other pituitary hormones then known, and specific in its ability to cause growth and secretion of the pigeon-crop gland, aroused interest in the possibility of stimulating lactation, particularly in cows and women, by anterior-pituitary extracts. With the development of methods for the partial purification of prolactin there was some tendency to assume that purified prolactin preparations would prove more efficient as galactopoietic agents than unfractionated anterior-pituitary extracts. Extensive experiments on cows, however, had shown that, far from this being the case, unfractionated ox anterior-lobe extracts gave considerably greater galactopoietic responses in cows in declining lactation, for a given unitage of prolactin as measured by the pigeon-crop tests, than partially purified prolactin preparation. With crude saline extracts of ox anterior pituitary substance, though temporary, increases in the milk yield of cows in declining lactation could be obtained even in response to single subcutaneous injections. With repeated injections a more sustained, but still temporary, response was obtained.

Finally, there were the effects on lactation of administration of thyroid hormone. The main features of the galactopoietic effect resulting from thyroid treatment might be briefly summarized as follows: The increase in milk yield during the period of treatment was considerable and might amount to as much as 30% above the basal level. Overdosage with thyroid preparations leading to a condition of marked hypermetabolism might, on the other hand, decrease the yield. Most workers have observed, *pari passu* with the enhancement of the milk yield, increases in both the fatty and non-fatty fractions of the milk solids; the increase in the non-fatty solids content was at the best slight, but the fat content underwent a more marked increase, sometimes to as much as a 50% rise in the daily yield.

This work had assumed importance from the point of view of wide-scale practical application in the dairy industry where

was shown that treatment of certain proteins, such as casein, with iodine under mildly alkaline conditions produced iodoproteins which exhibited thyroid activity by the oral route and from which thyroxine could be isolated after hydrolysis. Since docascin could be made quite readily from available materials it was evident that here was a cheap and plentiful supply of thyroxine. It was also shown that the thyroid gland of the rat could be made to produce thyroxine in all essentials by feeding iodoprotein. One important point was that prolonged feeding of doses sufficient to produce milk yield increases of the order of 30% above basal caused sufficient hypermetabolism to bring about significant and undesirable losses in body weight. If, however, one contented oneself with smaller responses the body weight losses were negligible, provided extra food was given as a compensation. Clinical reports on the use of thyroid hormones for the stimulation of lactation in women had not always been favourable; in fact, some clinicians had advocated thyroid treatment for the suppression of unwanted milk secretion. Nevertheless, further clinical trials, keeping the necessity for careful control of dosage in mind, would appear to be justified.

Vitamins in Human Milk

Mrs. MAWSON and Dr. S. K. KON read a paper on the study of certain vitamins and other constituents of human milk. The investigation described had lasted for more than four years, during which period 2,000 samples of breast milk were examined. Owing to the food policy of the Government some of the changes they had noted had been for the better rather than the worse. They had taken Reading, a prosperous town in an agricultural area, as a starting-point in the early summer of 1941; and in April, 1942, they had obtained support from the Medical Research Council which had enabled them to extend their activities to Shoreditch, thus providing a good contrast. In both areas the husbands of many of the mothers were in the Armed Forces, but Shoreditch had been more subject to enemy attacks than Reading. As a result of the work done confidential reports were sent each year to the Medical Research Council, and from these had followed certain important changes in wartime diet. The difference in the analysis of the milk was most noticeable immediately after the introduction of "national" wholemeal bread and also the first consignments of oranges to reach this country during the war.

Mr. BOURNE mentioned that one of the difficulties that Dr. KON and Mrs. MAWSON had encountered had been to discover women who were sufficiently ill-nourished to provide a really substantial difference in dietary intake compared with those on normal feeding; but there had been one woman found who was grossly undernourished, and it would be interesting to learn what differences were found in the composition of the milk. He had noticed tables on the screen showing the differences between cow's milk and human milk, and he had seen elsewhere attempts to supplement the milk in order to give the child the theoretical optimum. He thought that all such treatment of the natural product was nonsense, and that the more the child had of the natural milk the better it would be. Dr. KON, in reply, said that with regard to the woman who was grossly undernourished the composition of the milk had been found to be perfectly normal, and it was also found from milk samples in Belgium and Holland taken immediately after liberation that this was usual. They had had to revise their ideas of the effects of starvation and shortage of calories and essential foodstuffs. At such a low level life was geared down so that they could run satisfactorily with a less output of energy.

The Association of British Chemical Manufacturers has issued from 166, Piccadilly, London, W.1, the 1946 edition of its directory *British Chemicals and their Manufacturers*. During the war years the Government forbade publication of new editions and this is the first revision of the directory since 1939. A copy will be sent gratis by the manager of the A.B.C.M. to any inquirer writing on business paper or giving other genuine indication of his being likely to put the directory to good use as a purchaser of chemicals.

Correspondence

The Physiology of Vision

SIR.—I have read with great interest the leading article (June 28, p. 932). There are two points which I would like to raise.

In the first place, my doubts concerning the validity of the three-colour theory do not rest entirely on research in which it was necessary to confine the stimulus to single cones or to small clusters of functionally identical cones. Thus one experiment requiring no apparatus, which can be performed by anyone in an ordinary room, consists of taking three little coloured test objects 5-mm. square each—a bright red, a bright green, and a lemon yellow. These are separately mounted in the middle of pieces of black paper about 20 cm. square. If these are examined at a distance of perhaps 5 metres to 10 metres—this distance varies somewhat with the intensity of the light and the personal equation of the observer—it will be found that the yellow test object has altered to pale grey or white, whereas the red one and the green one have retained their colour, with hardly any observable alteration. Now, on the three-colour theory yellow is a mixture of red and green; therefore it would be expected that all the three test objects would undergo changes at about the same distance, but this they do not do. If this experiment be repeated with monochromatic lights produced by a spectroscope a similar result will be obtained.

This was the first experiment that shook my belief in the three-colour theory, to which I had always been a strong adherent.

The second comment concerns Dr. Willmer's book. The writer of the leading article considers that it supports the three-colour theory. A careful examination of this book shows, however, that this is not the case, for it describes an essentially dichromatic hypothesis. This is shown with great clearness if the figures illustrating chapters III and IV are examined. It is true that he states here and there in the book that the dichromatic hypothesis as it stands appears to be inadequate, and that some other factor must be involved of which no account has so far been taken; but in every case he follows it by some such statement as: "There is at least the possibility of overcoming the difficulty under consideration, without immediately assuming the existence of another distinct type of receptor." Thus nowhere in the book can one find anything to suggest that Dr. Willmer wishes to abandon entirely the dichromatic hypothesis which he advances in such detail.—I am, etc.,

London, E.C.1.

H. HARTRIDGE.

The "Costoclavicular Syndrome"

SIR.—As co-author with Graham Weddell of a paper¹ in which the term "costoclavicular compression" of the subclavian vessels was introduced to the literature, and which is one of the two papers specially mentioned in the text of the recent article in your columns on the "costoclavicular syndrome" by Telford and Mottershead,² may I be permitted to forward my comments? I trust you will forgive the delay, but the issue containing this paper has only recently arrived in this country.

Prof. Telford and Mr. Mottershead have rightly stressed that no one mechanical cause can explain all cases of pressure symptoms involving the neurovascular bundle at the base of the neck, and to this view I subscribe. They conclude that under certain circumstances costoclavicular compressions may occur, but in spite of an exceedingly rich experience of cervical rib syndromes they do not appear to have recognized a single example of costoclavicular compression, and consequently leave their readers with a feeling that the syndrome is mere supposition.

Compression of the subclavian artery between the clavicle and an unusually placed first rib has now been seen at operation by a number of observers³⁻⁵ besides ourselves. We described a case with vascular symptoms in which, at operation, proof was forthcoming that the subclavian artery was being compressed intermitently between the clavicle and the first rib, and in which symptoms disappeared completely after this costoclavicular compression had been corrected by removal of a segment of the rib. In addition

we described two other cases, one of which did not require operation, to illustrate other aspects of the mechanism, and also a fourth case with nervous symptoms to show that the mechanism did not operate in all cases with rib-pressure symptoms. Our primary purpose in reporting these cases was to show that the then widely held explanation of the scalenus anticus pressure, and also that of sympathetic dysfunction due to irritation of sympathetic fibres in the lower trunk of the brachial plexus by rib pressure, were not operative in these cases. It is interesting to note that the second of these explanations, which was championed by Prof. Telford on several occasions between 1913 and 1942,^{1,2} is not mentioned, either in support or refutation, in his latest article.³

Telford and Mottershead quote us that "more than one postural manœuvre involving the shoulder girdle may result in compression of the subclavian vessels," and then in the same paragraph go on to describe the effects on the pulse of depression or downward movement of the shoulder. We, however, had pointed out that "backward and downward bracing of the shoulders is the motion which most directly approximates the clavicle to the first rib," and illustrated the backward mechanism with a line diagram. Nowhere did we describe pure depression of the shoulder. This is important, as Telford and Mottershead take pains to show that pure depression of the shoulder widens the interval between clavicle and rib, although later in their paper they concede that backward movement or retraction of the shoulder may produce clavicular pressure against the scalenus medius. Their movement of retraction had an upward component, however, and if instead a downward component could have been imparted the clavicle would have approximated to the rib. Their findings were based largely on observations in formalized corpses, and must therefore be accepted with reservation. Only five fresh post-rigor bodies were tested, and, as in another part of their article they showed that retraction of the shoulder only affected the pulses in 60% of living persons, this number of fresh bodies is too few to prove the non-existence of costoclavicular approximation. Their statistics would have been of more worth had they, like ourselves, tested for costoclavicular approximation on the operating table in patients on whom it had previously been shown that retraction of the shoulders obliterated the pulse.

In describing depression of the shoulder Telford and Mottershead point out that, though the pulse in the arm may disappear on depression of the shoulder, a normal pulse remains in the axillary artery well below the clavicle, and that the clavicle consequently has nothing to do with the arrest of the pulse in this manœuvre. This I have confirmed in a few subjects whom I have just tested, but I have noted also that when the shoulders are braced backwards and downwards and the radial pulse disappears even the pulsations in the axillary artery cease. The arrest of the pulse in these two manœuvres, therefore, must be by different mechanisms, and thus the throttling of the brachial artery by the two heads of the median nerve, which Telford and Mottershead describe as occurring in depression or downward movement of the shoulder, is presumably not the responsible mechanism in retraction of backward movement of the shoulder. This latter mechanism we believe to be costoclavicular approximation.

As a cause of symptoms, the costoclavicular mechanism may not be common, at least in the type of case which comes to operation. In our paper Graham, Weddell and I wondered whether it was the usual mechanism in cases of rib pressure where vascular disturbances predominate, as Eden⁴ had suggested earlier. Cases of this type with symptoms warranting operation, however, are uncommon, and I have not encountered another case at operation since we wrote our paper. Prof. Telford⁵ reported in 1942 that he had collected 4 cases with vascular symptoms out of 92 patients operated on for symptoms of cervical rib, although by 1947 his total appears to have risen to 14 cases out of 120 patients. I have, however, seen a few patients with mild vascular symptoms which I thought were caused by a costoclavicular mechanism, but they improved on exercises designed to brace up the shoulders.

As regards cases of rib pressure with nervous symptoms, I would agree with Telford and Mottershead that the great majority are due to hanging up of the brachial plexus by a cervical rib or other mechanical obstacle, such as a fibrous band or abnormally developed anterior edge of scalenus medius, for such has been my operative experience. It was with some surprise, therefore, that in 1944 I read a paper by Walshe, Jackson, and Wyburn-Mason⁶ suggesting that costoclavicular compression was also of frequent occurrence in cases with nervous symptoms. These authors, however, although they described in detail four cases with vascular symptoms, did not support their views regarding plexus compression with case histories. Consequently for some time I have regarded costoclavicular compression of the brachial plexus, in contrast to that of the subclavian vessels,

as a myth, but recently I have encountered a case. This patient a middle-aged woman, had had for many years generalized plexus symptoms of the type envisaged by Telford and Mottershead, and when the neurovascular bundle was explored at the base of the neck no abnormality other than an undue approximation of the clavicle to the first rib on backward retraction of the shoulder could be made out. The brachial plexus was then compressed between the two structures, and it is significant that symptoms promptly disappeared following resection of a segment of the first rib. It was also interesting to note that a simultaneous compression of the subclavian artery was not present in this particular case, for the planes of the two bones crossed each other obliquely, and the two bones only approached each other sufficiently to compress structures at the place where the plexus passed into the axilla.

I therefore feel that costoclavicular compression of the subclavian vessels or of the brachial plexus as a cause of serious symptoms warranting operation is a real entity, though not a common one. Any surgeon exploring the base of the neck for vascular or nervous symptoms in the arm should always search for the exact spot and mechanism of compression of nerves or blood vessels. If he cannot find an adequate cause in the more usual situations, he should insert the tip of his finger beneath the clavicle opposite the neurovascular bundle, and then by pressing the shoulder backward and downward ascertain whether a costoclavicular compression occurs. If it does the treatment is removal of a portion of the rib. Telford and Mottershead report 5 negative explorations in their series, all without relief of symptoms. Perhaps some of these were costoclavicular compressions.—I am, etc.,

Dunedin, New Zealand.

M. A. FALCONER.

REFERENCES

- ¹ *Lancet*, 1943, 2, 539.
- ² *British Medical Journal*, 1947, 1, 325.
- ³ *Clin. Sci.*, 1934, 1, 329.
- ⁴ *Brit. J. Surg.*, 1939, 27, 111.
- ⁵ *Brain*, 1944, 67, 141.
- ⁶ *Lancet*, 1945, 2, 164.
- ⁷ *Ibid.*, 1913, 2, 1116.
- ⁸ *Brit. J. Surg.*, 1931, 18, 557.
- ⁹ *British Medical Journal*, 1942, 2, 96.

Surgery of the Gall-bladder

SIR,—I am sorry to see an error in your annotation on surgery of the gall-bladder (July 5, p. 21). You state that "partial removal of the gall-bladder, combined with electro-coagulation of the residual strip" is termed diathermy dissection. As stated in my article, this is Thorek's electro-coagulation. Diathermy dissection consists in removal of the whole gall-bladder, which is a simplification of Thorek's operation. I am afraid that anyone who reads the annotation and scans the paper will get a wrong impression.—I am, etc.,

London, W.1.

R. J. MCNEILL LOVE.

Oxygen Poisoning in Man

SIR,—Sir Leonard Hill's correction (June 21, p. 900) of Dr. Kenneth W. Donald's attribution to the late Prof. J. S. Haldane of certain work on deep diving prompts me to this communication. Dr. Donald writes: "In 1930 the late Dr. J. S. Haldane (Haldane and Priestley, 1935) reported confusion and amnesia in deep-sea air divers at 300 ft. (91.4 m.), and these symptoms were attributed to the raised tension of oxygen. These effects were proved by Behnke *et al.* (1935) to be due to the intoxicant effect of nitrogen at high pressures."

In 1930 I was asked by the Admiralty, through the Medical Research Council, to investigate cases of supposed unconsciousness occurring in divers at 300 ft. They were not presented to me as examples of amnesia. I found the condition occurred in men already subject to unsuspected but distinctly pathological nervous symptoms. One man with severe claustrophobia had been put in a diving suit and sent down to 300 ft. By using the then unfashionable method of revival and abreaction it was shown that what the men described as unconsciousness was a state of pathological terror, the memory of which had been suppressed. The simple technique and its dramatic results were described to my colleague Surgeon Lieutenant-Commander A. E. Phillips (*Proc. roy. Soc. Med.*, 1932, 25, 693) and by myself (*Ibid.*, 1933, 26, 655). In my

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description I wrote: "So far, then, we could assure the authorities that the manifestations were not due to any defect in their physiological theory or practice—an important matter to them. That physiologists welcomed the psychological explanation is perhaps . . . unique." I cannot help thinking that these are the cases referred to by Dr. Donald, and in the interests of psychopathology I proffer this addendum.

London, W.1.

MILLAIS CULPIN.

The Measurement of Human Skill

SIR,—Prof. F. C. Bartlett's Oliver-Sharpey lectures on "The Measurement of Human Skill" published in the *Journal* of June 14 (p. 835) and June 21 (p. 877) prompt me to put down a few observations on clinical diagnosis which I believe to have a sound scientific basis. As is stated, investigation proceeds step by step, the fitting of one set of responses to another, until the diagnosis is completed. Here the conscious mind calls on the stored knowledge of the deeper subconscious levels, and between them the mystery is solved.

Now, in protective muscular reactions such as the sudden application of a car's foot-brake, closure of the eyelids, or the placing of a hand in front of the face the conscious mind has not functioned except to receive the receptor impulses. The very complicated mechanism involved in the effector response has performed its work subconsciously. Similarly in mental reactions, immediately after the receipt through eyes, ears, or fingers by the brain of a skilled clinician, the correct diagnosis may thrust itself into consciousness: the step-by-step route has been short-circuited. Before seeing the patient he is heard to cough, and in a flash "pneumonia," "basal congestion," or "tracheitis" obtrudes itself. The hand placed indiscriminately on the abdomen before inspection or the history questioned—in an unorthodox but very valuable procedure—may give rise to "appendix" or "acute abdomen." And in general practice these conditions are very rare in comparison with the number of abdomens examined, and reference here is only to obscure cases, not to those where a reasonable prediction can be made before examination. A fleeting glance at a head above the bed-clothes brings out "perforated gastric," and innumerable times a glance brings forth a sense of immediate urgency, when a subsequent more careful inspection reveals nothing startling.

It must be emphasized that these are not snap diagnoses, nor is any attempt being made to produce quick results, the performance of which is much slower and due to a completely different mechanism. Further, such practices produce a far greater percentage of error than the events described, which are almost invariably correct. These immediate effector responses occur comparatively infrequently and very erratically, but are so uniform in their characteristics as to leave no doubt as to their definite entity as a class. Their appearances bear out the statement that often the participation of the conscious mind slows down the reaction time. It is an essential that the mind be almost or entirely dissociated from the patient, in fact "wool-gathering," for the diagnosis to be presented with such precipitance.

How to measure this skill must be left to others. Its use in a busy general practice is to focus attention on a patient who needs the most thorough investigation by oneself and, if the results are not conclusive, by the appropriate consultant.—I am, etc.,

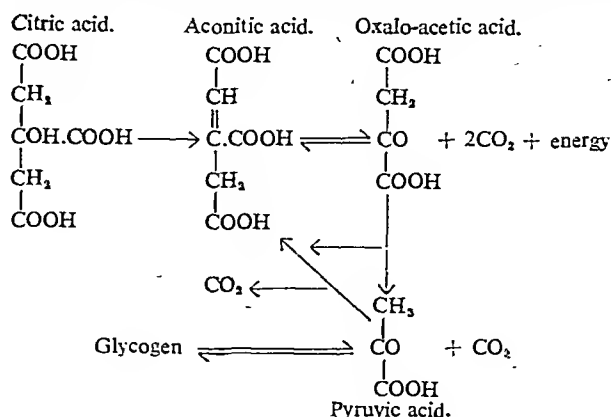
Hove, Sussex.

FRANK PORTAS.

Citrate in Urinary Infection

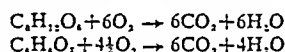
SIR,—Recent discussion on the use of citric acid drinks with sulphonamide therapy reminds me of the use of citrate in another sphere, whose full implication is not, I think, generally realized. Diabetics not infrequently suffer from a urinary tract infection and receive in consequence large doses of alkaline citrate. Now citrate is fully absorbed and fully utilized ("oxidized") in the body in a similar manner to carbohydrate. The method by which this occurs is, briefly, believed to be as follows: citric acid is converted to aconitic acid, which enters the "tricarboxylic acid cycle," and is converted through several stages to oxalo-acetic acid, losing two carbon atoms as carbon dioxide and releasing energy. Oxalo-acetic acid may be further decarboxylated to pyruvic acid, which may actually

be converted into glycogen, or which may condense with oxaloacetate, losing another carbon atom by decarboxylation in the process and re-forming aconitic acid, thus completing the cycle.

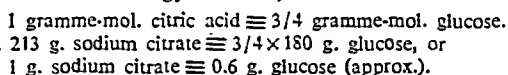


Now whether citrate is pictured as being converted into carbohydrate via pyruvate or as being fully oxidized in the tricarboxylic cycle is immaterial—the point being that all six carbon atoms in the citrate molecule are readily available for full utilization for the production of energy by complete oxidation, so replacing and "sparing" an approximately calculable amount of carbohydrate.

Now the two full oxidation equations for glucose and for citric acid are:



so that, taking the amount of oxygen consumed to be equivalent to the energy liberated, we have:



Assuming our patient to be getting the rather large dose of 60 gr. (4 g.) 4-hourly (which may well be needed for urinary alkalization), this means that he is having the equivalent of some 12 g. of extra sugar per day. Admittedly this is not very much when spread out over the day, but it should theoretically be taken into account in adjusting the dietary requirements of the diabetic.

This idea of the availability of citrate has other points of interest (at least in theory), such as the additional energy it presumably supplies to the ill febrile patient with anorexia who is being treated, for example, with sulphonamide, accompanied by the routine citrate; its theoretical action in checking a hypoglycaemic attack; the likelihood (on present theory) of its utilization in severe diabetics without insulin, in whom sugar is of no value.

I am very grateful to Dr. E. Baldwin, of Cambridge, for his help in regard to the biochemistry in this letter.—I am, etc.,

Wolverhampton.

W. P. U. JACKSON.

Pethidine in Labour

SIR,—I have read with interest Dr. J. H. P. Giff's letter (June 21, p. 901) stating that his experience shows the action of pethidine in labour to be unreliable. Dr. Giff does not state at what stage of labour he commences to use this drug, or any information regarding dosage, while I find that the time at which it is used is a most important factor in obtaining a successful result.

My experience with the drug, based on a very considerable and extensive usage over the past two and a half years, is the exact opposite to that of Dr. Giff: I have found the drug most reliable. The effects of pethidine in labour are helped by the previous administration early in labour (where the os is 1–2 fingers) of "seconal" 3 gr. (0.2 g.), though I have found that about 15% of patients vomit this unchanged, and I find, on short acquaintance, that "tuinal" is better.

Pethidine itself is administered hypodermically in doses of 100 mg. when the os is about 1/3 to 1/2 dilated, this dosage being repeated

if necessary hourly for three doses. If 300 mg. has no effect, I find it useless to administer more.

The administration at this stage does slow down labour for about 30-40 minutes, giving the mother rest and some sleep, after which the pains get stronger and labour is shortened, the mother being completely relaxed, and possibly asleep, between pains, but able to understand and co-operate during pains. It is worthy of note at this point that pethidine used in cases of "rigid cervix" exerts an effect which can only be described as dramatic. I have found that pethidine may safely be administered up to an hour before delivery with no adverse effects on mother or child, and after its birth, provided the cord is not cut until pulsation has ceased completely, there is no interference with the child's respiration and no cause for anxiety. If, however, it is necessary for the mother to have a general anaesthetic within this period, the induction of anaesthesia is prolonged owing to the maternal respiration being shallower than normal.

The administration of pethidine as outlined above eliminates in most patients the necessity for the Minnitt gas-and-air apparatus, which I find, even with a properly fitting individual facepiece, a most unsatisfactory and unsatisfying form of analgesia in about 55-60% of patients. In my experience pethidine used as above with premedication is eminently satisfactory in about 95% of patients and useless in the remaining 5%. There are occasionally nausea and even vomiting during administration late in the first stage, though this may be due to the onset of the second stage. There are no effects after parturition on either mother or child, and the maternal comments are most favourable and gratifying.—I am, etc.,

London, S.W.14.

A. B. WATERS.

Physical Therapy of Mental Disorder

SIR,—The recent correspondence on physical therapy in mental hospitals (June 14, pp. 861-2) has prompted me to draw to the attention of the profession a matter which, although serious and sinister in its implications, does not appear to be generally known among medical men who are unfamiliar with present-day mental hospital conditions. I refer to the increasingly common practice of inflicting on unwilling certified patients certain unnecessary and mutilating surgical procedures, particularly indiscriminate leucotomy and tooth-pulling, in a manner which is unpleasantly reminiscent of the practices of the Nazi concentration camps. The type of case in particular which I have in mind is the chronic psychotic patient under certificate in whom volition and ability to give or withhold consent are unimpaired by the disease present. In the course of several years' mental hospital experience I have seen a number of such unfortunates subjected against their will to procedures of the kind just described.

Such a practice, in my opinion, constitutes an inexcusable violation of fundamental human rights. It was pronounced to be a crime against humanity by the Nuremberg tribunal, a court composed of judges of the highest legal standing, and at the subsequent trials a number of German doctors convicted of such practices received the death sentence. The fact that the patient happens to be certified, and a form of consent is obtained from a "responsible relative," cannot, in my opinion, justify the forcible infliction of such operations on any human being; since, in my experience, the relatives of patients of the mental hospital class are as often as not even more lacking in insight and intelligence than the patient himself. In this connexion it is worthy of note that, in this as in all civilized democratic countries, even the convicted criminal is protected by law from such violation of his person.

Let it not be supposed for a moment that I am opposed to the use of physical therapy in mental disorders. My views on this subject were made clear in a previous letter in this *Journal* (May 31, p. 778). What I am opposed to is the abuses of such treatment just described, which in my opinion constitute an attack not on the problems of mental disorder but on the rights and liberties of the individual, and have contributed more than anything to bringing discredit on a new and promising form of therapy. I do not doubt for a moment that such practices are motivated by misguided therapeutic zeal rather than by wilful cruelty. Nevertheless, their sinister implication remains, and one can only conclude that they are only one more aspect of the insidious attack which is being made to-day from certain

quarters on individual rights and liberties. The German war-crime trials received sufficient publicity at the time to make a profound and shocking impression on the public conscience; yet their lesson and implications seem to have been only too speedily forgotten. Let us therefore take warning before it is too late. *Facilis descensus Averno*.—I am, etc.,

London, S.E.6.

G. TAYLEUR STOCKINGS.

SIR,—It appears that the important issue which your correspondence reflects is whether psychiatrists are going to take psychology seriously or whether they are instead going to side-step the body of analytical knowledge which has been accumulated. By confusing quick, dramatic (psychologically magical) effects with real results, they go some way at least towards disregarding the developments of the last fifty years or so. Beside this question the rest of the discussion is relatively unimportant, for if psychiatry really substituted magic for knowledge the long-term results would be disastrous to the cause of humanity.

At the present time, when most psychiatrists contrast physical therapy with psychotherapy, they are comparing a method which is familiar to them with one of which they can speak only as more or less talented amateurs. By this I mean that on the whole psychiatrists are untrained and unqualified psychotherapists (I hasten to add that there are a growing number of exceptions). It is not, however, their fault that they are untrained, since training is available only in certain regions of the country. But this should not blind us to the realities, which are very well illustrated by the assessment of results from physical methods of treatment. These are always couched in psychological terms which, to the analyst, are naive and unconvincing in the extreme. If psychiatrists unqualified as psychotherapists would openly state their lack of training or even tacitly admit it, then we should know that they are giving an untrained opinion, and we should be more tolerant of their inability to differentiate knowledge from speculation. As matters stand, there are almost bound to grow up two hostile camps in psychiatry.

As one who has seen nothing but a few bad results from physical methods of treatment, I regard myself as unqualified to make any statement about them which is not prejudiced. I will dare to say that I know more about medical and surgical methods than most psychiatrists know about psychotherapy, so that I am likely to treat these methods with the respect due to them. I invite psychiatrists to exercise a similar caution when discussing a subject they do not understand. Their lack of caution only induces feelings of disrespect and even contempt towards them, not only among our own profession but also among the better informed lay public, many of whom are able to understand the significance and value of psychotherapy in a realistic and objective way.—I am, etc.,

London, N.W.1.

MICHAEL FORDHAM.

SIR,—The letters on this subject in your columns are interesting and remarkable in displaying the prevalence of a lack of charity for the other fellow's point of view and so of an inability to understand and appreciate it. It is not surprising that the correspondence degenerates at times into an attack on mental hospitals, so that their liquidation is demanded by Dr. T. Gladstone (June 28, p. 942). Dr. Clifford Allen (p. 942) throws much light on the controversy by pointing out that practising psychiatrists for the most part see either psychotics or psychoneurotics according to the method of treatment they have become familiar with and, let us assume also, proficient in. Patients who have failed to respond to one line of treatment do tend to pass into the hands of practitioners of the other cult. There is thus a tendency for each other's failures to be seen, and a false conclusion may be readily drawn as a result.

A few of us have been fortunate enough to escape these unfortunate limitations in experience, and as medical director of an out-patient psychiatric and child guidance service and medical superintendent of a mental hospital I am responsible for providing for the needs of both groups of patients. I am associated with practitioners familiar with both lines of therapy and am in daily contact with patients undergoing both forms of treatment. Owing to the war our in-patient mental hospital side is still very greatly reduced in numbers, and although we have seriously considered leucotomy in some cases in no instance has

this been done. In this position I am convinced—at this stage I feel only personal testimony from those whose experience seems to justify its value can make a useful further contribution to this correspondence—that E.C.T. and insulin treatment have a definite sphere of usefulness as therapy at the present time and with our present knowledge.

One valuable point at least arises from the critics: effective steps must be taken to ensure that the distressing manifestations of the treatment—the sight of patients convulsed or unconscious, cry on induction, etc.—shall not be seen or heard by any other patients in the treatment unit. May I assure Dr. Allen that many of “those who use shock treatment” fully appreciate this need. From what he says it seems some still need convincing, but this is no argument against its employment with adequate precautions.—I am, etc.,

H. Albans.

W. J. T. KIMBER.

Calories and the Olympic Games

SIR,—Much, perhaps too much, has been spoken and written about our diet, and the general conclusion is that even for the ordinary person the average calorie intake is a good deal too low. Scientists, however, have had little to say regarding the necessary training diet for our athletes competing in international sport and who, next year, will be expected to uphold Britain in the Olympic Games. Yet it is clearly as unfair to expect them to compete successfully without proper feeding as it would have been to expect our Army to fight on an empty stomach.

Admittedly measurable energy used in sports is not as much as one would imagine, and an additional 500 to 700 calories could probably cover the most strenuous games (Deutsch and Lauf). But anyone who has run himself out in a mile race or played five sets of international lawn tennis or an hour's intensive squash will admit that it cannot be done without long and regular training, if the body is to be fit to fight again next day or even next week. Regular training means an intake of protein of not less than 100 g a day—the equivalent of a good steak—while Elmer Berry says that the optimum diet for an athlete includes 5 pints (2.8 l.) of milk, 8 eggs, and an ounce (28 g.) of butter a day; not to mention the oft forgotten 30 g. of salt which would stop both the cramp and a good deal of the lassitude of which our representatives at sport have recently complained.

Most foreign competitors in our sporting events are wise enough to bring their own fats and protein with them. The Australian lawn tennis team tell me they have 500 lb. (225 kg.); and of course they have had whatever they wanted to eat for many months. Whether the Government should give special allowances to Olympic and other representative athletes is, I suppose, a matter for debate; but the stomach cannot suddenly deal with increased food, and a long-term policy is the only one which would have any beneficial results. We fed our representatives specially in war: why not, one can argue, in peace? Certainly if we do not it must be a foregone conclusion that, however we may compare in technical skill with the rest of the world, we shall be unable to compete as regards stamina. That is a scientific fact that not only the public but many doctors, too, appear to miss.—I am, etc.,

London, W.1.

NEVIL LEYTON.

Penicillin for Osteomyelitis

SIR,—The development of an argument on the value of penicillin in the treatment of acute osteomyelitis is rather refreshing. The fact that time and energy are available for people to question the unquestionable implies a quiescence of the turmoil of war and a rest from the alarms of State service.

No experienced person in his or her senses could really question the value of penicillin in this condition. It has completely transformed the picture of acute osteomyelitis. Consequently I do not wish to detract in the slightest from the contribution by Mr. T. Twistington Higgins, Mr. Denis Browne, Dr. M. Bodian (May 31, p. 757), and it is unnecessary to elaborate their reply (June 28, p. 947) to Drs. J. Trueta and M. Agerholm (June 21, p. 899), which infers that nobody need take much notice of what the latter say. But I think it is reasonable to mention the importance of protecting long bones against stress. This precaution is most necessary about the end of the fourth

week, long after the temperature has subsided and healing of any wound or abscess has occurred. From that time to about the end of the seventh week decalcification necessarily resulting from the initial infection and necrosis reaches its peak, and reparative processes have not developed sufficiently to strengthen the weak part of the bone. I will not take up your space with details, but I have a vivid recollection of a child in the early days of penicillin who fractured her femur because her recovery was so spectacular that we failed to appreciate the importance of the zone of spotty decalcification.—I am, etc.,

Liverpool.

BRYAN MCFARLAND.

SIR,—We should like to change this correspondence from an argument to a constructive discussion of the best way of discovering how to obtain the fullest benefit from penicillin in acute osteomyelitis. It is clear that a number of centres working on the treatment of acute osteomyelitis with penicillin have come to different conclusions on the best method of treatment, and the variations are probably due to the relatively small number of cases which any group has treated. We suggest that the time has come for a committee to be formed to review the results so far obtained in the treatment of this disease, and to draw from the experiences of the several centres some general conclusions which could serve as a guidance for the future.

Such a committee might determine: (1) The best penicillin treatment in relation to the age of the patient, the infecting organism and its resistance to penicillin, the site of the lesion, the delay between onset of infection and the beginning of penicillin treatment. (2) The importance of the removal of pus and the best way of carrying this out. (3) The value of immobilization and the best means of deciding when it can be safely discontinued. In addition, a scheme for classifying the cases and a standardized method for recording results might be established so that different series could be readily compared.—We are, etc.,

Oxford.

J. TRUETA.
M. AGERHOLM.

Leprosy and its Problems

SIR,—Referring to the leading article on “Leprosy and its Problems” (June 7, p. 813), I note two rather serious mistakes in the last two paragraphs.

1. “Nodular leprosy may possibly prove intractable.” This is entirely the opposite of the trend of my article on sulphone treatment of leprosy on p. 798. There, under “Suitable Type of Case” is written: “It is the lepromatous or severe type of leprosy to which the sulphone treatment has been applied.” The lepromatous type is the modern nomenclature for nodular leprosy, and it is this type for which the sulphones are proving so very useful.

2. The number of lepers in the world is mentioned as two million, of whom 97.5% are Indian or African. This is quite contrary to the statistics which have been generally approved. In *Leprosy* (Rogers and Muir) a table is given on pp. 13–15 which calculates 3,291,000. It is said that this is probably an underestimate, and five million is as near as we can at present get to the true figure. Of the 3,291,000, one million are given as being in China, which would, I think, be quite contrary to 97.5% in India and Africa.—I am, etc.,

London, S.W.1.

E. MUIR.

State Medical Service in New Zealand

SIR,—It is good to read in your columns (June 14, p. 865) Sir Ernest Graham-Little's substantiation of the veracity of Mr. Porritt's injunctions against the State form of medical service in New Zealand. I have repeatedly denounced the present Health Act as the progeny of an unholy marriage of the Ministry of Health and a Party medical clique. I have pointed this out as fatal to any success both in meetings of the B.M.A. and the R.C.S. The only sure foundation for a completely comprehensive and satisfying health service rests on data only to be derived from the technicians of medical practice, whose life-long job is the conversion of disease to health. The problem is abstruse and intricate. Knowledge is doubly vital for an objective of such solemn import as the health of a nation. We alone are the informed section of the community and hold the key to successful planning. Every bit of medical wisdom needs

representing, and it is incumbent upon the authorities to seek evidence from all the best brains of the profession.

There should be set up at the instigation of the Ministry of Health a new medical planning commission whose members are chosen regardless of political views but acknowledged by their colleagues as fit spokesmen by reason of their professional knowledge, vision, and humanitarian spirit. This commission would deliberate while the present Act, shorn of its controversial features, is implemented as an interim measure, and while the country is getting on its feet again.

All of us should follow Sir Ernest's line, repeat this truth, and at least free our consciences of apparent acquiescence in the degradation of a great and noble profession and its work.—I am, etc.,

Bristol.

A. WILFRID ADAMS.

SIR,—The profession owe a great debt to Sir Ernest Graham-Little for the amount of work he has undertaken regarding the national medical service.

Sir William Fletcher Shaw (May 31, p. 782) does not agree with the conclusions of Mr. Porritt and suggests that conditions in N.Z. are satisfactory to the doctors but does not give the reason. The fact is that the general practitioner receives 7s. 6d. per visit or consultation, paid by the Government, and such additional fee as he likes to charge the patient, plus mileage for visit. The doctor in N.Z. is satisfied because he is receiving not a capitation fee but a flow of income as long as he is willing to sit in his consulting room and collect the signed claim forms.

There are few queues in N.Z. except for cigarettes and the doctors. The reason there is difficulty in obtaining the services of the doctor at night and week-ends is that he is worn out with excessive work; and again nobody in N.Z. works at night or week-ends. The forty-hour week has demoralized the whole community. You are lucky to get a plumber in a fortnight. These are the views of resident doctors in N.Z.

It is suggested by Sir William Fletcher Shaw that an increase in the number of doctors will solve the problem basically due to free treatment. Does he think the doctor will be on tap for 168 hours while the rest of the community are not allowed to work more than forty hours a week by law and any earnings at night or week-end are taken over in taxation. If the doctors in this country or N.Z. ever agree to a capitation fee they will end with a State medical service.—I am, etc.,

Beckenham, Kent.

A. E. BLACKBURN.

General Knowledge and General Practice

SIR,—Dr. D. N. Baron's hobby-horse is a common one; the clacketing of its hoofs rings in our ears from student days—not that we haven't bestraddled the beast ourselves, but we have learned not to ride side-saddle. Of Dr. Baron's basic premise (June 21, p. 902)—to wit, that the standard of culture among medical students (and doctors) is distressingly low—there can be no criticism. Of Dr. Baron's recommendations for improvement we say unblushingly they are not Good-enough. Culture is an attitude of mind. The cultured man is one who, as the result of many influences on his mental development, has learnt an instinctive habit of distinguishing the good, the true, and the beautiful from the bad, the false, and the ugly.

Has Dr. Baron asked himself why, with so little interest displayed by the university authorities, a number of students (including, we presume, Dr. Baron) managed to achieve such an outlook on life as he himself deems desirable? By the time the age of medical studentship is reached the seed is already sown. The opportunities for intellectual advancement are available for those who have the interest to seek them out, and if the demand were greater the university concerned would be forced to provide greater facilities. At the moment these are inadequate only in the sense that one feels a larger number of students should be making use of them.

Let Dr. Baron realize that the foundations of a cultured mind are laid much earlier than the time of the anatomy course. Let him recognize that the ability to discourse on existentialism is no more the mark of a cultured intellect than the accurate knowledge of the course and relations of the greater superficial petrosal nerve is the *sine qua non* of a general practitioner. His

plea should be for better schools and broader education brighter architecture and more opportunities for the mass of people to spend their leisure time in more beautiful buildings pursuing more intellectual hobbies than are normally found in the picture- or public-house.

We medicos are not a race apart. We are admittedly a uncouth lot, but like Garson Kanin's millionaire junkman we are "more couth" than the next man—on the average. "The great happiness of life is to be neither better nor worse than the general run of those you meet with." Dr. Baron wisely seeks to raise us all to his own high level, but does he consort only with doctors? And then to seek success by compulsion he will have us all crying with Faust:—

"Zounds, an I were at the strappado or all the racks in the world I would not on compulsion."

London, S.W.16.

DAVID L. KERR.

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- ¹ Kanin, G. (1946). *Born Yesterday*.
- ² Hazlitt, W. (1821). "On the Disadvantages of Intellectual Superiority" *Table Talk*.
- ³ Shakespeare, W. (1597). *King Henry IV*, Part I, Act ii, Scene 4.

POINTS FROM LETTERS

Physical Therapy of Mental Disorder

Dr. D. W. ABSE (Abergavenny) writes: Although the spirit in which Dr. Winnicott (May 17, p. 688) proceeds to deal with the subject is scientific, his argument is marred by the polemical use of analysis. After all, in psychotherapy the unconscious phantasies of the patient are engaged and the therapist assumes the magic mantle of Elijah no less than in physical treatment. Modern commerce is derived from systems of barter, and these replaced themselves by the unfolding of civilization. The modern physician has resulted from the magician's progress, as far as this has reached. To my mind the important aspect of the matter is that the physician should be conscious of the role he is assuming *vis-à-vis* the patient so that he may be able to heal more effectively. Nowhere is this more important than in shock therapy, and it is one reason (among others equally important) why the conception of "psychological shock" needs to be developed. It is to be remembered that there are those who regard the psychological factors which emerge during convulsion therapy as responsible for the changes wrought in the patient. This is only to say that these "factors" can be appreciated on a psychological plane. It is unlikely that they can be appreciated in terms of physiology any more than the onset and development of the mental disorders to which shock methods are habitually applied. . . . Shock methods of treatment are unpleasant for the patient, as anyone capable of making adequate psychological contact with the patient has to allow. They can sometimes drive the patient deeper into his psychosis, just as they can sometimes cause a remarkable emergence and reality-adjustment. It is a further complication that faulty judgments in regard to a patient's response to treatment easily arise. . . .

Choice of Specialist

Dr. G. C. PETHER (Colchester) writes: Dr. Eustace Shipman (June 14, p. 866) has touched on a matter which can be elaborated and is of fundamental importance. I think it will be admitted that the doctor-patient relationship as it now exists is able to give the patient, whose interests are paramount, a fair deal. This is at least true in private practice. If a patient or his relatives wish for another opinion they can get it. . . . Some years ago, when in a subordinate capacity in a hospital, my opinion was overridden because the superintendent considered that a specialist, who only saw the patient at intervals, could judge better than I. As a result of this an unnecessary operation was performed and the patient died. I do not suggest that in the Services this occurred more or less often than in civil life; yet in theory the colonel knew more than the major and the major more than the captain. . . . Where will the patient stand in a National Health Service? The doctor in his area will presumably be there as a result of "negative direction." The specialists from whom other opinions can be obtained, as also other G.P.s, will also be there by some similar process. Will the patient be able to choose a second opinion? . . .

Pruritus Ani as an Allergic Condition

Dr. E. M. FRAENKEL (London, W.) writes: I can confirm Dr. G. L. Davies's remarks (June 28, p. 950) to be correct in some cases of anal irritation in allergic patients, in whom it started when they used medicated toilet paper and stopped after discontinuing to do so. In my case of pruritus ani (June 7, p. 823), however, the toilet paper cannot be blamed, as the patient had used cotton-wool only for a long time due to the intensely painful irritation.

Obituary

WILLIAM GOUGH, F.R.C.S., F.R.C.O.G.

William Gough, formerly professor of gynaecology at Leeds University, died on June 29 at the age of 71. He was born in Leeds in 1876, and received his professional training in the Leeds school of medicine, where he was awarded the William Hey medal as the most distinguished student of his year. He took the London B.Sc. in 1895 and the M.B., B.S. in 1900. At the intermediate M.B. examination he won the gold medal in physiology and histology. In 1909 he became F.R.C.S., and on the establishment of the College of Obstetricians and Gynaecologists he was elected a foundation fellow.

After qualifying, he was Mayo Robson's house-surgeon, and acted for a period as private assistant to Lord Moynihan. He had to wait some time before an honorary hospital appointment became available, and in the meantime he engaged in general practice and also directed a laboratory of clinical pathology. He used to produce excellent histological preparations with the most primitive equipment and in an incredibly short time. He always maintained that these preliminary activities formed a most valuable foundation for his later special work. In 1909 William Gough was appointed to the staffs of the Leeds Maternity Hospital and the Leeds Hospital for Women. He became a lecturer in the University of Leeds and held the chair of gynaecology from 1929 to 1936. He gave much unassuming and painstaking service to the Royal College of Obstetricians and Gynaecologists as a member of the council and as vice-president. He was a loyal and enthusiastic member of the North of England Obstetrical and Gynaecological Society, and of the Gynaecological Visiting Society. He spoke little, and wrote less, so he was little known outside the circle of his immediate colleagues and pupils. Here, however, his influence was deeply felt, and it was invariably characterized by decency and generosity.

He readily gained the trust and confidence of his patients, for they at once recognized, and rightly so, that in his hands they would receive the best possible treatment. As an operator he was ambidextrous, using the scalpel with either hand but the left for preference. There was nothing spectacular about his methods. He did not give the impression of being a "brilliant" operator, but every operation he performed seemed to be done simply and swiftly. This speed was not gained by the sacrifice of any essential detail of technique.

His many activities in hospital work, teaching, and an extensive private practice were sufficient at times to strain even his exceptional capacity for work, but he was never flurried, never worried, and never lost his temper. His family life was singularly happy. The tragic death of his elder son, a young man of great promise, must have been a terrible blow to him, but it was borne with wonderful fortitude. He is survived by a widow, one son, and four daughters.—A.G.

CHARLES PHILIP BRENTNALL, M.C., M.B., F.R.C.O.G.

Charles Philip Brentnall died in Manchester on June 26 at the age of 56. Son of the Rev. Edward Brentnall, he received his early education at St. Paul's School, London, and the Manchester Grammar School, and then, having gained the Dreschfeld Scholarship, proceeded to Manchester University to study medicine. When he was in his second year his father moved to a living in West Lancashire, so Brentnall transferred to Liverpool University. There he had an unusually brilliant career, gaining distinction in the M.B. examinations in anatomy, pharmacology, and pathology, and also winning the Gee Prize.

He qualified in 1915 and, after holding the post of house-surgeon to the Liverpool Northern Hospital, joined the R.A.M.C. He served in the field in Gallipoli, Palestine, and France, rose to the rank of major, and was awarded the Military Cross. After the war he returned for a time to work in Liverpool and was then appointed as a resident to the hospital which he served for the rest of his life—St. Mary's, Manchester. At St. Mary's, he was successively house-surgeon, resident obstetric officer, resident surgical officer, and registrar, and he was elected to the honorary staff in 1923.

Brentnall's work as a gynaecologist was typical of the man. His approach to any problem was a quiet one, and his methods were gentle. In consequence his surgical results were outstandingly good, and his technique served as a model for his juniors. As was only to be expected, he built up a large consulting practice, and his services were in demand over a wide area. His appointments outside Manchester included those of honorary obstetrician to the Stretford Memorial Hospital and honorary consulting gynaecologist to Warrington Infirmary. A foundation member of the College of Obstetricians and Gynaecologists, he served on the council for six years, being raised to the fellowship in 1938. He was also a member of the Gynaecological Club.

Brentnall's contributions to gynaecological literature were made largely in the form of communications to the North of England Obstetrical Society, of which he was a fellow. At its meetings he could always be counted upon to add something of interest to a debate or to give a word of encouragement to a junior member. It was indeed tragic that shortly after his election as president he should be stricken by the illness from which he eventually died.

In his private life Brentnall was singularly fortunate, and he was never so happy as when, in his own home, he could enjoy the companionship of his family and friends. He leaves a widow, a daughter, and a son who is studying medicine.

Medico-Legal

DESCRIPTION OF A CHEMIST

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

A recent case concerning a chemist turned on the description of premises where no qualified chemist is in charge. Under the Pharmacy and Poisons Act, 1933, it is unlawful for a person to use a description in connexion with the business reasonably calculated to suggest that he or anyone employed in the business possesses any qualification with respect to the selling, dispensing, or compounding of drugs or poisons other than the qualification which he in fact possesses. A registered qualified chemist and druggist named Mr. Spink owned eleven chemists' shops. Qualified assistants were in control at ten of these, but none was available for the eleventh. This shop, like the others, was carried on under the name of "Spink's, the Chemist," but it had a placard in the window stating that owing to war circumstances there was no qualified assistant in charge of the shop and medicines could not be dispensed. An inspector of the Pharmaceutical Society bought glycerin and rose-water in a bottle labelled "Spink's, Chemist," and the society prosecuted Mr. Spink for a breach of the Act. The justices dismissed the case, and the Society appealed.¹

The High Court upheld the justices. Lord Goddard, Chief Justice, refused to read the Act as though it said, not "he or anyone employed in the business" but "he or any person in control of premises where the business is carried on." He also pointed out that, whereas the Act says that the word "pharmacy" in a description is to be deemed to be reasonably calculated to suggest that the owner of the business and the person in control are registered pharmacists, yet there is no such prohibition of the use of the word "chemist." His Lordship thought that the title complained of meant only "This is a shop belonging to Mr. Spink, who is a chemist." The word "chemist" over the shop, taken together with the placard, was not reasonably calculated to suggest that the person in charge had a qualification which in fact he had not. Mr. Justice Atkinson and Mr. Justice Oliver agreed.

¹ *Dentley v. Spink* (1947) 1 All E.R. 835.

The Minister of Labour and National Service has formulated new Regulations (H.M.S.O., price 6d.) in the light of the report of the Dust-Tile Committee, published in 1943, and of recommendations made by the National Council of the Pottery Industry in 1945. Conferences for examining the Regulations will probably be held in the autumn.

Medical Notes in Parliament

FOOD AND HEALTH

On July 1, on the estimates for the Ministry of Food, Mr. J. S. C. REID opened the debate with a reference to the statement of the previous day by Mr. Dalton indicating coming reductions in imports. Mr. Reid said he had yet to see any survey which showed that the majority of the people of this country who did not have access to canteens and restaurants consumed more than 2,400 calories a day. Calories told only half the story. Otherwise bread and water would be a good diet. Weight for weight there were more calories in bread than in stewed steak and twice as many calories in sausages as there were in chicken. Weight for weight stout had more calories than smoked herring.

Mr. STRACHEY said the average number of calories consumed per head per day at the moment by the people of this country was between 2,880 and 2,890. The figure of 2,325 which had been adduced by Col. Walter Elliot was what the national figure would be if no one in the country consumed any food in catering establishments and if some types of rationed foods under the personal points scheme were disregarded. Using this completely false figure Col. Elliot alleged that the nation was gravely undernourished, and his less cautious supporters alleged that it was starving to death. The figure of 2,325 came from the National Food Survey for the first quarter of 1947. The comparable figure in 1941 was 2,360, in 1942 it was 2,253, and in 1943 it was 2,315. If the nation was slowly starving to-day it was starving a little more quickly while Lord Woolton was in office. He did not suggest that 2,890 was a highly satisfactory level, but it was a good level in comparison with previous periods. The Government aimed to put the whole population of the country upon a higher level. To-day the difference of intake among individuals was largely according to need instead of according to class. There was comparatively little difference in the intake of the different wage groups.

Mr. BAKER WHITE pointed out that 84% of the meals eaten in this country were eaten in the homes and only 13% in catering establishments. National supplies of fruits including tomatoes and pulses were more than 20% below pre-war levels, but supplies of vegetables were about 10% above pre-war, and potato supplies had increased to about 64% above the pre-war level.

Mr. MICHAEL FOOT said tests by experts in this and other countries proved that the infantile mortality rate and the maternal mortality rate gave a proper indication of nutritional standards. In England during 1936 the infantile mortality rate was 62 per thousand. To-day, under Mr. Strachey, it was 46 per thousand and still going down. The same was true of the maternal mortality rate, which was the lowest on record. By comparison with pre-war days the height and strength of children in this country were greater. In Plymouth children born and brought up in the "blitz" were healthier, stronger, and better than any children ever born in this country before.

Mr. WILFRID ROBERTS said he had obtained the article by Dr. Bicknell entitled "Dying England." It was first-class political propaganda with opinions on statistics, political economy, and agriculture, on the last of which Dr. Bicknell quoted what seemed to him, Mr. Roberts, to be quacks.

Mrs. AYRTON-GOULD said Dr. Bicknell knew nothing about the unemployed and nothing about food. Before the war half the population of Britain spent from 4s. to 8s. a week on food and 50% of the population had an average of 2½ oz. of butter a week, whereas the nation was now getting 3 oz. per week per head and everyone was able to buy it. The same 50% had 3 oz. of margarine a week, which was the same as the present ration. The 1s. 2d. worth of meat which the nation now bought weekly was far above the amount the average person could afford to buy before the war. The consumption of milk to-day was 50% more than before the war. The excess went in the welfare services and to the people who needed it most. All ordinary housewives were able to buy 2½ pints a week, which, according to Sir John Orr, was the average milk consumption before the war. That was why the health of the population was much improved. Deaths from tuberculosis in England and Wales in 1935 numbered 29,201. The population had increased in the subsequent ten years, but the figure for 1945 was 23,955. People who talked about the nation being ill-fed talked absolute nonsense. The nation was being well fed, though monotonously fed.

More Milk

Lady GRANT said the nation was consuming 30% more milk at the expense of butter and cheese and processed milk. She

quoted figures from a review in 1937 by Sir William Crawford. They concerned the group with incomes below 48s. per week. In 1937 these people consumed on an average 26.8 oz. of meat per week while the nation now consumed 16.2 oz. per head. They then consumed 3.6 oz. of bacon whereas the ration was now 2 oz. In fats they consumed in 1937 10.2 oz., while the ration was now 7 oz. Since 1945 there had been cuts in several vital rations while more goods had been based on points. The nation was consuming more starchy products, and who would say these products were a good substitute for fats or proteins? The result of the lack of quality in the diet was having a great effect on the people's will to work and brought chronic fatigue with many minor ailments which were not notifiable, such as general debility and gastritis.

Dr. HADEN GUEST asked how the Government was going to fortify the health of the people and give them extra resistance in the event of the next winter being as bad as the last. The difficulties at present were not due to food, which was extremely good, but to the fact that all were suffering from the results of war strain. He thought there should be an extension of food for certain classes of heavy workers, including miners. Much could be done by ensuring that all the children entitled to priority milk actually received it. He believed that they did so in the towns. He hoped that the priority supply of eggs to children up to the age of 2 years could be extended to the age of 5, 6, or 7. Extra proteins for heavy workers, particularly miners, would help. He suggested that the Government should secure an increased supply of rice from Siam at an early date and said it was important that strong action should be taken to prevent the destruction by the Japanese of the world's supply of whales. Although he did not now practise, he recognized the enormous improvement in health at present compared with the condition of things after the 1914-18 war. The condition of the children on the continent of Europe in 1919 was appalling. One reason for considering that this country and the world were in a better state than at the end of the 1914-18 war was that there had not been anywhere in the world any large-scale post-war epidemic. With the exception of the U.S.A. and Canada every single country had a lower standard of food than Britain had at present and the general condition of the people was not as good as it was here. That was true everywhere, in Europe and in the East. Child health statistics, maternal health statistics, and the general health and vigour of the country showed that we were better fed now than in the inter-war period.

Dr. BARNET STROSS said that the world to-day was short of one million tons of grain and had 10% less sugar than before the war. Europe was short of meat by 40%, and the rest of the world by 10%. The world population had increased since 1938 by 5 to 10%. If the diminution in British meat supplies was 9%, then we had not done badly. They knew that between 1913 and 1934 the health of the people improved dramatically, in association with an increase in consumption of leafy green vegetables and fruit by 75% and of dairy produce by 50%. Expectation of life increased by 7 years; the death rate of infants dropped from 100 to 57; the tuberculosis rate was halved; and the children became taller, healthier, and stronger. The change continued throughout the war and to-day. The reason was that everyone had been compelled to eat less animal protein, and therefore ate much more summer fruit and leafy green vegetables. They consumed more liquid milk, and the quality of the fats was better; the vitaminization of margarine gave great protection. The better quality of bread and the fact that the nation ate more potatoes, which contained ascorbic acid, meant that the diet was healthier even though it was not fuller and was more monotonous.

Fewer Calories

Col. ELLIOT said everyone in the House feared that the standard of living in this country was in jeopardy. Prof. Marrack had said it was unfortunate that Government spokesmen continued to claim that the average calories per head per day were in the neighbourhood of 2,900. He declared that surveys of the Ministry of Food made on representative families showed that the average per head ranged from 2,300 to 2,400. Meals taken outside could not raise the total to more than 2,650. Drs. Bransby and Magee, of the Ministry of Health (B.M.J., April 19, p. 525), pointed out that classes such as farm workers, quarrymen, and lumbermen who could not get access to canteens would require, in addition to their special allowances, to eat up to 14 lb. of potatoes per week. Miners not in receipt of canteen facilities would require to eat 10½ lb. of potatoes per week or else to draw on the family pool by consuming other people's rations. The document "Food Consumption Levels" showed that about 2,800 calories per head was necessary to have an intake actually eaten of 2,500 calories per day. Yet the document further said that at

,700 calories the diet would be too low. The nation was living on a very narrow margin. Nevertheless it was true that in the main the health records had been excellent and the general condition of the country had greatly improved. The energy output figures made a different picture. They seemed to indicate that at present full employment was not practicable in the condition of nutrition of the people and that any reduction in the intake would lead the country into great danger. Tuberculosis figures did not bear the favourable interpretation put upon them. The death rate per million in England and Wales since 1939 was in no case as low as before the war and the notifications had gone up from 37,000 in 1938 to 42,000 in 1945. In Scotland the figures of deaths per million from tuberculosis were 520 in 1938 and 640 in 1946. Notifications in Scotland were 4,790 in 1938 and 7,500 in 1946.

Dr. STEPHEN TAYLOR pointed out that mass radiology had been introduced during the war with an increase in the notifications.

Col. ELLIOT said the nation was working on a too narrow surplus of energy intake over energy output. Its general health was good, but it found itself in difficulty in putting out a long and sustained effort such as the Government called for. Many sources of our food were in peril. The yield of fish was beginning to fall off, as happened after the first world war.

Dr. EDITH SUMMERSKILL said that the nation was adequately fed although the present diet left much to be desired in variety. She would not go into the question of calories except to quote Sir Wilson Jameson, who, in the Ministry of Health Report for the year ended March 31, 1946, which had been published seven weeks ago, said that as far as clinical surveys of the state of nutrition of groups of the population and the heights and weights of children were reliable the nutrition of the population generally remained good. Children in 1945 were of better physique than corresponding children in 1940 or before the war. She had just received figures for Scotland which showed that in 1938 the infant mortality in that country was 70 per 1,000, in 1944 65 per 1,000, and in 1946 53.8. The figures for neonatal mortality were 35 in 1938, 32.8 in 1944, and 29.2 in 1946. The maternal death rate figures were 4.9 in 1938, 3 in 1944, and 2.2 in 1946. In 1938 deaths from tuberculosis in Scotland were 69 per 100,000 population, in 1944 they were 82, and in 1946 they were 79.

Col. ELLIOT said he had quoted figures for deaths from respiratory tuberculosis.

Dr. SUMMERSKILL said pulmonary and non-pulmonary tuberculosis should be feared equally.

A motion to reduce the estimate was defeated by 278 to 113.

Medical Members of Executive Councils

Mr. HASTINGS, on June 26, asked the Minister of Health whether, in selecting representatives of the medical profession for the local executive councils under the new Health Act, he asked for nominations from the medical committees in the various areas, and whether he knew that in not a few of these areas medical committees were elected in 1938 and there had been no election since.

Mr. BEVAN replied that appointments of medical members to Executive Councils were made by the Local Medical Committees and not by the Minister. He knew that in most areas there had not been elections for Panel Committees since 1939. Therefore his recognition of Local Medical Committees for the new Service had been provisional.

Northern Ireland Bill

When the House of Commons on June 27 was in committee on the Northern Ireland Bill, debate arose on Clause 4, which empowers the Northern Ireland Government to provide health services. Mr. MULVEY moved a proviso that wherever the associations of a voluntary hospital linked it with a religious denomination, all attention should be paid to preserve the character and associations of the hospital in the general management and in making appointments to the board of management. The proposed amendment further provided that all endowments of such hospitals should remain their property. Mr. Mulvey pointed to a similar provision in the National Health Service (Scotland) Act, Section 60. Mr. GAGE said that a hospital in Belfast which derived strength from its religious links was one of the best hospitals in that city.

Mr. EDE said he understood that the Northern Ireland Government decided to follow Section 61 of the English Act, which incorporated the principle of the first proviso. Parliament had refused to insert the principle of the second proviso in either the English or the Scottish Bill.

Mr. Mulvey withdrew his amendment.

The Report stage was concluded and the Bill was read a third time.

Typhoid at Bombay

Mr. PHILIP NOEL-BAKER stated on July 2 that in 1946 there were 32 cases of typhoid at Worli camp, Bombay; this year there had been 11 cases. In 1946 one man died; on grounds of conscience he had refused inoculation. As soon as the water supply was found to be infected all drinking water was chlorinated in mobile tanks. New mains were installed last December. Analysis had shown that the water was now free from all infection, but as an additional precaution the mobile tanks were still in use.

Voluntary Funds

Asked on July 3 by Mr. SPARKES to state his attitude toward the continuance of such voluntary efforts as fêtes, bazaars, and sales of work for the benefit of particular hospitals, Mr. BEVAN said the governing bodies would have power to receive and hold voluntary funds from any source independently. No charges could be made on patients for any part of the service except those specifically mentioned in the Act or Regulations. Each of the hospitals could raise funds for additional purposes such as welfare. During the Committee and Report stages of the Bill he had made it clear that hospital committees could themselves organize voluntary funds under the new arrangement. These funds would in no way diminish the revenue provided by the State.

Signing of Death Certificates

Mr. SPARKES asked on July 3 what precautions were taken to secure that the cause of death certified upon a death certificate was correct; and, in view of the evidence at the recent coroner's trial at Southport, what steps Mr. Bevan proposed to take to ensure that death should not be certified from wrong or false causes. Wing-Commander HULBERT inquired if Mr. Bevan was aware that the law now permitted medical practitioners to issue death certificates in respect of near relatives, and if he proposed to introduce legislation to amend this practice.

Answering both questions, Mr. BEVAN said that the position under the Births and Deaths Registration Acts and Regulations was that a registered medical practitioner who was otherwise competent in the circumstances of the particular case to give a certificate of the cause of death was not precluded from doing so by reason of relationship to the deceased. It was not open to the registrar of births and deaths to reject a certificate on that ground. The duties of the registrar included the duty to report to the coroner, before registration, deaths in specified categories, including any which he had reason to believe to be unnatural or accidental, or attended by suspicious circumstances, or the cause of which appeared to be unknown. Mr. Bevan added that at present he did not contemplate amending legislation on any of these matters. He had no comment to make on the circumstances of a recent case at Southport and would not derive a general conclusion from that particular instance.

Mr. HECTOR HUGHES suggested that death certificates should be countersigned by an independent practitioner. Mr. Bevan repeated that he did not contemplate any amendment of the law at present.

Nurses.—On Jan. 1, 1946, the number of State registered and enrolled assistant nurses in Scotland was 17,767. On May 31, 1947, the number was 20,858. The numbers of women who became student nurses in Scottish hospitals during 1945, 1946, and the first five months of 1947 are estimated as 2,500, 3,200, and 1,300.

The Deaf Blind.—All blind-welfare authorities provide for the visitation and instruction of deaf-blind persons by home teachers.

The Services

The Air Force Cross has been awarded to Acting Wing-Commander R. Maycock, R.A.F.

The following appointments and mentions in dispatches in recognition of gallant and distinguished services in the Netherlands East Indies prior to Nov. 30, 1946, are announced:

O.B.E. (Military Division): Miss Perin K. Mullaferoze, F.R.C.S., Lieut.-Col. (temporary); Lieut.-Col. (temporary) S. L. Rikbye, M.B.E., I.M.S.

M.B.E. (Military Division): Captain (temporary) Lal Chand, I.A.M.C.

Mentions in Dispatches: Brigadier (temporary) G. S. Douglas, late R.A.M.C.; Lieut.-Cols. (temporary) B. Blewitt and V. J. Keating, R.A.M.C.; Capt. H. Foster, R.A.M.C.; Lieut.-Col. (temporary) G. Ahmed, I.A.M.C.; Majors (temporary) K. R. Rama Rao and M. R. K. Siddique, I.A.M.C.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 21.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947					1946 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	39	4	18	—	1	51	3	26	2	—
Deaths		1	1							
Diphtheria	220	24	41	24	8	274	20	99	32	12
Deaths	2	1	3	—	—	2	—	1	1	—
Dysentery	47	5	19	—	1	93	8	36	—	—
Deaths										
Encephalitis lethargica, acute	2	—	1	—	—	2	—	—	—	—
Deaths		1								
Erysipelas			25	14	2			35	10	2
Deaths										
Infective enteritis or diarrhoea under 2 years										
Deaths	78	1	17	39	2	49	5	13	50	1
				6					8	
Measles*	10,632	637	117	149	26	4,516	977	540	27	10
Deaths	7	1	—	2	—	4	2	1	—	—
Ophthalmia neonatorum	64	1	14	—	2	57	9	26	—	—
Deaths										
Paratyphoid fever ..	11	—	—	—	—	1	—	—	—	—
Deaths										
Pneumonia, influenzal ..	328	26	1	1	2	496	25	3	2	1
Deaths (from influenza)† ..	1	—	1	—	—	7	—	1	—	—
Pneumonia, primary ..			189	17				173	16	
Deaths		18		6	4		26		7	6
Polio-encephalitis, acute ..	2	1				1	—			
Deaths										
Poliomyelitis, acute ..	44	2	2	2	1	13	—	1	3	—
Deaths										
Puerperal fever		2	14	—	—			13	—	—
Deaths										
Puerperal pyrexia‡ ..	121	8	4	—	—	137	13	14	1	—
Deaths		1								
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths										
Scarlet fever	870	82	120	25	35	941	77	173	25	15
Deaths	1	1	—	—	—	—	—	—	—	—
Smallpox	7	—	—	—	—	—	—	—	—	—
Deaths										
Typhoid fever	7	—	1	5	—	4	—	1	2	—
Deaths										
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths										
Whooping-cough* ..	2,107	276	87	54	15	2,026	142	89	36	34
Deaths	13	3	2	—	1	4	—	2	2	—
Deaths (0-1 year) ..	420	38	73	25	15	365	51	55	30	20
Infant mortality rate (per 1,000 live births) ..										
Deaths (excluding stillbirths) ..	4,089	626	583	192	111	4,129	625	559	143	110
Annual death rate (per 1,000 persons living) ..			12.1	12.1				12.3	9.2	
Live births	9,630	1499	1225	498	304	9,672	1536	1054	410	266
Annual rate per 1,000 persons living ..			24.7	31.4				21.2	26.3	
Stillbirths	258	25	32			261	38	34		
Rate per 1,000 total births (including stillborn) ..			25					31		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Smallpox

At Barnsley, after an interval of four weeks, the sixteenth case was detected and removed to hospital on June 30. The diagnosis has been confirmed by the recovery of variola virus on egg culture. The patient is a woman aged 62, vaccinated in infancy and during the 1914-18 war. She is suffering from a modified attack which began on June 24. A discrete rash appeared on June 28. The source of infection is at present undetermined.

At Bilston a schoolboy aged 10 was removed on July 2 on suspicion. A rash had appeared on the previous day. He had been vaccinated on June 23. Confirmation of diagnosis is not yet available.

Poliomyelitis

Notifications for the week ending June 28 show a further increase to 56, compared with 44 in the previous week and 8 in the corresponding week of 1946. The disease is widely scattered over the country, some three dozen sanitary districts being involved.

Polio-encephalitis

Polio-encephalitis notifications have also jumped to 11 from an average of 2 to 3 a week. It is not yet known whether this rise is merely a reflection of the incidence of poliomyelitis or whether there is in fact a prevalence of encephalomyelitis and encephalomeningitis distinguishable from anterior poliomyelitis and resembling the series of cases described by Jennings (*Lancet*, 1947, 1, 471). An increase in cerebrospinal fever notifications to 57 may have some significance in this connexion.

Notification of Puerperal Fever to Cease in London

The London County Council is proposing to promote legislation next session to provide that puerperal fever shall cease to be a notifiable infectious disease and a dangerous infectious disease for the purpose of the Public Health (London) Act, 1936. In the provinces puerperal fever was notifiable up to September, 1937, under the Infectious Diseases (Notification) Acts, but these were repealed by the Public Health Act, 1936, and the disease was omitted from the list of notifiable diseases in section 343 of that Act. Puerperal pyrexia is notifiable in London under Regulations issued in 1926 and 1928 by the Ministry of Health, and in the provinces under Regulations issued in 1939, which, except in London, replaced the earlier ones. The Regulations are difficult to understand, and the statistics obtained on the present basis have been found valueless. As the separate notification of puerperal fever in London is not found to serve any useful purpose, it is considered that the Public Health (London) Act should be amended by the removal of puerperal fever from the list of notifiable infectious diseases and also from the list of dangerous infectious diseases. This will leave puerperal pyrexia to be dealt with solely by Regulations of the Minister under the Public Health Act, 1936, and by orders of the L.C.C. and the sanitary authorities under the London Act.

Discussion of Table

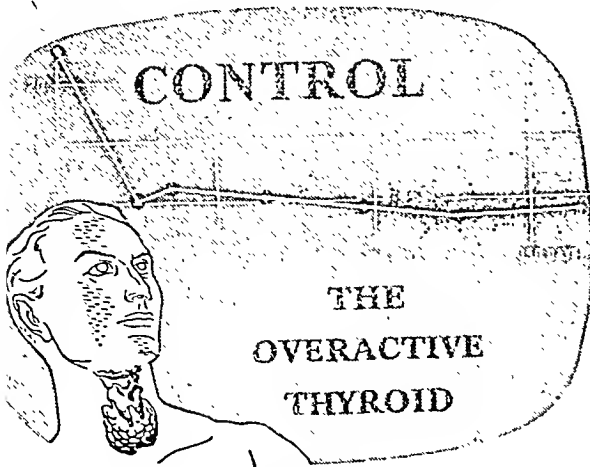
In England and Wales there was an increased incidence of whooping-cough 45, scarlet fever 37, diphtheria 25, while a decrease was reported for measles 164 and acute pneumonia 52.

The returns for scarlet fever and whooping-cough for local areas showed only small variations from the total notifications of the preceding week. The only large fluctuation in the local incidence of diphtheria was an increase of 25 in Lancashire, these cases being dispersed throughout the county and not due to a localized outbreak. The downward trend in the notifications of measles ceased in several counties, the largest increases being London 122, Glamorganshire 107, Sussex 104; the only large decreases were Yorkshire West Riding 432 and Surrey 130.

Although the total number of notifications of dysentery were practically unchanged, the cases were more widely dispersed. The 47 cases were notified in 21 counties—compared with 48 notifications from 14 counties in the preceding week. All the cases of smallpox notified were from Bilston U.D., Staffs. There were 44 cases of poliomyelitis—an increase of 13 on the high level of the preceding week—involving 21 counties. The only area with a number of cases was Barrow-in-Furness C.B., Lancs, where 5 cases were notified.

In Scotland there was an increase in the notifications of acute primary pneumonia 60, and scarlet fever 24, while decreases were recorded for measles 34, whooping-cough 21, dysentery 20, and cerebrospinal fever 8.

In Northern Ireland the chief features of the returns were increased incidence of measles 10, scarlet fever 5, and diphtheria 4. Six cases of typhoid fever have been notified in Belfast up to June 26.



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In Eire notifications of diphtheria increased by 9, while those of diarrhoea and enteritis fell by 8. The 24 cases of diphtheria are mainly isolated cases and involved 18 registration areas.

Week Ending June 28

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 947, whooping-cough 052, diphtheria 182, measles 9,377, acute pneumonia 342, rebrsopinal fever 57, acute poliomyelitis 56, dysentery 66, nallpox 2, paratyphoid 10, typhoid 10.

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he following candidates have been approved at the examinations dicated:

M.D.—S. B. Rampling.
FINAL M.B., Ch.B.—Barbara Anderson, Margaret Bagshaw, Mary L. Barrett, J. Bengier, J. I. Bentley, P. Brooks, D. L. Chadwick, Elizabeth H. Clow, Sheila A. ostello, P. J. Croxford, L. Dawson, J. Dubberley, R. D. P. Eaton, G. Fairclough, Feingold, J. R. C. Flett, P. D. Fowler, S. F. Gilbert, Ruth Goodier, B. oodman, K. S. Holt, Christine M. Hope, Thelma B. Hoyle, A. K. Kartoot, P. Keirby, N. P. Lancaster, W. Lees, D. C. Lindars, *Muriel Lister, G. P. ave, H. G. Lowe, V. T. Mason, J. G. Mathie, H. L. Matthews, I. O. Miller, N. L. Mulliner, A. Murphy, J. Nagington, J. A. Nightingale, L. M. Norburn, Rimington, S. L. Royce, Margaret E. R. Stoneman, D. B. Stott, C. H. ompson, J. T. L. Unsworth, G. W. Waters, *Letitia E. Woodvine. *Part I—rensic Medicine and Hygiene and Preventive Medicine*: Barbara Anderson, argaret Armistead, Doreen M. Ashworth, Beryl G. R. Atwood, H. de C. Baker, M. Bernstein, F. B. Bewick, Margery F. Blumberg, Joan Bolton, P. H. racewell, A. Braddock, A. B. Bradshaw, M. A. Brennan, Dorothy E. N. Briggs, Broadhurst, R. W. Buckley, F. Connor, Nancy M. Crosslett, J. L. Cotton, G. Cottrell, J. A. L. Derlien, M. Fasnacht, H. G. Fleetwood, D. L. Fox, B. Gill, arbara Hall, Barbara C. Hanson, B. Hendy, D. D. Hilton, Constance M. orrocks, Muriel M. Hughes, J. D. Hunt, H. Jackson, Jean Kershaw, Alexandra J. iman, Freda W. Lunt, C. A. Mays, Winifred J. Millar, S. Panikkar, K. M. earce, Dorothy Pearson, S. D. Pratt, K. Rawnsley, Regina Reif, Patricia Rhodes, R. Riley, Jean M. Sheldon, Beatrice E. Sleigh, L. Smith, P. J. D. Snow, A. Steele, B. Stone, Ruth Tattersall, D. B. S. Taylor, I. G. Taylor, R. M. aylor, Helen L. S. Tennent, W. L. Tonge, J. B. D. Tarr, K. Tuxford, J. D. illiers, D. L. Watson, H. Weisl, Doreen Wilkinson, J. L. Wilkinson, B. L. illiams.

* With second-class honours. † Awarded distinction in obstetrics.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—*Part II*: H. A. Cole, R. Cotter, C. Cunningham, S. Falk, I. McD. Kerr, M. G. McColl. *Part I*: C. L. Casimir, Gostynski, R. W. Lennon, Helen E. Smith.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following medical degrees were conferred on July 2:

M.D.—W. P. Griffin, P. Jakbovitz, H. D. McGorry, L. L. Nel, A. E. B. de ourcy Wheeler.
M.Ch.—G. E. Nevill.
M.B., B.Ch., B.A.O.—H. A. Adams, A. D. H. Browne, C. R. Deuchar, Marion Gaston, M. V. Graham, E. R. Haynes, Evelyn M. Holberton, Monica A. Jackson, A. J. E. Kilpatrick, F. Kirkpatrick, G. B. Leitch, E. A. McColl, J. M. McCormick, R. M. Peet, Marjory A. Pollock, M. S. Strong, Elisabeth M. Vann, Ruth R. Watson, J. L. Wilkinson, I. Wilson.

UNIVERSITY OF GLASGOW

ames Norman Davidson, M.D., D.Sc., professor of biochemistry a the University of London, has been appointed to the Gardiner Chair of Physiological Chemistry in the University of Glasgow, in succession to Prof. G. M. Wishart.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ELECTION TO THE COUNCIL

On July 3 Mr. R. J. McNeill Love was re-elected and Mr. A. Lawrence Abel and Mr. J. B. Oldham were elected members of the Council of the College. In addition Sir James Walton received the requisite number of votes but is prevented by the terms of the 1947 Charter from taking his seat on the Council as he has already served for sixteen years. There will, therefore, be a vacancy until he next election. The Fellows elected were:

	Votes
Robert John McNeill Love (Royal Northern) ..	839
Sir James Walton (London) ..	835
Arthur Lawrence Abel (Princess Beatrice) ..	637
James Bagot Oldham (Royal Liverpool United) ..	629

The following were the other candidates:

Arthur Dickson Wright (St. Mary's) ..	609
Hubert Wallace Symons (General Infirmary at Leeds) ..	557
Harold Clifford Edwards (King's College) ..	478
Louis Carnac Rivett (Middlesex) ..	356
Marriott Fawcner Nicholls (St. George's) ..	277

In all 1,563 Fellows voted: in addition six votes were found to be invalid.

Medical News

The Association of Surgeons

The Association of Surgeons of Great Britain and Ireland held its annual dinner in the Hall of Christ Church, Oxford, on July 3 with the President, Sir Hugh Cairns, in the chair. Prof. Geoffrey Jefferson, F.R.S., proposing the toast of the Association, quoted Southey and Spratt as witnesses against the volubility of those who make public utterances. In referring appreciatively to some of the early members of the Association of Surgeons, he said that a man who was incapable of worshipping heroes was lacking in one of the great qualities of the human spirit. Those who with Moynihan had started the Travelling Surgical Club had as one of their aims the breaking down of the jealousy unfortunately characteristic of surgeons in some other countries. Prof. Jefferson coupled the toast with the name of the President. In response Sir Hugh Cairns gratefully acknowledged the hard work done by the Hon. Secretary of the Association, Mr. H. W. S. Wright, and its Hon. Treasurer, Mr. R. M. Handfield-Jones. He paid a tribute to the memory of two absent friends—the late Mr. Tudor Edwards, who is now commemorated in the Tudor Edwards Travelling Fellowships in Thoracic Surgery; and the late Hugh Whitelocke. Sir Hugh gave a message of welcome to the Association from Dr. Elliot Cutler. He spent some time in discussing the evolution of the Nuffield Clinical School of Medicine in Oxford. He pleaded that they should not aim at producing a standard type of surgical professor, and that they should avoid excessive regimentation and standardization in their schools. Sir Alfred Webb-Johnson, in a characteristically humorous speech, proposed the health of the guests, welcoming in particular those from other countries: Prof. René Leriche, Prof. H. E. F. Albert, Prof. R. Danis, Prof. J. de Faumestruat, Dr. Lortat-Jacob, Prof. L. Mayer, Prof. J. Morelle, Dr. L. Bazy, Prof. W. Noordenbos, and Dr. W. K. Livingston. He thanked those whom he described as their hosts and guests: Sir Richard Livingstone, Vice-Chancellor of Oxford University; and the Dean of Christ Church. It was fitting, he said, that Sir Hugh Cairns, as a Rhodes scholar, should hold the first Commonwealth Travelling Fellowship. Sir Alfred paid a handsome tribute to their benefactor, Lord Nuffield, whom Sir Hugh Cairns had described earlier as "the Cowley father of modern medicine." Responses were made on behalf of the guests by Sir Richard Livingstone and by Prof. René Leriche.

More Nurses

Presenting medals and certificates at the Middlesex County nurses' examination on June 20, the Minister of Health said that more girls were entering the nursing profession now than before the war—about 14,000 annually compared with something over 11,000. Under the National Health Service two developments that would help to provide the best possible training for nurses would be wider facilities made available by the regionalization of hospitals and the fact that the desirability of full student status for the nurse in training was becoming increasingly recognized.

Dental Surgery at Glasgow

Sir Hector Hetberington, Principal of Glasgow University, announced at the annual prize-giving ceremony on June 27 at the Glasgow Dental Hospital and School that the University had taken over the control of dental education in Glasgow and would institute a degree in dental surgery. The University will select next year's entry of students to the Dental School.

Free Supplies for Day Nurseries

Every child attending a day nursery both in the morning and in the afternoon is now allowed two-thirds of a pint of liquid milk (or national dried milk when necessary) free of charge. Free cod-liver oil (6 oz. for 12 weeks) and a bottle of orange-juice (price 5d.) every 4 weeks is also allowed. Day nurseries should register for benefit under the Welfare Foods Scheme as set out on Form WF/DN.15, obtainable from the Ministry of Food. A day nursery not administered by a welfare authority should submit this form to the medical officer of health for certification that it is entitled to receive benefit. The local food office will then make the necessary arrangements. The milk benefit is applied for on Form WF/DN.4, which is renewable at quarterly intervals and obtainable from local food offices. The source and quality of the liquid milk must be approved by the medical officer of health.

Called to the Bar

Jeffrey Murray Robertson, M.B., B.S. (Inner Temple), and Thomas Kemp Homer, M.B., Ch.B. (Gray's Inn), were called to the Bar on June 18.

Wills

Dr. John Wallace, of Weston-super-Mare, who died on Feb. 13, aged 90, left £32,846. Mr. Christopher Tredwell Holford, of Tiverton, Devon, formerly senior surgeon of Burton-on-Trent Infirmary, left £34,492. Dr. George Montgomery Drury, of Cheadle Heath, Stockport, left £2,372. Mr. Walter Graham Stewart, of Ware, Herts, left £26,548. Sir Richard Robert Cruise, surgeon oculist to King George V and to Queen Mary, owner of the famous steeplechaser War Gratitude, left £40,215. Sir Walter Langdon-Brown, of Cambridge, left £23,630. Mrs. Catherine Mabel Edgerley, of Menston, Yorks, one of the first women to qualify and an authority on the Brontes, left £29,533.

COMING EVENTS

Athletics

The City and Hospitals Charity Athletic Contest for the *Financial Times* Challenge Shield is being held at the London University Sports Ground, Molesbury Park, Surrey, on July 12. The first event is at 3 p.m. Admission at the gate is 1s. 6d.

Labour Saving Hospitals

An exhibition of labour-saving devices for use in hospitals will be opened by the Minister of Health on July 14 at 3 p.m. at the Empire Tea Centre, 22, Regent Street, London, S.W.1. It has been organized on behalf of the Ministry of Health by the British Electrical Development Association and the British Gas Council. Exhibits will include special cleaners and polishers, a bed-pan sterilizer, cooking utensils and ice-cream makers, laundry apparatus, and suggestions for brightening the domestic staff's private rooms. The exhibition is open in the morning only to hospital representatives, and to the public every afternoon from 1-5.30 p.m. It will close on Aug. 2.

The Physiology of Lactation

The Kent Paediatric Society has arranged for Dr. H. Waller to give two addresses on "The Physiology of Lactation and the Causes of Early Failure" at the County Hospital, Farnborough, on Tuesdays, July 15 and 22, at 8 p.m. Hospital paediatric and maternity nurses, midwives, and health visitors are invited to attend the lectures.

Kelynaek Memorial Lecture

Prof. F. L. Golla, F.R.C.P., director of the Burden Neurological Institute, will deliver the inaugural Kelynaek Memorial Lecture on "Alcohol and the Neuroses" before the Society for the Study of Addiction at Westminster Hospital Medical School, Horseferry Road, London, S.W., on Tuesday, July 15, at 4 p.m.

Tuberculosis Conference

The joint annual conference of the Tuberculosis Association and the Tuberculosis Society of Scotland will be held in the Department of Zoology, King's Buildings, West Mains Road, Edinburgh, on July 16, 17, and 19. The programme is as follows: July 16, 2.15 p.m., opening address by the Marchioness of Linlithgow; 2.45 p.m., Dr. H. A. Pattison (New York), "Rehabilitation in the U.S.A."; 4.45 p.m., discussion, to be opened by Mr. T. Holmes Sellers, "Assessment of the Results of Thoracoplasty," followed by a general discussion in which several thoracic surgeons will give brief reviews of their results; 8.15 p.m., annual general meeting of the Tuberculosis Association; 9.15 p.m., Dr. H. P. Tait, "Edinburgh Medical Men at the Time of the Resurrectionists." July 17, 3.30 a.m., Dr. H. Van den Berg (Amsterdam), "The Control of Results in B.C.G. Trials"; 11 a.m., Dr. J. G. Scadding, "The Pneumonias Associated with Epidemic Respiratory Infections"; 2 p.m., Dr. V. Reilly, "The Pathology of Amyloidosis"; 3 p.m., Dr. W. M. Borthwick, "Genito-urinary Tuberculosis"; 4.45 p.m., Prof. V. Monaldi (Naples), "Endoeavitary Aspiration in the Treatment of Pulmonary Tuberculosis"; in the evening there will be a special performance of "The Anatomist" in the Little Theatre. July 19, 9.30 a.m., Mr. Norman Dott, "Skeletal Traction, Surgical Decompression in the Management of Pott's Paraplegia"; 11 a.m., discussion on "The Causes of the Breakdown of Discharged Quiescent Cases," to be opened by Dr. Alex. MacLean and Dr. B. R. Clarke. July 18 will be devoted to recreation, with a golf match at Gullane, an excursion to the Border country, and a garden party in the afternoon; in the evening there will be a joint annual dinner, preceded by a reception at the Grand Lodge of the Freemasons.

Penicillin Treatment of Syphilis

A joint meeting of the Medical Society for the Study of Venereal Diseases and the Section of Experimental Medicine and Therapeutics of the Royal Society of Medicine will be held at 1, Wimpole Street, London, W., on Thursday, July 17, at 5.15 p.m., when a discussion on "The Treatment of Syphilis with Penicillin" will be opened by Dr. Earle Moore (U.S.A.), Dr. G. L. M. McElligott, and Dr. E. M. Lourie.

Modern Anaesthesia

Dr. I. W. Magill has accepted the invitation of the Royal Institute of Public Health and Hygiene (28, Portland Place, London, W.) to be the Bengué Memorial Award Lecturer for 1947. His subject is "A Review of Modern Anaesthesia," and the lecture will be delivered at the institute on Thursday, July 17, at 3 p.m. Admission is free, without ticket. Seats may be reserved upon application to the secretary of the Institute.

APPOINTMENTS

Dr. Vincente Banet and Dr. José Lástra have been appointed president and vice-president respectively of the National Society of Surgery of Cuba.

Mr. J. F. Foster, formerly registrar of the University of Melbourne and secretary of the Australian Vice-Chancellors' Committee, has been appointed secretary of the Universities Bureau of the British Empire, on the retirement of Mr. W. B. Brander.

Dr. P. S. Selwyn-Clarke, C.M.G., M.C., has been appointed Governor and Commander-in-Chief of the Colony of Seychelles.

John Watkins-Pitchford, M.D., has been appointed H.M. Inspector of Factories.

BIRMINGHAM: SELLY OAK HOSPITAL.—*Chief Assistant Surgeons*, A. R. Leah, F.R.C.S., J. R. A. White, F.R.C.S.Ed., G. R. Clarke, F.R.C.S.Ed., *Chief Assistant Physicians*, W. M. Philip, M.B., M.R.C.P., W. P. U. Jackson, M.D. M.R.C.P., I. A. Guest, M.D., M.R.C.P., *Chief Assistant Gynaecologist and Obstetrician*, M. L. Neville, M.B., D.R.C.O.G., *Anaesthetist*, T. H. Hobbs, M.B., D.A., *Resident Assistant Anaesthetist*, J. E. McCutcheon, M.B., Ch.B.

BLACKWOOD, WILLIAM, M.B., F.R.C.S.Ed., Assistant Pathologist, National Hospital, Queen Square, London, W.C.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, E.—*Honorary Assistant Obstetric Surgeons*, H. H. Fouracre Barnes, F.R.C.S., and B. G. Spinks, F.R.C.S.Ed.

REES, HARLAND, M.Ch., F.R.C.S., Surgeon, St. Peter's Hospital for Stone, Henrietta Street, London, W.C.

SEYMOUR-JONES, ANTHONY, F.R.C.S., D.L.O., Honorary Assistant Surgeon to Ear, Nose, and Throat Department, Portsmouth and Southern Counties Eye and Ear Hospital.

SOCIETIES AND LECTURES

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W. Tuesday and Thursday, July 15 and 17, 5 p.m. Humphry Davy Rolleston Lectures by Dr. P. C. P. Cloake: Treatment of Disseminated Sclerosis by Artificial Pyrexia and Prolonged Administration of Arsenic.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Thursday, July 17, 6.15 p.m. Charles Tomes Lecture by Prof. J. G. Turner: Movements of Teeth.

ROYAL SOCIETY OF MEDICINE

General Meeting of Fellows.—Tuesday, July 15, 5.30 p.m.

Section of Experimental Medicine and Therapeutics.—Thursday, July 17, 5 p.m. Annual general meeting: Election of Officers and Council for 1947-8. 5.15 p.m. Joint Meeting with the Medical Society for the Study of Venereal Diseases. Discussion: The Treatment of Syphilis with Penicillin. Openers: Drs. Earle Moore, G. L. M. McElligott, and E. M. Lourie.

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—Thursday, July 17, 8 p.m. Twenty-fourth Mackenzie Davidson Memorial Lecture by Dr. John H. Lawrence (University of California): Application of Artificial Radioactivity to Biology and Medicine.

MEDICAL SOCIETY OF LONDON, 11 Chandos Street, W.—Monday, July 14, 8.30 p.m. Mr. F. A. Williamson-Noble, Contact Lenses; Dr. G. B. Dowling, Athlete's Foot; Mr. A. Dickson Wright, Pruritus Ani.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BEALE.—On June 27, 1947, at Bridgwater, to Violet, wife of Dr. J. Hanway Beale, a daughter.

MARRIAGES

BROWN-DANOS.—On June 25, 1947, Arthur Edward Brown, L.R.C.P., M.R.C.S., D.P.H., and Irene Danos, Budapest, Hungary.

EVANS-MORE.—On May 31, 1947, at Ipswich, Gordon M. Hylton Evans, M.R.C.S., L.R.C.P., to Hannah Mary More, S.R.N.

ILLINGWORTH-REDHEAD.—On July 3, 1947, in Newcastle-upon-Tyne, Professor Ronald Illingworth, M.D., F.R.C.P., D.P.H., D.C.H., to Cynthia Mary Redhead, M.B., B.S., M.R.C.P.

LOVETT-HARRY.—On July 5, 1947, at Peterstone-super-Ely, Glamorgan, William Charles Donald Lovett, B.Sc., M.B., B.Ch., B.S., to Frances Mary Harry.

RUTTER-STEVENS.—On July 5, 1947, at Caxton Hall, London, S.W.1, Clarence Rutter, M.R.C.S., L.R.C.P., to Mrs. Mary Stevens.

WALTERS-LARGE.—On June 30, 1947, in London, Geoffrey A. Barot Walters, F.R.C.S.Ed., to Mrs. Daphne Large (née Pullin-Thompson).

Any Questions ?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Acute Poliomyelitis

Q.—I am of the opinion that acute anterior poliomyelitis is related to gastro-intestinal infection, and that the main essential treatment is complete evacuation of the alimentary tract. Constipation is usual, but in the few cases where diarrhoea has occurred I regard this as the attempt of a healthy bowel to expel toxins. Is my theory correct?

A.—Recent evidence has shown that the virus of poliomyelitis appears in the faeces for some days or even weeks after onset of the infection, and that the virus probably reaches the central nervous system from the bowel, since it has been demonstrated in the abdominal sympathetic ganglia. In the pre-paralytic stage of the infection, characterized particularly by fever and irritability, gastro-intestinal symptoms may be present, although they are not usually prominent features. The modern view is that the majority of patients affected with the virus of poliomyelitis develop only these pre-paralytic symptoms, and these cases are called "abortive" poliomyelitis. What determines the development of the paralytic stage in the minority of cases is still unknown, although severe muscular exercise is probably an important predisposing factor. It seems unlikely that purgation or the natural occurrence of diarrhoea in the early pre-paralytic stage will affect the course or severity of the infection.

Physics of Odour

Q.—Is anything known about the physics of odour? We know that sensations of smell are conducted from the olfactory nerve endings, but how do they get there? What sort of particles does the smelling substance emit, and how do they traverse the air? Has any measurement been made of the air content of odoriferous particles? Does an odoriferous substance decrease in weight as a result of emission of such particles? Can they be seen or cultivated?

A.—There is a general belief that material particles of odoriferous substances must come into contact with the olfactory receptors and that the actual stimulation is due to some chemical action. There can be no doubt that the odoriferous substance is carried in the air, but very small weights of such substance may scent a room for years without apparent loss of weight. Threshold concentrations have been measured for some substances, but naturally the threshold varies for different individuals and in the same individual from time to time, but the following threshold concentrations are given: skatol, 3×10^{-11} ; synthetic musk, 4×10^{-11} ; mercaptan, 3×10^{-9} % in air (w/w). The loss of weight of a substance required to give these concentrations in usual surroundings, say a room, although exceedingly minute is nevertheless calculable.

Ichthyosis

Q.—A patient with severe ichthyosis from birth has seemed more normal during hot weather and especially in the Tropics. After return from the Tropics the skin became as bad as ever. On a course of thyroid extract he appeared to be sweating more and his skin became more scaly than usual, but the scales desquamated leaving the skin smooth and almost normal. How much thyroid can I give him, and for how long, apart from looking for symptoms of hyperthyroidism? Will prolonged dosage do harm and will any children be adversely affected? His brother has the same complaint, and his mother has a rough skin but no scaling. Can you suggest any other form of treatment?

A.—Ichthyosis is a congenital abnormality of the skin, often familial, and cannot be permanently influenced by treatment, though some little change occasionally occurs at puberty or the menopause. Thyroid by mouth increases metabolism and sweating and so may produce symptomatic improvement while

the drug is being administered. As a general rule it is wiser to control ichthyosis by local treatment, such as warm-baths and the use of the following ointment:

B	Acid. salicyl.	gr. 10 (0.65 g.)
	Lanolin.	
	Ol. oliv.	
	Glycerin.	āā ad 1 oz. (30 g.)
	Halden's emulsifying base	
	Paraff. moll.	
	Fi. ung.	

There is probably no harm in the prolonged administration of thyroid extract in reasonable dosage, to a total of not more than 1 to 2 gr. (65 to 130 mg.) a day, but it would seem unjustifiable to give larger doses unless there was any indication otherwise of thyroid deficiency. The affection is one that tends to be inherited, and reference should be made to *Inherited Abnormalities of the Skin*, by E. A. Cockayne (1933. Oxford University Press, London).

Chronic Bronchitis and Emphysema

Q.—A man of 72 is subject to chronic bronchitis and emphysema. The attacks started twenty years ago and have since increased in severity and frequency. Iodides, stramonium, and ephedrine have given only temporary relief. Recently it has been necessary to take ephedrine tablets daily, though the effect is less marked than before. X-ray examination of chest is negative. What do you advise?

A.—This description suggests that the patient has chronic bronchitis with attacks in which bronchial spasm is superimposed. In this disorder dyspnoea in the early stages is due mainly to bronchospasm and is relieved by ephedrine. With the passage of years irreversible changes occur in the lung parenchyma, diminishing its elasticity; it is to these that the dyspnoea of the later stages must be ascribed. The history reveals this change, for a dyspnoea on effort is gradually grafted upon, or replaces, the episodic asthmatic breathlessness. Treatment at this late stage is difficult and often unavailing, but the most useful therapeutic measure is the education of the patient, by means of breathing exercises, to use his damaged respiratory apparatus in the most efficient manner possible.

Vitamin D₂ and Pyrexia

Q.—Can concentrated vitamin D₂ cause pyrexia, as well as digestive disturbances? A young woman with pulmonary tuberculosis of four years' standing recently became sputum-positive without increase in radiological signs and with no obvious temperature disturbance. She had a course of calcium and vitamin D₂, but after the sixth dose of the latter pyrexia and general malaise developed. The vitamin was discontinued and after eight or nine days the temperature subsided. Was this coincidence, or could the vitamin treatment have influenced this phase of pyrexia?

A.—Pyrexia has not been reported in patients not suffering from tuberculosis given massive doses of vitamin D. Side-effects such as sweating, nausea, vomiting, anorexia, headache, diarrhoea, and polyuria have been reported after taking very large doses—for example, more than 200,000 units daily over a period. It is not stated in the question how much vitamin D₂ was taken. As the pyrexia occurred only after the sixth dose of vitamin D₂, and as toxic effects result only after prolonged administration of large doses, it is unlikely that the pyrexia in this case was caused by the vitamin.

Gastric Analyses

Q.—Much time is occupied in carrying out large numbers of gastric analyses with test meals. I believe that as much information could be obtained from the fasting juice, after previous preparation of the patient by a stomach wash-out, etc., followed by examination of a sample after administration of histamine if free hydrochloric acid is not found in the fasting juice.

A.—Gastric secretion is a valuable function which may be influenced by many different circumstances. The ordinary fractional test meal is open to so many possible errors that its

value as a diagnostic procedure in cases of uncomplicated peptic ulcer is doubtful. In the investigation of a patient with an anaemia or suspected carcinoma of the stomach, however, a secretion test may be important, and in these instances it is the presence or absence of hydrochloric acid which is looked for. Preliminary lavage may interfere with the secretion of gastric juice and therefore should not be done. No test meal is given, but specimens must be withdrawn at regular frequent intervals for two hours after the injection of histamine, otherwise a minimal response may be missed.

Femoral Thrombosis

Q.—*A woman of 64 had a left femoral thrombosis a year ago, caused by confinement to bed for kraurosis vulvae. She is now quite well except for the leg, which becomes swollen and painful with even mild exercise. What treatment do you advise, and what are the prospects of recovery?*

A.—The condition having settled down, it only remains to deal with the swelling which is the cause of the pain. Bandaging with real elastic bandages (not crêpe) will keep down the swelling below the knees, and that usually suffices. Raising the foot of the bed at night is also very helpful in reducing swelling and cramp. The amount of residual swelling is often greatly reduced by lumbar sympathetic procaine blocks during the active phase of thrombosis, but unfortunately in the present case the opportunity for this helpful procedure has now passed.

Pediculosis Capitis

Q.—*For three months I have been treating a friend who has pediculosis capitis with this mixture: "Lethane 384," 49 parts; ol. petrol. alb., 49 parts; ol. citronel., 2 parts. This has been applied four to six evenings a week after careful removal of nits, but has had no effect beyond reducing the nit population and alleviating scalp irritation. My friend deals with large numbers of children and has taken precautions against re-infection. Can you suggest a reason for the failure of this treatment, and is there one more likely to succeed?*

A.—Some millions of cases of pediculosis capitis have been treated with lethane, and where this has been properly carried out the writer does not know of one instance where three applications have not been completely successful and have not also prevented reinfection. The vast majority of individuals were cured with one application. The questioner here would apparently have made about seventy-five applications and, if he has carried out the proper instructions, will have used some pints of the medicament. The surprising factor is that some alleviation of scalp irritation is alleged, for it is more likely that this gross over-treatment would cause a dermatitis. If the treatment described has failed, no other treatment is likely to be more successful.

Prostatitis

Q.—*What is the treatment of non-specific prostatitis?*

A.—The best treatment ought to be rectal diathermy followed by prostatic massage, but as active infection is present it should be supplemented by the use of one of the sulphonamides.

Chronic Ulcer and Pemphigus

Q.—*A man of 73 has had a chronic ulcer on the left great toe for two years. Culture produced a mixed growth of Staph. aureus and haemolytic streptococci and a heavy growth of coliform organisms. The ulcer was dressed with penicillin cream, and sulphathiazole tablets were given at the same time, but they appeared to cause an acute dermatitis of the foot. Allantoin-sulphanilamide preparations were also tried with the same result. The urine is negative for albumin and sugar. The patient has chronic rheumatoid arthritis, and chronic pemphigus vulgaris of the scalp and front of chest. Can you suggest treatment for this latter condition as well as for the toe ulcer?*

A.—The patient should be seen by a dermatologist. If the diagnosis of pemphigus is confirmed there is no effective treatment and the ultimate prognosis is bad. It is presumed that x-rays have revealed no local cause for the ulcer of the toe. In the absence of organic nervous disease, it is possibly due to

vascular degeneration. Trauma or pressure is another causative factor, and resolution depends on treatment of the cause, which is almost certainly not infective. Cod-liver oil or 0.5% parachlorophenol in a bland base may be used for

Titanium

Q.—*May I have information regarding titanium for clinical use, or details of literature on the subject?*

A.—Titanium dioxide is used in face powders and in toilet articles in place of zinc oxide. Titanium salts appear to diminish erythema and pruritus in certain dermatoses. There is on the market a proprietary desiccant paste for exudative dermatoses, containing titanium dioxide, zinc oxide, and small quantities of purified silicates in a fat-free base. Ointments containing titanium salts are also useful in irritation, dermatitis, localized eczema, syccosis barbae, pruritus after insect bites, erythema of solar dermatitis, and ulceration associated with varicose veins. They are said to be of some value in psoriasis.

NOTES AND COMMENTS

Pink Disease.—Dr. W. G. BRANDER (Rochampton, S.W.) writes: With reference to the answer to the question on pink disease (21, p. 911), I was interested to see that no reference was made to the use of potassium chlorate and acid, hydrochloric dil., as recommended by Peckham in the *South African Medical Journal*, 20, 474. This article was summarized in *Abstracts of Medicine*, 1947, 1, 380. Peckham's treatment is not a direct one to your correspondent, but might be of value to him in the management of his case.

Ejaculatio Praecox.—"V.B.G.-A." writes: Without labouring the point that the wise men came from the East, might I advise the ejaculatio praecox patient referred to (June 28, p. 958) should follow the age-old Oriental practice of anointing the corona with a 1% ung. cocain. just beforehand or, if preferred, with ung. Eucerin. Either damps down the immediate reflex, and it will be found after a few occasions it can be discontinued. I have prescribed scores of times since I was told of it years ago by an ancient Hindu in Calcutta and have never known it fail or give rise to any "harm."

INCOME TAX

All inquiries will receive an authoritative reply but only a selection can be published.

Commencement of Practice

M. E. has been demobilized and contemplates setting up in general practice. How should he deal with income tax demands for his residence and income not taxed at source?

He is advised to get in touch with the local inspector of taxes, inform him as to the date as from which the practice is commenced, and undertake to supply a statement of account at the end of the first year of the practice. He should complete the form of claim to "married" and children allowance and ask that these allowances be set against the untaxed income, or alternatively that the tax assessed on that income should remain in abeyance until his first year's practice results are known. He will be entitled to deduct as professional expenses a reasonable proportion of Schedule A assessment on the house, of the cost of running the practice (including depreciation) and of such general expenses as cost of domestic service, telephone, etc. Cost of maintenance of instruments, medical library, etc., is permissible, but not the outlay of initial purchase or improvement of such assets. If results of the practice working show a loss relief can be claimed against his own or his wife's taxed income.

All communications with regard to editorial business should be addressed to the EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attila Westcott, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Westcott, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Westcott, London*. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 12 1947

British Medical Association

ANNUAL REPRESENTATIVE MEETING, 1947

The Annual Representative Meeting of the British Medical Association will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Tuesday, July 22, and succeeding days.

RESOLUTIONS BY DIVISIONS AND BRANCHES

NATIONAL HEALTH SERVICE ACT

Amendment by MARYLEBONE: That the second half of the third paragraph of Section 20 is an inadequate and therefore misleading account of the events to which it refers.

(The part of para. 20 to which this amendment refers is:

"As a result of the plebiscite, a small majority of the profession expressed themselves against discussions on the regulations. The special Representative Meeting on Jan. 28, 1947, on consideration of the plebiscite results, expressed a willingness that discussions should be entered into with the Minister, provided that such discussions were comprehensive in their scope and that the possibility that they might lead to further legislation was not excluded.")

Amendment by MARYLEBONE: That the following:

"90% of the entire profession took part in this plebiscite. The result of this was that 64% of general practitioners and 55% of the whole profession expressed themselves against discussions on regulations.

"Consequently, the Council drew up a resolution for the consideration of the S.R.M. on Jan. 28, 1947, to this effect. However, at a subsequent emergency meeting the Council withdrew this resolution and substituted one which expressed willingness that discussions should be entered into with the Minister, provided that such discussions were comprehensive in their scope and that the possibility that they might lead to further legislation was not excluded.

"The reason for the change was the belief that the Minister of Health was showing signs of a more conciliatory attitude, as revealed in a letter addressed to the Presidents of the three Royal Colleges. The R.M. were informed of this belief and, in the hope that it was justified, they welcomed the possibility of conciliation and co-operation on the Minister's part so warmly that they passed the resolution by a large majority in spite of the plebiscite figures."

be substituted for the words referred to above.

Report of Negotiating Committee

Motion by NEWCASTLE-UPON-TYNE: That this meeting is of the opinion that the Negotiating Committee should be asked to make in early report of the progress and discussions with the Minister.

Meetings of Local Units

Motion by BATH: That in the event of the Negotiating Committee failing to secure the Minister's agreement to the declared principles, all Divisions of the Association should be asked to meet, in order to instruct their representatives before a special meeting of the Representative Body is held to discuss the terms of a plebiscite. Further, that the Council of the Association should then give a strong lead to the profession in the light of the findings of this special Representative Meeting when issuing the plebiscite forms.

Plebiscite

Motion by BUCKINGHAMSHIRE: (1) That in the opinion of this meeting the result of a future plebiscite be binding on the Council. (2) That, prior to any future plebiscite, the clearest possible exposition of the Association's policy as to the issues involved be circulated by the Council. The actual voting paper should be sent to the voter under separate cover and unaccompanied by any expression of opinion.

Superannuation for Specialists

Motion by DERRY: That the Negotiating Committee be requested to examine the claims for superannuation for specialists retiring from hospital service on the inception of the National Health Service.

Remuneration of Medical Officers Employed by Local Authorities

Motion by LOTHIAN: That the Negotiating Committees in England and Scotland, in their negotiations with H.M. Government,

should endeavour to ensure that the rates of remuneration of all medical officers employed by local authorities should be uniform throughout Britain.

A Rota of Practitioners

Motion by PADDINGTON: That in any National Health Service adequate provision shall be made for a rota of practitioners for duty at night, week-ends, holidays, and during sickness.

Distribution of the Profession

Motion by READING: That, in view of the reason given by the Minister at the second reading of the Act for the abolition of the buying and selling of practices, as being necessary in order to correct maldistribution of practitioners, the Council formulate and publish a positive plan showing how this object could be achieved by other means.

Health Centres

Motion by SOUTHAMPTON: That (1) in view of the fact that the medical profession may be concerned with the staffing of Health Centres to be set up in the National Health Service, it is important that a definite policy with regard to their construction, siting, and organization be adopted, and (2) the Representative Body, instruct the Council to make definite plans regarding the construction, staffing, and functions of Health Centres to be set up in the National Health Service.

Nominations for Statutory Bodies Under the Service

Motion by NORTH STAFFORDSHIRE: That this meeting demands that the profession's nominations to all statutory bodies under the new National Health Service be approved by the Minister of Health.

Motion by TORQUAY: (a) That the Negotiating Committee be instructed to press for a regulation that medical nominations to local Executive Councils be made at a General Meeting of practitioners in the area, serving under the Act. (b) That the majority of medical representatives on local Executive Councils should be in active general practice, whereas on the Regional Boards the majority should be consultants.

Motion by MID-ESSEX: To ensure satisfactory representation of the profession on any of the proposed administrative bodies set up by the Minister, he shall ask the medical practitioners concerned to nominate only as many freely elected representatives as there are vacancies.

Midwifery Services

Motion by STRATFORD: That the Representative Body take the following stand:

1. That all practitioners registered under the present Medical Acts shall be entitled to undertake domiciliary obstetrics under the National Health Service Act.

2. That ten years' experience in domiciliary obstetrics is an adequate preliminary condition of entry to an examination for a postgraduate diploma in obstetrics.

3. That, if the conditions governing examination for existing diplomas cannot be varied in this respect, an appropriate diploma should be newly established.

4. That the above recommendation should be conveyed to the Negotiating Committee.

GENERAL PRACTICE

Fees for Medical Examinations in connexion with Life Insurance

Motion by the CHAIRMAN OF THE GENERAL PRACTICE COMMITTEE: That the following recommendation of Council be adopted:

That Minutes 119-133 of the A.R.M., 1920, and Minute 31 of the A.R.M., 1935, regarding the fees payable for medical examinations in connexion with life insurance be rescinded and the following substituted therefor:

(1) That a "short" form of medical report be approved for use in the case of all insurances where the amount of the policy does not exceed £300, the fee for the completion of this form of report to be 10s. 6d.

(2) That for a medical examination and report in cases where the amount of the policy exceeds £300 the fee shall be £1 11s. 6d.

(3) That no attempt be made to standardize the £1 11s. 6d. form

of report, but that where the form required by the life office is exceptionally extensive a fee of £2 2s. should be payable.

(4) That where, in the case of an insurance for an amount not exceeding £300, the office requires a fuller examination than is provided in the "short" form, the office may use its ordinary form at a fee of £1 11s. 6d.

(5) That in all cases the fee appropriate to the examination, and the amount of the policy, should be printed on the form.

Amendment by BARNSTABLE: That no report to insurance companies by a medical practitioner should receive a fee of less than £1 1s.

Amendment by NORTH STAFFORDSHIRE and WILLESDEN: That the Council be instructed to press for a fee of £2 2s. for medical examinations where the amount of a life insurance policy is £300 or over.

Amendment by TORQUAY: That the fee for the short form of medical report mentioned in sub-para. (1) should be £1 1s. If a more extensive form is required the fee should be £2 2s.

Amendment by WORCESTER and BROMSGROVE: That in the opinion of this meeting, in cases where the policy amounts to £1,000 or over the fee shall be £2 2s.

Motion by MARYLEBONE: That the British Medical Association shall make a recommendation, after consultation with the Life Offices Association, on the question of the payment of fees when proposers fail to keep appointments with doctors.

Fees for Police Calls and for Attendance on Members of Police Forces

Amendment by TORQUAY: That in view of the discrepancy in the time between paras. 22 and 88 of Council's Report, the time has come when the hours constituting day and night visits should be standardized.

Amendment by TORQUAY, and KENSINGTON AND HAMMERSMITH: That the hours constituting a day visit should be 9 a.m. to 8 p.m. and the night visit 8 p.m. to 9 a.m.

Fees for the Administration of Anaesthetics to Persons receiving Dental Treatment as an Additional Benefit under the National Health Insurance Acts

Motion by the CHAIRMAN OF THE GENERAL PRACTICE COMMITTEE: That the following recommendation of Council be adopted:

That where practitioners are requested to administer anaesthetics to insured persons receiving dental treatment as an additional benefit under the National Health Insurance Acts, the following fees should be paid:

For the simple administration of nitrous oxide or similar anaesthetic:

5s. per administration, for the extraction of:

1-5 teeth	..	..	..	10s.	6d.
6-10 teeth	..	..	..	£1	1s. 0d.
11-20 teeth	..	..	..	£1	11s. 6d.
21 or more teeth	..	..	..	£2	2s. 0d.

always provided that an increased fee shall be payable in specially difficult circumstances.

Amendment by CARDIFF: That the recommendation be referred back for further consideration, with a view to the introduction of a flat rate.

Fees for Medical Certificates under the Lunacy and Mental Deficiency Acts, and for Recommendations under the Mental Treatment Act

Motion by the CHAIRMAN OF THE GENERAL PRACTICE COMMITTEE: That the following recommendation of Council be adopted:

(i) That the existing policy of the Association relating to the fees for medical certificates under the Lunacy and Mental Deficiency Acts, and for recommendations under the Mental Treatment Act, be rescinded:

(ii) That there be substituted therefor the following:

(1) *Fees for Medical Certificates under the Lunacy Acts:* A fee of at least two guineas should be paid.

(2) *Fees for Medical Certificates under Mental Deficiency Act:* The fee for medical certificates under the Mental Deficiency Act, signed by the "usual medical attendant," should not be less than two guineas.

(3) *Fees for Recommendations under Mental Treatment Act:* In cases where a "recommendation" is made under the Mental Treatment Act for a private patient the fee should be a matter of arrangement between the relatives and the practitioner concerned, but in public assistance cases a fee of not less than two guineas would appear to be appropriate.

Amendment by DERBY: Fees for medical certificates under the Lunacy Acts—a fee of at least two guineas should be paid (1) whether the certificate is completed or not, (2) whether the certificate is completed and the patient is discharged by the Justice.

"Doctor" Signs on Cars

Motion by KENSINGTON AND HAMMERSMITH: That with reference to para. 28 of Annual Report of Council further action be taken with a view to securing the removal of all "doctor" signs from cars.

Supplementary Clothing and Other Coupons

Motion by SWANSEA: That, with reference to para. 37 of Council's Report, appropriate action be taken to secure a freer issue of gowns in view of the fact that when coupons are presented found that they cannot be honoured. The same applies with reference to rubber gloves.

Fees for Mileage and Visits for Local Authorities and Government Departments

Motion by BARNSTABLE: That fees paid by public authorities including Government Departments, for mileage and visits should be standardized.

Public Medical Service: National Deposit Friendly Society

Motion by DARTFORD: That the present rates of payment under the Public Medical Service and the National Deposit Friendly Society be reconsidered in view of increased cost of drugs, etc., so as to compare with the higher fees now paid for other medical services of a like nature.

Reports to Coroners

Motion by DERBY: That when a practitioner is requested by a coroner to furnish him with a medical report in respect of a deceased person for whom a death certificate cannot be supplied in the usual manner, the coroner shall pay the practitioner a fee of one guinea for such a report.

Motion by ROCHEDALE: That steps be taken by the Association to secure payment on a uniform scale for medical reports to coroners in all cases.

The Scope of General Practice

Motion by LEEDS: That the Council be instructed to resist to the utmost any attempt to diminish the present scope of general practice.

Doctors' Cars

Motion by GREENWICH AND DEPTFORD: That this meeting is satisfied with the present arrangements made by the Association for obtaining doctors' cars, and urges the Council to take appropriate action to secure definite priority.

Doctors' Evening Surgeries

Motion by SHEFFIELD: That this Representative Meeting considers that the time has now arrived when it is no longer in the public interest that doctors' evening surgeries should continue to the present late hour. There should be an immediate review of times of surgeries.

Certification

Motion by ABERDEEN AND KINCARDINE COUNTIES: That this meeting, while appreciating the need for certification during present world shortages, deplors the increasing number of certificates which doctors are asked to give, and recommends that in future all demands for further certification should be submitted to a committee of the General Practice Committee and passed only if reasonable before the profession is asked for these certificates.

NATIONAL HEALTH INSURANCE

Medical Records of Demobilized Persons

Motion by WORCESTER AND BROMSGROVE: That with reference to para. 53 the Council be asked to investigate the legal position as to the use of these medical records for any purpose which is for the benefit of the patients, including pensions appeals.

Certification

Motion by PADDINGTON: That, with reference to para. 55 of Council's Report, certification shall only appertain to the witness of a signature and not vouch for the accuracy of the material contents of the said certificate.

SPECIAL PRACTICE

Rules for the Government of Groups and Consultants' and Part-time Consultants' Rolls

Amendment by WORCESTER AND BROMSGROVE: That, with reference to para. 62 of Council's Report, this meeting, being desirous that the views of part-time consultants and specialists should receive adequate consideration, is of the opinion that membership of Consultant and Specialist Groups should be open to members of the part-time Consultants and Specialists Roll.

Salaries of E.M.S. Specialists

Amendment by WORCESTER AND BROMSGROVE: That, while approving para. 68 of Council's Report as a step in the right direction, this meeting is of the opinion that the increases allowed are insufficient and should be accepted only on the understanding that such acceptance is without prejudice to scales of remuneration in any future health service.

Access to Ancillary Departments of Hospitals

Amendment by GREENWICH AND DEPTFORD: That, with reference to para. 71 of Council's Report, this meeting regrets the obscurity of Council's recommendation and feels that until ancillary departments are adequately staffed the "open door" policy is fraught with danger.

HOSPITALS*Shortage of Nurses*

Motion by KENSINGTON AND HAMMERSMITH: That Council should ask the Minister of Health to give urgent attention to the solution of the problem created by the grave shortage of nurses, since it is affecting the health of the nation.

Remuneration of Practitioners holding Junior Hospital Posts

Motion by PLYMOUTH: That the present remuneration for junior hospital posts is entirely inadequate and the British Medical Association should formulate a scale of salaries for adoption by all hospitals.

PUBLIC HEALTH*Practitioners Employed Part-time by Local Authorities*

Amendment by EAST YORKSHIRE: That the Annual Representative Meeting, 1946, having approved the recommendations of Council relating to a minimum scale of fees appropriate to part-time medical work on a sessional basis, this meeting views with dismay the action of Council in propounding a lower scale of fees to which its negotiations with other bodies would appear to have committed the profession, repudiates such action as prejudicial to the present and future interests of the profession, as well as a betrayal of the mandate sought by the Council and accorded at its request, and reaffirms resolution 100 of A.R.M., 1946.

Amendment by NEWCASTLE-UPON-TYNE: (1) That the mileage fee for consultants agreed at the A.R.M., 1946, is inadequate and should be increased. (2) That a consultant called to an emergency case for consultation followed by operation should receive a consultation fee in addition to the mileage and operation fees.

Trade Union Membership

Motion by GATESHEAD: That the attention of the Minister of Health be drawn to the flouting of his recommendation as to the non-enforcement of the "closed shop" principle, as applied to doctors, by various local authorities in the country.

Salaries in Public Health Service

Amendment by NORTH STAFFORDSHIRE: That the Council be instructed to reconsider the minimum salaries for whole-time consultant and other appointments.

Motion by CARDIFF: That, with reference to para. 80 of Annual Report, when the revision of the Askwith scale of salaries in the Public Health Service takes place the new scale should be retrospective from April 1, 1946.

Motion by GATESHEAD: That the inadequacy of the present salary award to whole-time Public Health Medical Officers be emphasized and that care should be taken in future negotiations that any salary scale for whole-time officers be considered in relation to increases in fees payable for part-time Public Health and Hospital work.

Milk

Motion by HARROW: That, with reference to para. 84 of Council's Report, this meeting considers that the breadth of the problem demands consideration by an Inter-Departmental Committee of the Government, including the Ministries of Food, Agriculture, Health, and any other Department concerned with the production and distribution of milk; and requests Council to press the Government for the appointment of such a Committee.

Motion by MARYLEBONE: That this meeting wishes to impress upon the Minister of Health the urgent necessity of action by the combined efforts of the Ministers of Health, Food, and Agriculture in order to ensure that clean safe milk is made available as efficiently as possible.

FINANCE*Subscription to the Association*

Amendment by GREENWICH AND DEPTFORD: That this meeting is of the opinion that the time has now arrived when an increase in present subscription rates should be considered.

MEDICAL ETHICS*Rules of the Central Ethical Committee relating to Complaints regarding Professional Conduct*

Amendment by NEWCASTLE-UPON-TYNE: That this meeting agrees to the expulsion of a member who has accepted an appointment subject to an important notice in the *Journal*, but that all other cases of ethical conduct should originate in the Branch or Division.

ORGANIZATION*Expenses of Members attending Meetings*

Motion by GREENWICH AND DEPTFORD: That this meeting approves the principle of payment of expenses of members attending meetings, but considers that the rates suggested by the Organization Committee are inadequate and would still debar the younger member accepting office, and recommends that they be doubled.

(Note: The rates suggested by the Organization Committee were as follows:

That, in addition to first-class return railway fares (including sleepers), payment of subsistence allowances be made to members of the Association attending centrally arranged meetings on the following basis:

For absence from home over 8 hours	10s. 6d.
Where stay overnight is necessary an additional	£1 0s. 6d.
Where a sleeper is claimed the overnight payment to be reduced to	10s. 6d.

Where attendance on consecutive days does not necessitate the use of hotel accommodation payment on the day basis only to be made.)

Motion by GATESHEAD: That, with reference to para. 96 of the Annual Report of Council, payment of representatives attending central meetings should be on a factual basis of actual submitted expenses up to a predetermined maximum.

Motion by LEEDS: (1) That Representatives, Members of Council and members of Standing Committees or other Committees or meetings for the conduct of business of the Association arranged centrally be paid out of the general funds of the Association subsistence allowance at a rate to be determined by the Representative Body from time to time.

(2) That By-law 86 be amended to read as follows:

The expenses of any person which in pursuance of the 49th Article of Association are to be defrayed out of the general funds of the Association are the first-class travelling expenses (including where necessary the cost of a sleeping berth) within Great Britain and Northern Ireland of that person together with such allowance for subsistence as may be determined by the Representative Body from time to time.

(3) That the subsistence allowance payable to members under By-law 86 shall be as follows:

1. For each day on which the member shall be engaged away from his practice for not less than 8 hours between 8 a.m. and 8 p.m.	10s. 0d.
For each night spent in travelling	10s. 0d.
For each night where it is necessary to stop in a hotel	£1 0s. 0d.

GENERAL MEDICAL COUNCIL*Election of a Woman Practitioner as a Direct Representative of the Profession on the General Medical Council*

Amendment by PLYMOUTH: That the existing procedure is adequate to ensure that a woman can be elected to the G.M.C. on her merits.

PUBLIC RELATIONS*Information Service at B.M.A. House*

Motion by BATH: That the Public Relations Committee of the Association be urged to encourage its activities in giving to the public authoritative information on hygiene and medical progress such as is obviously popular when supplied by other agencies.

EXECUTIVE COUNCILS IN SCOTLAND

The Secretary of State for Scotland has fixed the areas that the 25 Executive Councils will administer under the National Health Service (Scotland) Act. Glasgow, Edinburgh, Dundee, and Aberdeen will each have an Executive Council, as will the counties of Angus, Ayr, Caithness, Dumfries, Dunbarton, Fife, Inverness, Lanark, Orkney, Renfrew, Ross and Cromarty, Sutherland, and Zetland. An Executive Council will be appointed to each group of counties as follows: Aberdeen and Kincardine; Argyll and Bute; Banff, Moray, and Nairn; Kirkcubright and Wigtown; Midlothian, West Lothian, East Lothian, and Peebles; Perth and Kinross; Roxburgh, Berwick, and Selkirk; Stirling and Clackmannan. The members of the Councils are expected to be appointed in a few weeks' time.

MEDICAL ORGANIZATION IN DENMARK THE STATE SERUM INSTITUTE

BY

PETER KRAG

Head of Department, State Serum Institute, Copenhagen

The State Serum Institute was established in 1902. The main object was the production of diphtheria antitoxin serum, but it was intended to take up similar work on other diseases according to the possibilities arising. Since then its development has been stamped by the Institute's being the sole central laboratory for diagnostic bacteriology and serology in the country. Besides considerable extension of the diagnostic work the Institute comprises larger and smaller factory-like plants for the production of sera and vaccines, and in connexion with these much scientific work is carried on—applied science as well as pure research.

The diagnostic work is arranged in several departments. A department for general bacteriology carries out all diagnostic bacteriology, including Widal and Bunnell tests; the tuberculosis and pneumococcus diagnoses are undertaken in separate departments, where also the production of tuberculin and anti-pneumococcal sera is carried out; a serodiagnostic department is responsible for the serological diagnosis of syphilis and gonorrhoea. Further, there are a special department for blood typing and dried serum production, and a hormone department (9,000 tests for pregnancy in 1945). Production proper is managed by the serum department (diphtheria antitoxin and vaccine; convalescent sera), the anaerobic department (other sera), and the vaccines department (smallpox vaccine and bacterial vaccines). The Calmette vaccine is produced in the tuberculosis department (40,000 persons vaccinated during 1945). In connexion with serum production a physico-chemical department performs concentration of the sera. All the finished products pass through a control department. Two special departments take care of the international work carried out at the Institute, namely, the department for standardization of sera and toxins, and the Salmonella Centre. There is a considerable plant for the production of foot-and-mouth disease vaccine. Virus research, which is going on in two or three departments, has not yet a department of its own.

Common to these special branches are the administration, library, stables and farming, and departments for medium preparation, cleaning, workshops, supplies, etc.

Diagnostic Service

Any doctor and any hospital have the right to send samples to the Institute for diagnostic purposes, and they may requisition packing and blank forms free of charge. All tests of importance for the control of epidemic disease are carried out gratis, while prices for other tests have been fixed in accordance with the actual expenditure of the department in question, given in a quarterly note of account. Payment follows from the hospitals directly (i.e., from the commune or county in question). Doctors are liable for tests carried out in connexion with private practice, but have a right to charge the cost with their fee. In panel practice the doctor simply fills in the name of the panel on the form, and the panel gets a quarterly note of account covering the investigations requisitioned by a number of panel doctors.

Every doctor in the country gets an annual survey (in the Organization's *Pocket Book*) of the diagnostic facilities offered; together with a list of prices. Applications for free investigations may be met in the case of research work or if the patient is poor.

Samples are received throughout the twenty-four hours. Serological investigations are started at 10 a.m. (Widal tests repeatedly during the day); bacteriological examinations are taken from 9 a.m. to 11 p.m.; particularly important samples are dealt with during night hours also. The results are sent by mail; but telephone and telegraph are used in accordance with doctors' wishes and whenever it is deemed necessary by a positive finding of, for instance, typhoid bacilli. With each

answer, on the back of the form, an explanation of the result obtained is given, and the diagnostic consequence likely to ensue is suggested.

As the size of the country in relation to the railroad system makes it possible for samples to reach the Institute within six to eighteen hours, the whole area of Denmark is covered, even the remotest corners of Jutland. It is true, however, that doctors in some parts of the country have to take a sample from their patients (e.g., for gonococcus culture) just before the train leaves.

The departures from the system of centralized diagnosis are few and may in part be looked upon as virtual outposts of the Institute: (1) Many doctors do their own microscopy with regard to gonorrhoea and tuberculosis. (2) Most clinical laboratories (in the hospitals) manage the diagnosis of *Bac coli*, staphylococci, etc., in cultures from urine and pus, and the microscopical diagnosis of gonorrhoea and tuberculosis. (3) Most hospitals diagnose diphtheria by the culture method. (4) The Institute has for some years run eight auxiliary laboratories for pneumococcus typing, and one for gonococcus diagnosis by culture. These provisional laboratories are being developed at present.

As the culture methods are vastly superior to microscopy for gonococci and tubercle bacilli, there is an increasing demand that samples should go direct to the Institute in order to secure the best possible basis for diagnosis and control. As for diphtheria, the Institute is the only place where type and virulence can be ascertained.

Material for Education and Records

Material from the Institute is utilized by the university in the training of medical students, and its routine methods are taught. It is a rule that alterations occurring in the diagnostic method are described and accounted for in the Organization's weekly *Ugeskrift for Læger* (corresponding to the *B.M.J.*). A post graduate course is usually held at the Institute annually. It is attended chiefly by a few doctors wanting to specialize in research work or who require an addition to the hospital training.

As the Danish population is rather small, about four million a survey is manageable, and the Institute is able to run a series of indexes, comprising, for instance, all typhoid and paratyphoid carriers, all tuberculous patients, all syphilitics, all patients with a positive gonococcus complement-fixation reaction or positive gonococcus culture, and all members of authorized blood donor corps. These indexes are kept up to date from the results registered in the various departments and by means of compulsory notification from practitioners and from hospitals, sent through medical officers. The indexes give information to any doctor inquiring into the case history of a patient, and in return are provided with the information necessary for registration and classification. The Institute receives ten to forty inquiries daily by letter or telephone from doctors wanting advice on diagnosis and therapeutics—which tests should be used in a certain case, how a result should be interpreted, or what is the correct use of the Institute's sera and vaccines. Some of the questions, however, are referred to specialists among the chief physicians or professors in the capital.

Sera and vaccines are distributed to hospitals, clinics, and doctors upon written or telephoned requisition at any time of the day or night. Payment follows the rules for diagnostic investigations mentioned above. Since the panel institutions refuse on principle to pay for any prophylactic measure—some of the vaccines form exceptions to the rule—the patients have to pay themselves. Diphtheria vaccine, however, is free of charge; and, as for vaccination itself, a law was passed a few years ago fixing doctors' fees and stating what public institutions are liable for payment.

Income and Expenditure

The size of the Institute appears from the following figures for 1945-6.—Employees: laboratory, 249; administration, stables, cleaning, workshops, etc., 379. Income: about £150,000; expenditure: about £300,000. The annual deficit is

met by Parliamentary vote; the cost of new plants and buildings is covered by special grant.

The number of samples received per year approaches one million, divided into groups as follows: bacteriology, 300,000; serology, 500,000; others, 100,000.

Public Health and Research

A central institute is an immensely valuable organization, when the size of the population is less than five to six million and proper means of communication are at hand. It means that all diagnoses become comparable. It is easy to maintain a high technical standard, since the use of controls necessitates only a proportionately small amount of work. The doctors and hospitals can send the day's diagnostic material in one package. The Institute receives a large and uniform quantity of material suitable for the evaluation of practical routine work as well as for research. It is also possible for the staff to survey diagnostic and epidemiological problems of the whole country; and therefore the State epidemiologist, who is called for as adviser to the medical officers whenever an epidemic shows signs of becoming serious, has his daily activities divided between the Board of Health and the Institute.

The following are minor disadvantages of the centralized work: the large scale on which the work has to be done is accomplished only by means of a somewhat factory-like organization, and a certain skeleton-like treatment of the individual sample may ensue; unfortunately, also, the subordinate laboratory personnel have a very monotonous and unqualified task. The staff may find it difficult to keep abreast of the scientifically important material accumulating.

Research work is considerably furthered by the possibilities for team work naturally afforded by a branched and full-grown central institute providing efficient and highly qualified technical assistants in many fields. Problems of room and personnel may here be more easily settled since not all departments are fully loaded at the same time. But, on the other hand, if planning for extensions and new buildings is neglected the resulting disadvantage is considerably more serious than in the case of minor laboratories, where the difficulties may perhaps be overcome by the addition of an extra room or two. Further, an independent, central institute with a monopoly may lead to stagnation, since criticism and new ideas are seldom brought forward or perhaps dismissed as not well founded. A fruitful scientific reciprocal relation can be established only with similar institutes in foreign countries.

The leading posts of the Institute are filled by physicians and pharmacists who are permanent functionaries; all have to regard the Institute situation as full-time employment not allowing any paid extra job. This means that at the age of 40-45 they have become specialists within a narrowly limited field and have very little opportunity indeed for obtaining favourable conditions elsewhere. This feeling of dependency is to some extent compensated by the excellent access to scientific work offered by the Institute—in theory. In practice, long periods of necessary routine work together with want of space may tend to diminish the possibilities for research work. To our young medical assistants an appointment of from two to four years means a valuable scientific scholarship, since the routine work they are called upon to carry out can be accomplished within three or four hours of the day, while culture media, chemicals, animals, etc., are placed at their free disposal—granted of course that the principals approve of the research plan in question.

Freedom from Financial Profit

In my opinion it is an essential advantage that the Institute is not a private enterprise with a demand for a certain annual balance, since this might lead to a price policy obstructing many useful investigations of importance to the patients as well as to science. If the standard of scientific work in a country's sole central institute can be maintained equal to that of other countries, and if the institute's daily experience is utilized in the right way, the central institute constitutes the most economical and manageable solution to the practical and scientific problems connected with bacteriology and serology.

RELEASE FROM THE FORCES

The following is the latest information received by the Central Medical War Committee on the arrangements for the release of medical officers in Class A.

Royal Navy.—July 1-Aug. 31: Group 62; Sept. 1-30: Group 63.

Army.—General Duty Officers: July 1-Aug. 15: Group 60; Aug. 16-Sept. 30: Group 61. Specialists: July 1-31: Group 51; Aug. 1-31: Group 52; Sept. 1-30: Group 53.

Royal Air Force.—July 1-31: Group 60; Aug. 1-31: Group 61; Sept. 1-30: Group 62.

HEARD AT HEADQUARTERS

Self-certified

In the strange retort houses of the Ministry of Fuel and Power the ancient taunt, "Physician, heal thyself," becomes not a taunt but an injunction, "Physician, certify thyself." A correspondent raised with the Ministry the question of space heating in doctors' surgeries and asked about the necessary authority for such heating. He received in due course a reply from the Parliamentary Secretary stating that it was assumed that the reference was to a room in the doctor's own house which he used as a surgery. "If this is the case the use of gas or electricity, where necessary in the interests of his patients' health, can be covered by a certificate issued by himself." Then there followed the usual reminder of the need for economy. The certificate, presumably, will be something to this effect: "I, John Brown, certify that I, John Brown, am entitled to use a gas fire in my surgery." To whom is this certificate to go? Who is to "vet" it? What penalties are to be imposed if it is "untrue, misleading, or improper"? If a doctor who is himself neither a septuagenarian nor an infant (the certificate of course should be specific on that point) switches on his electric radiator, does the filling up of a certificate by himself legalize an illegal act? Where is the line to be drawn? May a doctor, on the ground that his own well-being is necessary to the health of his patients, certify himself as eligible for extra rations? This is surely another instance of the faith in form-filling which has descended on official bodies. Everything is all right if it is vouched for on the dotted line.

No Parking

The no-parking rule in certain streets in West and Central London has its advantages in speeding up traffic, but it can be very inconvenient to a doctor if he is required to park his car a considerable distance away from the premises to which he has been called. Fortunately the streets affected by the new order are mostly non-residential; nevertheless, doctors are called in emergencies to business premises. The Association has asked the Commissioner of Metropolitan Police whether a practitioner who is called to a sudden emergency may be allowed to park his car in the prohibited area. An ambulance is permitted to stop in a no-parking street, and the doctor on an emergency call is on no less important an errand.

Scotland under Dissection

The Registrar-General for Scotland described to the Royal Statistical Society the other day the projected third Statistical Account of Scotland, which is being undertaken through the generosity of the Nuffield Foundation. The first Statistical Account was completed at the beginning of the nineteenth century, and the second in 1845. It is much more than a census: it is a collection of information on the way of life of each local community, the attitude of the people to work and leisure, the changes in public and social services, and it includes local customs and traditions, local ballads and sayings, and even medicinal cures or food recipes which are peculiar to the parish under review. Four preliminary surveys are already being undertaken, each under the special supervision of one of the Scottish

universities—namely, in the counties of Ayr, East Lothian, and Fife, and the city of Aberdeen. For this purpose the goodwill of many national and local bodies in Scotland has been secured, among them the Scottish Council of Social Services, the Convention of the Royal Burghs, the Association of County Burghs, educational institutes, and the presbyteries. Clergymen of every church, teachers of every school have been asked to co-operate. It was curious that not a word was said by the Registrar-General about the help which medical practitioners and medical officers of health could give in such a survey. Very possibly such help has been enlisted, but it was not mentioned. The doctor knows the lives of people behind doors which may be closed to ministers of religion. No one has a better knowledge of the domestic background to the social scene.

Correspondence

Buying of Practices

SIR,—In answer to my letter published in the *Supplement* of June 7 (p. 116) Dr. J. Michael Jones states (*Supplement*, June 21, p. 153) that I repeat the glib statement that up to 100% of the price of a practice may be obtained at low rate of interest; he had heard this stated so frequently, usually by old practitioners, etc. I must refute his statement, which I am in a position to do authoritatively, having recently availed myself of one of the schemes available. The bank did not require a guarantor. All the bank required was a life assurance policy to cover the amount of the loan, which policy had no surrender value, having been recently taken out, an assurance of personal integrity, and a copy of the audited accounts of the practice over the past six years. The bank take a charge on the goodwill of the practice and an assignment of the life policy; repayment is over ten years usually, but may in a few cases be extended to fifteen.

When one considers that a building society will usually loan 90% of the cost of a house over 20 years, it will be seen that very little capital is actually necessary for the purchase of a house and practice, and not many years of assistantship would be necessary to acquire these means.

It seems possible to me that the Treasury hope to make more than the 4% p.a. on medical practices after they have "over."—I am, etc.,

Wales,

T. H. HARGREAVES.

SIR,—With reference to Dr. J. Michael Jones's letter (*Supplement*, June 21, p. 153) concerning the buying of practices, I would point out that last year I borrowed 100% of the amount to buy my practice without security save for £300 of saving certificates. The latter I need not have given, but I preferred to do so. The loan was arranged by a firm that advertises in the *Journal*, and my bank advanced the money. The same bank allowed an overdraft of £300, to run if necessary for five years. The loan is to be repaid in 15 years, interest being 4% per annum.

I have since borrowed a further substantial sum to buy another share in a practice, and this was arranged in five minutes over the telephone. References are of course required, but the only one I gave was from my former Army A.D.M.S. The only other condition is that a life insurance equivalent to the amount borrowed has to be held by the borrower. I should perhaps add that other firms are less obliging.—I am, etc.,

Newport Pagnell, Bucks.

A. A. CLAY.

Extension of N.H.I.

SIR,—Dr. A. Crawford Mayer (*Supplement*, June 21, p. 153) comments on the N.H.I. Service. His suggestions, and others, are to be found in "The B.M.A.'s Proposals for a General Medical Service for the Nation" (1930). I would like to know why the B.M.A.'s admirable plan has attracted so little attention.—I am, etc.,

Chichester, Sussex.

G. T. RUTHERFOORD.

Association Notices

PROPOSED WEST WIGTOWNSHIRE DIVISION

Notice is hereby given by the Council of the Association that it is proposed to form a separate Division composed of members of the Association in West Wigtownshire (at present included in the Dumfries and Galloway Division and form part of the Border Counties Branch), and to attach this Division to the Glasgow and West of Scotland Branch, area of the Division being defined as follows: Wigtown, with the exception of the parishes of Glasserton, White Sorbie, Kirkcinner, Wigtown, and Penninghame. The area of the Dumfries and Galloway Division to be consequently amended.

Any member affected by the proposal and objecting thereto is requested to write to the Secretary by Aug. 12 stating objection and grounds therefor.

CHARLES HILL,
Secretary

Diary of Central Meetings

JULY

- 22. Tues. Council, 11 a.m.
Annual Representative Meeting, 2 p.m.
- 23. Wed. Annual Representative Meeting, 10 a.m.
Annual General Meeting, 12.30 p.m.
- 24. Thurs. Annual Representative Meeting, 10 a.m.

Branch and Division Meetings to be Held

EAST YORKSHIRE BRANCH.—At Quern House, Park Street, H. Tuesday, July 15, 8 p.m. Discussion of agenda of Annual Representative Meeting and instruction of Representatives. Saturday July 26, 3 p.m. Visit to "The Retreat," Haslington Road, York.

ISLE OF WIGHT DIVISION.—At Royal Isle of Wight Convalescent Nurses' Home, Adelaide Place, Ryde, Monday, July 14, 8.15 p.m. Dr. L. A. Hulst (Dean of University Hospital, Utrecht) "Experiences of Medicine in the Occupied Netherlands."

WESTMINSTER AND HOLBORN DIVISION.—At City Hall, Chancery Cross Road, W.C., Thursday, July 17, 8 p.m. Agenda: Consideration of Supplementary Report of Council for 1946. To formulate amendments to published motions on agenda for A.R.M.

Meetings of Branches and Divisions

EDINBURGH AND SOUTH-EAST OF SCOTLAND BRANCH

Dr. P. Martin Brodie, retiring President of the Branch, and his friends received a large gathering of members and their friends at the Hall of the Royal College of Surgeons, Edinburgh, for the Annual Summer Meeting of the Branch on June 25. In welcoming the guests Dr. Brodie expressed to the President and Council of the Royal College the sincere appreciation of the Branch for the great privilege of being allowed to hold their meeting in the honourable precincts of the College. In replying, Mr. J. M. Graham, President of the Royal College of Surgeons of Edinburgh, hoped that it might be the first of many future occasions when members of the British Medical Association would be welcome guests.

Dr. Douglas Guthrie, Honorary Librarian, gave an entertaining account of the history and traditions of the ancient College from its foundation in 1505 to modern times. The social activities culminated in a sumptuous tea with strawberries and cream. At the reception the Annual Meeting of the Branch was held, the main business being the election of office bearers, with Dr. G. W. Ireland as the new President.

SOUTH-WESTERN BRANCH

The 107th Annual Meeting of the South-western Branch was held at Torquay on June 12, when Dr. F. D. M. Hocking, Truro, resigned the chair to Dr. P. A. McCallum, of Torquay. Dr. McCallum gave his inaugural address on "The Practice of Medicine in Retrospect and Prospect." He said that they stood to-day at the close, or very near the close, of an era in medical history. They saw themselves threatened with governmental control becoming the servants of the State rather than the servants of the patients.

At this critical phase in the history of medicine what could they do to be saved? First, they must at all costs retain and safeguard their individual freedom to deal with their patients as they believe to be best. There must be freedom of judgment, action, speech, and publication. Secondly, if they were to retain their freedom probably one of their greatest needs was unity. The diversity of activities and interests within the profession made that difficult. They needed more opportunities for friendly intercourse and for discussion of their general and individual problems. Thirdly, they must preserve a due sense of proportion, uninfluenced by personal idiosyncrasies, personal likes and dislikes. And fourthly, their public relations must be developed and improved.

LONDON SATURDAY JULY 19 1947

SOME ASPECTS OF HUMAN INFERTILITY

BY

ALBERT SHARMAN, M.D., Ph.D., B.Sc., M.R.C.O.G.

Senior Assistant Surgeon, Royal Samaritan Hospital for Women, Glasgow

Although infertility is one of the oldest of human problems it is only within the present century that real progress has been made in its study. But in these comparatively few years intensive work has been done on this subject, and the accumulated literature is now enormous. It is not my intention to refer to more than the essential relevant writings or to give an exhaustive account of the complete investigation and treatment of a barren marriage. It is proposed, rather, as indicated in the title of the paper, to discuss certain selected aspects of the subject which have been under personal study and investigation during recent years—namely: (1) The tubal status—patency and non-patency—as determined by insufflation in a consecutive and unselected series of 1,478 cases of primary sterility. (2) Therapeutic aspects of insufflation, based on 271 cases of pregnancy following insufflation in primary sterility. (3) Tuberculous endometritis and primary sterility—a study of 100 cases (the largest series ever recorded). (4) The causation of tubal occlusion.

The Tubal Status

Patency of the lumen of the Fallopian tube is an obvious essential to conception. But the tube is not a static entity: not only does its muscular coat undergo peristaltic movements but its fibres increase and decrease in length with the phases of the cycle. Guthmann (1922) was the first to record the fact that tubal peristalsis was responsible for the nanometric fluctuations on insufflation, and he based his conclusions on the fact that when the tubes were closed these fluctuations were absent. Müller (1944) has shown by hysterosalpingograms that peristalsis occurs in the tubes, both in the direction of the uterus and from the uterine end towards the fimbriae. In two cases of sactosalpinx he demonstrated that iodine masses moved from place to place as the result of peristalsis and antiperistalsis. Peristalsis has been observed by Westman (1930) in the monkey and by Mikulicz-Radecki and Nahmmacher (1926) and by Siegler (1944) in the rabbit. Peristaltic movements or contractions in the human tube had never been directly visualized until August, 1946, when I observed them during the course of an operation for the removal of a diseased ovary. I had been utilizing the opportunity for studying the effects of insufflation (per vaginam) on the tubes when their fimbriated ends were clamped. As soon as the pressure forceps were released peristaltic movements in the direction of the fimbriated ends were clearly seen and demonstrated to the assistant, house-surgeon, and anaesthetist. These movements were seen in only one of nine such experiments. As Ruddick (quoted by Siegler, 1944) has failed to notice any tubal peristalsis on peritoneoscopy in over 2,000 cases,

it is probable that the non-physiological conditions imposed by experiment were responsible for inducing peristalsis in my case.

Since the functional condition of the tube to a large extent determines the chances of fertilization it is obviously desirable to investigate this aspect of the reproductive mechanism. Although the available methods are not physiological they have the advantage of being easy to apply and of yielding sufficiently accurate information for clinical purposes. They should be adopted as part of the routine examination of the wife, for impairment of tubal function cannot be excluded by the ordinary bimanual examination, however carefully conducted.

The methods in general use fall into two main groups—those designed to investigate the passage of a gas through the genital tract (utero-tube insufflation) and those in which the condition of the tubes is revealed by their radiographic appearances after the injection of a suitable opaque substance (hysterosalpingography). It is proposed here to discuss only insufflation, for which purpose various types of apparatus have been described since the introduction of the method by Rubin in 1919. The outstanding advance in recent years has been the inclusion of the kymograph, which makes possible the registration of tubal contractions and thus takes into consideration the actual behaviour of the tubes during the test. Four types of record are obtained, corresponding to the following conditions: normal tubal patency, tubal spasm, tubal stenosis, and non-patency.

The total number of patients in the series whose tubes were insufflated amounted to 1,478, of whom about 400 had two or more insufflations. In most instances the test was repeated simply as a confirmatory procedure; in some it was done to compare the findings with and without anaesthesia; but in 22 patients six or more tests were done to study the behaviour of patent tubes over a considerable period of time. One patient was insufflated 23 times over a period of seven months and another daily for the 18 days between the conclusion of one period and the beginning of another.

A study of the behaviour of patent tubes as revealed by repeated insufflations shows that under similar conditions—for example, the consistency of the rate of flow of the gas—there is a noteworthy constancy in the appearance of the tracings obtained. No great difference, either in the level at which patency is established or in the appearance of the tubal contraction waves, is usually seen in any given patient when insufflation is repeated even after several months. Increase in the rate of flow of gas is sometimes followed by a great increase in the patency-pressure level and by more active deeper peristaltic waves, but this is not invariable. Around ovulation time (presumptive) more active or more frequent peristalsis may occur. This also

*Being the substance of a paper read, by invitation, at the South African Medical Congress, Durban, October, 1946.

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KEY TO DATES AND PAGES

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 6 1946

THE EVOLUTION OF CLINICAL MEDICINE AS ILLUSTRATED BY THE HISTORY OF EPILEPSY

BY

GORDON HOLMES, M.D., F.R.C.P., F.R.S.

To all who have been for some years engaged in the practice of clinical medicine it is obvious that important developments in the diagnosis of many diseases have taken place during the period of their professional life, but many are apt to forget now recent is the acquisition of much knowledge. Hughlings Jackson, to whom I was house-physician, was accustomed to say he had been a neurologist many years before the knee-jerk was first described, and I had almost passed out of studentship when Babinski drew attention to that type of pathological plantar reflex which has become such a valuable sign in the diagnosis of nervous disorders. Advances in treatment are perhaps more striking, but as rational therapeutics depend on recognition of the nature of the disease, diagnosis is evidently the first essential step in progress.

In many instances recognition of the nature and origin of a morbid condition has developed suddenly as a result of careful clinical observation, as the distinction of typhus from enteric fever; by the demonstration of constant and characteristic anatomical changes associated with it; and, more critically, by the discovery of a specific-causal factor, as the infecting organism of an infectious illness. Sometimes, however, it has been due to introduction of new methods of investigation, as the use of the electrocardiograph in that branch of medicine in which the founder of this lecture is a recognized authority.

More frequently the differentiation of separate diseases as seen through the centuries has been a long and slow process which has been retarded by failure to follow the straight path in the maze of clinical experience, by misinterpretation of observations, and particularly by failure to observe accurately and correlate clinical symptoms with morbid anatomy. And as most symptoms are disturbances of function, diagnosis has had in many cases to follow in the wake of physiology.

But the history of medicine reveals another and even more serious obstacle to progress which must be impressed on the student, or rather postgraduate, of to-day: it is too faithful submission to authority and failure to reason independently from facts observed. This will be evident in the subject I have selected to illustrate the evolution of clinical medicine. Many diseases might be chosen for this purpose, and the story of some might be more instructive, but, owing to the dramatic manifestations of epilepsy, its occurrence and views on its nature and pathology have been recorded since the dawn of history. Perhaps I have also been prompted to talk to you on the history of epilepsy by a subconscious memory of a statement by Oliver Wendell Holmes: "If I wished to show a student the difficulties of getting at truth from clinical experience I would give him the history of epilepsy to read."

An accurate definition of terms should be the first step in any discussion, and it is particularly necessary here, as history has recently repeated itself in a tendency to extend the connotation of the term "epilepsy": many, in fact, now speak of several types of convulsions and other episodic phenomena as belonging

to "the epilepsies." It will, however, suffice to state that here it is proposed to deal only with so-called idiopathic epilepsy—that is, a chronic disease without gross structural changes, characterized by periodic attacks of loss of consciousness with or without convulsions or other symptoms.

It is evident that in dealing with the early history of any morbid condition one must distinguish between the views of the layman and those of the physician. This is often difficult, as they may include in it different clinical entities—in fact, speak of different conditions. It is particularly so in the history of epilepsy, with which, till early in the nineteenth century, hysteria, vertigo, trances, the religious ecstatic states so common in the Middle Ages, and other conditions were often confused by both the profession and the people. But, on the whole, a fairly clear picture of genuine epilepsy is presented in early literature.

Views of the Greeks

Scientific medicine—that is, direct clinical observation and application of reason to the facts observed—came to birth in Greece about the end of the fifth century B.C. Some of the medical knowledge then possessed by the Greeks may have been derived from earlier Arabian and Egyptian physicians, but the empirical practice of the East was from this period largely replaced by attempts at a materialistic interpretation of the universe and of vital phenomena.

The earliest contribution to epilepsy that we possess is a treatise by Hippocrates or by a member of his school, *On the Sacred Disease*, written about the middle of the fifth century B.C. It contains an attack on the superstitions of the people, and probably of physicians too, who had regarded it as a disease of divine origin. It is therefore evident that epilepsy, or conditions confused with it, was recognized by previous generations. In the Hippocratic monograph it is insisted that all illnesses have natural or material causes and that epilepsy is no more sacred or divine than other diseases. It is not due to the wrath of the Gods, demoniac possession, or other extraneous influences. Divine and supernatural influences were denied, and anthropomorphic and religious theories of earlier philosophers and priests were replaced by a pathology that was the first step in scientific knowledge.

The clinical descriptions are excellent, and contain many observations that were overlooked during the next two thousand years. It was recognized that epilepsy rarely starts after the age of 20, that there is often a hereditary tendency, that its manifestations vary, that it sometimes ceases spontaneously, that attacks occur in sleep and particularly on waking, and that when associated with injury of one side of the head convulsions may be limited to the opposite side of the body. It was also observed that in chronic cases the brain may be abnormally moist—a fact well known now, as cerebrospinal fluid accumulates on its surface and between its convolutions when its tissue atrophies. Further, epilepsy was attributed to irritation of the brain by acid or sour substances—an interesting fact, as it is the first indication of localization in it of pathological processes.

* The first Price Lecture, delivered in the Queen's University, Belfast, on May 9, 1946.

2 JULY 6, 1946

school regarded epilepsy as a cerebral disease. It is hard for us to recall the views of the Greeks on the brain. Some years earlier Alcmaeon taught that the brain was the seat of consciousness; but this was not generally accepted by the philosophers up to the time of Hippocrates. For many subsequent years the nature and the seat of consciousness and mind occupied a dominant place in Greek philosophic discussions, largely to the exclusion of somatic functions. Intelligence, the passions, and sensibility were by various authors referred to the heart, liver, lungs, and other visceral organs. According to Hippocrates, however, the brain is the organ of the mind; it is by it we think and understand, see and hear. All intellectual and moral activities depend on it; it is the interpreter of intelligence, but intelligence is carried to it by air that circulates through the veins. If the veins are blocked by cold phlegm the patient becomes unconscious and an epileptic attack occurs.

The influence of the teaching of Hippocrates is obvious in Plato's hypothesis that epilepsy is due to a mixture of white phlegm and black bile which obstructs the circulation of air to the head. But Plato's dogma that it is necessary to avoid the confusion caused by evidence afforded by the senses and to determine truth by argument alone was largely responsible for failure in advance in the natural sciences during the following sixteen centuries. The influence of his teaching persisted, though in his later writings Aristotle emphasized the necessity for observation and the importance of determining concrete facts.

Aristotle attributed disease to morbid changes in the body, and refuted belief in magic and intervention of divine and demoniac agencies. Though there is no evidence that he studied anatomy or performed dissections, he repeatedly marshalled evidence to prove that the heart was the "sensorium commune"—the organ of sensation and intelligence—and that the only function of the brain was to cool and purify the blood, or rather the air or vapour that is conducted to it by the veins. He attributed epileptic seizures to these vapours being too condensed by the cold brain and therefore impeding the action of the heart when they return to it. These humoral theories favoured by Plato and Aristotle had for several centuries great influence on views on the pathogenesis of epilepsy.

Although Plato, Aristotle, and other Greek philosophers sought to explain illness of the body and often afflictions of the mind by somatic or material causes, not only was the application of scientific methods to the study of man neglected by their successors, but, as the fate of Socrates shows, denial of divine intervention in natural happenings was, as it also became in later years, a dangerous heresy. Even early in the eighteenth century Hippocrates was accused of atheism.

The Next Milestone

The work of Galen in the second century A.D. is the next milestone in the history of epilepsy. Galen was an anatomist as well as a first-rate clinical observer; he insisted that the brain is the organ of mind, of sensation, and of movement—not merely an inert mass or a kind of cold wet sponge which cooled the humours, as some of his predecessors believed. He published excellent descriptions of the clinical features of epilepsy, and insisted that it is always due to disorder of the brain, though in certain types the brain may be affected sympathetically by disease of other organs, as the stomach.

He was probably the first to describe local epilepsy, and observed that its clonic spasms may be sometimes arrested by tying a band round the limb in which they start. He observed, too, that when unilateral convulsions reach the head consciousness is generally lost. He assumed, however, that convulsions limited to one limb were due to an affection of peripheral nerves, those involving the whole body except the face to disturbance in the spinal cord, while those in which the face was also affected originated in the brain.

His view on the exciting cause of generalized convulsions was that the humour or principle on which sensation and motion depend, or by which the brain acts on, or is acted on by, the rest of the body, is elaborated in the anterior ventricles of the brain, passes through the third and fourth ventricles, and is thence distributed to the periphery. When this humour becomes too thick or viscid its circulation is impeded, and the

brain, which in its reaction he compared to the strings of a harp, is agitated and thus causes convulsions. On the other hand, accumulation of viscid humour in the substance of the brain produces changes in intelligence and temperament such as are common in epilepsy. It is interesting that he also attributed convulsions to excessive humidity, or, as we would say to-day, to hydration—a factor which has been again recognized only within recent years.

Areteaus of Cappadocia, who practised medicine a little later than Galen, also furnished excellent descriptions of epileptic phenomena, particularly of the initial stages or *aurae* of seizures. He also recorded post-epileptic paresis and anaesthesia, the mental disorders that occasionally follow attacks, and the dementia that frequently develops in chronic cases. He had apparently no doubt that seizures originate in the brain owing to disturbances in the circulation of animal spirits. As late surgeons, he found that merely opening the skull, or cauterizing the underlying brain, might arrest seizures for a time.

After the philosophic age of Greek culture search into the nature of things declined except in Rome, but as here learning and research were directed to more practical or material ends there is little new in the records which have come down to us on the nature of epilepsy. That it was common among the Latins is evident. They gave it the name "*morbis comitialis*," as their meetings in comitia were suspended when one of those present had a seizure, since this was attributed to demoniac possession or to a malign influence of a god, who by this means indicated his displeasure at the proceedings. In the first century B.C., however, Lucretius, who in his often-quoted verse gave an excellent and detailed description of an attack, attributed it to physical or rather humoral causes. At the onset the patient "Struck as with lightning by some keen disease, drops sudden," and, as the attack passes off, "The morbid cause declines, and the fermenting humours from the heart flow back."

The Old Superstitions

But the old superstitions still held sway. They were universally accepted by the people, and probably by the educated too, for, as Francis Bacon wrote, "In all superstitions wise men follow fools." It was so among the Hebrews, who were at that time under Roman rule; for both St. Matthew and St. Mark record the case of an epileptic boy, one of whose seizures occurred in the presence of Jesus, who according to St. Mark said, "Cast out the devil," or in St. Matthew's words, "the foul spirit." The characteristic abrupt cessation of the convulsions and the rapid recovery after a brief period of coma could obviously be explained by the hypothesis that the victim had been suddenly freed from a malign possession.

It is consequently not surprising that, later, demonology became a dogma of the Church and doubt a heresy. Its influence extended through the Dark Ages of the next 1,400 years. Independent thought and investigation were largely replaced by tradition and often suppressed. Belief in witchcraft and possession by demons was almost universal; the Church frowned on views discordant with precedent, and Medicine relied largely on authority, which, as Sir Thomas Browne wrote, has always been a "powerful enemy unto knowledge." In the thirteenth century St. Thomas Aquinas, and two centuries later Martin Luther, admitted the possibility of possession by evil spirits, and even in the sixteenth century epilepsy was spoken of as a "demon disease." The professional reputation of Chaucer's Doctor of Physik was based on his acquaintance with ancient Greek, Arabian, and Roman authorities and on his knowledge of the humoral pathology of Empedocles.

"He knew the cause of everich maladye,
Where it of hoot or cold, or moyste or dry,
And where they engendred and what humour."

Throughout the Middle Ages there were, so far as we know, only variations of ancient theories and little or no original research or speculation into the nature of epilepsy. Seizures were often confused with outbursts of hysteria and other conditions, while most still believed in demoniac possession; others held that the moon and the planets could influence the occurrence of fits. Relief was consequently sought in prayer and fasting, and in magic charms and rituals.

In the first half of the sixteenth century Jean Fernel, whose biological philosophy Sir Charles Sherrington has taken as the

text for his Gifford Lectures, *Man on his Nature*, recognized various types of epilepsy, emphasized its common hereditary tendency, attributed seizures to poisons or vapours irritating the brain, and produced pathological evidence which he thought confirmed this view. But he did not definitely exclude possession, for he recorded the case of a man who was regarded as an epileptic, but from the record was beyond reasonable doubt subject to hysterical seizures, in whom "a certain devil was found to be the cause of this ill." He protested against the prevalent use of charms as a means of warding off attacks, as carrying in writing the names of the three kings who came to worship the infant Christ.

A New Era in Neurology

A new era in neurology was introduced by Sir Thomas Willis (1621-75), whom Soury, the historian of neurology, compared in the vividness of his imagination, brilliancy of style, and profundity of thought to Shakespeare. Though known chiefly as an anatomist, Willis was also a pathologist who correlated symptoms of disease with structural lesions, and a physiologist who attempted to elucidate function by relating the functional capacity of the animal to the development of different portions of the brain. He recognized that the forebrain is not only the organ of mind and that by which sensory messages reach consciousness, but also the origin of nervous impulses, or as he, following his predecessors, wrote, of "animal spirits," which when distributed to lower levels of the nervous system excite movement. He compared these nervous discharges to explosions of gunpowder, and attributed epilepsy to excessive and irregular explosions which in predisposed persons spread through the nervous system. He also taught that epileptogenous discharges originate in grey matter—not in the meninges, white matter, or ventricles of the brain, as was previously believed.

But even Willis did not escape the weight of tradition, for he wrote: "As often as the Devil is permitted to affect miserable mortals he is not able to draw more cruel arrows from any other quiver, or to show miracles by any better witch than by assaults of this monstrous disease." He also described how an attack could be recognized as the work of witches.

A generation later Boerhaave, the celebrated Dutch physician, attempted to explain the symptoms of epilepsy and of other diseases in terms of the physiology of his time. He recognized that many causes may precipitate an attack in one predisposed to epilepsy, and emphasized the importance of injury of the head and neck at birth as a factor. In his view the essential cause of seizures was excessive irritation or abnormal irritability of the brain. At first he believed that the epileptic discharge starts in the white matter of the forebrain, but later decided it may originate in the medulla oblongata. Boerhaave also distinguished hysterical and simulated convulsions from epilepsy, and described an interesting outbreak of mass hysteria in an orphanage which he suppressed by applying, or threatening to apply, a red-hot iron to each of the patients. But even Boerhaave was not wholly free from the influence of tradition, for he appeared doubtful if it was safe to exclude the possibility of supernatural causes in all cases.

During the next century little was added to the knowledge of epilepsy—in fact, a series of experiments on animals diverted attention from the conclusions to which Willis had come. Haller and others found the cortex of animals inexcitable, but evoked convulsions from the brainstem, particularly from the medulla oblongata, which suggested that this was probably the seat of origin of epilepsy. Even in 1859 Schroeder van der Kolk stated that fits are due to abnormal excitability of the medulla—a view shared later by Kussmaul and Russell Reynolds. Nonetheless also postulated the existence of a convulsive centre in the pons, and even Hughlings Jackson believed, for a time at least, that some convulsions depend on discharging centres in the pons or medulla.

It is not surprising that even when it was recognized that epilepsy was a cerebral disorder most of the hypotheses on it immediately exciting cause of an attack were indefinite and vague. The Hippocratic school, as we have seen, believed they were due to excessive and viscid humour acting on the brain; others explained them by obstruction to the circulation of a vital humour in the heart or brain; later, chemical substances and peripheral irritation were evoked as probable factors. Henle

attributed seizures to disturbances in the cerebral circulation. Kussmaul and others to spasm of the cerebral vessels—a view that later was repeatedly revived. It will be observed that all these theories sought to explain seizures by extraneural factors; Willis alone placed the essential abnormality in the nervous elements of the cortex of the forebrain.

Treatment and measures to prevent the occurrence of seizures which were till this time commonly practised both by the people and by doctors illustrate the prevalent ignorance and uncertainty on the nature of the disease. Hippocrates recommended strict dieting, fasting, purgation, counter-irritation of the head, and sometimes blood-letting. When it was believed they were due to the powers of darkness, prayers, incantations, and charms were the only obvious means of treatment. Charms of great variety were used in many lands: silver rings and rings made from coffin nails were popular in England; carrying three bairs of a milk-white greyhound was recommended in Ireland. But most reliance was placed on religious and mystical rites; even in the middle of the eighteenth century a protest was made at depriving the Church of its privilege of curing fits by holy means. From earliest times various drugs were also employed, but none proved so efficient as to be generally used till Sir Charles Locock introduced bromides in 1857.

Modern Views on Epilepsy

This short review of the history of epilepsy brings us to modern times, when the discovery that the surface of the brain is excitable, and that excessive stimulation of the cortex is liable to produce local or general convulsions, provided what is now generally accepted as conclusive evidence that it is here seizures originate. More refined experimental methods and, during the past ten years, the recording of the electrical activity of the brain have confirmed this conclusion.

But clinical observation and the scientific application of analysis and reasoning to facts observed had not yet exhausted progress. This was above all owing to Hughlings Jackson, who in a series of papers from 1861 subjected all features of epilepsy to a keen and masterly analysis. Few diseases have been subjected to such an intensive and critical study, few conclusions have stood so well the test of time as those drawn from it. In a long series of papers Jackson dealt with all its symptoms, discussed their nature, and related them to disorders of specific functions of the brain. Jackson's name is most commonly associated with local convulsions, which, being the simplest subject for study, naturally attracted his attention; but this is only a minor contribution to his fame. Particularly significant now is his statement that a convulsion is due to "a sudden and excessive discharge of many nervous arrangements representing movements, at once or nearly together, because the cells of these arrangements have by some pathological process become highly unstable." This was indeed a prophetic forecast of the results of later methods of investigation.

Another eminent English physician, Sir William Gowers, whose clinical studies and vivid descriptions of the phenomena of epilepsy are unsurpassed, came to a somewhat similar conclusion. According to him an epileptic outburst is due to an unstable equilibrium of the brain that depends on the molecular constitution of nervous elements, which are therefore predisposed to sudden releases of energy apart from an adequate stimulus.

The important part in the teaching of Jackson and Gowers is that the primary and essential disorder lies in the nervous tissue of the cortex, although various other factors may increase their liability to discharge. Later studies have added little to our knowledge. Jackson, Gowers, and others exhausted the limits of clinical observation and analysis, and laboratory investigations have served only to demonstrate factors that predispose to seizures in those subject to them.

Electro-encephalography

But suddenly and unexpectedly, as often happens in other branches of knowledge too, a new means of investigation was discovered which brings us much further in our search into the mystery of epilepsy. In 1929 Hans Berger found that the electrical activity of the brain can be detected through the unopened skull and scalp and recorded when adequately amplified. This activity, which is now generally known as "brain waves,"

appears as variations in the action potentials of large groups of neurons which beat together in synchrony, but it is so feeble that to be made visible in tracings it must be magnified one to two million times. These waves may be modified by several factors, as the arrival of afferent impulses, the state of consciousness, and emotion. Normal waves are more or less regular, but their rate and amplitude vary in different regions of the brain, to some extent in different individuals, and even in the same individual under different conditions.

A few years after Berger's discovery it was found that during epileptic seizures the rhythm and voltage of the waves are grossly modified owing to large numbers of neurons discharging synchronously or simultaneously. Owing to this grouping of discharges they are larger and slower; it is as though the ripples on a calm sea were suddenly by a gale transformed into much larger waves more widely spaced or separated from each other. An epileptic discharge has, indeed, been figuratively described as a "brain storm." It has also been found that different patterns of irregularity are associated with different types of seizures, and that deviations from the normal may occur in an epileptic in interparoxysmal periods.

By many the electro-encephalograph has come to be regarded as a magic wand that can clear away any doubts there may be in the diagnosis of epilepsy. This attitude is certainly unjustified, and may unfortunately cause not only an error but also the personal and economic tragedy that wrongly stamping a person as an epileptic may lead to. Let us see what is the position electro-encephalography occupies to-day. In the first place it is no uncommon experience for the physician to find that separate reports on tracings of the brain waves of any individual are widely divergent or even contradictory: one recorder may report the tracings he has obtained as normal, another that they indicate beyond doubt epilepsy, while a third may interpret his tracings as doubtful but sufficient to suggest the possibility of epilepsy and thus excite the fears, anxiety, and uncertainty that are so disturbing to the patient and to his relatives. For here, as in other branches of medicine, the significance of tests that are new, mysterious, or classed as "scientific" outweigh to the layman the value of expert clinical experience.

The changes in the electro-encephalographic tracings during and immediately preceding a seizure are characteristic and can leave no doubt of its nature; but often these can be demonstrable only when recorded during an attack—then they merely supplement direct observation. Occasionally, however, they appear between seizures and can then be interpreted as due to larvate attacks that present no outward or visible sign. Such deviations from the normal are undoubtedly valuable, especially when an attack has been unobserved and when information conveyed by the patient or his friends may leave doubt of their nature.

But electro-encephalographic abnormalities of the type associated with epilepsy occur even in normal persons who never have had, and probably never will have, a seizure. Lennox, whose experience is unrivalled, estimates that 10% of the population, and an even larger proportion of relatives of epileptics, give such records, and he and others have seen undoubted epileptics in whom abnormal tracings have never been obtained even on repeated examinations.

Recently attention has been directed to less characteristic or non-specific abnormalities, which are more common in tracings from epileptics than from normal persons, but they are not pathognomonic, and indicate at the most only an epileptic tendency. Their value in diagnosis is also reduced by the fact that they occur in other conditions, particularly in the psychoses, psychoneuroses, and after head injuries.

Changes in the rhythm of the brain waves as revealed by the electro-encephalograph have not, therefore, the absolute value in diagnosis as has the demonstration of the causal organism of an infectious illness, the Widal test in enteric fever, the estimation of blood sugar in diabetes mellitus, or even electro-cardiographic tracings in revealing lesions of the conducting system of the heart. To quote Denis Williams, who has had extensive experience both in the use of electro-encephalography and in clinical neurology: "With expert clinical case-taking the electro-encephalograph is needed as a diagnostic aid in only a minority of patients suspected of having epilepsy"; and "There is an unfortunate tendency among some clinicians to

substitute a laboratory report for a careful history and examination." Jasper, who has worked extensively on the subject also writes: "The electro-encephalogram cannot be depended upon to give a certain diagnosis of clinical epilepsy without the aid of other data."

Future experience, research, and the adoption of new methods may add to the value of recording the electrical activity of the brain in epilepsy, but to-day we can only regard it as ancillary or supplementary to clinical investigation and experience. It may, however, produce evidence of what Lennox has called "dysrhythmia" of the cortex—a state that can be regarded as the essential basis of epilepsy, though the patient is not subject to fits or other epileptic symptoms. It also frequently serves to identify the site of pathological changes in the forebrain whether associated with epileptic phenomena or not, and it has thrown light on the nature of the epileptic discharge. Electro-encephalography has done little more than confirm the hypothesis of the cause of epileptic convulsions formulated as result of his clinical studies by Hughlings Jackson more than 70 years ago, but it has made possible the visible recording of these excessive discharges.

Conclusion

Here our short sketch of the long history of epilepsy must end. To-morrow may throw new light on the abnormality of function that constitute liability to seizures and may perhaps bring new therapeutic measures for controlling this liability, but we can now inquire what light this history throws on the evolution of clinical knowledge, for, unless it conveys to us lessons from the past for the use of the present and the future, no matter how interesting history may be it remains barren.

It is obvious that the first step must be differentiation of each disease by clinical methods which mark out the features that distinguish it and make it possible to define it as a clinical entity. The next step is determination of the organ or disorder of which is responsible for the appearance of these clinical symptoms. Then comes recognition of the manner in which the functions of this organ are disordered, whether they are associated or not with structural disease—in other words, the interpretation of symptoms in terms of physiology. But in many pathological conditions clinical investigation alone cannot succeed in unravelling all the problems of disease; it must count on the assistance of laboratory and other ancillary methods that may throw light on the nature of the disorder and on the aetiological factors responsible for it.

Finally, the history of epilepsy emphasizes the importance of adequate clinical study of each disease, no matter how valuable laboratory methods may be, in order to make possible the synthesis and integration of information obtained from its sources and its relation to the patient as a whole; for the patient must ever be looked upon as a conglomerate of many more or less independent parts, but as a living adapted individual.

The history of epilepsy is particularly valuable for the student—and most of us remain students, though perhaps less objective and less receptive to new ideas as age advances—it shows that one of the most potent obstacles to the advancement of knowledge is reliance on authority and subordination of accurate observation and careful analysis in terms of function of the facts observed.

The Canadian Tuberculosis Association in its *Bulletin* for March, 1946, says that two of the great stumbling-blocks to effective control of tuberculosis have been lack of sanatorium beds and unsatisfactory arrangements to defray the cost of treatment. Steps have been taken during the past few years towards solving these problems. If present plans go through 3,000 additional treatment beds are likely to be available this year. Four provinces have already instituted free treatment for all their tuberculous sick. These are Saskatchewan, Alberta, Manitoba, and New Brunswick. Nova Scotia and Quebec have announced their intention to make similar arrangements at an early date. Meanwhile the educational programme has been intensified. Surveys have stimulated public interest, and they have provided valuable object-lessons in how much unsuspected tuberculosis there is likely to be in the general population. Another encouraging feature is the growing public interest in rehabilitation. During 1944 Canada's death rate from tuberculosis fell to its lowest point in history, namely, 47.7 per 100,000 of the population. Preliminary reports indicate a further reduction last year.

TYPHUS: EXPERIENCES IN THE CENTRAL MEDITERRANEAN FORCE

BY

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PART II

TYPHUS IN ITALY AND THE BALKANS

No information could be obtained about the presence of typhus in Italy prior to the Allied occupation. It was known that there had been outbreaks in the Balkans and on the Russian front (Don-Donetz regions). The fact that Italian soldiers returning to Italy from these fronts, as well as from Tunisia, might have brought the disease with them was appreciated. Subsequent events proved this supposition to be true. It was not, however, until some little time after the occupation of Naples that any accurate details were unearthed. Naples was occupied by the Fifth Army in October, 1943, and between November, 1943, and March, 1944, a sharp outbreak of typhus occurred in the city and the surrounding districts. Much has already been written about this epidemic in both the lay and the medical press. The main facts, with special reference to the British Army control measures, are given here. They are condensed from a report submitted by me to the War Office in March, 1944.

The Naples Outbreak

During the early days of the Allied occupation of Naples the general disruption of normal civil affairs made it almost impossible to obtain any accurate epidemiological data. The medical services were completely disorganized; there was little general practice and the public health service was barely functioning. As a result no accurate picture could be obtained as to the incidence of infectious disease. The city had suffered very severe damage. The gas, electricity, water, and sewage systems were out of action, and between 20,000 and 30,000 people lived more or less permanently in air-raid shelters. The people were apathetic and depressed. Lousiness was prevalent, especially in the hospitals and prisons. It was clear that these factors, operating in a malnourished unwashed populace of nearly a million, were ideal for the occurrence and rapid dissemination of infectious diseases. The main risk appeared to be that of an epidemic of the typhoid group. By good fortune this did not materialize in Naples, although severe epidemics arose in other towns.

This appeared to be unlikely, and later the following facts were elicited. It is hard to explain why this important information was at first withheld:

In July there were 12 cases among Serbian prisoners housed in Naples. Between that time and Nov. 20, cases occurred, chiefly among shelter inhabitants and in the large prisoner-of-war hospital. Earlier in the year a small outbreak occurred at Aversa, six miles from Naples. It had been the practice to quarantine soldiers returning from the Russian front at Trieste. A few military cases infected in Tunisia had appeared in different parts of Italy. Few details as to the action taken to prevent the disease spreading could be given us.

It was not until many weeks later that a full account of previous cases was obtained. This was contained in correspondence between the Naples civil authority and the Minister of the Interior, Rome, and the German Military Command. It may be summarized:

In March, a case in a town 15 miles from Naples; in April, 3 cases in soldiers returning from Russia; early in May, 6 cases outside Naples, including 4 children; in July, a civilian who had used a public bath-house in Naples frequented by soldiers returned home infested, contracted typhus, and died. The porter at the baths was next affected. New foci appeared in August in Naples prisons. Cases then occurred in a porter at the jail, a shelter warden, and a policeman. Six inmates of one prison died of typhus. Many "contact" prisoners escaped and could not be traced. The disease appeared in another town outside Naples, and there a quarantine was imposed. It was stated that the epidemic had been mild but that disinfection of contacts and cleansing of the jail were carried out; and, finally, "measures were taken in the city to get rid of body lice, but this was too difficult to control owing to the congestion of people living in the shelters." Between July and November there were 60 cases in the Naples area; there was also an outbreak at Forlì, in Northern Italy. Later information from another source stated that 70 cases occurred in various parts of Italy in troops from Russia.

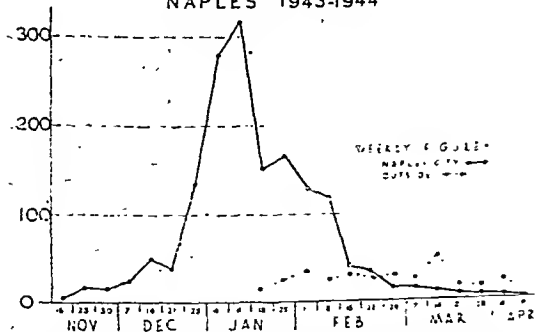
Initial Action Taken.—Two responsible Italian physicians were appointed to carry out an inquiry and furnish daily reports. A committee was established consisting of representatives of the medical services of the Allied Forces, A.M.G., and Italian civil and military medical officers. Arrangements were made for the immediate putting into operation of the civilian disinfecting centre and for the delousing of hospital inmates. A meeting of Naples practitioners was called and the position explained to them. Daily notification of new cases and the preparation of spot maps were arranged for. The services of hygiene personnel were made available for assistance in disinfection and in the construction of showers and disinfestors. Malaria Control Units were also brought into the city for the purpose. Insecticide powder was asked for urgently, together with supplies of soap. Schemes were drawn up for controlling movement of the civilian population, and immediate disinfection and closure of the shelters was demanded. The importance of searching for and notifying all cases and dealing with contacts was emphasized.

The appropriate military authorities were at once informed of the danger to Allied troops, and formations were instructed to submit schemes to be put into operation in case of local necessity.

Progress of the Epidemic

Up to the end of the third week in December, 1943, the number of cases showed a slight but nevertheless significant increase: Nov. 16-23, 18; Nov. 24-30, 18; Dec. 1-7, 22; Dec. 8-14, 45; Dec. 15-22, 36. But between Dec. 22 and 28 a total of 138 cases were recorded. Drs. Soper and Davis, of the Rockefeller Foundation, arrived in Naples early in December. A scheme for case-searching (past and present cases) and the treatment of contacts with insecticide powder was put into operation about the middle of the month. The American Army insecticide powder containing pyrethrum was used, being applied mechanically by means of dust-guns. Every available contact in the family and outside, together with everyone in the building or block of buildings, was dealt with. A dusting centre was opened in a room in the house to which persons living in the neighbourhood could come. Up to 200 persons per case were dusted in this way. This method of application of insecticide powder (NYL, A.L.63, or D.D.T.) by means of dust-guns has particular advantages over the old-fashioned method of hand-dusting of the underclothing. It can be done without removal of the clothes and large numbers of people can be dealt with quickly and efficiently. The powder is forced up the sleeves so that it reaches the axillae, down the front and back of the neck inside the shirt, and inside the

TYPHUS
NAPLES 1943-1944



Every effort was made to obtain notification figures, a variety of sources being explored. In November there were rumours that typhus cases were appearing in the city. The word *tifo* is used rather loosely for both typhus and typhoid; a searching investigation was therefore demanded. On Nov. 24 the Regional Public Health Officer, A.M.G., who had been asked for further details, reported that the cases were true typhus. A conference was called by us on the following day, at which British and American hygiene officers and civilian public health doctors took part. At this meeting it was said initially that these were the first cases in Naples since 1935.

trousers to the pubic region. The hair is also dusted. Towards the end of the month public dusting stations were open in the city, and with the advent of the Typhus Commission these were quickly increased in number. Centres were also established at the railway stations and hospitals, at ferry embarkation points, and in refugee camps. The Italian staffs of these included doctors, nurses, and Red Cross workers. All were paid. Trained squads worked in the shelters, visiting each one periodically. No compulsion was placed on the populace to submit to this form of disinfestation, but its availability was made known through the medium of doctors, priests, and the Press. It was found that all were eager to be rendered louse-free, partly from their fear of typhus, but more probably because it gave them a freedom from body irritation which they had not known for many months. The efficacy of this mode of disinfestation needs no better testimony than this. The daily number of persons treated rose to 60,000, and by the end of February, 1944, 2,250,000 people had been dealt with. This figure does not include the civilians employed by the British and U.S. Forces. 30,000 civilians in British Army employ were dusted with A.L.63 at fortnightly intervals. This was done by Malaria Control Units.

The U.S. Typhus Commission

This organization, under the direction of Brig-Gen. Fox, arrived in December, 1943, and began operations early in January, 1944. It comprised sections for case-finding, contact delousing, mass delousing, inoculation, and refugee delousing, together with a "flying squad" for investigating new outbreaks, and a Central Advisory and Control Branch. D.D.T. powder was made available in large quantities and a 10% mixture in talc was used exclusively for civilian dusting. It was not until late in December that it had first been obtained. During this preliminary period only 10% of the total dustings were carried out with D.D.T. All the dusting was done by means of dust-guns. R.A.M.C. officers, 17 in number, loaned from general hospitals, assisted the Typhus Commission.

Administrative Control

A Typhus Control Board was set up by authority of Sir Brian Robertson, the Chief Administrative Officer of the Allied Central Mediterranean Forces, under the chairmanship of Brig. Galloway, the D.D.M.S. The members consisted of Brig-Gen. Fox, U.S. Typhus Commission; senior administrative medical officers of the British and American Armies, and of the Allied Commission and the Allied Military Government; and myself. At its meetings civilian and military control measures were co-ordinated, and difficulties in such matters as transport, personnel, and equipment sorted out. It fulfilled a most valuable function.

The local committee, inaugurated in November, continued to meet weekly. Allied Navy, Army, and Air Force officers attended, as well as Italian military and civil doctors. The Regional Public Health Officer, Col. Crichton, acted as chairman. These meetings were very successful, and they enabled problems to be solved which could not otherwise have been tackled. (See also *Journal*, June 29, p. 996.)

Frequent meetings of general practitioners were arranged by A.M.G. The doctors and their families and members of the nursing profession were offered immunization. The response to this was disappointing, and inoculation proceeded very slowly—the result of a belief that untoward results often followed its administration. Such an attitude of mind, which had its counterpart in Algeria, is inexplicable.

Further Control Measures

Cinemas and public places of amusement were closed. The reopening of schools was agreed to, for children could be dusted there and propaganda fostered.

When railroad travel restarted no civilians were allowed on the platforms at Naples without being dusted. The control of road traffic from the city was supervised, but, although civilians were required to furnish proof of having been dusted before being issued with passes, there was a very considerable leakage. This was fostered by a black market in disinfestation certificates. The problem of refugees from forward areas promised to be a serious one. A few scattered cases occurred in these areas, but contacts were very efficiently dealt with by field hygiene sections and divisional

medical officers. Steam disinfestation was used at first, and later insecticide powder (A.L.63 and MYL). Camps were eventually established where all refugees were deloused before dispersal. Large numbers of these refugees passing through Naples were treated with D.D.T. by Typhus Commission teams. Five tons of A.L.63 powder were released from our stocks to A.M.G. for refugee use in the Army areas, and portable disinfestors were lent.

British Army Control Measures

These were based on early propaganda by means of lectures, films, posters, and newspaper articles. The streets of Naples were plastered with signs prepared and erected by the hygiene sections. Routine instructions were issued regarding baths, A.L.63 powder, etc.

Naples was the principal Allied port in Italy. At this critical stage of the campaign, with the landing at Anzio imminent, the port had to be kept working at full capacity. It was also an important leave centre for fighting troops, the Allied Navies, and the Mercantile Marine. As a port of disembarkation and a railway terminus, thousands of troops passed through it in transit. To have placed the city entirely out of bounds would have been a serious matter, and this step was deferred as long as possible. Troops were forbidden entry to certain parts of the town and the use of public vehicles, cinemas, and restaurants. As the epidemic increased, this decision had to be reconsidered, for in the narrow streets and alleys with which the city abounded it was impossible to avoid rubbing shoulders with civilians. Prostitution was rife, and rigid policing of the prohibited zones was a difficult matter. So on Jan. 9, 1944 it was recommended that Naples be placed out of bounds to all Allied Forces other than those on essential duty;—this was agreed to. All Allied seamen were included in the order, but in spite of the hardship this imposed on them it was safer to confine them to the dock area than to allow them to run the risk of getting infected and carrying the disease to other parts of the world.

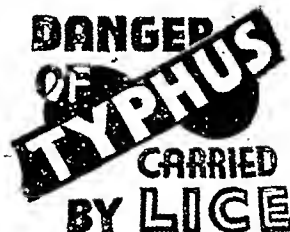
The British Army inoculation state, at first low, was gradually raised as Cox's vaccine became available. Brig-Gen. Fox was instrumental in obtaining supplies from America for our use. The work of hygiene sections in constructing baths and disinfestors has already been referred to, as has the part played by malaria control units who formed the mobile teams. We employed Italian tinsmiths to make dust-guns. These were afterwards manufactured at Army workshops. Power-gun were experimented with, and were used by the mobile teams. Civilians employed by the British Army were dusted every two days, and a selected number of these were given injections of the vaccine of Durand and Giroud. Many cases occurred in the Italian Navy and Army during the early days, when the degree of infestation in barracks and hospitals was high. They were supplied with dust-guns, A.L.63 powder, and vaccine. Leave of Italian troops to Naples was cancelled, and those departing from the area were dusted and quarantined. Few Italian Service cases of typhus occurred in 1944—in marked contrast to the incidence at the end of 1943.

British Army Cases

One British soldier was infected in Naples. The victim was a deserter. He was apprehended after hiding in the slum quarter, and was heavily infested when caught. Two other cases of typhus occurred, but the place of infection was probably North Africa. So far as is known, there were no cases among the 25,000 to 30,000 civilians employed regularly by the British Army. Many casual workers were attacked

Hospital Arrangements

The regular infectious disease hospital was not being used as such in November. It was bomb-damaged, and was in military occupation. The alternative accommodation was even less suitable, and after some difficulty the original premises were released and partially repaired. Heating, lighting, kitchen, and



Road Sign in Naples (62 Field Hygiene Section)

thing arrangements were sadly deficient, as a result of which the feeding and preliminary cleansing of patients was imperfect. The long delay between the reception of the sick and their admission to the wards was a particularly unsatisfactory feature. Improvement, which was only gradual, necessitated instant pressure and much material assistance before it came to being. A research team under Lieut.-Col. Stuart-Harris, A.M.C., took over 50 beds. Twelve British Army nurses, who volunteered for this duty, worked in these wards; a detachment of the Friends Ambulance Unit also assisted. There were many difficulties and no few risks attached to this work. There was a shortage of civil ambulances. This was one reason, but not the most important reason, for the delay in admitting patients to hospital. American and British ambulances were loaned, and even taxi-cabs were utilized. Extra accommodation was soon required, and a building was released from military requisition for housing convalescent cases. The dietary of these patients was quite inadequate. We obtained supplies of meat from our own stocks to augment their meagre rations.

Subsequent Course of the Epidemic

By Jan. 8 cases had increased to 65 in a day. These were all distributed throughout the city. The outlook was black. There was nothing to suggest that this epidemic would not be the way of all previous winter typhus outbreaks and increase in intensity. But this was not so. During the week that followed notifications fell suddenly from 340 to half that number. This level was maintained for each of the ensuing three weeks, when a further sharp drop was recorded. Thereafter the epidemic gradually petered out. About the middle of January places outside Naples began to be affected. Each week until the end of March there were about 30 cases; this secondary focus persisted after the primary one had been extinguished.

Clinical Notes

The disease was not quite as severe in type as that encountered in North Africa. According to Stuart-Harris it resembled the Polish outbreaks of pre-war years. It is probable that it had its origins in Eastern Europe, and not in North Africa. There was a high proportion of cases among children. In these the infection ran a mild course. This to a lesser extent was true of young adults, but in this group the pyrexia persisted for a long time. The general mortality figure was 15%: half the patients over the age of 50 died. The long delays in reheated reception-rooms, before reaching the wards, tended to increase the death rate. Early admission to hospital was not the rule—due not so much to transport deficiencies as to concealment and failure to notify, for which not only the relatives but the civilian practitioners were sometimes to blame. Cases were seldom seen before the fifth or sixth day of illness. The rashes observed were typical, but were not a constant feature. The Weil-Felix reaction was positive as early as the fifth day, and the British research workers were able to recover rickettsiae from the blood in early cases, in a large proportion of patients, using guinea-pigs.

Factors Influencing the Cutting Short of the Outbreak

It was clear after Jan. 9 that the epidemic was under control. Assuming an incubation period of 12 days, and taking into account the delay in notification until the fifth or sixth day of illness, the measures responsible must have been operating 8 days previously—i.e., just before Dec. 23. At this time there was intensive case-searching and mechanical dusting with the U.S. Army pyrethrum powder (MYL) of contacts and persons living near. Until early in January, D.D.T. powder was used in about a tenth of the total dustings only. It was not used at all until the end of this period, by which time there were 6,000 dustings a day. Hospitals, jails, railway stations, and shelters as well as contacts were dealt with. By Dec. 27 all the shelter inhabitants were being dusted every ten days. This work was under the direction of the Rockefeller Foundation team. The initial defeat of the outbreak was brought about by the energetic pursuit of the principles mentioned above—viz., a search for cases and contacts and prophylactic mechanical dusting with an efficient insecticide powder. The armies and their civilian workers were protected with either

MYL or A.L.63 powder, which did not at this time contain D.D.T. Only two or three cases of typhus occurred in this large group. Casual employees, whose number was probably equal to the regular ones, produced many cases. They were not under close supervision, and their periodic dusting could not be ensured.

D.D.T. was brought into use on a large scale early in January, and mass civilian dusting was intensified, together with other preventive measures. An enormous decrease in the louse population of Naples followed. Thus the epidemic, already defeated, was given its *coup de grâce*, and all risks of a flare-up were prevented.

Civilian inoculation played only a minor part in the cessation of the epidemic. By the end of April 60,000 out of a population of more than a million had been inoculated, but in December the number was negligible. The British Forces' inoculation state was at a seriously low level early in December: this was not more than 70% at that time. Our Merchant Navy and the Italian armed Forces were totally unprotected until later. From the evidence available, in Algeria as well as Italy, it would appear that inoculation with the killed vaccines does not necessarily protect against infection; its value lies rather in the reduction of the mortality rate.

The economic situation did not improve during the early months of 1945. Indeed, it deteriorated very much at times. In January the Regional Public Health Officer called attention repeatedly to the gravity of the food situation. There were marked deficiencies in the dietary: the protein content was particularly low. The black market flourished, and fantastic prices were paid for such things as tinned meat. None but the wealthy could procure these articles. Poor-class patients admitted to the typhus hospital were all undernourished, unwashed, and very badly clothed, but few were actually near starvation. Regular washing and changing of underclothes was out of the question, owing to the lack of soap and fuel. The number of permanent shelter-dwellers, of which there were about 20,000, fell but little during January. The need for finding other accommodation for these unfortunate people was stressed time and again. A civilian committee detailed to deal with the problem of this large reservoir of infection did little to grapple with it for some time. These people lived under primitive conditions in the labyrinth of ancient caves and tunnels deep below the city. This did not, however, prove to be entirely disadvantageous, for they were always available for supervision and periodic mechanical dusting.

The quenching of the epidemic cannot, therefore, be associated with any improvement in the nutrition or the social and economic condition of the Neapolitans.

General measures such as the prohibition of meetings, concerts, and the use of cinemas, and the search for cases and their removal to hospital, did much to localize points of infection. The Church, Press, and medical profession were used extensively for propaganda. The response to this was variable. The least efficient part of the organization was the control of movement into and away from the city, which was found to be difficult to supervise: there were very many roads to police—military congestion on these roads made it no easy matter to establish check-points; it was unfair to curtail the amount of farm produce brought in daily from the country districts; and there were civil police deficiencies. Forged "dusting certificates" have already been referred to. In spite of these obstacles this aspect of control should have received greater attention. This leakage was responsible for some 300 cases in nearly 50 separate communities outside Naples. Each had to be dealt with individually. Shortage of transport for the "flying squads" of the Typhus Commission meant unnecessary delay in this work. We made repeated representations for the loan of Army transport, but little was done. Since most travellers leaving Naples by train were thoroughly dusted, secondary cases rarely appeared in remote parts of Italy.

Lessons Learned in Naples

- (a) An epidemic of typhus can be terminated in the winter months even in a city where conditions are most favourable for its spread.
- (b) Intensive searching for cases and the disinfection of contacts and the general public were the most important measures adopted. Other public health measures must not be overlooked—in particular, the control of movement.

(c) An army can live and work in a typhus-ridden city with almost complete impunity, provided discipline is maintained and prophylactic dusting is carried out efficiently and regularly.

(d) The principle of dusting fully clothed people, using hand- or power-dusting apparatus, is a notable advance on former methods of dealing with lousiness in a community. Its use in the Army allows cumbersome steam and hot-air apparatus to be done away with.

(e) Any efficient insecticide powder applied in this way will be successful in guarding against infestation and reinfestation, as well as in treating it. The method is without equal for dealing quickly with large groups of people. Its worth was proved at a later date in disinfesting immense numbers of prisoners and refugees.

(f) D.D.T. is a new weapon in preventive medicine. It does not kill lice quickly, but it is non-irritant and persistent, having a residual action which prevents reinfestation. It is particularly valuable where people are not under strict discipline and washing and laundry arrangements are defective.

(g) Civilian inoculation played no part of importance in the extinction of the epidemic. The British Army, which escaped with one case, contained a large number of uninoculated troops at the peak stages.

(h) A well-equipped organization is essential. Adequate staff, equipment, and transport must be available. In Naples this was obtained by pooling Allied resources; but some valuable time was lost, and there were marked deficiencies in some directions, which might have proved a serious handicap.

(i) In conclusion, it should be stated that there was the closest and most amicable co-operation between British and American medical officers of the two Armies, the U.S. Typhus Commission, the Rockefeller Foundation, the Allied Commission, and the A.M.G. Senior Italian civil and military doctors also gave full support. This unity must occupy a high place among the factors which contributed to success.

YUGOSLAVIA

We had three foci of typhus infection to contend with in Italy—Naples, North Africa, and Yugoslavia. Large numbers of sick and wounded partisans and refugees were evacuated to Southern Italy from the Balkans. The care of these was a British responsibility. It was known that typhus was epidemic in the Balkans, and measures had to be taken to prevent its being carried to Italy by these evacuees.

During the spring and summer of 1943 about one case of typhus arrived in Italy each week with the sick and wounded. Many casualties came by air; these were dusted in the aircraft. Others arrived by sea. Dusting stations were set up on the island of Vis, the place of embarkation. Information was received that typhus was rife among Italian units left in the Balkans. Supplies of the vaccine of Durand and Giroud, together with dust-guns and A.L.63 powder, were sent them by air. The refugees were all bathed and disinfested. Steam disinfestors were used at first; subsequently mechanical dusting was employed.

It was significant that Yugoslav cases continued throughout the summer. During the following year there were many localized epidemics. A British medical officer with the Partisan forces informed me that there was an epidemic at Sarajevo. All the hospital inmates were lousy. Dust-guns and large supplies of A.L.63 powder were sent to this area. There were also cases of typhus in Greece. After the reoccupation of the country by the British Army, large-scale dusting of refugees was carried out immediately by the hygiene sections. The disease did not become epidemic there.

Although many cases of typhus from the Balkan countries were treated in hospital in Italy, no contact cases occurred either in the Allied Armies or among civilians there. The meticulous care with which both the Army hygiene staffs and the R.A.F. dealt with this problem was thus well repaid.

Summary

An account is given of civilian typhus problems in North Africa, Italy, and the Balkans. Reasons for the comparative immunity from attack enjoyed by the Allied troops are discussed.

In Algeria a severe and widespread epidemic was brought under control by concentrating on mass inoculation of the Arabs with a living vaccine, despite the fact that the infestation rate remained high. In Italy a sharp localized outbreak was terminated in the winter. Inoculation played no part in this. The most important single measure responsible was the mass delousing of contacts and

the general population, using insecticide powders applied mechanically. The use of D.D.T. powder on a large scale showed it to be a valuable insecticide, with a marked residual effect. No to effects followed its use in powder form.

The energies directed towards the prevention of typhus were repaid by results. An important reason for success was co-operation given by the troops themselves—officers and men alike. By contrast, the efforts made to prevent malaria, dysentery, typhus, venereal disease, etc., were far less successful, although Army hygienists attacked these problems with no less vigour. But support given by the non-medical branches of the Army was as whole-hearted. The solution is to be sought in the greater education of all ranks of the Army in the principles of preventive medicine, so that they fully appreciate how important a factor it is in the successful conduct of a military campaign.

I wish to acknowledge my indebtedness to Brig. Galloway D.D.M.S., A.C.M.F., and to the hygiene officers who worked with me in North Africa and Italy, for the support and co-operation they gave, and the zeal with which they tackled a difficult problem. The following gentlemen, who all played a prominent part in the event at Naples, supplied me with a great deal of information; I have drawn freely from their reports in the preparation of the second part of this paper: Brig.-Gen. Fox and Col. Bishop, U.S. Medical Corps, U.S. Typhus Commission; Dr. Soper, Rockefeller Foundation; Col. Crichton, I.M.S., A.M.G.; Col. Williams, U.S. Medical Corps, Allied Commission. Dr. Grenouilleau, Chief Public Health Officer, Algeria, furnished me with full details of the Algerian epidemic. These have been used extensively in this paper. My thanks are due to him for his unstinted advice and assistance during the critical early days in Algeria.

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PENICILLIN IN TREATMENT OF SEVERE DIPHThERIA

BY

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Since 1936 Gateshead has had an epidemic of unusually virulent diphtheria with a high proportion of "gravis" type infection. Many cases of which have appeared resistant to antitoxin. There have been 2,911 cases with 147 deaths, giving a case mortality rate of 5% over the years 1936 to 1945 (J. Gray, 1936-45). The severer forms of the disease—namely, the pharyngeal and nasopharyngeal varieties—have had an associated case mortality rate of 14%. The earliest opportunity was therefore taken in 1945 to try the effect of penicillin, given in addition to the customary therapeutic dosage of diphtheria antitoxin, on severe cases of diphtheria. The results to date are embodied in this paper.

Few reports have so far appeared in the medical literature on the use of penicillin in the treatment of diphtheria. Symo (1945) described a case of an immunized boy with a severe mixed infection (*C. diphtheriae* and haemolytic streptococci) who made a dramatic recovery following the administration of antitoxin and penicillin. Archer (1945) reported a similar favourable result in a woman with triple infection (diphtheria streptococci, and Vincent's angina). Recently Christie at Preston (1946) gave details of two cases of severe diphtheria treated by a combination of serum, intramuscular penicillin and local penicillin spray; the first patient did very well, but the second died in spite of prolonged treatment.

To carry out an adequately controlled investigation on the value of penicillin in the treatment of diphtheria it would be necessary to analyse the results obtained in three fully comparable groups: (I) cases treated with diphtheria antitoxin alone; (II) cases treated with penicillin alone; (III) cases treated with a combination of antitoxin and penicillin. The last group is included to determine whether penicillin and diphtheria antitoxin exert on each other any synergistic action.

On the preliminary results obtained with Group III cases—that is, those treated with antitoxin and penicillin—it would seem exceedingly unwise to treat severe cases of diphtheria with penicillin only; and, as the results obtainable from the treatment of milder cases with penicillin alone would be of no value as a comparison, Group II has been discarded—f

TABLE I.—Cases Treated with Penicillin and Antitoxin

Case	Age and Sex	Day of Disease on Admission	Clinical Condition	Antitoxin Dosage and No. of Occasions Injections given	Penicillin When first given. Duration of Treatment. Total given	Days after Admission till Throat Clean	Complications	Days in Hospital	Remarks
1	19 F	1st	O.A.: Mod. tonsillar diphtheria. 20,000 u. D.A.T. given. Membrane spread for 48 hours till severe pharyngeal in type, with faucial oedema and bullneck	170,000 u. 3	3rd D.O.D. 48 hours 400,000 u.	5	Persistent albuminuria	35	Gross oedema of fauces and bullneck; very toxic and disorientated. Penicillin on 3rd day; condition improved rapidly. Throat clean 72 hours later
2	43 F	3rd	Severe nasopharyngeal, with profuse rhinorrhoea and bullneck. Type, "gravis"	120,000 u. 2	3rd D.O.D. 48 hours 400,000 u.	—	Persistent albuminuria. Myocarditis; tachycardia. Vomiting; Death	13	Rapid reduction in bullneck and clearance of rhinorrhoea after penicillin. Cardiac sickness 7th day. Died 16th D.O.D.
3	16 M	2nd	Severe nasopharyngeal. Oedema of fauces and uvula. Bullneck	100,000 u. 1	3rd D.O.D. 48 hours 378,000 u.	5	Persistent albuminuria	62	Swab not negative until 59th D.O.D. Good recovery
4	6 F	2nd	Severe pharyngeal. Bullneck. Type, "gravis"	100,000 u. 1	3rd D.O.D. 48 hours 360,000 u.	5	Nil	57	Good recovery
5	6 F	2nd	Moderate nasopharyngeal. Bullneck. Type, "non-gravis"	70,000 u. 1	2nd D.O.D. 48 hours 360,000 u.	4	Nil	43	Good recovery
6	13 F	2nd	Severe nasopharyngeal, with very gross oedema of fauces, rhinorrhoea, bullneck, and albuminuria O.A.	150,000 u. 2	2nd D.O.D. 4 days 720,000 u.	6	Albuminuria. Palatal paresis. Myocarditis; extrasystoles	84	Spread of gelatinous membrane for 48 hours A.A. Very restless and toxic for 5 days
7	16 F	5th	Severe pharyngeal. Marked faucial oedema and early periaadenitis	100,000 u. 1	5th D.O.D. 48 hours 400,000 u.	6	Transient albuminuria. Palatal paresis. Mild peripheral neuritis	53	A well-established case on admission
8	19 F	7th	Severe nasopharyngeal. Gross "gelatinous" faucial oedema (and uvula). Profuse post-nasal discharge. Very toxic. Type, "gravis"	90,000 u. 1	7th D.O.D. 5 days 560,000 u.	8	Myocarditis; extrasystoles	61	Very ill, and at times disorientated for 5 days A.A. Collapsed on day A.A.; pulse soft and irregular; "cardiac collapse." Responded to restoratives; no complications afterwards
9	25 F	3rd	Severe pharyngeal. Thick membrane with spreading edge extending beyond molar teeth. Bullneck	100,000 u. 1	3rd D.O.D. 3 days 540,000 u.	8	Albuminuria. External and internal ocular palsies. Palatal paresis. Peripheral neuritis	77	One fainting attack during convalescence. No signs in C.V.S.
10	10 F	? 1st	Severe pharyngeal. Moderate faucial oedema. Bullneck	110,000 u. 2	2nd D.O.D. 4 days 400,000 u.	7	Nil	43	Considerable spread of membrane on day A.A. One prophylactic inoculation against diphtheria B.A.
11	20 M	2nd	Moderate nasopharyngeal. Periaadenitis	180,000 u. 4	3rd D.O.D. 4 days 480,000 u.	9	Nil	41	Membrane spread for 3 days A.A. Toxic and disorientated for 1 week; then made an uneven recovery
12	14 F	3rd	Severe pharyngeal. Early periaadenitis	90,000 u. 2	4th D.O.D. 48 hours 400,000 u.	5	Secondary tonsillitis	34	Spread of membrane 24 hours A.A.
13	20 F	4th	Severe nasopharyngeal. Fauces and uvula very oedematous. Mild periaadenitis	100,000 u. 1	4th D.O.D. 4 days 400,000 u.	6	Nil	34	Very toxic O.A.

TABLE II.—Cases Treated with Antitoxin Only

Case	Age and Sex	Day of Disease on Admission	Clinical Condition	Antitoxin Dosage and No. of Occasions Injections given	Days after Admission till Throat Clean	Complications	Days in Hospital	Remarks
1	12 M	2nd	Severe nasopharyngeal. Very extensive membrane and moderate faucial oedema. Early bullneck	100,000 u. (40,000 I.V.) 1	7	Persistent albuminuria. Palatal paresis. Myocarditis; extrasystoles	75	Lethargic and ill for 4 weeks A.A.
2	6 F	4th	Severe pharyngeal. Membrane on to pillars of fauces only; no oedema. Moderate bullneck	110,000 u. 2	6	Persistent albuminuria. Palatal paresis. External ocular paresis	34	
3	19 F	3rd	Severe pharyngeal. Spread of membrane on one side of soft palate. Moderate oedema. Severe adenitis	90,000 u. 1	4	Transient albuminuria	33	Good recovery
4	25 M	3rd	Moderate nasopharyngeal. Extensive membrane but little faucial oedema. Early bullneck	100,000 u. 1	3	Nil	37	Attack of abdominal pain of uncertain origin in convalescence
5	12 F	2nd	Moderate pharyngeal. Tonsillar membrane O.A.; spread to anterior pillars of fauces	80,000 u. 2	4	Persistent albuminuria. Myocarditis; bradycardia, early bundle branch block	50	
6	7 M	3rd	Moderate pharyngeal. Membrane not extensive. Bilateral adenitis	70,000 u. 1	—	Palatal paresis. Myocarditis; extrasystoles	51	Partly inoculated against diphtheria
7	5 F	? 1st	Severe nasopharyngeal. Oedema of fauces. Extension of membrane 2nd day. Bullneck	100,000 u. 2	—	Persistent albuminuria. Acute myocardial failure (bundle branch block). Death	9	Early cardiac failure with vomiting and bradycardia. Died on 9th D.O.D.
8	24 F	3rd	Severe pharyngeal. Oedema of soft palate and fauces. Severe adenitis. Type, "gravis"	100,000 u. 1	5	Albuminuria. Myocarditis; persistent extrasystoles	47	Very ill 3 weeks A.A. Appeared on 11th "cardiac sickness" several times
9	6 F	2nd	Severe nasopharyngeal. Considerable oedema of fauces. Early bullneck	150,000 u. 3	17	Palatal paralysis	35	Note persistence of membrane on throat
10	35 F	6th	Severe nasopharyngeal. Extensive membrane but no faucial oedema	100,000 u. 1	9	Persistent albuminuria. Myocarditis; auricular fibrillation. Palatal paresis	71	
11	9 F	2nd	Moderate nasopharyngeal. Discrete adenitis	130,000 u. 2	7	Myocarditis; auricular fibrillation. Palatal paresis	79	Very toxic. Heart irregular for 7 weeks
12	31 F	5th	Moderate nasopharyngeal. Some faucial oedema. Early periaadenitis	110,000 u. 2	5	Mild palatal paresis	53	Persistence of pulse throughout
13	6 M	7th	Severe nasopharyngeal. Profuse rhinorrhoea. No oedema. Periaadenitis. Type, "mitis"	60,000 u. 1	5	Myocarditis; extrasystoles. Palatal paresis	75	
14	24 F	5th	Severe nasopharyngeal. Marked oedema of fauces, palate, and uvula. Post-nasal discharge	60,000 u. 2	3	Albuminuria. Myocarditis; cardiac sickness; extrasystoles. Peripheral neuritis	92	Absent early cardiac failure with vomiting. Very ill for 5 weeks A.A.

B.A. = Before admission. O.A. = On admission. A.A. = After admission. D.O.D. = Day of Disease.

present purposes at least. This paper is therefore confined to a comparison of the results obtained in cases treated with antitoxin and those treated with a combination of antitoxin and penicillin.

All the cases recorded here were under treatment during 1945 and January, 1946. The majority of the severe cases of diphtheria treated in hospital during that period had penicillin in addition to the usual dosage of antitoxic serum; they are referred to as the "penicillin series." A similar number of cases, comparable so far as is possible in respect to age, treated with serum only and comprising the remaining severe cases and a few that were rather less severe, admitted over the same period, were selected for comparative purposes. It must be emphasized that they were chosen for a high incidence of their initial lesion, and not because of a high incidence of complications. They are not, strictly speaking, a control series, in that they are not alternate severe cases as admitted. Indeed, a number of them are rather less serious than the penicillin cases. Thus one might expect better results, on the whole, from the control group than from the penicillin series.

None of the cases in either of the groups has been fully inoculated against diphtheria, because it is common experience that the immunized patient, however bad the initial lesion, almost invariably does well, escaping most complications. Therefore, one case of severe nasopharyngeal diphtheria treated with penicillin, and subsequently found to be fully inoculated, is not included in the comparison.

The age distribution of the penicillin cases is rather striking in that it shows a high proportion of adolescents and adults; this topsy-turvy state of affairs has been the experience in Gateshead recently. A further unusual feature is a marked disparity in the sex incidence of the cases, which is shown in the preponderance of females in the two groups.

Dosage and Administration of Penicillin

It is known that the causal organism, *C. diphtheriae*, is penicillin-sensitive (M.R.C. War Memo, 1944, No. 12), but as the disease is essentially toxæmic in nature the organisms, which are confined to the pseudo-membrane, are more or less cut off from the systemic circulation of the blood. It therefore seems doubtful, on theoretical grounds, whether the blood concentration of penicillin obtainable by the orthodox schemes of dosage would reach the organisms in the membrane in effective amount. Because of this doubt the early cases of the series were given double the usual dosage—that is, approximately 200,000 units in the 24 hours. Because of the shortage of penicillin for civilian use this heavy dose was continued for only 48 hours, but, later, doses of 100,000 units in the 24 hours were continued over 3 to 5 days. It is possible, of course, that with heavier and more prolonged penicillin therapy better results might be obtained.

The penicillin, preferably the sodium salt, was given in every case by three-hourly intramuscular injection. Local penicillin therapy was not used in any of the cases tabulated, though it is under trial.

Contents of the Tables

In order that the tables might be presented as clearly as possible they have been abridged; certain facts should therefore be borne in mind when analysing the contents: (i) The disease was confirmed bacteriologically by swabbing the lesion in all cases, though, unfortunately, typing was not carried out in every instance. (ii) In no case is the membrane confined to the tonsils alone. The cases dealt with are divided into "pharyngeal" and "nasopharyngeal," according to the anatomical distribution of the membrane and its associated symptoms and signs. A precise definition of these terms, which are in common usage, is, I think, unnecessary here. The pharyngeal and nasopharyngeal cases are subdivided into moderate and severe, in each case depending on the clinical severity. Throat diagrams have been omitted to facilitate printing. (iii) Antitoxin was given by intramuscular injection, unless stated otherwise.

Discussion of Results

There was one death in each series (Case 2, Table I, and Case 7, Table II). Both patients died from early myocardial failure, of the "cardiac sickness" type; their ages were 4½

and 5 years respectively. In the penicillin group there was only one case with multiple paralyses of any consequence (Case 9); while 9 out of the total of 13 escaped paralysis completely. In the control group only 4 out of 14 escaped paralysis. There were only 3 cases of clinical myocardial involvement in the penicillin series, as against 9 in the controls. The unexpected finding is that while penicillin seems to have little effect on the rate of clearance of the membrane, it does appear to reduce the incidence of complications. However, no conclusions can safely be drawn as a result of such a small series of cases.

The course of the disease is, as is well known, notoriously unpredictable; the severe case may escape all complication while a comparable subject with a milder attack may fall victim to one complication after another. This makes results very difficult to assess, and while we feel sure that penicillin caused a definite, even dramatic, improvement in some instances—Case 1, for example—it is impossible to be certain that any given patient would not have fared quite as well without it. In severe mixed infections, though, penicillin should be unquestionable value. I am left with the impression that penicillin therapy shortens the toxæmic state in nearly all cases, in addition to reducing the length of stay in hospital. A comparison of the tables shows, then, after due allowance has been made for the smallness of the numbers, that, in so respects at least, the patients receiving the penicillin far better than the controls. It should be remembered here, in addition, that because some of the controls were less severe attacks the control group might have been expected to do better on the whole than the others.

Summary and Conclusions

Thirteen cases of severe diphtheria were treated with systemic penicillin in addition to normal doses of antitoxin. The results obtained are compared with a similar number of comparable cases treated with antitoxin only. The results reported here show that while penicillin may not have the dramatic curative effect in diphtheria that it has in many other diseases, and can in no way supplant antitoxin, it appears to have been in some degree beneficial to most cases treated. In my opinion it should be given, together with antitoxin, to all cases of severe diphtheria.

I should like to thank Dr. James Grant, Medical Officer of Health for Gateshead, not only for permission to publish these cases, but also for his help and constant interest in this article.

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A SHORT SURVEY OF TRILENE IN GENERAL PRACTICE

BY

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AND

S. H. B. PLATTS, M.B.

The object of this survey was to determine the usefulness of trilene in general practice. It was carried out in two independent practices for a period of six months. The points of reference were:—(1) Method of administration: (a) choice of appropriate apparatus; (b) technique. (2) Minor surgery especially as to the possibility of exploiting the known peculiar analgesic properties of trilene. (3) Midwifery.

Trilene (trichlorethylene; $\text{C}_2\text{Cl}_2\text{CHCl}$) was rediscovered as an anaesthetic in this country in 1941, after being used to some extent in America. It has a relatively high boiling point (87°C), which renders it unsuitable for administration on an open mask. In anaesthetic potency it occupies a place between N_2O and ether. During administration in Stage I there is a marked period of analgesia, use of which has been made in midwifery. For deep anaesthesia its use would appear to be limited to that of an adjuvant. It is alleged to have the property

of maintaining anaesthesia with a remarkably small dosage. It is, however, difficult and possibly dangerous to try to obtain the lower planes of anaesthesia by trilene alone. On no account should it be used in conjunction with a soda-ash canister, as the heat evolved has a deleterious action on trilene—dichloroacetylene being formed, which causes cranial nerve palsies.

Choice of Apparatus for Administration

It follows from the above that some closed apparatus was necessary for administration, and preferably one in which some rebreathing occurred, in order to warm the trilene with the heat of expired air. It was thought that the Clover inhaler (Hewitt) was a suitable instrument. Another instrument evoking interest from this point of view was the Oxford vinesthene inhaler. The latter was found a useful alternative for purposes of minor surgery, but, having only a small capacity (2 dr. 7.1 ml.), it was not so convenient for the purposes of midwifery, and as the Clover (Hewitt) was found to cover all requirements, used with or without the rebreathing bag, no further reference will be made to the vinesthene inhaler.

Technique

Minor Surgery.—Trilene was found to be a very useful anaesthetic in the hands of the single-handed practitioner: as will be seen from the illustrative cases, it allowed of careful and unhurried minor surgery in a variety of emergencies with the help of a pair of untrained hands. Many variations in technique, using Hewitt's modified Clover inhaler, were tried. And as a result of experience it appeared that there was a choice of two procedures:

1. Where the operation was of a very minor nature, and the amount of pain likely to be inflicted was very slight, it was necessary only to render the patient analgesic and not fully anaesthetized. Starting with the inhaler at 1/4 without the bag, and increasing to "full," the operator could then hand over to a bystander to hold the inhaler in place whilst proceeding with the operation. The patient was in this case usually not rendered unconscious, having felt no pain but sensation of touch only, although remembering what was said by others in the room.

2. When the patient expressly desired to be rendered unconscious, or when the operation was such as to be likely to inflict severe pain, the anaesthesia was continued to a deeper stage, and the patient so rendered completely unconscious for the duration of the operation. The inhaler was used as described above, and after a few breaths at 4/4 the bag was added. After a varying length of time automatic breathing indicated a satisfactory depth of anaesthesia. During the period in which the trilene was being tried out the operation was in many cases started before the onset of automatic breathing when it was thought that the patient would be sufficiently anaesthetized. Anaesthesia was usually found to be sufficient, but in order to be quite certain it was decided to wait until the onset of automatic breathing. Failing to do this accounted for one or two unsatisfactory cases of the series. After the stage of automatic breathing had been reached the bag could be removed and a bystander could hold the inhaler while the operation was completed, provided that this was not likely to be very long. Obviously, if a longer time was required it was necessary to have a second practitioner present. There was found to be a very considerable variation in the amount of trilene required for different individuals.

The whole procedure was very simple and enabled the single-handed practitioner to tackle many things that he could not otherwise manage by himself. Recovery was always very quick, and very complete, even when the anaesthetic was continued for a considerable period. Furthermore, the patients seemed to like it, and it was notable how very loudly it was praised by anyone who had had previous experience of other inhalational anaesthetics.

Midwifery.—Here the main use of trilene was as a self-help anaesthetic during the second half of the stage of dilatation. The inhaler was given to the patient (without the bag) set to 1/4 at first, and she inspired through the inhaler during the pain only. After a few pains the setting was increased to 1 2. pain only. At this setting she experienced considerable if not complete relief from pain, while still remaining co-operative. If the setting of 1/2 was not sufficient, it was increased to 3 4 for a time. The patient held the inhaler to the face during the pain only, laying it on the pillow at the side of her head in the intervals. It was found that after some considerable time, as more of the anaesthetic became absorbed, the setting could be reduced, and increased later for the actual delivery.

In a small proportion of cases there was a diminution in the strength of the pains; this was easily overcome by the injection of 0.5 ml. of pituitary extract. As with other sedative procedures, in one or two cases there was a slight post-partum haemorrhage. Provided that this possibility was foreseen, and a syringe containing pituitary extract was left handy, there did not appear to be any real danger of the haemorrhage being at all severe.

TABLE I.—Minor Surgery: Tabulated Results (All Cases)

No. of Cases	Treatment Given	Analgesia	Anaesthesia	Failures	Successes	Rapid Recovery	Absence of Sequelae
12	Incision: Boils	4			4	4	4
	Abscesses, etc., not involving digits	9	8		8	8	8
10	Stitching of lacerations			1	9	9	9
1	Including midwifery		1		1		
1	Manipulation of toe	1		1		1	1
	Operations:						
6	Involving digits	3		3		3	3
	Whitlow, avulsion of nails, etc.		3		3	3	3
4	Dilatation of multiple urethral structures (one individual)				4	4	4
33		21	12	5	28	33	33
17	Above cases treated with analgesia, less those involving digits	17		1	16		

The sole criterion of success or failure was whether the patient felt any pain.

TABLE II.—Midwifery: Results with Trilene Alone

	Failures	Partial Failures	Successes	Successes with Amnesia	Total
Primiparae	0	2	9	2	13
Multiparae	0	1	6	2	9
Total	0	3	15	4	22

"Failure" = Little or no relief from pain.

"Partial Failure" = Patient difficult to control and unco-operative.

"Success" = Patient had great relief from pain and remained co-operative and controllable throughout.

TABLE III.—Midwifery: Trilene followed by Ether*

	Cases	Slowing of Labour	Slight P.P.H.	Slowness of Recovery	Unpleasant Sequelae	Maternal and Foetal Deaths
Primiparae	5	1	1	1	0	0
Multiparae	0	3	1	0	1	0
Total	5	4	2	1	1	0

*Forceps or other operative procedures performed under open ether anaesthesia subsequent to the use of trilene self-help analgesia.

A Few Selected Cases

1. **Minor Surgery.**—(a) Successful analgesia (2 cases); (b) a case of unsuccessful analgesia; (c) successful anaesthesia in a similar type of case to (b).

II. **Midwifery.**—(a) An ordinary successful case; (b) an ordinary successful case plus amnesia.

Group I (a). Mrs. B., aged 56, fell on some stone steps, sustaining a large laceration on the front of the leg below the patella, 2½ in. (6.3 cm.) long, involving subcutaneous tissues; the patella tendon was showing. Trilene was administered for toilet of the wound and the insertion of two silk-worm-gut sutures. The Clover inhaler was used, starting at 1/4 and increasing to 3/4 without a bag. After 10 to 12 breaths the toilet was started and sutures inserted. Recovery was very rapid, and the patient felt no pain whatsoever. She did not completely lose consciousness, but felt that something was being done to the knee, and could see the practitioner as a vague black shadow. She was quiet throughout.

Mrs. F., aged 50. Obese subject; abscess of abdominal wall, probably a suppurating sebaceous cyst. She expressed a wish not to be rendered unconscious. Trilene was given in Clover's inhaler without a bag, gradually increasing to 4/4, and the abscess was opened. She had not lost consciousness, and had felt no pain, although she could tell that something was being done to her abdomen.

Group 1 (b).—Mr. P., aged 35. Subungual whitlow of index finger. Trilene was administered without a bag, increasing from 1/4 to 4/4. He was a big ex-Army man of 13 st. (82.5 kg.), and his was an unsatisfactory case. He nearly jumped off the bed when the nail was removed, and said afterwards that he felt it being avulsed.

Group 1 (c).—Mrs. W., aged 30. Large subungual whitlow of finger; she felt ill and was suffering greatly. The terminal phalanx was two to three times its normal size. She was anaesthetized to the stage of automatic breathing. The nail was removed and pus released by probing with forceps. Recovery (1½ minutes) good, but pain from the finger then made the patient a little faint. She had of course felt no pain during the operation.

Group II (a).—Mrs. H., primipara aged 22. Vertex presentation L.O.A. Administration started at 10 p.m.; one-third dilated. Delivery at 3.30 a.m. The patient continued to self-administer up to and including delivery; setting, 3/4 followed by 1/2 for the greater part of the labour; last 10 minutes, 3/4. She did not remember the birth, and had very little pain. The period 10 p.m. to 3.30 a.m. seemed more like two hours. She was enthusiastic, and stated that after three breaths at 3/4 she lost all pain.

Group II (b).—Mrs. G., primipara aged 24. Occipito-anterior presentation. Started in labour at 8 months. In pain all night; first seen at 9 a.m. Taken to nursing home and found to be one-third dilated. Trilene, self-administered, 1/2 to 3/4; delivered 11.30 a.m. The child weighed 4 lb. 14 oz. (2.2 kg.). Immediately after delivery she sat up and took tea, talking rationally. The patient said she had had hardly any pain. Next day she denied any knowledge of labour subsequent to receiving the anaesthetic, or of sitting up, talking, and taking tea immediately after delivery. She spoke of her surprise, the previous afternoon, to find that she had had her baby.

Conclusions

Minor Surgery.—Provided that very painful procedures—e.g., operations on digits—are avoided, the use of the analgesic properties of trilene in minor surgery seems quite feasible. With the exception of operations on digits, the only analgesic failure was in the case of a child who became very excited and uncontrollable. However, as our experience and confidence increased we learnt more to the view that mild anaesthesia in all cases is the more satisfactory procedure. Recovery is rapid and without sequelae, and the agent has not given rise to the least anxiety. Used as a light anaesthetic for minor surgical procedures it appears quite safe.

Midwifery.—An interesting and otherwise unencountered property of trilene has come to light. In rather more than 20% of cases complete amnesia followed its use. With careful instruction, and close observation of the patient in setting the apparatus, it is thought that this figure might be raised a considerable extent. It is a very useful and gratifying phenomenon.

One partial failure was in a case in which the practitioner was summoned at the very end of labour, and trilene used for only about 10 to 15 minutes. The patient was excited and overwrought, and, quite frankly, chloroform would have suited the case better. Used in place of chloroform in the last few minutes of labour, trilene does not show its full range of capability; here the field should be left to the older drug.

The other two partial failures were both relegated to that category owing to the action of premedication (chloral and seconal), and we roundly condemn its use in conjunction with self-help trilene analgesia. The patients were rendered restless and unmanageable, and could not self-administer the trilene.

Comment

The cheapness of the method is phenomenal; 1 oz. (28 ml.) of trilene will last, as used in midwifery, 3 to 5 hours, at a cost of less than 6d.

The wide variation in the requirements of trilene in different individuals, and in the same individual at different stages in midwifery, necessitates a variable administrator for the full exploitation of its remarkable properties. Attention is drawn to this particular point because the fixed type of administrator is tending to become popular in midwifery. We see no reason why midwives should not use the Clover (Hewitt) without the bag.

The general practitioner has in trilene, used in Clover's inhaler, an excellent alternative to the heavy, cumbersome, and expensive N₂O apparatus, both for midwifery and for minor surgery.

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UNDULANT FEVER COMPLICATED BY ACUTE TRANSIENT ATTACKS OF APHASIA AND DURING CONVALESCENCE, BY DEAFNESS, TINNITUS, AND PARAESTHESIA

BY

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The occurrence of symptoms suggesting mild involvement of the nervous system during the course of undulant fever is recognized. In 1934 Krabbe estimated meningitis and neural pains as occurring in 75% of cases. Actual recovery of causative organism from the central nervous system was first described by Hughes in 1897; and De Jong in 1936 collected nine similar observations from the literature and added one of his own. However, definite neurological signs are not commonly recognized. Dalrymple-Champneys (1943) reports meningitis in only three of his collected series of 616 cases; and Har Jordan, and Borts (1936) in reviewing 1,080 cases mentioned "meningitis and meningo-encephalitis—one case simulating brain tumour," indicating that these complications are rare.

A different experience is recorded by Leys (1943), who, reporting eight consecutive cases of undulant fever, found meningism in two and transient aphasia in a third; while Pos and Smith (1936) consider that Brucella infection should be suspected in any case of atypical meningitis. Roger (19) reviewed the literature and described the neurological complications of undulant fever as cases of: (1) paraplegia, majority with only motor involvement, but in others there occurred sensory and sphincteric disturbances and pachymeningitis serosa circumscripta; (2) cerebral complications such as hemiplegia and insanity; (3) both isolated and periphereal neuritis; (4) chronic leptomeningitis.

Case History

On August 8, 1944, a medical practitioner aged 31 developed headache, malaise, fever, shivering, and some photophobia. The next day he was better and his temperature returned to normal. He had spent August and September of the preceding year in Sicily. Blood films were taken two-hourly and examined; in 11 of 19 film trophozoites of *Plasmodium vivax* were found. He was given an appropriate seven-day course of quinine and mepacrin on the last day of this treatment shivering and pains in the region of both sacro-iliac joints occurred. Subsequently his illness followed the usual pattern of undulant fever, with intermittent pyrexia and a curiously rapid alternation of well-being and malaise. Unusual features were attacks of meningism, during which Kernig's sign became positive.

On Oct. 9, at about 5.30 a.m., he suddenly became extremely excited, and thoroughly alarmed his wife and the doctor she called in. This condition subsided at about 7 a.m. When I saw him at 9 a.m. his temperature was 99° F. (37.2° C.) and he was fully conscious but photophobic and uncommunicative, and complained of headache. Kernig's sign appeared on lifting either leg to 65°.

The illness resumed its usual course until, on Oct. 19, at 6.20 p.m. he started to shout; but when the nurse came to him he appeared rational, though she could not at first understand him. I saw him 35 minutes later, when he was obviously rational and quite comprehensible, though slightly dysphasic. At 7.20 p.m. I was called back as he had become very excited. He seemed to understand what was said, and on the whole acted rationally but spoke gibberish. He was obviously intensely anxious to impart some information, but was unable to find the words. Certain phrases kept recurring in their correct context; for instance, he repeatedly said, and obviously meant, "Pay great attention." His mood, however, was far from

rmal; he readily became irritated at not being understood, and owed an impatience quite foreign to his usual temperament. There were no other abnormal neurological physical signs at this time. However, his comprehension of speech was so good that it proved possible, with the help of his wife, to devise a system of questions, which he had only to affirm or deny. He was thus able to impart at his mother suffered from migraine, and that he had a fortification spectrum or some similar visual disturbance and desired me to give him an injection of "femerger." Directly he had imparted this information he settled down quietly. Objectively he regained his usual speech on waking next morning. At this time the optic disks showed an appearance suggestive of early swelling which had not previously been present and which had certainly subsided when he was examined in March, 1945. On Oct. 30 he had a further attack of aphasia, which was diagnosed by an experienced ward sister as lithium. From the subjective point of view the attacks came on about five minutes without previous warning or obvious cause, it associated with a feeling of strangeness and visual hallucinations, which were recognized as such. The patient never lost consciousness, and could always understand what was said to him, and even read and grasp the meaning of what he read. He retained full sight and the powers of reasoning. For instance, at the time he thought the first attack was due to a cerebral embolism, and on another occasion, when he wanted an injection of "femerger," he repeated the advertisement columns of the *British Medical Journal* to demonstrate his idea. He could not write word but only individual letters. He noticed slight dysphasia for a few days after each attack.

The attacks of aphasia were associated with a severe paroxysmal headache. From the third to the ninth month of the illness attacks of classical migraine occurred frequently, at first almost daily; the patient had not previously suffered from migraine, and it has been since recovery.

Although obviously far from completely recovered, he returned to work on March 1, 1945, and soon became aware of a persistent tinnitus, progressive deafness, and tingling of the legs and arms. These symptoms became progressively worse during the summer of 1945, and by the end of June he had developed a moderate degree of auditory-nerve deafness. An otologist who was consulted expressed the opinion that the tinnitus, deafness, and absence of findings in the middle ear were suggestive of a hereditary degenerative condition. However, it would appear that these symptoms were a manifestation of undulant fever, as he found that he had a slight vertigo during this period. The next winter the headache, tinnitus, and paraesthesiae gradually disappeared, and his hearing improved the same time.

The diagnosis was established by the rising blood titre of agglutinins against *Brucella abortus*; thus serum collected on Sept. 2, 1944, caused agglutination of this organism up to dilutions of 1 in 160, while serum collected on Sept. 9 caused, after 48 hours, agglutination in dilutions of 1 in 1,280 and after 48 hours in dilutions of 1 in 5,120. It is considered unlikely that malaria had any part in the symptomatology after August, 1944, as frequent subsequent examinations of the blood for malaria parasites were persistently negative.

Summary

A case is described in which the patient had undulant fever with intermittent pyrexia for about 21 months; during this period he suffered three attacks of pure motor aphasia and, when almost convalescent, progressive nerve deafness and tinnitus. He ultimately made a complete recovery.

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ALTERATIONS IN THE "B.P."

The General Medical Council announces certain alterations in the *British Pharmacopoeia*, 1932. The amendment to the monograph on strychnine, ferr. phosph. & quinin. et strychn. (Easton's syrup), which was authorized in the Sixth Addendum, pages 26 to 28, is annulled. The dried root or rhizome of *Cephaelis acuminata* Karsten, known in commerce as Cartagena, Nicaragua, or Panama ipecacuanha, may now be used as an alternative to the dried root of *Cephaelis ipecacuanha* (Brot.) A. Rich. The requirement that the 2% of the total alkaloids of ipecacuanha, calculated as emetine, in root or powdered ipecacuanha must consist of a definite proportion of non-phenolic alkaloids is deleted.

Medical Memoranda

Carcinoma of the Bladder Associated with Presence of a Stone

I would like to place on record the following interesting case, which would appear to support the factor of chronic irritation in the aetiology of carcinoma of the bladder.

CASE RECORD

A man aged 55 was admitted to hospital on May 23, 1944, because of severe haematuria of two weeks' duration. His history revealed that in 1935 he had had an attack of frequency of micturition and dysuria which had lasted but a week and then cleared up. From that time until his admission he had been subject to frequency of micturition. Examination showed that he was passing what appeared to be practically pure blood. He was shocked and exsanguinated. Rectal examination revealed a prostate of normal size for his age, but the base of the bladder was rather tender. Radiographs taken soon after admission revealed a stone in the bladder. The centre of the stone appeared to be composed of some completely radio-opaque substance, whereas the more peripheral parts were less dense. Blood transfusions were given and cystoscopy was performed under spinal analgesia, and although nothing could be seen because of the large amount of blood in the bladder, the stone was distinctly felt with the tip of the cystoscope. Adrenaline bladder-washout rendered the bleeding less copious, and four days later suprapubic cystostomy was performed, again under spinal analgesia, and the stone was removed. The stone was chocolate-coloured and of irregular outline but highly polished. It measured 1½ by 1 by 1 in. (3.8 x 2.5 x 2.5 cm.). It was cut open along its long axis to determine the cause of the opacity mentioned above, and was found to contain a rifle bullet of a calibre similar to those used in Service rifles (see



Photograph of inside of stone after section, showing the bullet.

illustration). Further questioning of the patient revealed that in 1913 he had been wounded in the upper part of the right thigh, and had sustained a fractured femur on that side, but no history of any symptoms which would support a vesical injury could be elicited. Unfortunately the patient collapsed and died suddenly eight days after the operation.

Post-mortem examination revealed that death was due to bronchopneumonia, and also that the bladder base was infiltrated with a ring of carcinoma. Histological examination of a section of the growth revealed it to be of epidermoid type.

The points raised by this case would appear to be: (1) Did the bullet lodge in the bladder at the time of wounding in 1913, and so form a nucleus for stone formation? If this were so, it is indeed surprising that no symptoms had been noticed at the time of injury. (2) Was the carcinoma due to the long-continued presence of the stone? Secondly, the epidermoid character would presume a metaplastic change preceding the onset of malignancy.

I am indebted to Mr. A. Holley, M.B., F.R.C.S., for permission to report this case.

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Labial Adhesions in Children

Adherence of the labia minora in children is a condition that is often seen in the out-patient department of this hospital. It does not seem to have gained the recognition either of the general medical practitioner or of the commensurate textbook. In paediatric textbooks it is usually found under the title "atresia of the vulva." It is not an atresia, but a simple adhesion; and, though the aetiology is obscure, it is not

that a previous mild attack of vulvovaginitis, which is very common among children of poor hygiene, is a factor.

It is as a rule first noticed by the mother when washing the child, or, at a later date, at a routine examination. It may be diagnosed as a rare congenital abnormality, such as complete atresia of, or a membrane occluding, the vagina. There is never any obstruction of the passage of urine, but some vulvitis and consequent dysuria may be present as the result of imperfect hygiene.

The treatment is simple when once the nature of the condition has been appreciated. The labia minora can often be separated simply by steady, gentle pressure, stretching them apart. An anaesthetic is sometimes necessary to free them, and separation can then be readily effected with a probe. There is almost always some oozing from the freed edges, but this is never severe and it needs no haemostasis. It is important that the vulva be lubricated for a day or two after freeing to prevent the formation of new adhesions; but even when this is done they occur occasionally.

The prognosis is complete recovery and normality, and the mothers should be reassured on this point.

I am indebted to Mr. T. Twistington Higgins for permission to publish this note.

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Noma Treated with Penicillin

The condition of gangrenous stomatitis, or noma, though a well-recognized clinical entity, is now seldom seen in England, but in Aethiopia it appears to occur more frequently, and until the arrival of penicillin it carried a high mortality (approximately 80%). Below are given brief reports of three cases treated with penicillin, all of which showed a highly satisfactory response.

CASE RECORDS

Case 1.—An Aethiopian woman aged about 30 was admitted complaining of a sore mouth and soreness round the vulva. She was ill, pale, and febrile, with large white ulcerating patches on her tongue, gums, and inner aspect of the lips, and similar ulcerations on the labia majora and minora. The Wassermann and Weil-Felix reactions were negative, as were the direct blood smears; smears from the ulcers showed spirochaetes and fusiform bacilli of the Vincent type, together with streptococci and staphylococci. In addition to local cleansing and general care, the patient received an injection of neoarsphenamine (0.6 g.) on the day of admission and again two days later. In spite of this the process was spreading, and patches of black gangrene were appearing on the outer aspect of the lip and also on the vulva. On the fourth day sulphapyridine was started—7 g. that day and 5 g. on each of the two succeeding days—but the gangrene was still spreading and the general condition was worse. Penicillin was started on the seventh day—25,000 units every three hours for five days. A transfusion of a pint (568 ml.) of citrated blood was also given on the seventh day and local treatment with hydrogen peroxide was continued, but the sulphapyridine was stopped. Within 24 hours of starting this treatment the gangrenous patches had become sharply demarcated, and by the fifth day they had separated, leaving clean ulcers. Penicillin was then stopped, and the condition did not relapse.

Case 2.—An Aethiopian boy aged 4 was admitted, having been ill 12 days with headache, fever, and a rash, probably measles, of which there was an epidemic in the town at the time. For two days a black patch had been noticed on the right cheek and slight fever persisted. He was pale and febrile (T. 100° F. (37.8° C.), P. 100). On the skin externally, with discharging pus, erythema and oedema. Inside the mouth there was a moist grey patch involving both the inner side of the cheek and the upper jaw. Direct smears from this revealed spirochaetes, fusiform bacilli, streptococci, and staphylococci. Penicillin was started at once, and in all 300,000 units were given in three days. The process immediately became sharply demarcated and a slough rapidly separated, leaving a clean through-and-through hole 1 in. (2.5 cm.) in diameter in the cheek. A small bony sequestrum did not separate for some days, but progress was satisfactory. At the time the patient was also suffering from acute amoebic dysentery, which responded to treatment with emetine.

Case 3.—An Aethiopian boy aged about 8 was admitted, also following an attack of presumed measles, with a grey gangrenous patch on the inner aspect of the cheek. Except that the skin was not yet involved, the appearance was identical with that of Case 2. His general condition was satisfactory (T. 100° F., P. 100). Penicillin was started at once, 300,000 units being given in the course of four days. The result was again an immediate demarcation and rapid separation of sloughs, but this time without loss of external skin at all.

COMMENT

The first case occurred at a time when penicillin was very scarce and could be given only if life was endangered; sulphenamides had been tried and proved inadequate. There can be little doubt that had penicillin been given at once, as in the other two cases, much suffering, danger, and deformity would have been avoided.

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Reviews

AETIOLOGY OF SCROTAL CANCER

Cancer of the Scrotum in Relation to Occupation. By S. A. Henry, M.D., F.R.C.P., D.P.H. (Pp. 112; illustrated, 15s.) Oxford Medical Publications. London: Oxford University Press, 1946.

Cancer of the scrotum is relatively rare, occurring in about five per million of the male population, but it is of great interest and importance as the first and outstanding example of human cancer in which the predominant causative factor can be identified. Dr. Henry's short book is valuable as a contribution to cancer research as well as to industrial medicine. The clinical features, course, and treatment of the disease are described briefly. A summary of the history of cancer of the scrotum as an industrial hazard since Percival Pott in 1773 noticed its frequency in chimney sweeps leads to the author's main contribution, which is an analysis of the probable causative factors.

The value of Dr. Henry's discussion of the statistical data is enhanced by his close acquaintance with industrial life and by his personal inquiries into individual case histories. Since 1920 epitheliomatous ulceration of the skin has been a notifiable disease under the Factories Act; 3,333 cases had been notified up to the end of 1943 and about 40% of them were cases of cancer of the scrotum, more than half of these being in cotton-mule spinners. Taking into account the number of workers at risk the incidence was highest in chimney sweeps, followed by patent-fuel makers, cotton-mule spinners, and men employed in the distillation of tar and the manufacture of coal-gas and coke. In the majority of cases, exposure to tarry products or to mineral oils was accepted as the causal factor, but in about 20% of the cases no probable causal factor was identified. The scrotum is the commonest though not the only site of epithelioma even in chimney sweeps and cotton-mule spinners. In terms of laboratory experience, the carcinogenic potency of the noxious materials must be accounted low, for cancer develops in only a small proportion of the exposed worker and the induction period is long. Cancer of the scrotum was not found in cotton-mule spinners who had started work less than 16 years previously; commonly it occurred 40 to 50 years after starting work. Many men had ceased to be employed as cotton-mule spinners for many years before developing cancer and some had been retired from all work for long periods as, for example, for 35 years, when cancer first appeared. As in laboratory experience, cancer can develop long after the inducing stimulus has ceased to operate. It is less clear how long the stimulus must operate in order that cancer shall occur after long delay without further exposures to the carcinogenic agent. Dr. Henry cannot settle this important question, but he finds indications that exposure for one or two years may be sufficient. Further inquiry is evidently required.

The book is well illustrated by photographs of lesions and of industrial processes, and it is enlivened by reproductions of old prints and by many interesting sidelights on industrial and social history.

PHYSIOLOGY AND MEDICINE

The Physiological Basis of Medical Practice. By Charles Herbert Best, M.D., D.Sc., F.R.S., and Norman Burke Taylor, M.D., F.R.C.S. Ed. Fourth edition. A University of Toronto Text in Applied Physiology. (Pp. 1,169; 497 illustrations. 55s.) London: Baillière, Tindall and Cox, 1945.

This textbook is about a third longer than the Bible, and if used as a script for broadcasting it would occupy the B.B.C. Home Service programme continuously for nearly a fortnight. One is astonished at the mere physical achievement of the authors in writing or dictating so many words, and one is further astonished at their energy in producing four editions over a period of nine years, particularly as six of them were years of war in which the authors took an active part. The book is divided into nine sections, dealing respectively with the blood and lymph, the circulation of the blood, respiration, the excretion of urine, digestion, metabolism and nutrition, the ductless glands, the nervous system, and the special senses.

Each section consists of approximately 100 large pages with two columns to a page, so the treatment is frankly encyclopaedic. The book is well illustrated, though the photographic reproductions are poor; there is a coloured plate illustrating the blood cells.

So far as we have been able to test it, the book is admirably up to date. The subtitle, "A Text in Applied Physiology," accurately defines its scope and limitations. Its scope is the whole of physiology, and its limitation that not a great deal of physiology can be profitably applied to medical practice. Our criticism therefore is that it is much too large and detailed to be used as a textbook, and that it is very doubtful whether one book can effectively deal with physiology and its applications. It might be better for physiologists to teach physiology, and the clinical scientists to teach its applications. We should then have less about the physiological basis of muscular contraction, which is in any event contentious; more about the physiology of joints, fasciae, and ligaments; less about the chemical properties of haemoglobin; and more about the air-conditioning apparatus in the respiratory tract, and so on. The problems which puzzle us in medical practice are not the applications of chronaxie or the cardiac output, but the meaning of pain and sleeplessness, of flatulence and heartburn and the like; and these are just the problems on which our physiological colleagues give us least help. They are rightly and properly interested in the growing points of their subject, but they are not so justified in assuming that these things are of general interest. The idea that the whole of physiology can usefully be applied to medical practice is surely as outmoded as the idea that the student should learn every detail of man's anatomy. Genetics, statistics, biochemistry, and psychology all now claim a share in the teaching of normal human function, and we should therefore prefer to see textbooks of medicine for the student showing more of the influence of the basic sciences, rather than see textbooks of the basic sciences growing ever longer.

"Best and Taylor" is a magnificent achievement of intellectual synthesis, and it should be of great value to the advanced student and research worker, but it is not the solution to the problem of bridging the gap between the preclinical and the clinical sciences. We still await the writer who will reorientate the teaching of applied physiology and preliminary medicine in the same way as MacCallum set pathology on a new road after the war of 1914-18.

TROPICAL NUTRITION

Tropical Nutrition and Dietetics. By Lucius Nicholls, M.D. Second edition, rewritten and enlarged. (Pp. 370; 32 illustrations; 11 plates. 27s. 6d.) London: Baillière, Tindall and Cox. 1945.

Knowledge of food constituents is increasing rapidly and Dr. Lucius Nicholls may be complimented on his effort to keep his book *Tropical Nutrition and Dietetics* in line with present knowledge. The second edition includes the later findings on vitamin K, nicotinic acid, pyridoxine, biotin, choline, etc., and even something about the "minor vitamins." This term is used somewhat apologetically for those which are very unlikely to be deficient from human diets, but the reviewer considers that they may prove to be just as important as those "major vitamins" whose functions are better known. It seems a pity that this term should have crept into the literature. Two chapters on foodstuffs peculiar to tropical climates (their production and preparation), one on food poisoning and one on insect pests of grain foods, and further information on public health activities in relation to nutrition have been added. There are also descriptions of diets suitable for use in hospitals, prisons, and other institutions.

The book gives much useful and interesting information that might be difficult and would certainly be laborious to find elsewhere. As appendices it contains many useful analytical methods and tables—e.g., the examination of the blood in anaemias, certain tests for vitamins, a dentition table, a determination of prothrombin in blood, instructions for dietary inquiries, average heights and weights of fairly well-grown boys and girls, the A.C.H. (arm, chest, hip) index of nutrition, nutritional section of a food craft exhibition in Ceylon, etc. There are thirty-two figures, some of them photographs and others clear pen drawings. The form of the book, binding, printing, and paper are very good for a "war-time" production.

MEDICAL ENTOMOLOGY

Entomology (Medical and Veterinary). By D. N. Roy, M.D., D.T.M. (Pp. 358; illustrated. Rs. 30.) Calcutta: Saraswati Library, College Street Market. 1946.

"Entomology," says Dr. Roy, "is no longer restricted to insects alone but it includes the study of the whole phylum Arthropoda." With this fiat, he allows himself scope to deal with most of the smaller vermin encountered by medical men, especially in the Tropics. The range of subjects treated should make the book a useful one and the profuse illustrations are of considerable assistance in identification.

Unfortunately a closer examination of the book reveals quite a large number of small errors and ambiguities. We may quote some statements taken at random to illustrate this: p. 11 (of the cockroach), "Ants and other hymenoptera often parasitise the egg pod"; p. 273, "Lice are usually killed by thirty minutes immersion in water . . ." (not true), and "Wind may be responsible [for spreading lice] to a small extent by blowing the nits" (nits are firmly attached to hair or garments); p. 268, "The main features of this order (Anoplura) are . . . (2) the integument is highly chitinated" (does he mean "not highly chitinated"?); p. 326, "The egg (of *Sarcoptes*) is ovo-viviparous . . ." (?); p. 289 (speaking of control of bed bugs), "French chalk is a good insecticide" (not true). In dealing with the Arachnidae, Dr. Roy has obviously confused the superfamily Ixodidae with the order Acarina. If one transposes the two words on page 291 (where they occur as major headings!) his text reads correctly.

The control sections are perhaps the weakest parts of the book, for the most recent methods and materials are either omitted or are given with small errors in the directions for use, which sometimes vitiate the whole procedure. In general the whole work gives the impression of being rather hastily finished. Considering that the scope and treatment lay the foundations of a very useful handbook, it is a pity that more care was not taken with these essential details.

Notes on Books

The very popular textbook *A Short Practice of Surgery* by Hamilton Bailey and R. J. McNeill Love was first published in 1932, and after six revisions and five reprintings appears now in a seventh edition (H. K. Lewis and Co.; 40s.). Owing to the inclusion of new material the present volume is somewhat larger than its predecessor; with the index it runs to nearly 2,000 pages. Many chapters have been rewritten and there is an additional one on the larynx. New illustrations have been added and some of the former figures are replaced, bringing the total number to 1,063, of which 203 are coloured. The printing and general lay-out of the book are most satisfactory. As before, advanced surgery and rare conditions are relegated to small type, which is quite legible. This edition also includes a glossary of anatomical names, giving in parallel columns the page reference, the structure mentioned in the text and the equivalent term in the Birmingham revision of the B.N.A.

The Autonomic Nervous System by Dr. ALBERT KUNTZ (London: Baillière, Tindall and Cox, 42s.), which has already an established place in the literature of the autonomic nervous system, has in its third edition been thoroughly revised and in part rewritten. The chapters dealing with the central control of autonomic functions, including cortical influences as well as hypothalamic, and the newer information regarding conduction paths, are representative of the present-day views; clinical bearings are abundantly introduced. The general get-up is excellent.

The first number of *Tuberculosis Index and Digest of Current Literature*, dated March, 1946, has been published for the Tuberculosis Educational Institute by the National Association for the Prevention of Tuberculosis, with a foreword by Sir Francis Fraser. The aim of this periodical is to give a complete list of current articles on all aspects of the disease as they appear in world scientific and medical literature. The list is made up of articles published in the preceding three months. The *Tuberculosis Index and Digest* is divided into 23 main sections, each under the supervision of an expert. The annual subscription is 15s. or 54s., and communications should be addressed to the Editor, N.A.P.T., Tavistock House North, Tavistock Square, London, W.C.1.

Nova et Vetera

THE LONDON LOCK HOSPITAL AND ITS FOUNDER

The bicentenary of the London Lock Hospital, founded July 4, 1746, lends interest to the details of the life of the founder, William Bromfeild (as he always spelt his name), whose initiative made its existence possible.

William Bromfeild (1713-92) was the son of Thomas Bromfeild, M.D.Oxon, and Mary Briggs, daughter of William Briggs, M.D., physician to William III and to St. Thomas's Hospital. He was born in New North Street, Holborn, and was baptized July 30, 1713. He early attracted the interest of John Ranby (1703-73), Serjeant-surgeon to George II and first Master of the Corporation of Surgeons after their separation from the barbers (1745). It probably was Ranby's influence which got him appointed demonstrator of anatomy at Barber-Surgeons Hall in 1744, and surgeon to St. George's Hospital on August 9 of the same year. Next year he became surgeon to the Prince of Wales, who was President of St. George's, and on his death in 1751 continued as surgeon to the Dowager Princess.

It was at this period in 1746, at the age of 33, that Bromfeild founded the Lock Hospital on a site half-way down Grosvenor Place from St. George's. There he bought the remaining 95 years of a 99-year lease of "the house lately in the possession of Mr. John Cooper" for £350, and a ground rent of £10 annually, paid to Sir Robert Grosvenor, Bt. This he sublet to the Trustees of the Hospital for £17 10s. a year plus the ground rent until such time as they could repay him the £350 purchase money, and so have legal possession. The hospital was opened with 30 beds on Jan. 31, 1747, and it has continued its charitable work ever since.

Bromfeild must have been a good mixer, for his practice became large and fashionable, and he was able to gather an influential list of patrons and subscribers to his hospital. Obviously it was very badly wanted in the West End, for of the 442 patients admitted in 1758 "one hundred were married women, some with infants at the breast, many of whom were admitted almost naked, penniless, and starving."

At that time there were still two Lock Hospitals in London, one in Southwark for men and one in Kingsland for women. These two were all that were left of the seven lazaret houses controlled by St. Bartholomew's Hospital after the Dissolution of the Monasteries. But both of them were closed in 1760, and Bromfeild's hospital was thus left to carry on alone in London for roughly the next 160 years. In 1760 he became one of the Court of Assistants of the Surgeons Company. In 1768 he was Senior Warden, and in this capacity passed John Hunter for his diploma. In 1769 he was Master, and in the same year made surgeon to Queen Charlotte, wife of George III. In 1780 he resigned at the age of 67 from the Court of Assistants, and also from St. George's after 36 years' service.

He had two sons and a daughter. The elder son, William Heriot Bromfeild, M.D.Padua, died in 1762. The younger son, Charles Bromfeild, succeeded his father as surgeon to the Lock Hospital in 1770 and as assistant surgeon to St. George's in 1778; but he predeceased him in 1784. An engraving of Charles is often mistakenly catalogued for that of his father, of whom only three authentic portraits are known: one by Vandergucht, one by Cosway, and one painted by Nathaniel Dance in 1773 which is now in the Lock Hospital.

According to Ottley (*Life of John Hunter*, p. 25) Percival Pott ranked highest as a surgeon in this period, "but the second stations were ably filled by Bromfeild, Sir Caesar Hawkins of St. George's, and Samuel Sharp and Warner of Guy's." He published a small work in Latin, *Observationes ad lithotomiam attentiores aliaque Chirurgiae Monumenta*, Florence, 1761; but his *Chirurgical Observations and Cases* published in 1773 is Bromfeild's main contribution to surgical literature.

He seems to have had certain literary tastes and to have been on friendly terms with the artistic and musical world. He adapted an old play *The City Match*, and under the title of *The Schemers* this was produced by Garrick at Drury Lane for the benefit of the Lock Hospital. Benefit plays were given annually for the hospital at Drury Lane and Covent Garden. Garrick, J. Rich, Board, and Giardini were his friends; and he persuaded Foote, Powell, and Macklin to play for him. Handel gave the first performance of *Judas Maccabaeus* to the hospital after Bromfeild had operated on him for cataract.

Any account of his life would be incomplete without reference to the Rev. Mr. Madan, the brilliant eccentric preacher who founded the Lock Chapel and made such a success of it that he was able to contribute from the pew rents £1,000 a year to the hospital funds. Madan's sermons drew large congregations. He was a musician and published a book of hymns. He was a friend of John Wesley and secured Charles Wesley as organist to the Annual Oratorio in

the Chapel. He was a cousin of Cowper the poet. Between him and Bromfeild they kept the hospital going financially up to 1780, by which time it was soundly on its feet. Both resigned from the hospital that year owing to differences with the Board. Both were forceful dictatorial men and resented innovations which were necessary. Madan died in 1790. Bromfeild followed him, full of years and honours, in 1792.

J. J. A.

EARLY METHODS OF ANAESTHESIA

Ancient Anodynes. Primitive Anaesthesia and Allied Conditions. By E. S. Ellis, M.R.C.S. With foreword by T. K. Penniman, M.A. (21s.) London: William Heinemann Medical Books, Ltd. 1946.

In this attractively printed and bound book Dr. Ellis has gathered from some hundreds of sources anecdotes and fact about the attempts of all races to subdue pain and obliterate sensation. He has researched into methods of "physical anaesthesia," the production of unconsciousness by a blow before performance of an operation; into "psychological anaesthesia" or forms of "mesmerism"; and into the inhalation of drugs to produce anaesthesia. References to various sleep-giving drugs were made in literature four centuries before Christ, and biblical references have not been neglected in the exhaustive catalogue. Like the results of an excavation, sorted, classified, and displayed, the book offers a series of facts almost entirely without comment. "Mr. Penniman in his foreword says 'it is a work of reference rather than one to be read straight through.'" Certainly for one who wishes to know of literary references to early methods of anaesthesia it will be invaluable. Attention is drawn in the preface to the fact that the war has made it impossible to finish the book in the form originally intended. The material which the author has compiled is such that one wishes it had been presented, as it could have been, in a completely absorbing form. This is left to those who will use Dr. Ellis as their source of reference. The book concludes with two chapters on the history of modern anaesthesia; these are less staccato and breathless than the rest of the book, but remain the brief collected stories of the participants in the discoveries of ether, nitrous oxide, and chloroform as anaesthetic. There is a full list of the authorities quoted.

THOMAS BILL, M.D.

"GENEALOGIST" writes: Details about Thomas Bill, physician to Henry VIII and Edward VI, "in addition to those recorded in Munk in the *Roll of the Royal College of Physicians*," were given in the *British Medical Journal* of Aug. 18, 1945 (p. 228), and can now be supplemented by reference to Cusson's *History of Hertfordshire* (Odsey volume), according to which the earliest mention of any of the Bill family at Ashwell is that of Christiana Bill, who was assessed towards a subsidy in 1307. The next mention is of the grandfather, Christian name not given, and the father, Thomas, both of Ashwell, of John Bill, draper, in his will dated Aug. 31 and proved Oct. 26, 1503. John and his wife Agnes had one son, also called John, alive in 1524, who married one Margaret, alive in 1551, and had three sons and two daughters: (1) John, the eldest son, a lawyer and probably King's Serjeant, who married twice, first wife dead by 1557, name not given, by whom he had descendants, and second wife Susan Samwell, without issue; (2) Thomas, the subject of these notes; (3) William, Dean of Westminster, who died without issue; (4) Mary, alive in 1558; and (5) a daughter, name not given, married to Thomas Gosnold, also alive in 1558. Thomas Bill, the physician, was M.D.Pavia before 1533 and was incorporated at Cambridge in 1534. His will is dated June 1, 1551, and was proved on Feb. 23, 1552. He married Agnes, daughter of John Theobald, of Seale, Kent, by whom he had Margaret, sole daughter and heir, who married James Haydock, of Graywell, Southamptonshire, by whom she had a family. Agnes Theobald's second husband was Percival Smallpage, and her third Bernard Randolph. Cusson gives the Bill arms: "Ermine; two Bills in a saltire proper; on a Chief azure, between two Pelicans' heads erased argent, vulning themselves, a Pale of the last, charged with a Rose gules"; and the crest: "A Pelican's Head erased, vulning itself as in the Arms." The bills, a canting device, are war weapons, and "vulning" means "wounding," an allusion to the legend that pelicans drew blood from their breasts to feed their young.

Sir Arthur S. MacNalty's presidential address to the History Section of the Royal Society of Medicine on "The Influence of Medical Poets on English Poetry" has been published in full in the June issue of the *Poetry Review*. A limited number of copies (2s.) may be had from the secretary, the Poetry Society, 33, Portman Square, W.1.

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THE NUTRITIVE VALUE OF BREAD

The National loaf has darkened in colour and dwindled in size, and bread and flour are now to be rationed. At the present critical time informed medical opinion is necessary both to prevent undue dismay among the general public and to counteract any possible complacency among those in authority. It is fortunate, therefore, that the Nutrition Society should recently have published a full account¹ of its important conference in February, 1945, on "Factors Affecting the Nutritive Value of Bread as Human Food."

Judged solely on its content of nutrients, brown wholemeal flour, in which 100% of the grain is "extracted," is much superior to white flour, in which as little as 70% of the grain may be used. McCance has compared the amounts of nutrients present in the whole wheat grain with those found in the central portion of its endosperm, from which the whitest fraction of flour is derived, and his data leave no room for doubt. Thus the protein contents of the whole grain and the endosperm are given as 8.9% and 8.1% respectively, fat 2.2% and 0.7%, phosphorus 311 and 59 mg.%, iron 3 and 0.5 mg.%, vitamin B₁ 1.6 and 0.1 i.u. per g., riboflavin 1.5 and 0.4 µg. per g., and nicotinic acid 42 and 5 µg. per g. Only in carbohydrates does the endosperm surpass the whole wheat, containing 75.8%, as against 66.8%. Similarly the amounts of nutrients in intermediate grades of flour may be correlated with the percentage of the whole grain which is included. Thus the present light-brown flour of 90% extraction is superior to the 85%, 82½%, and 80% broken-white flours which we had in the less hungry days during and just after the war.

In general the amounts of vitamins and minerals decrease steadily with reduced rates of extraction, until, according to Kodicek, a minimum is reached at about 70%. The different nutrients, however, are present in widely varying concentrations in different parts of the "offals." As a result the amounts of individual factors in flours of different extractions do not run quite parallel. Because the scutellum is very rich in vitamin B₁, flour of 85% extraction milled to contain this fraction is little inferior to wholemeal in its vitamin B₁ content. Copping gives values of 1.40, 1.15, and 0.35 i.u. per g. for wholemeal, 85%, and 73% extraction flours respectively.

The nutrient contents of flours, however, represent but part of the story. Many people prefer the neutral taste of white bread to the slightly bitter taste of brown. The texture of brown bread often tends to be harsh. A high proportion of indigestible fibre may cause diarrhoea in sensitive persons, while the heavy manual worker has to eat a greater bulk of brown bread than of white to satisfy

his heavy calorific demands. The superiority of high extraction flour in phosphorus, moreover, may actually be a disadvantage. According to McCance about 60% of this element in wholemeal flour is present in the form of phytate, which might be regarded as a potential cause of rickets.

Arguments for high- and low-extraction flour were thoroughly sifted at the 1945 conference, and many nutritionists agreed that a wise choice had been made in selecting the 85% extraction flour which served so well for a long period during the war. It combined light colour, good taste, and low roughage, with a vitamin B₁ content little inferior to that of wholemeal. Reasonable amounts of other vitamins and minerals were present, any deficiency in the latter respect being readily adjusted by adding calcium carbonate. The action of the Government when, at the time of the conference, it had reduced the rate of flour extraction to below 85% was strongly criticized by McCance and others interested in wheat as food for human beings. Pig and poultry keepers, and to a less extent dairy farmers, were more inclined to rejoice, since the rejection of a highly nutritive wheat fraction from the human loaf raised hopes of less precarious feeding for farm animals. If the National loaf was less pleasing to nutritionists, at least the prospects for eggs and bacon were improved. During the present year, however, the shortage or dislocation in world wheat supplies has caused fundamental changes in official policy. It is essential, we are told, to spare food for Germans and Indians, who are worse off than ourselves. The extraction rate has therefore been raised from about 80% to 90%, which means roughly that, for every eight loaves we eat, one loaf can be spared for use elsewhere. On the other hand, wheat offals have been cut from 20% to 10%, which means that our farm animals will have only about half their previous supplies of food from this source. Fortunately the new 90% loaf, if uninviting to many palates, is richer in nutrients than the loaf it replaces. We shall not starve. But cakes and pastries, if any, will become even more austere, and with a declining animal population the so-called protective foods will probably become more scarce than ever. The new Minister of Food, therefore, has taken over the reins of office at a most serious juncture. While all will hope that he may realize his ambition to introduce a little more variety into our diet, it is difficult to see from where that variety is to come: not everyone is enthusiastic over the prospect of having more dried egg.

PENAL JURISDICTION OF THE G.M.C.

In May, 1945, the General Medical Council, after a long hearing to which the public were not admitted, erased from the *Medical Register* the name of Dr. Arthur Henry Hennessy, a general practitioner of Sanderstead. The charges were that on Sept. 26, 1944, he had attempted to commit adultery with an unnamed woman patient and had indecently assaulted her. Dr. Hennessy had no right of appeal against this decision, but last April he sued in the High Court for slander Miss Irene Boyanton, of Sanderstead, the patient who had accused him of assaulting her.

¹ *Proc. Nut. Soc.*, 1946, 4, No. 1, 1-50. See also *British Medical Journal*, 1945, 1, 379.

He showed that since the G.M.C. hearing she had alleged to two persons in the neighbourhood that he had made love to her and criminally assaulted her in his surgery on Sept. 26, 1944—the allegations which she had made before the Council. He called certain evidence which (for reasons which did not appear) had not been before the Council. Mr. Justice Charles said in his judgment¹ that he utterly disbelieved Miss Boyanton's story of the assault and was satisfied that she had lied in uttering the slanders and in saying, as she had, that Dr. Hennessy had committed adultery with her regularly. He found it difficult to believe that if the Council had had the fresh evidence before them they would not have believed it in preference to that of Miss Boyanton, for she patently lied. In this shocking case there had been obvious slanders, meant to damage and damaging, spoken by a woman who had shown herself a willing and ready perjurer. The Council, in the absence of adequate evidence, had accepted her story and struck this wretched man off the *Register*. The slanders, for which he was awarded £2,000 damages, with costs and an injunction against repetition, were utterly and absolutely untrue, and he was hopeful that the G.M.C. would see their way to reinstating Dr. Hennessy, for in the absence at their proceedings of the evidence he had had before him there had been a gross miscarriage of justice. He offered to communicate with the Council, an offer which Dr. Hennessy's counsel gratefully accepted.

This case brings into clearer prominence than has any other of recent years the Council's defects as a disciplinary tribunal. No blame whatever attaches to the members of the Council for these defects; they are inherent in its statutory constitution. As Mr. Justice Humphreys remarked in the Spackman case, the Council is a domestic forum left to manage its own affairs as it considers best in the interests of the profession. It is not bound by rules of evidence; it has no power to administer an oath or to compel the attendance of witnesses. Its rules permit the reception of written depositions or statements as well as of oral evidence. In short, his Lordship said, the Council is free to adopt its own procedure and to decide on its own methods of proof so long as it obeys the dictates of natural justice. With all respect to so great a judicial authority, surely such cases as this show clearly that freedom is just what the Council does not possess. Because it cannot compel witnesses to attend, nor to take the oath, it has to put up with inferior and often biased evidence, especially in cases in which the complainant is actuated by spite and a desire for private vengeance. To combat the allegations against him the doctor can bring only such witnesses as he can persuade to attend, and the expense of bringing them and of maintaining them during their stay in London falls entirely on him—unless he is defended by a defence society. If he is condemned in these unsatisfactory circumstances he has no appeal. Surely the fact that the Council is a domestic tribunal does not justify its being forced to conduct its disciplinary duties in this manner. A doctor's livelihood is at least as important as any of the issues tried before civil courts, in which evidence is given on oath and before which witnesses can be compelled to attend.

Now that radical reforms in medical practice are about to be enacted, the statutes governing the General Medical Council will doubtless be drastically revised. The Council itself is in fact deliberating on the changes which would in its opinion be desirable in its own constitution. A committee of the Council of the B.M.A. is investigating the composition, functions, and procedure of the G.M.C. as part of a review of the working of the Medical Acts. In this issue too we publish (p. 21) a carefully considered memorandum which has been drawn up by the medical defence societies. A new Medical Act should clearly bring the Council, as a disciplinary body, into line with other domestic tribunals, particularly the Disciplinary Committee of the Law Society, which have been set up in more recent years. It should have power to compel witnesses to appear before it, to oblige them to take the oath, and to award costs against an unsuccessful party. Strong argument could also be adduced in favour of entrusting the hearing of penal cases to a committee, perhaps with a legal chairman. Finally, an aggrieved respondent should be entitled to move the High Court to re-hear the case against him. An appeal to the Court is open to a solicitor or to a dentist; there seems no reason in logic or justice for denying it to a doctor. By good fortune in Dr. Hennessy's case the time between the High Court's finding and the Council's recognition of it was relatively short. If, however, the action had been tried just after the May meeting instead of before it Dr. Hennessy would have had to remain unregistered until the meeting of the Council in late November, unless a special meeting had been convened at a cost of some hundreds of pounds. A right of appeal, with power in the Court to restore a name by order, would avert not only miscarriages of justice but also regrettable delay between the clearing of a doctor's name and his reinstatement.

PROBLEM OF HAEMOPHILIA

Whatever success has been achieved by local treatment of accessible bleeding areas, and however this may be improved by fibrin dressings and more potent thrombolytic preparations, only prophylaxis can make the life of the haemophilic relatively normal. Crippling joint-changes, internal haemorrhages, and constant anxiety can only be avoided if the patient's clotting function is brought within normal limits and kept there. In this respect a line of approach that began forty years ago is becoming promising. In 1906 Weil² claimed that the injection of normal human serum was of benefit in haemophilia. Other workers were not so successful, and attempts to improve the original method by using more specific coagulant fractions of blood such as platelet extracts, resulted in failure. Ten years later, however, Addis³ and Minot and Lee⁴ showed that the intravenous injection of serum, or of whole blood shortened the clotting time of haemophilic patients. Blood transfusion became the accepted, and indeed the only reliable, form of general treatment, though its effect was transitory. Then in 1937 Patek and Taylor⁵ demonstrated that the anti-haemophilic activity of normal blood resides in the cell-free globulin fraction of the plasma. The corresponding fraction of haemophilic plasma had no such activity, so that it appeared that some unknown factor

² Bull. Mém. Soc. méd. Hép., Paris, 1906, 23, 1001.

³ Proc. Soc. exp. Biol., N.Y., 1916, 14, 19.

⁴ Arch. intern. Med., 1916, 18, 474.

⁵ J. clin. Invest., 1937, 16, 113.

¹ Times, April 13; British Medical Journal, April 27, p. 665.

present in normal plasma, was absent or inactive in haemophilia.

During the war the fractionation of human plasma on a large scale was developed by Cohn and his associates, and in consequence a number of subfractions of normal human globulin have been available for investigation by American workers. Taylor⁶ and Minot⁷ have made a careful examination of the anti-haemophilic activity of a large number of such fractions. Their work reveals that this activity does not depend on the fibrinogen thrombin or prothrombin content of the fractions, nor on their ability to develop fibrinolytic activity after treatment with chloroform. This latter observation is of importance since Tagnon⁸ observed that haemophilic plasma is deficient in this ability, and it might appear that the fibrinolytic enzyme of plasma has a place in normal coagulation. Unless the classical theory of blood coagulation is to be abandoned, the evidence suggests that it is the thrombokinas of normal plasma which is being studied; and which is reduced or inactive in haemophilia. The investigation may, perhaps, be taken a stage further by the work of Tocantins⁹, demonstrating an increased anti-thrombokinas activity in haemophilia, which may explain the results of other workers. This is probably the first positive finding of importance in research on haemophilia. Such an anti-kinase might be expected to be anti-fibrinolytic also, since Macfarlane and Pilling¹⁰ have shown that thrombokinas and fibrinolysin may be inhibited by the same substances. Interest should centre now on the inhibitor systems in blood coagulation. It is the concept of a constantly operating dynamic equilibrium, between enzymes on the one hand and inhibitors on the other, which is most likely to resolve the problems of coagulation in general and of haemophilia in particular.

As to the practical application of this work, too much must not be expected. The activity of whole blood has been concentrated into a smaller volume by plasma fractionation, but that is all; 200 mg. of active protein now have the same effect as 100 ml. of whole blood, an effect that only lasts 24 to 48 hours. Future work may reduce the effective dose still further, and regular injections may keep the patient's clotting time below the danger level. But it must be remembered that haemophilia is not a deficiency disease; it is an inherited state of disordered physiology. It is as natural for the clotting time to be long in haemophilia as for it to be short in normal people. The haemophilic system may react to attempts to alter its clotting equilibrium by compensatory processes rendering the introduction of foreign substances useless or even harmful.

MANGANESE PNEUMONITIS

Chronic manganese poisoning was first described in 1837 by Couper,¹¹ and since that time some 353 cases have been reported. Manganese appears to be an essential substance in plant and animal nutrition. It occurs in nature as the oxide in the ores, pyrolusite, braunite, hausmanite, and manganite, which are found in Russia, India, the Gold Coast of Africa, Brazil, the United States, and Cuba. Its most important alloys are spiegeleisen and ferro-manganese, but silico-manganese and silico-spiegel are employed in certain grades of steel. Manganese bronze resists corrosion and is used for marine construction and mining machinery. Manganese is also alloyed with aluminium, tin, arsenic, antimony, bismuth, and boron. The oxide is used in bleaching glass, the chloride in dyeing, the sulphate in calico printing, and the persulphate as an oxidation agent in making

organic products. Manganates and permanganates are used for preserving wood, for bleaching textile fibres, and for disinfecting and oxidizing purposes.

In chronic poisoning the commonest pathological changes affect the central nervous system and result in the Parkinsonian syndrome. Accounts of the condition have mostly come from Europe, but cases have been reported in England by Charles,¹² and by Owen and Cohen,¹³ and recently a full review has been produced by Fairhall and Neal¹⁴ in the United States. As long ago as 1921 Brezina¹⁵ drew attention to the relationship between manganese and pneumonia; he reported that five out of ten men working in a pyrolusite mill had died of pneumonia in a period of two years. Baader¹⁶ ascribed to manganese the high incidence of pneumonia among workers making dry-battery cells. Elstad¹⁷ in Norway observed that the erection of an electrical plant for smelting manganese at Sanda was followed by a tenfold increase in the mortality rate for pneumonia in that area; a pall of smoke containing manganese oxide with particles of less than 5 μ overhung the town. Immediately before the war Buttner¹⁸ reported that men working in a Rhenish pyrolusite mine had an average pneumonia rate of 17 per 1,000 with an average death rate of 6.3 per 1,000, as compared with a pneumonia rate of 0.54 per 1,000 in a control group from Leipzig.

Lloyd-Davies¹⁹ has now recorded his observations on men employed in the manufacture of potassium permanganate and exposed to the inhalation of dust containing manganese dioxide and the higher oxides of manganese, the manganese content of the atmospheric dust being between 41 and 66%; practically all the particles were below 1 μ in size, and 80% were below 0.2 μ . This group of men, numbering from 40 to 124, had an incidence of pneumonia which varied from 15 to 63 per 1,000 in the period 1938 to 1945, compared with an average of 0.73 per 1,000 for the same period among male members of Boots Health Insurance Society. Nasopharyngeal catarrh was common, and attacks of bronchitis were frequent; these always subsided after removal from exposure. The pneumonia which occurred did not differ clinically from that which may develop in any individual, and Lloyd-Davies illustrates his paper with radiographs showing upper-lobe consolidation which resolved in nine weeks. He suggests, however, that the temperature and general condition of the patient respond more slowly than usual to sulphonamides. No permanent pulmonary changes were observed either clinically or radiologically.

Animal experiments in which mice were exposed to manganese dust were complicated by the obvious toxic effect of the manganese, but the histological effects on the lungs were uniform and striking. The changes were dependent on the length of exposure, and varied from slight mononuclear infiltration to intense mononuclear interstitial infiltration with many dust-laden cells, progressing finally to consolidation, including haemorrhagic areas, leading to complete disorganization of the lung structure. The changes were most marked around the bronchi; cells lining the bronchi were swollen and had undergone hydropic change. Lloyd-Davies thinks the manganese has a direct influence on the cells of the bronchial and alveolar epithelium. The presence of dust cells, even though few, suggests that the dust is phagocytized, but it is probable that after absorption the phagocytic cells are killed. Either before or after absorption manganese would appear to

¹² *Brain*, 1927, 50, 50.

¹³ *Lancet*, 1934, 2, 982.

¹⁴ *Nat. Inst. Hlth. Envt.*, Washington, No. 112, 1943.

¹⁵ Internationale Übersicht über Gewerke-Ärztinnen nach den Berichten der Gewerbeinspektion der Kulturländer über das Jahr 1920-21, p. 40, Berlin, 1922.

¹⁶ *Arch. Gewerbepath. Hyg.*, 1933, 4, 101.

¹⁷ Report on Eighth International Congress for Industrial Accidents and Occupational Disease, Leipzig, 1939, 2, 1022.

¹⁸ *Ibid.*, p. 1022.

¹⁹ *Brit. J. Industr. Med.*, 1946, 3, 111.

⁶ *Ibid.*, 1945, 24, 693.

⁷ *Ibid.*, 1945, 24, 704.

⁸ *Ibid.*, 1943, 22, 127.

⁹ *Amer. J. Physiol.*, 1943, 139, 265.

¹⁰ *Lancet*, 1946, 1, 583.

¹¹ *Brit. Ann. Med. Pharm.*, 1837, 1, 41.

have a specific action, causing intense mononuclear proliferation and infiltration, and being sufficient to cause consolidation of the lung with necrosis and haemorrhage.

TUBERCULOSIS UNDER THE BILL

Controversy over the general aspects of the Health Service Bill has obscured the question of what the Minister intends for the tuberculosis services. Indeed, the name of this disease does not appear anywhere in the text of the Bill. This is perhaps explainable in a measure purporting to deal with health rather than disease, and the future of our tuberculosis services when the Bill becomes law is at present a matter for deduction and conjecture. From what can only be guessed, or read between the lines, anticipations on the subject are not free from misgiving. Presumably the treatment of cases of pulmonary tuberculosis, which form a majority of the tuberculous population, will be in the hands of chest specialists at the new regional clinics and hospitals. In so far as the tuberculosis officer will be considered a chest specialist, and presumably have more hospital beds and clinical facilities, this change is to the good. But if at the same time he is not to have complete charge of the tuberculous patient, more will be lost than gained. When one inquires about the environmental aspects of the tuberculous patient's care, the control of his home surroundings, and his rehabilitation towards normal life, these are found to come under the local health authority. Further, industrial re-employment is the concern of the Ministry of Labour. To make a fourth branch of this inconvenient division of the tuberculosis patient's interests, we have the unwelcome news that the treatment allowances (266/T) are to be abolished. It would seem that the tuberculosis service of Great Britain, which led the way in 1912 and still leads the world, is to be broken up into fragments. This view is expressed in an article in the June issue of the *N.A.P.T. Bulletin* entitled "Disintegration"; it is also the opinion of Dr. Frank Ridehalgh, tuberculosis officer for the City of Leeds, writing in the *Times* on June 11, of the Joint Tuberculosis Council, and of a large number of tuberculosis officers. Mr. Bevan has promised or threatened a third Bill—additional to the Health Service and National Insurance Bills—to deal with Poor Law and to clear up remnants of socio-medical legislation, and until this new measure emerges the social welfare of the tuberculosis patient is not provided for. If these deductions from the text of the Health Service Bill are incorrect, would it not be well for the Minister to show what he has in mind for the tuberculosis service of the country?

MATAS OPERATION FOR TRAUMATIC ANEURYSM

"The report of the first patient treated by endo-aneurysmorrhaphy was made by Dr. Rudolf Matas in the *Philadelphia Medical News*, October 27, 1888. In the 57 years which have intervened since that memorable publication no alterations in the technique of the procedure other than minor niceties have been made. Few operations have stood this test of time, and none has had a more profound effect upon the surgery of blood vessels." Thus Elkin¹ begins an account of 106 false aneurysms treated by operation during thirty months; in 61 the Matas procedure was employed. There were no deaths, no recurrences, and no instance of gangrene.

Elkin's warm advocacy of the method stresses its simplicity; his results indicate its effectiveness. The problem that confronts the surgeon in these cases is well shown by the account of Matas's original case. A young negro had

a large traumatic aneurysm of the brachial artery, which had recurred after combined proximal and distal ligation of the main artery. When Matas exposed it at operation he found that the branches of the brachial plexus were so firmly incorporated in its walls that excision was impracticable. Exploration of the interior of the sac revealed three large orifices, corresponding to collateral branches, which had clearly caused the recurrence. Matas realized that the easiest way out of the difficulty was to seal the orifices of these collaterals by suture. This was done with ease and with success. As Elkin states, the Matas endo-aneurysmorrhaphy is simple in conception, and if the principles of its application are borne in mind it is easy to carry out. The seven cases he selects to illustrate his experiences are examples of difficult, and even terrifying, large traumatic aneurysms in the most awkward places.

Before the introduction of the Matas procedure aneurysms were treated by a variety of methods, most of them unsuccessful. Antyllus, a fourth-century surgeon, ligated the vessel above and below the sac, the contents of which were evacuated before applying an astringent or packing; this operation was performed right up to the eighteenth century. In 1710 Anel suggested ligation of the proximal artery close to the sac, but it was chiefly due to the introduction by John Hunter of proximal ligation at a distance from the sac, in order to lessen the risk of gangrene, that the operation of Antyllus was abandoned. The Hunterian ligation was often successful. Its success has been marred, however, by frequent recurrences, the sac being fed through the collateral channels Hunter was so anxious to preserve. Even to-day, with proximal and distal ligation combined with excision of the sac as the method of choice, the simplicity and effectiveness of the Matas operation is quite inadequately appreciated. In those cases with a huge, diffuse, and widely adherent false aneurysmal sac, resulting from gunshot wounds, excision of the sac is always difficult and often dangerous or impossible. It is, therefore, important that the principle of the Matas operation should be widely known and appreciated.

MEDICAL FILM COMMITTEE

The Council of the British Medical Association has set up a committee to inquire into the scope and use of films in postgraduate and undergraduate medical education. Under the chairmanship of Sir Lionel Whitby the committee is composed of the following members: Lord Amulree, Mr. V. Zachary Cope, Dr. A. E. Barclay, Dr. J. A. L. Vaughan Jones, Dr. R. P. St. L. Liston, Dr. B. G. Maegraith, Dr. R. C. MacKeith, Mr. R. L. Newell, Mr. H. Reid, Dr. C. M. Seward, Prof. J. C. Spence, Mr. A. Dickson Wright, and Mr. R. L. Pryer and Mr. S. A. Biggart appointed by the British Medical Students' Association. One of the first tasks of the committee will be to survey the different techniques in which films are employed in other spheres of education. The film was used extensively in Naval, Army, and Air Force training during the war, and the experience in these fields should prove most valuable. The committee will consider how far the lessons learnt can be applied to medicine. Problems of production, distribution, cataloguing, and projection will all have to be studied. It is clear that a vast field for valuable work is opening up.

The Hugh Owen Thomas Memorial Lecture will be delivered by Mr. George Perkins, President of the British Orthopaedic Association, at the Liverpool Medical Institution (114, Mount Pleasant, Liverpool) on Thursday, July 11, at 4 p.m. His subject is "Bone Grafting."

¹ *Surg. Gynec. Obstet.*, 1946, 82, 1.

POWERS AND PROCEDURE OF THE GENERAL MEDICAL COUNCIL

A memorandum on Proposed Variation of the Powers and Procedure of the General Medical Council has been drawn up by the Medical Defence Union, Ltd., the London and Counties Medical Protection Society, Ltd., and the Medical and Dental Defence Union of Scotland, Ltd.

Proposals for Reform.

The Councils of the three defence bodies are of opinion that the existing powers and procedure of the G.M.C. require strengthening and amendment to bring them into alignment with modern practice in criminal courts and courts-martial regulated by rules of procedure similar to those of the Disciplinary Committee of the Law Society. Having posed certain questions to and received the opinion of counsel, the societies submit the following decisions for the consideration of the G.M.C., believing that their adoption would redound to the benefit of all concerned.

That the General Medical Council be empowered and required to establish two distinct and separate committees to be known as (a) the Penal Cases Committee and (b) the Disciplinary Tribunal. That a member of the Penal Cases Committee be not eligible to sit as a member of the Disciplinary Tribunal to hear a case that has already been before him as a member of the former committee.

That the Disciplinary Tribunal, sitting with a legal assessor, consist of 7 members drawn from a panel of 12 members elected by and from the G.M.C.; that its quorum consist of 5 members, and that it be vested with the full disciplinary and judicial powers of the G.M.C. That complaints received by the G.M.C. be examined in the first instance by the Penal Cases Committee to determine whether a *prima facie* case exists for reference to the Disciplinary Tribunal for determination.

That the General Medical Council be incompetent to present any case in which a Government Department or a constituent body is the complainant, and that the burden of the presentation of any complaint be undertaken only when the Council is satisfied that justice would be denied in the absence of its intervention. That the initial complaint in all cases, including information laid by a Government Department, be supported by an affidavit or affidavits setting out all material facts. That a copy of the affidavit or affidavits be furnished to the respondent with any request addressed to him to provide a reply and explanation. That the respondent be given not less than four weeks' notice of any inquiry to be held by the Disciplinary Tribunal with discretionary power vesting in the President to extend the time on the receipt of an application to this effect.

That the attendance of witnesses and the production of documents before the Disciplinary Tribunal be enforceable by subpoena. That all evidence before the tribunal be given orally on oath save for good and sufficient reason, except evidence as to character, which may be given in writing. That each party furnish to the other not later than 10 days before the hearing of the case a list of the documents on which they propose to rely. That notice to produce and admit be not permitted.

That the Evidence Act, 1938, be not made applicable to the proceedings of the Disciplinary Tribunal. That the parties be entitled to require the tribunal to subpoena any deponent to an affidavit to give oral evidence. That only those documents which are agreed by the parties and such others as are proved in evidence be placed before the tribunal.

That a summing up by the legal assessor be not required unless it is requested by the Disciplinary Tribunal or one of the parties when in the opinion of that party a point of law is involved. That if and when the legal assessor sums up, he be obliged to do so in the presence of the parties. That the legal assessor be a barrister or a solicitor experienced in the practice of the Courts of Common Law and of not less than 10 years' standing.

That provision be made for a right of appeal to the High Court by the respondent on points of law only. That in the event of an appeal any order for crasure be suspended until after the disposal of the appeal, subject to the appeal being entered within 7 days from the date of the order.

That the Disciplinary Tribunal be empowered (in addition to the present penalty of crasure) to administer other penalties short of crasure—viz., suspension for varying periods or censure of differing degrees. That the tribunal be empowered to award costs against a complainant or respondent and that machinery be established for taxing the costs.

That the General Medical Council be given the power, but not the exclusive power, to conduct prosecutions for infringements of the Medical Act, 1858.

That the words "professional misconduct" be substituted for the words "infamous conduct in a professional respect" and used in the same connexion.

That the rules of procedure relating to penal inquiries be not subject to the approval of a judicial authority.

That the appropriate provision of the Medical Act be amended to permit of the imposition of a maximum penalty of £500 and the alternative of a term of imprisonment for persons convicted of falsely holding themselves out to be registered medical practitioners.

That addition be made to the present protected designations appearing in Section 40 of the Medical Act to embrace abbreviation of recognized medical qualifications, the courtesy title of "Dr." when associated with the healing art, and any other description in common use that is accepted by the public and the profession as indicating that the user is a registered medical practitioner.

SOCIAL SURVEY OF DIPHTHERIA IMMUNIZATION

Diphtheria immunization was recently the subject of an investigation made by the Social Survey for the Ministry of Health. In the course of the inquiry over 2,000 mothers were interviewed. They were a representative sample of mothers of children aged under 16 in England and Wales. The results of the inquiry are given in a report bearing the name of Kathleen Box and issued by the Ministry of Health. (New Series, No. 69.) Among points made are the following:

The Ministry's publicity campaign has had widespread success in persuading parents to have their children immunized, and in bringing to their notice the free immunization scheme. Of the mothers interviewed 81% with one or more children who had passed the first birthday had had at least one child immunized; 84% of the immunized children had been immunized under the local authorities' free scheme, the remaining 16% by private doctors. The two peak ages for immunization were at about the first and fifth birthdays. Of the immunized children 34% were immunized at the suggestion of the school, 19% at the suggestion of a welfare clinic, and 6% and 5% at the suggestion of health visitors and doctors respectively. Of the mothers interviewed 35% had had their children immunized on their own initiative, as a result of hearing about immunization from publicity. Immunization posters had been noticed by 87% of the mothers interviewed, newspaper or magazine publicity by 75%, radio publicity by 50%, and cinema publicity by 40%.

There was no considerable difference between the proportions of immunized children in towns and in rural districts; the proportion was rather lower in the North than in the South. Mothers in the higher education and income groups were slightly ahead of those in the lower groups in having their children immunized. Among interviewed mothers who had not had their children immunized, only 15% said that they did not believe in it. Resistance to immunization came from another 26% on various other grounds, such as that the husband objected, or that the mother feared the child would be hurt or frightened. The largest group of unimmunized children (35% of the total) was accounted for by apathy and ignorance on the part of the mother.

MEDICAL BIRTHDAY HONOURS

A further list of Birthday Honours was published in a *Supplement* to the *London Gazette* on June 24, and included the names of the following members of the medical profession.

O.B.E. (Civil Division)

ARCHIBALD BUCHANAN BARBOUR, M.R.C.S., L.R.C.P., A.F.R.Ae.S., lately Commander and Chief Medical Officer, Air Transport Auxiliary.

JOHN CONSTABLE BROOM, M.D., Acting Director of the Laboratory of Tropical Medicine, Wellcome Research Institution.

Mrs. EVA COTCHING, M.B.E., M.D., lately Deputy Director, Iraq Soldiers', Sailors', and Airmen's Families Association, Palestine.

Surg. Capt. ARCHIBALD FAIRLEY, M.B., Ch.B., R.N.(ret.), Principal Scientific Officer, Chemical Defence Experimental Station, Ministry of Supply.

GEORGE FOGGIN, L.R.C.P.&S.Ed., Principal School Medical Officer, Newcastle-upon-Tyne.

FREDERICK JAMES SIMKIN HALL, M.B., B.S., F.R.C.S.E.D. For services to ships lying off Deal, in the Downs.

ENEAS KENNETH MACKENZIE, M.D., J.P., Chairman, Ross and Cromarty Insurance Committee.

HUBERT TURNER PENN YOUNG, M.B., Ch.B., Medical Officer, H.M. Prison, Wormwood Scrubs.

M.B.E. (Civil Division)

ERIC WILLIAM BINTCLIFFE, M.S., F.R.C.S., Senior Surgeon, Royalwood Hospital, Worcester, Ministry of Pensions.

Mrs. R. C. LANCASTER (Miss RUTH DURY), M.B., Ch.B. In charge of the Military Families Hospital, Rumwood Court, Langley.

ROBERT CATHERWOOD WALLACE, M.B., Ch.B., Admiralty Surgeon and Agent and Medical Officer, R.N. Armament Depot, Crompton.

MACKENZIE INDUSTRIAL HEALTH LECTURE

Dr. Donald Hunter, F.R.C.P., will deliver the Mackenzie Industrial Health Lecture at B.M.A. House on Wednesday, July 24, at 5.45 p.m. The title of the lecture is "Academic Aspects of Industrial Medicine," and admission is by ticket only. The lecture will be confined to persons, lay and medical, who are professionally interested in industrial medicine. Tickets of admission can be obtained from the Secretary, B.M.A. House, Tavistock Square, W.C.1, and early application is requested as the number is limited.

CONSULTANT PAEDIATRICIANS

We print below an abridged version of a document on the appointment of a consultant paediatrician which has been drawn up by the British Paediatric Association, partly as a result of requests from various centres. Copies of the full text may be had from the secretary of the B.P.A., Hospital for Sick Children, Great Ormond Street, London, W.C.1. The suggestions are intended to help centres, other than the main undergraduate teaching schools, where such an appointment is under consideration.

Qualifications for Appointment

A consultant paediatrician should have received his or her paediatric training at an approved children's hospital or children's department of a hospital, and have a minimum of five years' training and experience after qualification. One, preferably the first, year of this period should be spent in an appointment or appointments in adult medicine or surgery. Three years should be devoted to paediatrics, using this term in its widest sense to include all medical work among healthy and sick children, and one year should have been spent working at some allied subject. He should be a Member or Fellow of one of the Royal Colleges of Physicians or hold an approved higher degree in general medicine; the D.C.H. is not essential. He should not engage in general practice.

Standards of Remuneration

These should be based on the assumption that no considerable measure of private practice will be available. In determining standards for a consultant paediatrician, whether part- or whole-time, his services should be valued in the light of the work done and responsibilities assumed, bearing in mind that the care of children involves great responsibility. Travelling expenses in connexion with his work, adequate secretarial and office assistance, and time off to attend meetings of learned societies should be provided.

In his hospital work he should have adequate medical assistance of the type of medical registrars and house-physicians, and these must be taken into account when assessing the requirements and cost of the department. So that the best nursing services may be available the senior nursing staff in the children's department should hold the sick children's nurse's certificate.

Duties of the Consultant

He should have general charge of the children's department of local hospital; act as consultant to the local hospital for infectious diseases; be responsible for care of the newborn in the local maternity department; be available as a consultant for long-stay country hospitals, convalescent homes, and residential schools for defective children; act as a consultant to the School Health Service, the local welfare clinics, the Tuberculosis Service as applied to children, and any other service for children for which the local authority is responsible; be available for domiciliary consultations, as determined by the new Health Bill; and undertake teaching duties for house-physicians, nurses, midwives, health visitors, etc., in close association with the local university department of child health.

The consultant paediatrician should be jointly appointed by the appropriate hospital board and local authority, in consultation with the university of the region, and it would be an advantage to have some external assessors. The emoluments and conditions of work should be made attractive in order that those of high standing may be led to apply.

The report for 1945 of the Kashmir Medical Mission of the Church Missionary Society has been published from Mysore City. Shortage of staff influenced the output of work both in quantity and quality. Dr. Cecil Vosper left for England in June after 33 years of faithful service on the Frontier and in Kashmir, and a tribute to his work and character is paid in the report. One regrettable result of the war has been the impossibility of maintaining adequate repairs and renewals owing to the prohibitive cost, and much new equipment will also be required. The Mission Hospital at Srinagar looks forward to brighter times when full and efficient staffs are again the order of the day. The general survey is signed with the initials of the Rev. K. W. MacKenzie, M.B., superintendent, and non-treasurer and secretary.

Reports of Societies

NUTRITIONAL EXPERIENCES IN P.O.W. CAMPS

A conference of the Nutrition Society on May 18, at the London School of Hygiene and Tropical Medicine, discussed nutritional experiences in prisoner-of-war and internment camps in the Far East.

Dr. P. S. SELWYN-CLARKE, Director of Medical Services, Hong Kong, who acted as chairman, said that during the war the wise guidance of Sir Edward Mellanby and others had prevented malnutrition in Great Britain. Dr. Magee had produced evidence that the children, at least, were better nourished than before the war. The situation in other parts of the world, however, was much less satisfactory. Rapidly increasing populations had to subsist on the products of cultivated areas which dwindled as the result of soil erosion. As a result bad harvests, combined with shortage of shipping, had led to the present crisis, in which death by starvation threatened about 150 million people. It was therefore essential to have expert advice on how best to use available food supplies. Nutritional Research Committees had already been established in many colonies, and he was authorized to announce that a control Colonial Nutrition Research Committee would shortly be set up to advise the Colonial Secretary.

Deficiency diseases appearing in prison camps might presumably be taken as a rough index of those likely to occur in the population of the surrounding territory. The present meeting, therefore, might well be regarded as a regional conference on general nutritional problems in the South-West Pacific area. Undoubtedly, however, complications in the interpretation of data arose from the special conditions of life in individual camps. Thus, great variations existed in regard to climate, hygiene, housing, clothing, and water supplies, and in the facilities for sanitation, washing, cooking, and recreation.

He had been impressed by the number of syndromes, presumably of nutritional origin, which bore a distinct resemblance, although incomplete, to conditions met with in general medicine. Thus in a camp on the Kowloon Peninsula he had observed several cases which might have been diagnosed as Paterson's syndrome, but in which koilonychia and hypochromic anaemia were absent. In Hong Kong Major Harrison saw several cases of a syndrome resembling subacute combined degeneration of the cord, but without extensor plantar response. Several minor points presented interesting problems. It was difficult to understand why young women should digest rice much better than young men. An explanation had still to be found for the violet hallucinations which troubled sufferers from the amblyopia which appeared as a complication to frank vitamin B₁ deficiency when they attempted to read.

Formosa P.O.W. Camps

Lieut.-Col. J. BENNET, R.A.M.C., said that in prisoner-of-war camps in Formosa it was difficult to decide to what extent the incidence of deficiency diseases could be attributed to the somewhat defective diet. Environmental stress, compulsory hard labour, a high incidence of malaria and other infectious diseases, combined often with the after-effects of transport by sea under appalling conditions, all contributed to a highly complex picture of ill-health. A diet consisting mainly of unpolished rice was freely eaten by men who had a deep elemental fear of starvation. Large amounts of vegetables of poor nutritive quality and coarse texture were also consumed. The resulting intestinal irritation caused diarrhoea, which undermined health and led to a high incidence of nutritional oedema.

In some camps the prevailing oedema was classified as beriberi, but this diagnosis disregarded the outstanding features, which were its soft pitting character and the effect of posture in determining its distribution. Some indication of vitamin B₁ deficiency, however, was given by the occurrence of neuritis in the later years of captivity, although the features were not those usually found in beriberi. The bones and joints ached severely, and there were cramping sensations in the feet. Often the nerve cords were thickened and tender. Retrobulbar neuropathy was another common abnormality. The complete picture of the sprue syndrome was rare, although some cases will

rhoea showed early changes in the tongue. Large blooders sometimes formed in the mouth, even in men who were arently fit.

isoners who were expected to work received about 2,500 to 0 calories daily, but when officers were excused work their ke was reduced to 1,770 calories. It seemed probable that diet would have maintained a reasonable state of health in absence of "conditioning" factors, such as overwork, tion, and diarrhoea.

Interned Civilians in Hong Kong

r. D. A. SMITH described conditions in a civilian internment p in Hong Kong which housed about 1,300 men, 900 en, and 300 children. The main foodstuff was highly milled e rice, of poor quality, and usually infested with weevils. ration allowed by the Japanese also included water-buffalo in 1942, but this was later replaced by fish, which during last two years was salted and supplied only every other th. A little arachis oil and some salt were allowed. ese cabbage, water spinach, chrysanthemum and sweet to tops, and gourds were the main vegetables. The diet calculated to be low in all nutrients except carotene, min C, and iron. Some food was fortunately obtained from r sources, and included beans, wheat bran, and rice polish- purchased from the local Red Cross organization occa- al International Red Cross parcels, and the produce of p gardens.

he first effect of poor diet was loss in weight. After the few months the body seemed to adjust itself to the new e of nutrition. A lowered metabolic rate was accompanied bradycardia, hypotension, weakness, undue liability to ue, dizziness, and fainting. About 90 days after capture beriberi first appeared, and throughout the whole period cases occurred. The condition could readily be cured with talline aneurin, preferably given by injection. Although incidence of beriberi rose in warm weather, the main factor eciding its incidence was the amount of vitamin B in the at different periods. A high incidence could be expected n the daily intake fell below 0.25 mg. per 1,000 non-fat ries. At about the same time numerous cases of oedema e noticed which were not associated with neuritis. This dition did not respond to aneurin, and was presumably due rotein deficiency. Features of pellagra, usually including sitis and blood-blisters in the buccal mucosa, were found 157 cases, but the typical brown pigmentation was seldom erved. "An "ora-genital syndrome," with angular stomatitis genital dermatitis as its main characteristics, was frequently ountered, and was ascribed to deficiency of riboflavin. There e 55 cases of tropical macrocytic anaemia. Other lesions e retrobulbar neuropathy, which failed to respond to such ry treatment as was available in the camp; and "electric," which were not cured by aneurin but improved gradually n beans, wheat bran, and rice polishings were given.

Internees at Singapore

rof. R. G. SCOTT MACGREGOR recounted his experiences in civilian camp at Singapore. At Changi prison 3,000 inter- s were at first housed in accommodation designed for 600, in 1944 the camp was moved to primitive huts on the Sime d. The Japanese allowed the camp to look after its own al organization, and a Medical Reference Committee was ned which met at weekly intervals for three years to take e of nutritional matters. The diet allowed by the Japanese much the same as in Hong Kong, but the rice was often olished. Red Cross facilities were not freely allowed, but committee was able to arrange for the purchase of supple- tary foodstuffs, such as rice polishings, ground nuts, and en dhall, through a neutral agent. The diet provided 2,000 ories daily for healthy men, with less for invalids. Women l children received only about 1,000 calories. In order to rt the ill effects of periods during which the food supplied the Japanese was worse than usual the committee showed at resource in the provision and issue of supplements. Thus reu-palm oil was distributed during the early months when lack of vegetables brought danger of deficiency of vitamin A. During periods when the Japanese were supplying unpolished rice improvised drying plant was put into service. This allowed the storage of rice polishings in stable form so that they might

be issued when beriberi was threatened through a change of the ration to polished rice. A procedure was even devised for the extraction of salt from sea water at times when the salt ration was low, but the injudicious use of salt sometimes increased the tendency to oedema.

Probably as a result of the committee's careful planning, the incidence of deficiency diseases was comparatively light. Although the average age of the internees was 44, the mortality was under 10%. Nevertheless, losses of 2 st. (12.7 kg.) in weight, and 1/2 to 1 in. (1.25 to 2.5 cm.) in height, were common. Only 30 cases of beriberi occurred in the early stages of internment, and there were no further cases except for a few in 1945. There was an outbreak of retrobulbar neuropathy in 1943, and of pellagra in 1944.

Drs. R. C. BURGESS and E. K. CRUICKSHANK both spoke about malnutrition in the military camp at Singapore. Although the calorie intake was reasonably adequate, there was, as in other camps, a serious deficiency of protein and of vitamins of the B complex. The incidence of beriberi, which could clearly be correlated with periods when the vitamin B₁ intake was low, rose to a high level two months after capture in 1942, but was very low when an improved diet was received during 1943. Later, however, deterioration of food supplies caused a steady rise in incidence to a peak in 1945. To keep the vitamin B₁ intake as high as possible steps were taken to ensure that losses involved in washing and cooking rice should be minimized. At one time yeast was grown as a source of vitamin B₁, but the specimens obtained proved to be of little value. The incidence of conditions due to deficiency of the vitamin B₂ complex, including mouth lesions, aching feet, and scrotal dermatitis, were parallel with low levels in the riboflavin intake, but apparently not related to the estimated nicotinic acid level. The incidence of keratitis followed most other deficiency conditions fairly closely, but retrobulbar neuritis was slow in appearing.

Prevention of lesions due to deficiency of the vitamin B₂ complex was effected by increasing the intake of green vegetables to about 180 g. per day. Protein deficiency remained severe, as indicated by the very low serum value of 4.7%, estimated immediately after liberation. One of the most distressing effects of malnutrition, however, was undoubtedly aching feet, which kept the sufferers awake at night. Some tried to find relief by an endless walk round their sleeping-quarters. Others wore several pairs of socks, or knelt in a bent-up attitude, squeezing their feet with their hands.

Effects on Women and Children

Miss E. M. M. HUME read a paper contributed by Dr. CICELY WILLIAMS which dealt with the nutritional conditions among women and children interned in Singapore. After the capitulation a motley group, made up of professional women, nurses, and the wives of British civilians or prisoners of war, some European, some native, and some Eurasian, was paraded all day in the sun at the centre of the town, before being marched 6 miles (9.6 km.) to houses in Katong. Here they were kept for three weeks, with little food and no sanitation, before transfer to Changi prison. Although the women were kept in quarters separate from the men, information and food were exchanged, and the women had the benefit of advice from the Medical Reference Committee. On the whole the women, with their lower metabolic rate, withstood dietary deprivation better than men, but there was great individual variation. Some native women, accustomed to rice, actually put on weight during the first stages of internment. The coarse bulky nature of the diet, however, gave some Europeans diarrhoea. Apart from a few cases of frank deficiency diseases, the main physical disabilities were giddiness, cessation of menstruation, and nocturnal diuresis. Hunger was not only distressing as a sensation but was generally accompanied by feelings of insecurity and anxiety, and longings for rich food. In the early months the nights were perpetually disturbed by overcrowding, crying babies, prowling sentries, women having nightmares, quarrels among cell mates, and by attacks of enteritis, indigestion, and anxieties. All these factors tended to settle with familiarity and conditioning, but even when fluids were avoided during the latter part of the day the nocturnal diuresis persisted, in most cases until some weeks after liberation. The children were undersized, but most of them were otherwise normal. It

is highly satisfactory that in 300 children, including 20 babies born in the camp, only 2 deaths occurred, and these were in babies sick before internment.

Dr. J. V. LANDOR discussed the pathology of the conditions occurring in prison camps. He mentioned in particular the occurrence of purplish areas, often following injury, which he ascribed to infection with diphtheria bacilli.

Dr. SELWYN CLARKE, in thanking the authors for their contributions, emphasized the great importance of the information which they had made available. It was most desirable that all the data should be published in adequate detail, and there seemed to be ample material for a further conference on the same subject.

Correspondence

Reduction in Rationed Foods

SIR,—The Executive Committee of the Guildford Division has instructed me to write you upon the question of further reduction in rationed foodstuffs.

It was strongly held that the Government should have before it solemn warning from actively practising members of the profession that the state of the national health, so far from being better than ever, is only fortuitously being maintained; that the war weariness and fall in production in essential heavy industries is a better index of adequacy of nourishment of the country as a whole than are Governmentally collected statistics. It was held that the country had been most fortunate to have escaped a major epidemic so far, and that the cuts in protective foods and first-class proteins were likely to lead to a serious diminution of the mass resistance to epidemic disease.

We wish to record our whole-hearted disagreement with the predicted "cuts," in particular, in regard to fats and meat rations. We would strongly urge the necessity of obtaining at any cost a more adequate supply of these essential commodities, and then we are strongly of the view that both resistance to disease and the will to work hard for national recovery would be materially increased.—I am, etc.,

DAVID HALER,
Hon. Sec., Guildford Division.

West Byfleet.

Migrainous, Ciliary, and Post-traumatic Headaches

SIR,—Mr. Cecil Tivy (June 22, p. 964) refers to my article (May 18, p. 754) as being open to severe criticism from at least one point of view, and he goes on to say that I talk light-heartedly of the loss of corneal reflex after my injections. I find I made two references to the corneal reflex, the first when I described the effect of a small injection, leaving loss of sharpness to pinprick and loss of the corneal reflex, or even complete analgesia (p. 755). Mr. Tivy apparently does not distinguish between analgesia and complete anaesthesia, for he continues that I surely must be aware that the correct description would be "complete loss of corneal sensation, with its attendant loss of trophic nerve supply." For his information I may say that analgesia means loss of sharpness, and complete anaesthesia means not only loss to pain but to touch and pressure. I referred to diminished corneal reflex, with light analgesia of the ophthalmic and maxillary divisions, in Case 3, a public schoolboy, whom I injected with only 3 mins. (0.18 ml.) of alcohol. If this is being light-hearted I will not quarrel with the term.

I never touch the cornea if I can help it; the ciliary reflex is usually sufficient, but a better test for comparison of the two sides is to prick lightly the inner canthus with a pin; this seems to me to be the most sensitive part of the face. The after-care of the cornea is most important when the ophthalmic division is anaesthetic, but in the very large majority, if the patients carry out my instructions to instil a drop of liquid paraffin three times daily, and wear a shaped "celloidin" shade, made specially for me by Solport Bros., during the day-time for three weeks, only a few give trouble. It is the eyes with chronic conjunctival catarrh which are most likely to go wrong, quite certainly if trachoma is present. Even then,

atropine and eye-baths and careful fomentations, with rest in bed, may avert tarsorrhaphy. Over 20 years ago, when discussing the incidence of keratitis with Harvey Cushing, when he came to see me do a ganglion injection at Maida Vale, he agreed with me that eyes varied very much in their reaction, that some kept normal even if no care were taken, yet others in spite of careful treatment might develop keratitis.

A point I am always careful to inquire into is the vision of the eye on the non-affected side, for should that be useless, not more than 3 mins. alcohol should be used within the ganglion, and then only in cases of extreme severity of pain affecting the ophthalmic division.

As regards follow-up of cases, which Mr. Tivy suggests I omit, he can scarcely have read my article carefully, and I may add that I have had in addition many scores of letters sent spontaneously from grateful patients, often many years after treatment. He says he is all too well aware of the number of people who suffer from intractable headaches, and of the amount of misery they suffer, and yet he expresses grave doubts whether a Gasserian operation is justifiable.—I am, etc.,

London, W.1

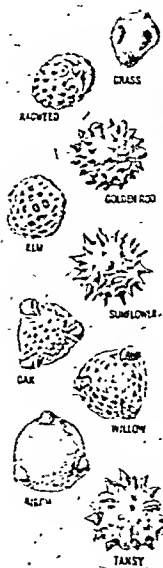
WILFRED HARRIS.

Lumbo-sacral Root Pain

SIR,—Analysis of the article by Dr. J. MacD. Holmes and Mr. B. R. Sworn (June 22, p. 946) leaves me confused as to the need and results of their operative measures and methods employed. They state: "We have therefore made a complete clinical and radiological examination of all our patients with sciatica, including lumbar puncture with manometry and examination of the cerebrospinal fluid. . . . If operation has seemed necessary . . . myelography has been carried out and operation has been performed" if myelography has been positive and in some cases even if negative. Of the 50 cases operated upon "in which we had made a confident diagnosis of a lesion," no lesion was found in 10 (20%), but "a considerable measure of relief followed operation" in spite of this. They suggest conservatism in their methods by the statement, "Laminectomy may be necessary for extensive lesions, but in most cases of disk rupture we have used the interlaminar approach, usually combined with removal of the lower border of the upper lamina," yet in the history of the only case which they cite they state "the fourth and fifth lumbar laminae were removed" and still no lesion was found. With such surgical trauma I find it difficult to believe, "at least a considerable measure of relief followed operation—in spite of the fact that in some of them we had found no visible lesion" and "in the cases with negative myelograms no appreciable relief followed operation, but no patient was worse."

Inman and Saunders (*Radiology*, June, 1942, p. 669) have recorded: "It is disappointing, however, in spite of initial brilliant post-operative results, to find a certain proportion of cases presenting a residual of painful symptoms." They emphasize a similar injury to the ligaments around the interpeduncular foramen which is not modified by removal of the disk remnants, and in support of this they quote that the State Corporation Fund of California reports "compensable disability in 100% of patients operated upon for disk injuries." A. Oppenheimer (*New Engl. J. Med.*, Jan. 27, 1944, p. 95), reporting on a study of 826 cases, states, "Most of the clinical manifestations are caused by those secondary alterations rather than the primary disk lesion. Even rupture of the disk is not an invariable exception to this rule." It has been proved by more than one observer that positive myelography may not be supported by operative findings, yet negative myelography is by no means infallible. Neither it nor laminectomy are without the risk of serious damage to the patient.

Presumably most of this work of Holmes and Sworn has been done within a relatively short time. But my experience is that patients who have suffered damage to a disk, even by needling, may not yield any radiographic evidence of it for many months, and some do not develop symptoms sufficiently severe to cause them to seek surgical attention for five, ten, or more years, and at this time radiographs show definite evidence, such as diminution of the intervertebral disk space and splaying out of the approximated bony surfaces. The number of patients who show radiographic evidence of damage to disks is small compared with the number who show reactive changes in the borders of the vertebral bodies and articular facets. An



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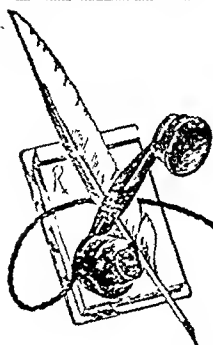
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analysis of the radiographic indications of many other causes for these symptoms has been recorded (Brailsford, *Brit. J. Radiol.*, October, 1944, p. 308).

One has witnessed a considerable display of fashion in the alleged cause for low back pain. Disk lesions are now at the crest of the wave. Jefferson (*Med. Ann.*, 1944, p. 171) has stated, "There are few to-day who deny that the most common cause of sciatica is rupture of the intervertebral disk," but the adoption of operative measures for its relief one hoped was on the wane. I cannot help but think that many were undertaken without adequate study of the normal and its infinite variations, and I appreciate the candour of Holmes and Sworn who state, "Two cases had what we thought was some thickening of the ligamentum flavum, but this may have been within normal limits." Such expressions direct us to their more helpful statement: "There is no doubt that most cases of 'sciatica' will clear up spontaneously, or can be cured or relieved by relatively simple measures without resort to surgery."—I am, etc.,

Birmingham.

JAMES F. BRAILSFORD.

Blindness in Nigeria

SIR,—Dr. J. Graham Scott in his letter on this subject (June 22, p. 964) confuses the issue, for he does not seem to appreciate that the flora and fauna, the dietary habits of the natives, and the prevalent diseases vary with the climatic conditions. Nigeria is a very large territory; the south is in the tropical rain forest belt, while the north, where the census in question was held, is at the edge of the Sahara. His statements are more nearly correct in the south and central zones, but in Bornu, in the extreme north-east of the colony, his statements do not apply at all. In the original article I was careful to point out that the figures given related to this area only. They must not, in any circumstances be applied to any other area in the colony or in West Africa generally.

The following specific points are raised by Dr. Scott's letter.

(a) Ophthalmia neonatorum was common and was seen frequently in the out-patient department of the hospital and at the infant welfare clinic.

(b) The native of Bornu does not like red-palm oil. The oil palm is not indigenous in this area and any oil imported into the province has to be brought first by rail to the railhead and then almost 400 miles (650 km.) by road. This makes the price prohibitive for the general population, and it is only consumed by the relatively well-paid Government and commercial clerks, who are usually southerners and for whom the oil is a normal article of diet.

(c) One is taught that trachoma is an endemic and epidemic disease and that its spread is facilitated by insanitary conditions and poor nutrition. If it were present in these large native towns it should spread like wildfire. In fact, however, very few cases are reported annually from the hospitals in the most northerly provinces in Nigeria. The diagnosis of the disease is not difficult even to one not specially trained in ophthalmology, and I can only suggest that it is not so prevalent as Dr. Scott would make out.

(d) Onchocerciasis is very common in some areas in Nigeria, particularly in the southern provinces, and the statement by Dr. Scott that 50% of the population is infected may be correct in these areas. The climate of Bornu, however, is unfavourable for the vector, *Simulium damnosum*, and where the vector cannot breed easily the disease cannot exist to any large extent.

—I am, etc.,

Leeds

FRANCIS E. STOCK.

"Tropical" Eosinophilia

SIR,—You state (June 8, p. 884) that Loeffler's syndrome differs from the tropical eosinophilia "in that it occurs in dry and temperate climates." This is not correct. Loeffler's syndrome was described by myself simultaneously with Loeffler in 1932 in Shanghai, which has an extremely humid, tropical climate during the summer months.

In my first publication I named the so-called Loeffler's syndrome "allergic spring oedema of the lungs." I then suspected that a pollen may be the responsible allergen. This supposition was based on the fact that certain people developed signs of lung oedema every spring, approximately at the same time. My first observation was made on myself. I further called attention to the fact that Loeffler's cases also showed a seasonal incidence with a distinct summer peak. This was since admitted by Loeffler and confirmed by others. I also denied any connexion between my syndrome and tuberculosis, then

suspected by Loeffler. I had no opportunity to follow up my observations in the Tropics, but it might be of significance, and in support of the pollen theory, that since I came to Britain in 1936 I have had no attack of spring oedema though I was subject to it in Shanghai every May or June for several years.

Since my publication two other observations of similar nature were made, one in China, the other in Japan. Case 4 of M. H. Chien and T. P. Wu most probably belongs to this group. They mention also that during spring of each year they see patients suffering from "cold" with cough and malaise and sometimes slight fever. They are generally treated as out-patients. Some are admitted to hospital for some surgical condition, and x-ray examination of their lungs shows patches of soft infiltrations which are usually absorbed completely in a short time. The sputum, when present, is scanty and contains no tubercle bacilli. Chien and Wu could not know then of the existence of my syndrome, which was published in the same issue of the *Chinese Medical Journal* as their paper. The case observed in Japan was published by I. Hatakeyama, who called it "temporary infiltration of the lung caused by high-grade tuberculous allergy." The assumption of tuberculosis was based on a positive tuberculin test. This, in a boy of 15 years, especially in Japan, is very unconvincing. The patient showed slight clinical symptoms but a very extensive and dense shadow of the upper lobe which disappeared in two weeks. The patient had eosinophilia. This, in my opinion, is a typical case of my syndrome.

I have no experience with the tropical eosinophilia of Weingarten, but from his description it appears to me that his disease is of a more serious nature, inasmuch as it causes the patient much more inconvenience and lasts longer, while my syndrome is often detected only by chance and usually does not cause any serious symptoms. The x-ray findings of the two syndromes also differ. It is possible, however, that different allergens cause different reactions in the lung, as shown in bagassosis, in which the allergen is melasse.—I am, etc.,

Dewsbury.

D. ENGEL.

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Hatakeyama, I. (1940). *Bull. naval med. Ass. (Abstr. Sect.)*, 29, 10.

What is Clinical Pathology?

SIR,—In so far as any distinction can be drawn between "clinical pathology" and other aspects of pathology, it would presumably be the distinction between laboratory investigations applied to diagnosis and control of treatment in individual patients and investigations directed to the elucidation of the fundamental problems of the science. The distinction is certainly not between the simpler and the more specialized techniques, and I entirely agree with Dr. A. C. Lendrum's emphasis (June 1, p. 848) on this point. Every pathologist, whatever his special branch, is acting as a clinical pathologist when he is concerned with individual diagnosis. It would be most undesirable if the distinction between work required for the immediate service of patients and work on fundamental questions should be made the basis of a separation of specialties, either from the administrative standpoint or in defining the scope of journals.

Much work on human material, done in laboratories attached to hospitals, is concerned primarily with fundamental scientific problems, and such work takes its place, together with animal experimentation, in the progress of the science of pathology. On the other hand, every new advance in diagnostic methods rests upon the medical sciences. In my own field of chemical pathology the development of new diagnostic methods involves chemistry, physiology, pathology, and clinical medicine. Yet I think there is a place for a new journal devoted to those investigations of disease in man in which both the clinical field and the medical sciences are involved. Publications of work on human material, whether directed to fundamental problems or to diagnostic requirements, must often include clinical case histories or summaries adequate to give the medical reader an understanding of the nature of the material, and may also include technical and scientific matter too specialized for the

general medical journals. Such papers are apt to be more difficult to place than those falling clearly within either the "clinical" or the "scientific" field.

Whether the new journal has the title "Quarterly Journal of Clinical Pathology" or some other title, it is to be hoped that its scope will not be conceived as covering only the narrowly diagnostic aspect, but will be wide enough to include other work on human material, and especially investigations of disease in the living patient.—I am, etc.,

Newcastle-upon-Tyne.

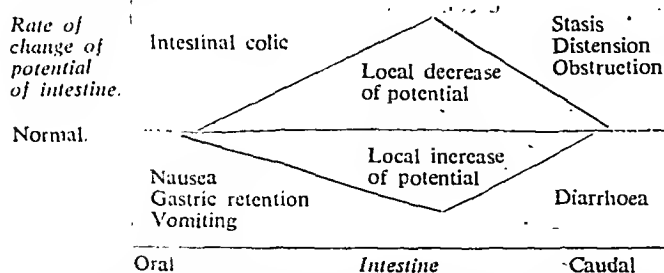
FREDA K. HERBERT.

Neurogenic Ileus

SIR,—I found Mr. J. T. Chesterman's paper on neurogenic ileus (June 1, p. 830) interesting. It shows a great amount of thought and work and an understanding of a theory. The theory is badly expressed because an unsuitable word is used, and this becomes patently obvious on careful examination of the diagrams which are intended to convey the essentials of the theory. I am not in a position to discuss the theory, but it is deplorable that it should be expressed in an unsuitable form which is certain to hamper its development.

"A" of Fig. 1 graphically defines flattened and steepened gradients. Analysis of "B" on this definition shows a local focus preceded by a flattened gradient and followed by a steepened gradient. This is called "local focus causing steepening of gradients." Why? It could equally well be called "local focus causing flattening of gradients." Similarly, "C" is called "local focus causing flattening of gradients" but could equally well be called "local focus causing steepening of gradients." The diagrams do not represent "intestinal gradients" but they do try to represent "rate of change of intestinal gradient," and these two are as different as a curve is from a straight line; as different as $y=x^2$ is from $\frac{dy}{dx}=2x$.

It is apparent that the unsuitable word is gradient. A gradient is a thing of precision, a straight line at a precise angle to a base line. A change from one gradient to another gradient happens precisely at a point and you cannot examine the intestine and pin-point the place where the "gradient changes." By differential calculus one can visualize a gradual change as a multiplicity of minute straight line changes of gradient spread over a length of intestine—but the word gradient by itself in no way implies this gradual change. May I suggest that the word "gradient" be discarded and the word "potential" used instead. The essentials of the theory would then be written as follows: A focus causing local increase of potential produces a decreased rate of change of potential on the oral side of the focus with decreased activity and an increased rate of change of potential on the caudal side with increased activity. Similarly, a local decrease of potential is preceded by an increased rate of change of potential and followed by a decreased rate of change of potential. This is easily and precisely expressed graphically.



The essential simplicity of this nomenclature, which specifies the nature of the focus and then describes the changes each side of the focus, should be compared with the nomenclature of the focus by reference to the change on one side of the focus without specifying which side. It is not possible in the space of a letter to go into the full application of this change of nomenclature, but surely I have shown how the use of the word "potential" instead of the word "gradient" leads to a logical expression of the present theory. Looking to the future, I suggest that potential will be found to be the right word when research is concerned with the minutiae of electricity in living matter.—I am, etc.,

Birkenhead.

ALEX. M. FRASER.

Penicillin for Diphtheria Carriers

SIR,—I started to try local treatment of diphtheria throat carriers by means of applying every two hours a solution containing 2,000 units of penicillin per ml. A night interval of 8 hours is observed. I have so far treated three cases, only; the results are entirely encouraging, as no more diphtheria bacilli could be obtained in culture from repeated smears after 13 applications, totalling 67,000 units of penicillin. I would not consider it wise to wait for more cases before giving publicity to this possibility of treatment, as it is essential to induce other workers to make similar trials at the earliest opportunity. Should more attempts prove the efficaciousness of this method, there is no need to stress its far-reaching importance in the control of diphtheria.—I am, etc.,

General Hospital, Cieszyn, Poland.

W. BINCER.

Inhalation Apparatus for Penicillin

SIR,—We note the report in your issue dated June 15 of the meeting of the Royal Society of Medicine, when the uses of penicillin were reviewed and questions were asked about the availability of inhalation apparatus. It seems appropriate to offer an explanation why the special inhalation and other apparatus developed by this company has not been made generally available.

When we first produced aerosols by what is now generally known as the "phantomiser" system the immediate practical applications were for the control of different kinds of pests, and subsequently for air disinfection generally. Throughout the war our energies were almost wholly devoted to the production of apparatus for these purposes, and, whilst we were fully aware of the potentialities of aerosols in medical practice, the development of production of inhalation and other apparatus for this purpose was severely restricted. The possibility of being able to replace the repeated injection of penicillin, and other medicaments normally requiring parenteral administration, by a simple efficient inhalation technique is so novel that even now we are reluctant to place apparatus on free sale until further convincing trials have been completed. The findings of these trials will be published in due course.

For the production of wet sprays of small particle size there are several excellent machines available commercially, but it is important to remember that a true aerosol can be produced only by apparatus specially designed for the purpose, such as the "phantomiser" and "aerolyser" manufactured by this company.—I am, etc.,

London, W.1.

A. K. BEDWELL,
Director, Aerosols, Ltd.

Health Service Bill

SIR,—If once the people of Britain realize that the medical profession are not fighting for themselves alone but for the freedom of this country as a whole, they will surely rally to their aid. It would be well, then, to appreciate that it is not health *per se* that the battle really rages around, but freedom or bondage.

At present the health of the people actually depends far more on good housing, good feeding, good clothing, good education, and freedom from the incessant irritations interminably imposed by increasing controls and restrictions, rules, and regulations, which predispose to, or actually cause, ill-health, than upon a chaotic revolution in the medical world for the sake of vindicating Socialist doctrinaire theories. Until these primary matters are rectified there is little use in the politicians trying to saddle the medical profession with responsibility for the state of the nation's health, be it good, bad, or indifferent.

Power-seeking politicians are well aware that complete control of the people, which is essential to their policy, can only be secured by first completely controlling the medical profession. This is to be achieved by tempting or bullying them into becoming State-paid, State-instructed medical officers, dependent or largely dependent for their living on being efficient Government tools, subject to direction and instruction from the "minister-dictator of health," who does not negotiate but "rules by regulation." Such rules and orders are nothing less than dictator-made laws; beyond the real control or scrutiny of Parliament itself. Do the people of Britain consciously stand for this chicanery in the name of health? The Bill in its present

form is a Socialist measure for which no true mandate from the country has ever been given to this, or indeed to any, previous Government, whatever is stated to the contrary. A Socialist majority can, and no doubt will, ram the Bill through. Thereafter the only course open to the profession in the interest of the whole community is to refuse to sign any operative contract with the Government, and thereby retain their liberty. This proved successful in New Zealand under similar coercive circumstances.

Little more than a year ago we fought for our very existence against a country which had yielded up its freedom to political power-seekers. With this terrible example before our eyes we we, like they, going to walk into this cunningly devised trap of "National Socialism," a gilded cage of bondage from which there can be no return to freedom? Belsens and Buchenwalds are the logical outcome of dictator-made laws when resistance or protests run counter to the whims or fancies of "dictator-ministers." Do not delude yourselves with the thought that "it could not happen here"; steadily it is happening. Power breeds the lust for power, and any discerning person can observe its erosion on the freedom of this country day by day.

People and doctors alike favour improved health—who does not?—but not as devised in this Bill, which aims at improved political power for politicians, not improved health for the people. It would make the community disease-conscious, would quadruple the work of the already overworked hospitals and doctors by overloading them with trivialities which undoubtedly would be the outcome of so-called free treatment. To control this increased traffic in sickness and drain on the Treasury it would become necessary to issue regulations to medical officers to issue certificates as instructed by the State, not in the interest of the patient, but of the State. The medical officer, being a State servant in greater or lesser degree, without alternative source of employment and therefore owing allegiance to the State for his bread-and-butter, would of necessity have to consider the State's interest first, last, and all the time, to the very great detriment of the patient.

There are insufficient doctors or hospital beds in the whole of the United Kingdom to cope with the increase in sickness incidence which this Act would bring about. The disgruntled, disillusioned, dejected, despondent, and dreary State doctors will not easily radiate health and happiness to the pathetic patients in like plight to themselves; no, not even if directed to do so by the Minister of Health, strange as that may seem.—I am, etc.,

St. Annes.

G. H. URQUHART.

SIR,—Less than two months ago a Special Representative Meeting passed with great unanimity a number of resolutions. They were, for example, firmly of the opinion that goodwill in practice should be retained, that there should be no direction, that payment should be exclusively by capitation, and that there should be no discrimination against doctors who remained outside the public service. Not a ripple has all this caused on the calm waters of the Ministry. The profession's representatives have been as completely ignored as if they were some babbling collection of village busybodies.

While we are grateful to Mr. Willink, Mr. Reid, Mr. Strauss, Mr. Law, and others for doing their best to put the profession's case in Standing Committee C, they, too, have been completely flouted by an automatic majority echoing the constant urge of the Minister: "Let us not waste time on windy argument. This Bill must go through!" Needless to say, the Minister has displayed great knowledge of professional affairs. He has said that when a practice is sold it is only the panel portion which has any monetary value, the private part being valueless. He has said that it is undesirable for sons to follow their fathers in practice, as this may lead to "inbreeding." He sticks to his desire to gaoil any doctor who makes a profit on selling his house, and he is denying the use of the hospitals to doctors who remain outside his scheme. In short, there is no doubt that this Bill will become an Act unmodified in the slightest way by the unanimous resolutions of the British Medical Association. What then? Time drags on. It may yet be eighteen months before doctors are to say whether or not they will serve under Mr. Bevan or under Hippocrates. Meanwhile, fatalism sits like a load on our shoulders, and it has been unkindly said that the warriors of yesterday are the mathematicians of to-day, working out what their compensation is likely

to be—unmindful of the hard fact that that compensation will be rather less negotiable than a post-war credit certificate.

The real difficulty is that it takes a lot of moral courage for a doctor, not too well off, with a wife and family to support, to stick out against the coffers of the Treasury, to put his professional soul higher than the plain risks of bankruptcy. Dr. X, of Devonshire, may well say to himself: "I would stand out, but I should hate to be the only one doing so. And how am I to know what Dr. Y, of Lancashire, will do?" To ask the doctors of the country to keep their passions hot for a year or more, and then to remember all that has gone by and to turn down this scheme, as it should be turned down, is asking for something that may not happen. There are still doctors one meets who will say with great pride: "I was one of those who stood out in 1911." But there are not many of them. Who will be able to say, in thirty years' time, "I was one of those who stood out in 1947"?

But there is a way out. This scheme, like peace, is indivisible. Passive resistance stoutly sustained over a few wide areas would make it unworkable. There are areas more convinced of the importance of freedom than are other areas. Let them but stick to their guns and they will win. More, they will encourage the others to follow their lead. Yorkshire, Surrey, Kent, the Metropolitan Counties—your power is in your own hands. It does not depend on the waverers elsewhere. We are a great profession. We have a right to be heard, to be consulted in these matters. Let us stand on our right.—I am, etc.,

Ashted, Surrey.

W. EDWARDS.

SIR,—The new National Health Service Bill when passed into law will do much to co-ordinate and bring up to date our health services. There is, however, likely to be a time lag before the new service can do itself full justice, if only on account of the shortage of suitable buildings for health centres and hospitals. The health services have been chosen as the first branch of national economy to be nationalized by the Labour Government, and with a policy of limited nationalization now being followed it is inevitable that the development of the health service will in the first place be handicapped by the fact that industry in general remains in private hands. Thus it is apparent that if the building programme called for to make the service fully efficient is put out to private contractors huge profits will pass into their hands, thus greatly increasing the cost of the service and reducing the speed of construction.

I would suggest that Mr. Bevan would do well in dealing with this obstacle to progress to consider the example set by Edmonton and other progressive local authorities which have a fine record of building by direct labour. Is there any reason why the new hospitals which we need so badly should not be built by direct labour employed by the new regional hospital boards, and the health centres by the building departments of the major local authorities? The new buildings which are so urgently required could then be erected more cheaply, quickly, and efficiently.—I am, etc.,

St. Mary Cray, Kent.

BRIAN H. KIRMAN.

SIR,—The profession should be grateful to Dr. W. Edwards for his letter (June 15, p. 926) emphasizing the significance of Mr. Bevan's remarks in Committee. All our efforts will have been in vain unless we can secure two essentials: (1) The terms and conditions in any National Health Service must be acceptable to (and not accepted under economic stress by) the majority of the profession. (2) Those of us who wish to remain outside the service must not be penalized. Surely, the public has never expressed its desire for a State monopoly of medicine?—I am, etc.,

Dorking.

CYRIL E. BEARE.

The Hypochondriac's Treatment

SIR,—In the press Dr. Edith Summerskill is reported to have said that "in future no doctor need prostitute his science by pandering to hypochondriacs. The malingering will find short shrift in medical health centres. The doctor of the future will be judged not by the size of his bank balance, his house, and car, but by his capability to prevent and cure diseases." Does Dr. Summerskill really believe that her colleagues are

so deficient and the general public so credulous as to measure a doctor's capability by these criteria? Surely the hypochondriac is in need of careful and sympathetic treatment, and even the malingerer requires not short shrift but a most careful investigation, first as to the accuracy of the opinion, and secondly of the economic factors leading to such conduct.

If this is to be the aggressive spirit animating the new health service let the profession and the general public take warning before it is too late.—I am, etc.,

Bournemouth.

E. D. GRANGER.

Obituary

ERNST FREUND, M.D.

Prof. Ernst Freund, born in Vienna in 1863, died in London on June 2, 1946. He studied medicine at the University of Vienna, was a brilliant student, and obtained his M.D. at the age of little over 22. In the mid-nineties of the last century he became director of the biochemical department of the "Rudolf-Spital," and remained in that position for almost forty years. When later he was made professor of pathological chemistry in the university, he worked in his old laboratory until he reached the retiring age. At that juncture, when Freund was in danger of being left without any opportunity to continue his work, Mr. F. F. A. Pearson put into being the "Pearson Cancer Research Foundation" to enable him to carry on his research. When Austria was overrun by the Nazis Mr. Pearson transferred the Foundation to London, where Freund worked to his last day.

The early years of Freund's career (writes F. S.) coincided with a glorious period of continental science. At that time Freund did some outstanding work on the problem of blood clotting. One of the results of his experiments was the use of sodium citrate as an anticoagulant. At a meeting of the "Gesellschaft der Aerzte" in Vienna he suggested the use of it for blood transfusion (1891). Freund's researches covered a wide field. His institute was a part of one of the best Viennese hospitals at its best time. At the beginning of this century he worked in close collaboration with men like Paltauf, Pick, Sternberg, Kraus, Bamberger, and Obermeyer. Many new methods of biochemical analysis were devised by Freund and his co-workers. Special care was given to urine analysis, and Freund was able to demonstrate the presence of enzymes or enzyme-like substances which were believed to be specific for various diseases. Another line of research for many years successfully pursued by Freund was concerned with the physiology and pathology of digestion. He tried not only to explore and to determine the products of digestion in normal and pathological conditions, but he also aimed at elucidating the mechanism of the absorption of these metabolites through the intestinal wall. These studies were followed by investigation on the mechanism of protein synthesis within the living body.

From his early days Freund devoted much zeal and time to the study of tuberculosis and published several papers dealing with biochemical aspects of this disease. Also rheumatism fell within the scope of his work. His main interest, however, was the problem of malignant growth. Freund came to conclusions which are well in keeping with the results Warburg obtained more than 40 years later. With his collaborator, G. Kaminer, he described the cytolytic reaction which he modified and revised in many respects in later years. The technique of this test was much too complicated to become a routine method. It is, however, fair to say that those few who have mastered the technique agreed that the results were better than those achieved with any other cancer reaction. Freund's belief in biochemical changes in cells as a predisposing factor of malignancy growth led him to therapeutic assays. He tried to influence the pace of growth by dietetic means; long before the importance of *B. coli* for the vitamin contents of the body was known he stressed the importance of maintaining a normal bacterial flora in the gut. He also suggested several therapeutic methods aiming at the restoration of the normal intestinal flora.

More than 200 papers are the scientific inheritance that Freund has left to posterity. With an unquenchable spirit he devoted his life to science and to the fight against disease.

The death occurred at Bath on June 12 of Dr. HERBERT CASTLEMAN JEFFREYS, who had had a very varied career in many different parts of the globe. His father, Herbert Jeffreys, was one of the early settlers in Victoria; but H. C. Jeffreys, his only son, was actually born in 1874 near Taunton, though his father returned with him to Australia while he was a boy. He was educated at Sydney Grammar School, then at Melbourne

University, and then at New College, Oxford. After taking his arts degree with honours he studied medicine at St. George's Hospital in London, whence he qualified as M.R.C.S., L.R.C.P. in 1898. After holding the usual resident appointments at his own hospital, he next served in the South African war as civil surgeon with a yeomanry field hospital unit. After that he entered the Colonial Medical Service and spent a few years in British Honduras. Returning to Australia, he found it uncongenial and rejoined the Colonial Service, this time in Nigeria, when he finally retired in 1925. He had taken the D.T.M. at Liverpool in 1906 and the D.P.H. at Cambridge in 1912. In Nigeria he was for a time inspector of a leper colony, and after his retirement he indulged freely in his hobby of foreign travel. A further African experience fell to his lot as medical officer to the Tanganyika Concessions Expedition to Angola, in Portuguese West Africa. An earnest, kindly, hardworking, and yet modest man, Jeffreys had many friends and few enemies. He was unmarried.

The death of Squadron-Leader ROBERT WILLIAM STANLEY MARSHALL has now been officially announced. The only son of Dr. and Mrs. Robert Marshall of 9, College Gardens, Belfast, he was born on July 12, 1916, and was educated at Methodist College and Queen's University, Belfast, graduating M.B., B.Ch., B.A.O. with honours in June, 1940. He was then appointed house-surgeon and physician at the Royal Victoria Hospital, Belfast, and joined the R.A.F.V.R. early in 1941. He married, in 1941, Hilary, elder daughter of Prof. and Mrs. P. T. Crymble. He served in Persia, Iraq, and India for three years before being appointed S.M.O. to No. 909 Wing, R.A.F., Burma, where he was killed on June 3, 1945, while on flying duties. J. B. Y. writes: His untimely death at the age of 28 removes from our midst one of the most promising of the younger members of the Belfast Medical School. To have known him as a boy at school, as a student at the University, as a houseman in the Royal Victoria Hospital, and in a more intimate sense in his own home, is to appreciate the grievous loss sustained by his family and many friends. Robert Marshall was characterized by his great natural charm and cheerfulness, by his thoughtfulness and loyalty. A cultured conversationalist with a broad outlook on life, his ready wit and love of humanity marked him as outstanding among his peers and was an indication of his maturer manhood. A brilliant scholar and undergraduate he gained many distinctions. He was a fine golfer and swimmer, a keen motorist and an ardent photographer. His work as a resident student and houseman in the wards of the hospital testified to his thoughtfulness and kindness to those in suffering and distress and to his knowledge of essentials and thoroughness in the practice of medicine.

Dr. GEORG KOSAK, who died at the early age of 38 on June 16 at his home in Winchmore Hill, London, was an M.D. of Munich and came over here as a refugee from Nazi oppression. After further studies he became L.R.C.P. & S. Ed. and L.R.F.P.S. Glas. A colleague writes: He soon took to the ways of life of this country which he grew to love very much, and when he eventually set up in practice he became a very successful doctor whose patients sought his professional and friendly advice alike. He was of a quiet and amiable disposition whose depth of feeling showed itself by some casual remark, and he had an unfailing sense of humour.

The following tribute to Mr. W. McADAM ECCLES comes from Mr. A. P. Bertwistle. A man's life is divided into three well-defined phases: The first, of education; the middle, of his life's work; and the third, of his retirement. This last only too often means lone rounds of golf, visits to deserted clubs, half-hearted efforts at gardening, etc., all leading to a premature decease. On the other hand it may mean a change in work; this was the case with Mr. Eccles. I first knew him at the end of the middle phase. One's first impression of him was of an aloof, prickly man, but this rapidly disappeared as one discovered his kindness. He was religious and a teetotaler, neither of which was an asset in popularity among medical students. For his teetotalism he had excellent reasons; he took a keen interest in drink addicts. He was a past-master with trusses. He had sound business instincts—his opinion on a financial question was always of the greatest help. He was a perfect correspondent, prompt and to the point. When the last war broke out he threw himself wholeheartedly into A.R.P. first-aid work. Towards the end of his life he took up the question of medical films with a vigour rarely found in a man of his years. He originated a scheme for obtaining the best out of them. He produced a "short" showing how blitzed casualties were dealt with; when it was shown at the local cinema so realistic was it that 14 people fainted, and the sheepish looks on those who had succumbed, when they saw how it had been faked, was a study. As a diagnostician he had few equals; I, for one, will ever be grateful for his discovery of a dental focus of infection.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on June 15 the following degrees were conferred:

D.M.—R. D. Newton.
B.M., B.Ch.—T. J. Thompson (in absence).

UNIVERSITY OF CAMBRIDGE

At a Congregation in the Senate House on June 24 the degree of Doctor of Science, *honoris causa*, was conferred by the Vice-Chancellor on five delegates to the Royal Society Empire Scientific conference during its visit to Cambridge. The medical recipients of the honorary degree were Prof. C. H. Best, M.D., F.R.S., head of the Department of Physiology, University of Toronto, and director of the Banting-Best Department of Medical Research; and Dr. F. M. Burnet, F.R.S., director of the Walter and Eliza Hall Institute for Medical Research, Melbourne. Introducing Prof. Best, the Public Orator said that he had won an honoured name in the realms of medicine and physiology and was joint leader of an institution which had made notable contributions to the relief of human suffering. Of Dr. Burnet he said that he excelled particularly in the field of bacteriology; his book *Biological Aspects of Infectious Disease* was famous and fully entitled him to wear the Cambridge scarlet.

The Marmaduke Shield Scholarship for 1946 is awarded to R. P. Holmes of Trinity College.

The following candidates have been approved at the examinations indicated:

FINAL M.B.—Part I (*Surgery, Midwifery, and Gynaecology*). A. Ackroyd, A. P. Baker, E. A. D. Boyd, G. A. Bracewell, G. T. F. Braddock, D. C. Bradford, J. H. S. Buchanan, A. O. Chase, L. W. Clarke, J. Crossley, D. E. Cullington, A. B. Douglas, W. M. Edgar, A. S. Fairbairn, G. R. Freedman, E. C. Glover, J. L. Harris, C. F. Hingston, E. M. James, C. S. Kirkham, J. G. Latimer, R. G. Law, D. M. N. Longridge, I. D. Mackichan, E. D. Marsh, D. G. Miller, D. V. Milward, J. L. Moffatt, D. R. Morgan, A. G. Norman, D. O'Brien, J. M. Palmer, E. E. Philipp, G. Raperport, P. Rhodes, D. H. Richards, D. W. T. Roberts, K. J. Roberts, P. W. Rowsell, B. E. Shairp, M. F. Smith, J. E. H. Stretton, M. K. Tower, H. Walstead, K. L. Williams, R. D. Williams, R. H. L. Volfsohn, G. M. Woodward, P. M. Yap, R. E. V. B. Young. *Women*: Mrs. E. W. Higgins, G. F. Jacob, G. A. Meigh, B. E. S. Richards, D. M. Robinson, P. M. Stanwell.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following lectures will be delivered at the College (Lincoln's Inn Fields, W.C.) at 5 p.m. each day: July 9, Prof. John Beattie: Physiology of Convalescence; July 10, Walker Prize Lecture by Dr. Peyton Rous: The Antecedents of Cancer; July 11 and 18, Charles Tomes Lectures by Sir Frank Colyer: Dental Disease in Animals, and Positional Variations in Animals; July 25 and Aug. 1, Hunterian Lectures by Prof. W. D. Coltart: Injuries of the Astragalus, and by Prof. A. L. d'Abreu: War Surgery of the Chest.

Dr. Peyton Rous, of the Rockefeller Institute, New York, will give a lecture on "The Antecedents of Cancer," on Wednesday, July 10, at 5 p.m., at the College. Dr. Rous was awarded the Walker Prize for 1936-40 for his discovery and systematic investigation of filtrable tumours, and is now paying a visit to this country to lecture and visit centres of cancer research.

A course of 68 lectures on anatomy, applied physiology, and pathology will begin at the College (Lincoln's Inn Fields, W.C.) on Sept. 2 and will continue until Oct. 18. There will be two lectures daily from Monday to Friday each week at 3.45 p.m. and 5 p.m. The fee for the whole course is £15 15s.; it will not be possible to take one or two subjects only. Applications accompanied by a cheque should be sent to the secretary of the College. Fellows and Members will be admitted without charge, but must apply for a card of admission.

At a meeting of the Council of the College held on June 13, with Sir Alfred Webb-Johnson, Bt., President, in the chair, Sir William H. Collins handed to the President a cheque for £100,000 which he promised in February last as a further gift for the scientific departments of the college, in encouragement of the project for an Academic Medical Centre in Lincoln's Inn Fields.

There was presented to Prof. E. C. Dodds, of the Middlesex Hospital, a cheque for £1,000, being a prize given to him by Mr. Charles Mayer, of New York, in recognition of his work in discovering and studying stilboestrol, and as a contribution for his further researches in the field of synthetic hormones.

Diplomas

Diplomas of Fellowship were granted to the following candidates:

L. O'N. Knox, W. Bullock, S. H. C. Clarke, G. C. Tresidder, J. F. H. Butman, W. M. H. Shaw, C. J. Evans, R. S. Murlay, J. H. Penrose, B. J. Harries, H. F. Lunn, J. S. H. Wade, P. F. Milling, R. G. Barclay, Muriel Crouch, J. W. P. Gummer, G. K. Tutton, W. J. Atkinson, Carolina M. van Dorp, F. R. Wilde, A. Elton, P. R. N. Kerr, M. E. Minchin, T. L. T. Lewis, G. D. Adhia, S. G. Aulken, C. E. Baker, E. V. Farling, A. K. Basu, J. K. Bors, W. S. Charlton, W. P. Cleland, K. Coen, V. V. Da Silva, J. B. Devine, M. R. Ewing, G. J.

Fraenkel, H. K. M. A. Hassah, G. F. Homer, F. L. Hutter, A. M. Khan, M. M. Kinawy, R. J. B. McEwen, J. W. McNamara, G. B. Morris, R. Nigam, R. A. C. Owen, N. K. Parikh, A. P. R. Pinto, V. G. Renowden, D. G. Simpson, J. McN. Tainsh, D. F. Thomas.

A diploma of Membership was granted to T. L. T. Lewis.

Diplomas in Anaesthetics were granted, jointly with the Royal College of Physicians of London, to the following candidates:

R. E. Adam, A. F. Alsop, F. J. Aumonier, J. W. L. Bain, C. T. Barry, V. T. Baxter, P. H. Blackiston, J. A. Bolster, J. D. Bourke, A. K. Brown, C. H. Bulcock, J. H. Capon, P. S. Cheshire, K. S. Crawford, G. N. Deshmukh, S. Dobbin, T. M. Doran, G. A. Eason, B. Fairburn, J. N. Fell, Eileen M. R. Ghey, D. T. Gilchrist, Alexandra Goldblat, D. W. F. Gotla, H. W. C. Griffiths, Eileen M. L. Gunderson, J. Hutton, Margaret D. W. Hamilton, A. W. Hardie, J. B. Hargreaves, A. G. Hegarty, P. J. Helliwell, A. J. H. Hewer, E. Holden, Elizabeth A. Hout, D. D. C. Howat, E. G. Hudson, E. James, Flavia Z. L. B. James, Emily E. Johnson, D. S. Jones, Olive M. G. Jones, W. M. Jones, B. S. Kent, R. C. Lawrence, R. Lawrie, Janet E. Leng, J. M. Lockett, K. McCaul, Elizabeth McKenzie-Newton, D. Macpherson, F. W. Marshall, Sheila Millar-Danks, P. L. F. Mortimer, J. F. Perredes, Marie E. Potter, K. J. Powell, I. A. Schalit, M. Shaw, A. D. Sinclair, J. A. Smart, J. Sneddon, L. W. Spratt, G. S. Steele-Perkins, E. Stevenson-Wright, Margaret M. G. MacH. Sweeney, A. I. Ward, Kathleen M. Watson, O. M. Watt, R. J. Whiting, Dora M. Youne.

The following hospitals were recognized for the six-months resident surgical post required of candidates for the Final Fellowship Examinations:

Prince Bijay Singhji Memorial Hospital, Bikaner (three general house-surgeons); Central Middlesex Hospital (the third A.M.O. surgical and three additional surgical posts for as long as the Ministry of Health scheme for ex-Servicemen is in force); Clatterbridge General Hospital, Bebington (the resident surgical officer).

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At a meeting of the President and Fellows of the College, held on June 6, the following were admitted licentiates and members:

B. G. Alton, M. I. Drury, B. Moshal, H. J. Cronhelm, R. G. Cross, Sheila Sheehan, E. W. L. Thompson.

The Services

INDIAN MEDICAL SERVICE DINNER

After a lapse of seven years the annual dinner of the Indian Medical Service was again held in London at the Connaught Rooms on June 19, when 83 serving and retired officers met under the presidency of Lieut.-Gen. Sir Ernest Bradfield. The guests were Surgeon Vice-Admiral H. St. C. Colson, Medical Director-General R.N.; Air Marshal Andrew Grant, Director-General R.A.F.M.S.; Lieut.-Gen. Sir Alexander Hood, Director-General A.M.S.; Lord Moran, P.R.C.P.; Sir Alfred Webb-Johnson, P.R.C.S.; Mr. Eardley Holland, P.R.C.O.G.; and Mr. H. S. Souttar, President British Medical Association.

Work of the I.M.S. and I.A.M.C.

After the Royal toast Sir Ernest Bradfield proposed the toast of the Indian Medical Service and took the opportunity of outlining the work of the Service, and of the Indian Army Medical Corps which had been developed from it, during the war. In 1939 the I.M.S. was in a more flourishing state than it had been for some years. The military side with its military hospitals had attained a corporate spirit so long denied it in the individualism of the old regimental system. The civil side still offered opportunities for interesting and important work, though many of its responsibilities in the civil medical administration had been absorbed by an independent medical profession, for the growth of which the I.M.S. has been responsible. In September, 1939, the strength of the Service was 631 officers, of whom 265 were in civil employment. At the end of the war with Japan the Service, including the new Indian Army Medical Corps, had 7,625 officers, of whom 108, and 31 re-employed retired officers were in civil employ. Included in these figures were 206 women doctors, of whom 53 had been recruited in the U.K. The pre-war strength of the Indian Hospital Corps was 12,000; at the end of August, 1943, the strength in Indian officers and other ranks was 156,393. It is of interest to compare these figures with those of the 1914-18 war. At the commencement of that period the permanent strength of the I.M.S. was 770; it finished the war in 1918 with 793 permanent officers and 625 temporary officers—i.e., the recent effort was five times as great. During the war India mobilized over 1,000 field medical units, and provided 1,500 specialists. The total hospital bed strength reached 146,248, and the nursing services and amenities were really first class. Sir Ernest visited the Army Medical Training Centre at Poona last year, which is to carry on as an Indian Millbank. At one time there were 450 medical officers in training, and the results have been excellent. Indian doctors, who included a number of licentiates given commissions in the I.A.M.C., were not only taught the responsibilities of officers, they were given intensive field training and a special very comprehensive clinical course at Poona hospitals. Recruitment to the Indian forces remained on a voluntary basis throughout the war, and 23% of Indian graduates under 45 years of age and 12%

of the medical licentiates of the same age were recruited to the armed Forces. From May, 1942, recruitment of Europeans to the I.M.S. ceased, and the War Office undertook to provide from the R.A.M.C. British doctors required for duty with Indian troops. "The medical man-power situation in this country, however, became still more serious, and in 1942 I was a member of the Medical Personnel Mission appointed by the Secretary of State to visit India and to make recommendations. We are fortunate in having with us as guests to-night Mr. Souttar, the leader of that mission, and General Hood, Director-General of the R.A.M.C., who has proved himself to be one of the great administrators of this war, and I am glad of the opportunity of paying a tribute to a very happy association and to their great sympathy for the Indian Medical Services as well as for their wise counsel which solved this very difficult problem. It was clear that the medical authorities in India had been asked to build up a medical service to meet the requirements of an Army whose size and rate of expansion had never been envisaged by the General Staff. Although everything possible had been done it seemed that a breakdown could not be long delayed if existing conditions were permitted to continue. Great stress had been laid upon the shortage of doctors, but the real danger of the situation lay in the quality of the recruits provided for the Indian Hospital Corps and the scarcity of trained nurses. A system under which the officers belonged to one service, the I.M.S., the Viceroy's Commissioned officers and Warrant officers to another Department, the I.M.D., and the men to another Corps, the Indian Hospital Corps, was now obviously unworkable. The Mission, therefore, made proposals which were designed to provide one efficient and complete medical corps for all ranks of the Indian Army, and as a result came the I.A.M.C., a solution to India's medical problems which had been suggested before but never until now to provide an efficient medical corps including all ranks in one organization. There was no intention on the part of the Mission that terms and conditions of service of officers in the I.M.S. should be altered in any way, neither have they, but the Army Department has decided that the new corps should be an entirely military corps with no option of transfer to civil appointments."

After surveying the extent of the military effort of the Service and its high scientific record, General Bradfield concluded: "No one can foretell yet the future of the Indian Medical Service. Some of us, including practically all the senior serving officers, felt that our D-Day had arrived; but it is only logical that the disposal of all the Indian Services should be decided when a political settlement is reached as a result of the present negotiations. The creation of an Indian medical profession based on the ideals of British medicine has always been the aim of our Service, which founded the first medical colleges in India more than 150 years ago. The record and place of the I.M.S. in the building up of modern India is second to none of the great administrative services, and the I.M.S. will live in the I.A.M.C., in more than 45,000 registered doctors and the Civil Medical Services of India, who owe their existence in a very large measure to our Service."

The toast of "The Guests" was proposed by Major-General Sir John Megaw and replied to by Mr. H. S. Souttar who, as Chairman of the Central Medical War Committee, had been deputed to India in 1942 along with Sir Alexander Hood and Sir Ernest Bradfield to advise on the medical man-power situation in India in relation to the greatly expanding needs of the Forces. The result of the Mission had been the formation of an Indian Army Medical Corps in which all ranks were included, and he had had no hesitation after seeing the work of the Indian doctors in military hospitals in making the recommendation which led to this. He was specially appreciative of the work of the Indian licentiates who, on the recommendation made, were given commissions in the Corps. These men filled a serious gap, and their subsequent work fully justified the action taken. Mr. Souttar paid a tribute to the I.M.S., whose spirit had been diffused throughout the medical services in India. India would not forget the work of the Service, which would remain a great tradition.

Col. (Acting) R. D. Davy, M.C., R.A.M.C., has been appointed O.B.E. (Military Division) and Capt. P. M. Kirkwood, I.M.S., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services in the field.

Capt. J. H. Keesey, R.A.M.C., has been mentioned in dispatches in recognition of gallant and distinguished services in the field.

The Efficiency Decoration has been conferred upon the following officers of the Territorial Army: Lieut.-Col. (Hon. Col.) W. A. Lister and W. H. D. Patterson, Lieut.-Col. J. C. Anderson, O.B.E., Major (Temp. Lieut.-Col.) T. F. Briggs, Majors (Hon. Lieut.-Cols.) W. R. Everett and J. J. Myles, Hon. Major H. F. Wattsford, Capt. (Hon. Major) R. E. Davie, M.C. (T.A.R.O.), and J. G. McDowell, and Capt. W. P. Blackstock, R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died.—Major Samuel Barratt Browning, R.A.M.C.

Killed in air crash in Nigeria.—Capt. Reginald Thomas Moore and Evan McGregor Stirling, R.A.M.C.

Medical Notes in Parliament

HEALTH SERVICE BILL

On June 25 Mr. BEVAN moved that the Committee should meet in the morning and afternoon, so as to get the Bill through the House of Commons by the summer recess. There was agreement on many fundamental features of the Bill and an administration must start as early as possible to get the Bill into operation by 1948. Mr. Bevan's proposal was accepted.

— ASSISTANTSHIP WITH VIEW—OR WITHOUT

Resuming the discussion of Clause 35, the Committee agreed to a proposal by Mr. KEY to amend subsection 6 dealing with instances where a doctor performed services as an assistant to another doctor for payment substantially less than those services might reasonably be expected to be worth and afterwards succeeded to the practice. Mr. Key's amendment was to add after the words "expected to be worth" the further words "having regard to the circumstances at the time when the remuneration was fixed."

Mr. J. S. C. REID, discussing this provision whereby a low payment to an assistant should be deemed to have been a sale or part sale of the goodwill if the assistant subsequently succeeded, moved to insert "if" instead of "unless" in the proviso "unless it is shown that the said remuneration of the first practitioner was not fixed in contemplation of his succeeding to the said practice or any part thereof." Mr. Reid also proposed that the word "not" in the same proviso should be left out. In the proviso as it stood the Government proposed to put the onus of proof on the accused person in a difficult inquiry which might be entered upon after the passage of a number of years. A doctor could not possibly know if it was in the contemplation of the assistant that he would succeed to the practice.

Mr. BEVAN said Clause 35 had been very difficult to draft because the Ministry had sought to find a whole series of offences to protect the whole scheme. He would look at the Clause again to see if any of the fears expressed at the previous meeting of the Committee were justified and whether any cause for apprehension could be removed before the report stage. He thought he would be justified in resisting Mr. Reid's amendment. He asked how a prosecution was to know what had been in contemplation, and said it was reasonable to put the onus of proof on the accused person. The Government was trying to protect the assistant in these cases against being mulcted and having to accept an unreasonable reward at the beginning of his career. These prosecutions would arise very unusually. It might be that the assistant took a very small amount of money because he had no experience or because it was in his interest to become assistant to an eminent physician. Those would be justifications. In other words, the circumstances would have to be taken into account and the assistant would be asked: "What was in your mind when you took so small an amount of money?"

Mr. WILLINK accepted the assurances of the Minister that he would look into the Clause as a whole. He pointed out that there might be a running agreement for an assistant partly before and partly after the appointed day, whereby the assistant would succeed to the practice not under the partnership agreement but by selection by the medical practices committee. In those circumstances, nevertheless, there might be deemed to have been a sale of the goodwill. Mr. Reid withdrew his amendment. In doing so, he asked Mr. Bevan to re-examine what should be done with the assistant's agreements which were no longer appropriate.

CERTIFICATION BY MEDICAL PRACTICES COMMITTEE

Mr. BEVAN moved to leave out the final subsection (10) and to add:

"(10) Any medical practitioner or the personal representative of any medical practitioner may apply to the medical practices committee for their opinion as to whether a proposed transaction or series of transactions involves the sale of the goodwill or any part of the goodwill of a medical practice which it is unlawful to sell by virtue of this section, and the committee shall consider any such application and, if they are satisfied that the transaction or series of transactions does not involve the giving of valuable consideration in respect of the goodwill or any part of the goodwill of such a medical practice, they shall issue to the applicant a certificate to that effect, which shall be in the prescribed form and shall set out all material circumstances disclosed to the committee."

(11) Where any person is charged with an offence under this section in respect of any transaction or series of transactions it shall be a defence to the charge to prove that the transaction or series of transactions was certified by the medical practices committee under the last foregoing subsection, and any document purporting

to be such a certificate shall be admissible in evidence and shall be deemed to be such a certificate unless the contrary is proved: Provided that, if it appears to the court that the applicant for any such certificate failed to disclose to the committee all the material circumstances or made any misrepresentation with respect thereto, it may disregard the certificate and this subsection shall not apply thereto.

(12) A prosecution for an offence under this section shall only be instituted by or with the consent of the director of public prosecutions, and the medical practices committee shall at the request of the said director furnish him with a copy of any certificates issued by them under subsection (10) of this section and with copies of any documents produced to them in connexion with the application for that certificate."

Mr. REID moved to add to the words proposed by Mr. Bevan a further safeguard that if the medical practices committee did not within fourteen days of receipt of an application either issue a certificate or send a note to the applicant stating their reasons for refusing his application, they should be deemed to have issued a certificate. Mr. Bevan's amendment was good in principle but would only work properly if it could be worked speedily. He did not see how the medical practices committee could cope with this work without getting into arrears.

Mr. BEVAN said that almost all the work would be done by the executive council, and the medical practices committee would be in the background. The work in his proposed new subsections seemed to him the sort of thing the committee should do. If they imposed on the medical practices committee an obligation to give a reason why they refused to grant a certificate that would impose an obligation to give a direction or advice and would add to the work of the committee. Before long the medical profession would know what were reasonable conditions and what remuneration was paid to assistants immediately they started practice.

THE PRICE OF THE DOCTOR'S HOUSE

In reply to Mr. WILLINK, who asked: "And the price of the house?" Mr. BEVAN said it would be going too far to impose on the committee the obligation of saying what would be a reasonable price for a particular house, although they would take the price of the house into consideration in connexion with other things. There ought to be some way of conveying to the applicants to which part of the contract exception had been taken. He could not accept the imposition of the time limit.

Mr. REID asked what was to be done by a doctor's widow if she could not apply to the medical practices committee and ask whether she was free to take the top one of a number of offers made for her house. She must know beforehand or she would commit an offence as soon as the auctioneer's hammer fell. Mr. BEVAN said he was not concerned with the price the widow got for the sale. He was concerned with the influence on the succession. There was an offence where the price had an influence on the succession. Sir HAROLD WEBBE pointed out that unless a decision was given which enabled a successor to buy the house and enter into possession the local authority could take the house over within fourteen days of its becoming vacant.

Mr. REID withdrew his proposed amendment to Mr. Bevan's amendment and then moved to substitute a provision that the certificate issued by the medical practices committee should set out any facts known by the applicant to be relevant in place of Mr. Bevan's proposal that the certificate should set out all material circumstances disclosed to the committee. Mr. Reid said that as the amendment stood it would be possible to upset the certificate because of failure to disclose all the material circumstances. His object was to make sure that a man should only be prosecuted for having got a certificate when knowing that something was material he had deliberately withheld it.

Mr. BEVAN rejected the amendment and it was withdrawn. He thought it would be perfectly proper for the medical practices committee to take a newly disclosed fact into account for the purpose of invalidating a certificate. The Ministry might do something on those lines. When he said he would examine the language of the Clause the Committee must not assume he thought the Clause was wrongly drafted. He wished to avoid ambiguity. He accepted a contention advanced by Mr. Willink that unless the Ministry could make its intention more specific, existing partnerships might be seriously affected, and the partners would not know what to do. The words proposed by Mr. Bevan were then accepted and the Clause as amended was agreed to.

COMPENSATION FOR SCOTLAND

Clause 36 was next considered. In moving a drafting amendment Mr. KEY said three steps had to be taken. First there was the question of total compensation to be paid. That was put down at a figure of £66 million on the supposition that the number of doctors joining the service would be 17,900. If it

fell below that number then the total of £66 million would be reduced by 1/17,900 for every practitioner below the figure of 17,900. The second step was to decide the apportionment of the total figure between the services in England and Wales and in Scotland. That would be decided upon the relative losses of the people involved in those two sections. The third step was taking the portion that came to England and Wales and deciding upon its proper distribution. That distribution would be decided according to regulation which would be made after consultation with the profession. The amendment which he moved made it clear that not only the doctors in the service affected by the present Bill were included but also those who would give services under provisions applicable to Scotland when the legislation for Scotland had been agreed to.

Mr. BEVAN said the sum of £66 million was largely based on what practices were changing hands for before the war related to the number of doctors who would come into the public service. The Committee agreed to Mr. Key's amendment and also to an amendment by Mr. WILLINK to incorporate in the Bill the figure of 17,900 practitioners.

PAYMENT FORTHWITH

Mr. WILLINK moved to provide that compensation should be paid forthwith or as soon as practicable after the appointed day or the day on which the name of the doctor to whom it was payable was entered on any list of practitioners undertaking to provide general services, whichever of those days was the later. Mr. Willink said that for the majority of doctors, and their widows this was the bulk of their capital and might be the whole. His friends could not see why there should be a prohibition upon immediate payment.

Sir HENRY MORRIS-JONES said that Mr. Bevan's proposal was really a form of forced loan. Doctors had paid the money out and would have to continue paying interest at 4 or 4½%, as against the State interest of 2½%, until the loans were repaid. The Minister would gain the goodwill of the medical profession if he banded over the money.

Mr. BEVAN said that if he accepted the amendment the doctors would regard his act as evidence not of softening of the heart but of the brain. The money would be available to doctors when they normally received it—on death or retirement. Where there was great hardship the money would be paid out immediately. For £66 million to be handed over to the medical profession at once would have a most appalling effect. The money would be paid out at once where a young doctor had borrowed money at an unreasonable rate of interest.

Col. STODDART-SCOTT asked what Mr. Bevan proposed to do if the purchasing power of the £ fell greatly below what it was at present. Mr. BEVAN said other transactions did not make such an allowance, and transactions between doctors contained no such provision. The amendment was withdrawn.

On the motion that Clause 36 stand part of the Bill as amended Mr. SOMERVILLE HASTINGS asked for a ruling on the case of a practitioner who wished to withdraw from practice on health grounds and was paid his compensation. Supposing, that after a year's rest he recovered and wished to apply for a post in an under-doctored area. Would he be in order in doing so although he had received his compensation? Mr. BEVAN thought this would be in order but said he would like to consider the matter further. The Clause was ordered to stand part of the Bill.

No amendment was moved to Clause 37 concerning practitioners dying or retiring before the appointed day, but on the motion that the Clause stand part of the Bill, Mr. REID asked what would happen to the goodwill of a practice supposing the doctor died now. Did the Minister advise the representatives to sell that practice as soon as might be? Otherwise the representatives neither got value for the practice on a sale nor did they come in for part of the £66 million. Supposing the Act came into operation on Oct. 1 and someone died on Sept. 15. Was the practice to be sold or were the persons participating in the £66 million to be widened so as to include that case?

Dr. COMYNS said it was anticipated that the Bill would become an Act about October or November. He submitted that the application of Clause 37 to doctors who retired from practice or died during the period between the passing of the Act and the appointed day was too narrow. Practices of doctors who had died since the outbreak of the war had been carried on by locums, by assistants, or under the protection of practices scheme. The Minister should see if it was possible to embrace that category. Mr. BEVAN said he had it in mind to insert on the report stage a date which would cover the points raised.

Dr. STROSS said unless the date was retrospective gross injustice would be done to widows or doctors who had died recently. Since the printing of the Bill there had been difficulty in disposing of practices.

Clause 37 was ordered to stand part of the Bill, as were Clause 38 (arrangements for pharmaceutical services) and Clause 39 (persons authorized to provide pharmaceutical services). Answering Sir H. MORRIS-JONES on the last Clause Mr. BEVAN said arrangements would be made in rural areas for doctors to provide medicines.

After some discussion the Committee agreed to Clause 40 (arrangements for general dental services). Mr. BEVAN gave an assurance that it would be possible for dentists to appear in the lists of more than one executive council. The Committee then adjourned.

SUPPLEMENTARY OPHTHALMIC SERVICES

On June 26 the Committee examined Clause 41. Section 1 of this Clause says it shall be the duty of every executive council to make arrangements with medical practitioners and opticians having the prescribed qualifications for securing the testing of sight by them. Mr. LINSTED moved to insert a reference to optical practitioners. He said that the White Paper set forth a temporary scheme which provided for the optician being the normal sieve through which the patient passed in order that eye diseases might be identified. The medical ophthalmologist was in reserve. As soon as the Minister was satisfied that adequate ophthalmic services were provided in any area through the specialist clinics he might wind up this supplementary scheme, and the nation would get the main scheme providing for first-class ophthalmologists as the first sieve through which the patient passed. The two schemes had unfortunately been presented by some people in the form of a conflict between the medical profession and the optical profession. There were at the moment 500 ophthalmologists recognized as specialists. There were probably the same number of medical practitioners with some specialist knowledge of eye diseases. He doubted whether the Minister could ultimately get many more than 1,000 first-class medical ophthalmologists or one for every 45,000 people. He did not think that in any reasonable time the manpower position would permit the introduction of what the Bill intended to be the main scheme. Circumstances would compel the Minister to keep to the subsidiary scheme for a large number of years. He believed there were something like 7,000 opticians in the country. There was no statutory register. He asked the Minister to make proper provision for the optical profession in the Bill, and to encourage that profession to go forward with education, examinations, and a statutory registration.

Mr. SOMERVILLE HASTINGS said the Minister would be able to make full use of all the ophthalmic opticians and the ophthalmic surgeons, who should work as a team. The head of the am ought to be the ophthalmic surgeon working from a hospital with a big clinic and with assistants under him. The ophthalmic opticians should work with him not only in the hospital clinic but in the health centres. These centres should be outposts of the central clinics run by ophthalmic opticians so that sight could be tested at them by these opticians, and difficult cases could be sent at once to the ophthalmic surgeon. Mr. Hastings did not think that when the scheme was fully developed there would be room for the general practitioner who could not be a real expert in ophthalmic work. In reply to Mr. WILLINK, Mr. Hastings explained that in his parlance an optician was a man who made spectacles while an ophthalmic optician was a man who prescribed spectacles, could test errors of refraction, and could examine eyes to make sure there was no serious trouble with which he was not capable of dealing.

Mr. BEVAN said he found little to disagree with in these speeches. In the ideal system anyone having something wrong with his eyes should go first to the person who knew most about the subject. The eye specialist would not waste his time doing refraction work. Eye specialists had told him that the refractionist could do this work better than they could. He proposed to use the services of the qualified optician to the utmost extent. There was no antagonism between the spectacle-maker, the refractionist, and the specialist, but merely a proper division of functions. It would be disastrous to give an impression that the Ministry was not anxious to promote the status of eye-testing opticians. Representatives of the eye specialists and the eye-testing opticians would meet in the following week at his invitation to discuss the relative status of both sections. The results would be incorporated in the Bill. He contemplated a system where the eye specialist would be centred on the hospitals but would move freely between the health centres and the hospitals, discussing and generally supervising the work which the eye-testing optician was doing. By the time they had enough qualified eye specialists the relation between them and the eye-testing opticians would have been regularized. The independent optician was not excluded from the scheme. Mr. Linstead withdrew his amendment and Clause 41 was added to the Bill.

DISQUALIFICATION OF PRACTITIONERS

On Clause 42 Mr. PIRATIN moved an amendment to change the permissive part of the Clause into an obligation. The Clause as presented suggested that only in the case of representations from an executive council must the case be heard and it was left to the option of the tribunal whether the case of any other person should be heard. He proposed to put down later a new clause introducing a local body to which people could go in the first place.

Mr. BEVAN said the new clause would be considered when Mr. Piratin moved it. The proposed amendment would clutter up the work of the tribunal with minor complaints which the local executive committee could consider. The Ministry did not want this tribunal to be a source of petty persecution of the profession. Minor allegations would be sifted first by the local executive. If there was found to be substance in them the executive council could take serious steps against the doctor concerned, and the tribunal itself would consider whether a doctor should be removed from that list or all lists, or what should be done with him.

Dr. CLITHEROW pointed out that Clause 42 referred to representations being made to the tribunal "by an executive council or any other person." He asked Mr. Bevan to say what was meant by those words. Mr. BEVAN replied that if a complainant felt his complaint had not been adequately dealt with by the executive council he could appeal to the tribunal, which might consider the matter. If the tribunal was satisfied that the complaint was trivial or that a sound judgment had been reached it would not make further inquiries. Mr. Piratin withdrew his amendment.

APPEAL TO THE HIGH COURT

Mr. HOPKIN MORRIS moved to leave out the subsection dealing with an appeal to the Minister from any direction of the tribunal and to substitute:

Any person aggrieved by a direction of the tribunal either under the preceding subsection or under subsection (7) of this section may within three months after the date on which notice is given to him by the tribunal of their direction appeal against the direction in manner provided by rules of court to the High Court, and in any such appeal the High Court may give such directions in the matter as it thinks fit.

Dr. MORGAN hoped that Mr. Bevan would accept this amendment or look into the matter again. Until recently government departments, when they had not enough evidence to take a case to court, took it to a non-judicial body and threw on that body the onus of a decision which meant the ruin of a man's life—the decision of erasure and the possibility of not being able to practise.

Mr. BEVAN wished to prevent the Committee from being stampeded by emotions over a related subject which had nothing to do with what was before the Committee. The General Medical Council procedure might or not be altered; but that was not a matter for this Bill. The Committee was not discussing whether a man had been guilty of unprofessional conduct but whether a person who had contracted to carry out certain duties carried them out satisfactorily. He had thought first that in creating a service in which most of the doctors would participate there should be exceptional protection to the individual doctor against injustice. He had considered the existing machinery not adequate for that purpose though it worked to the satisfaction of the profession. Under the machinery the local committee considered complaints and appeals were made to the Minister. Doctors had not complained about this, but it had seemed to him that the Minister ought to put another body between himself and the local executive council. If the complaint were made against the doctor on a professional basis the G.M.C. would consider it as well as the Minister. The Minister would not consider the matter from the point of view of the doctor's position on the Register. A doctor might be continuously drunk and not attend to his work. That complaint was investigated in the first instance by a body on which the profession itself had half the representation. The other half of that body would be drawn partly from the Minister's nominees and partly from the local health authority. That executive council, after hearing the person concerned and what the doctors had said about that person, would say that they did not want him in that area. He could then appeal to the tribunal with evidence on oath, personal appearance, and all the panoply of judicial investigation. If the tribunal also said that the doctor ought to be removed from the list and he was still aggrieved he could come to the Minister. Reference to the Minister implied the right of the House of Commons to interrogate the Minister on how he was using his powers. The Minister would make an investigation, and if he decided that all the other bodies were right the man would be taken off the list. It was flat nonsense to assume that a judge of the High Court was a better person to decide whether a



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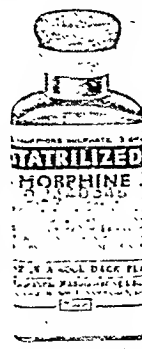
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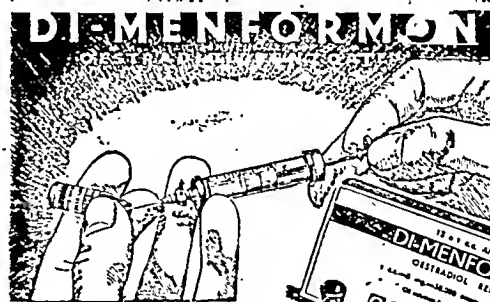
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doctor had carried out his job properly than the executive of the profession, tribunal, or the lay Minister. Suppose a doctor were recommended by the local executive and the local tribunal not to practise in that area, and the High Court then said he must have a job there, that doctor had to become a protégé of the Ministry. If the procedure laid down by the Bill had not been carried out or if the various tribunals had exceeded their powers, or if "the principles of justice had been offended" the appellant could still go to court. Doctors themselves would be worse off, because if a doctor went to a court the case would be publicized throughout the country, whereas under the procedure in the Bill it would only be necessary to move the doctor from a particular list. He could go elsewhere, be inscribed on another list, start afresh, and probably recover himself.

Sir H. MORRIS-JONES said the penalty provided by the Clause was almost as severe as that of the G.M.C. when dealing with professional misconduct. A medical man who was driven out of service under the Bill was virtually driven out of the profession. That was the main difference between the Bill and the existing national insurance scheme which dealt only with a third of the population. Mr. LINSTAD said hitherto the main disciplinary tribunal for the doctors, dentists, and pharmacists had been their statutory body. Under the Bill the Minister, or the tribunal, would possess powers as substantial and as comprehensive as the powers of the statutory professional disciplinary bodies. It would be a matter of chance whether a drunken doctor was brought before the G.M.C. for removal from the *Medical Register* or found his way to the tribunal. If the complaint came through the professional tribunal it could ultimately reach the High Court. In any event dental and pharmaceutical cases went to the High Court. If there were two channels for discipline they should be brought to a head at one and the same point. That should be the High Court.

Mr. HASTINGS regretted that he must agree with the Minister. To determine whether an individual was fit to remain a member of the service could not be the function of the High Court. Those employed in this service would have under the Minister's proposals all they needed against injustice or victimization. Mr. REID said that Mr. Bevan's argument could only have validity if the Minister believed there would still be a large amount of private practice by which a man who retained his professional status but not his place on the list could earn his livelihood.

On a division the motion that the words which Mr. Hopkin Morris proposed to be left out should remain part of the Clause was defeated by 17 to 19. This was the first defeat of the Government during the Committee Stage of the Bill. A division immediately followed upon whether the words which Mr. Morris proposed to insert should be added to the Bill. This motion was defeated by 16 to 17. After an adjournment the chairman, Mr. BOWLES, suggested that nothing further should be done at that stage on Clause 42.

Mr. REID saw no reason why the Committee should not go on with the Clause as it stood, and subsequently he could consider whether other steps should be taken at a later stage. The medical profession would not thank those who had defeated the Government for the extraordinary situation which resulted.

JUDICIAL INVESTIGATION

On the motion of Mr. KEY the Committee accepted an amendment to bring about reciprocity with Scotland on the disqualification of practitioners. This provided that where doctors were totally disqualified from inclusion in the list in Scotland they could be disqualified from the list in England, but if they were disqualified in only one or two places in Scotland they would not be disqualified from the list in England.

Mr. PIRATIN withdrew a further amendment on receiving an assurance that the person concerned would have a hearing before the tribunal. Mr. BEVAN said that if there were a hearing the person must attend.

On the motion that the Clause as amended stand part of the Bill, Mr. REID said that although Mr. Bevan had spoken of the full panoply of judicial investigation the right of a person to appear by solicitor or counsel before the tribunal was not covered, and he doubted whether the right of a tribunal to take evidence on oath was covered even by implication. Capt. BAIRD said the executive and the higher authorities could impose only one sentence. He hoped the Minister would consider giving them the right to admonish or to impose some minor punishment.

Mr. BEVAN said it was proposed to make provision by regulation for evidence to be taken on oath and for legal representation. It was also proposed by regulation to enable other forms of discipline to be imposed by the executive council and the tribunals in addition to that of removal from the list. Smaller penalties would be appropriate for minor offences.

The Clause as amended was ordered to stand part of the Bill. Clause 43 on the powers of the Minister where services are inadequate was also added to the Bill. Mr. BEVAN said that where the service had broken down the executive council would consult the representatives of the services before making any proposals. He did not wish to tie the executive council to formal discussions because urgent action might be necessary.

Clause 44, which concerns the recovery of charges in respect of certain appliances and dental treatment, was ordered to stand part of the Bill.

OTHER CLAUSES

Discussing Clause 45 on the exercise of choice of medical practitioner in certain cases, Mr. BEVAN explained that the Clause would apply when patients were themselves too ill to choose a doctor or in the case of children where the choice would be by the parents as legal guardians.

On Clause 46 the Committee negatived an amendment proposed by Mr. PIRATIN to the effect that charges for the use of health centres should not be paid by general practitioners. Mr. BEVAN said that when a doctor was taken away from his consulting room and was given one at the health centre he had not the same expenses to meet. It was therefore reasonable to expect him to make some small payment. He would be asked to pay not an economic rent but a reasonable rent. The rents charged would not be such as to discourage him from going there.

Mr. HASTINGS said a doctor coming into an area would have no surgery and would be prepared to pay something instead of starting a surgery for himself. On the other hand a doctor already in an area who proposed to carry on a certain proportion of private practice would need a surgery. Dr. STROSS said there would be great advantages to the doctor at the health centre, not only to himself but to his wife and family, because he might be able to live as a private person when not at work. A doctor's house was often on a dusty and noisy main road and was the last place where he would live if he could live somewhere else. Medical men had no incentive to go into a health centre and pay another rent while still compelled to live in the large house they already had. They were not allowed to sell that house to another medical man, having sold their goodwill to the Minister. If they sold it for any other purpose they were likely to lose a substantial amount of money. That point exercised the minds of family doctors all over the country. Mr. MCGHEE said the Minister ought to allow doctors to use the health centres freely but to make them provide their own staff.

Mr. BEVAN said he would be foolish to attempt a precise indication of what he thought health centres would be like. Doctors were allowed substantial expenses on account of having to provide facilities in their houses, and that expressed itself in the standard of remuneration. He thought that before long, if good health centres were provided, the doctor's wife would have something to say about it. He could not understand why a doctor's wife should continue to be tormented and have to be at the telephone day and night when her husband could get better facilities at a health centre. He believed that the financial inducements, together with the amount of wholesome nagging which would come in course of time, would enable the Ministry to get the doctors into the centres. At the same time the Committee must remember the patients. There had been a tendency to think that the Committee was providing a service for doctors, dentists, ophthalmic surgeons, and opticians, and to forget the patients. The doctors at the health centres would be able to arrange for emergency calls, but he agreed that continuity of treatment by the same doctor for the same patient was necessary. The Committee was not handing the patients over to a team of doctors at the health centres. The Ministry would have to feel its way for a considerable time in the organization of the health centre service. Clause 46 was ordered to stand part of the Bill, as was Clause 47 on the decision of disputes.

On Clause 48, which provides courses for dental and medical practitioners, Sir HAROLD WEBBE moved to bring in optical practitioners for these facilities, and Mr. LINSTAD urged the inclusion of pharmacists. Mr. BEVAN said that if the language of the Bill did not give him power to provide such facilities then language would be used which would do so. Sir HENRY MORRIS-JONES said the facilities proposed extended what already existed under the National Insurance Act. The rural practitioners would welcome this extension, but he thought that Mr. Bevan had not made provision for locum tenets to be provided when doctors left their practices for refresher courses.

Mr. BEVAN said that when a doctor was taken from a rural area to attend a refresher course the executive council in that area would be under an obligation to provide a substitute. Sir H. Webbe withdrew his amendment. The Clause was added to the Bill and the Committee adjourned.

MENTAL HEALTH SERVICES

On June 27 Mr. KEY moved an amendment to Clause 49. In the provision transferring to the Minister the administrative functions relating to the reception of persons suffering from mental illness as private patients, he moved to leave out the words "as private patients." This was a necessary drafting amendment; it might be required that the Minister should arrange for treatment in a certified institution of a patient who would normally be treated in a hospital vested in the Minister. Such a patient would not be regarded as a private patient.

The Committee agreed to the amendment, and also to another proposed by Mr. KEY to ensure that both Sections 23 and 24 of the Mental Deficiency Act, 1913, providing for the appointment of officers by the Board of Control and for their disqualification, should cease to apply to any officers other than the secretary and inspector. Mr. KEY moved further to add "commissioners" after "inspectors." He said Section 24 of the Mental Deficiency Act disqualified from office any commissioner, inspector, secretary, or officer of the Board who was directly or indirectly financially interested in certified institutions, houses, and private homes for mental defectives, and so on. The transfer to the Minister of the offices of the Board other than commissioners, inspectors, and secretary made it necessary to preserve this disqualification only in the case of commissioners, inspectors and secretary. The amendment was agreed to.

Mr. REID asked whether Mr. KEY could indicate the appointed day when this Clause came into force. Mr. KEY said he could not; it would be a case of seeing how the administrative business arose. The Clause as amended was ordered to stand part of the Bill.

On Clause 50, repealing and amending the lunacy and mental treatments Acts and the mental deficiency Acts, Mr. KEY moved to insert words "enabling the Minister as a temporary measure to include in the designation of a mental hospital a small poor law institution in which only mental patients were accommodated or the separate wards of a poor law institution that were so used." The result would be that temporarily patients accommodated in such places would come under the care of the medical and nursing staff of the neighbouring mental hospital, and the hospital management committee responsible for their maintenance would be that of the mental hospital. The poor law authorities would cease to have any statutory responsibilities or duties towards these people. Mr. WILLINK remarked that this was the first reference in the Bill to a mental hospital. The Committee agreed to the amendment.

Mr. KEY moved to omit from subsection 4 of Clause 50 words restricting the transfer of a mental patient from a workhouse to a mental hospital or institution for defectives in the particular regional area. The convenience of patient and relatives should be considered so that he could be transferred to another institution even if it happened to be in another regional area but nearer his home. He assured Mr. REID that he power would not be abused to take people further away from their relatives merely for administrative convenience. The Committee agreed to the amendment and also to a proposal by Mr. KEY to omit subsection 5 of Clause 50, which permits the continued use as a special school of an institution for defectives. Mr. KEY explained that a new Clause would be moved to replace this subsection. Clause 50 as amended was ordered to stand part of the Bill; also Clauses 51, 52, and 53.

EXPENDITURE BY REGIONAL HOSPITAL BOARDS

On Clause 54 Sir H. LUCAS-TOOTH asked the Government to state its intentions. Mr. WILLINK said it did not seem from what Mr. BEVAN had said that there would be maximum initiative and personal life in the hospital management committees, and in the boards of governors of teaching hospitals. If these authorities feared that money not spent in one year might be taken from them in the next year, that would make for inefficiency.

Mr. KEY said the idea of the Ministry was that the hospital management committee would give the regional board for its area an estimate of its expected expenditure in the coming twelve months. That would be in some detail to give the regional board an idea of the character of the service to be carried out and the extent of the development proposed. The regional board would be able to negotiate with the hospital management committees and to suggest an extension here or a modification there for the time being. In the end the regional board would submit to the Minister an appreciation of the contemplated expenditure in its area during the next twelve months. That would be analysed, and would be subject to the Minister's approval. He must decide whether a region was carrying out its functions as it should, and whether it was exceeding what should be done at that particular time, if the service as a whole was to be adequately financed. The expendi-

ture having been approved, the regional board would have its annual amount of money and would allocate to the hospital management committees their proportions of the regional sum. In the expenditure of that money regional boards and hospital management committees should have considerable latitude. If a deficit resulted from something unforeseen it would have to be made good in the budget arrangements of the following year. Any surplus must be carried through to the next budget period.

The Clause was ordered to stand part of the Bill, as was Clause 55, with drafting amendments.

RESPONSIBILITY OF THE MINISTER

On Clause 57 Mr. REID moved to omit the medical practices committee and the dental estimates board from the authorities in connexion with which the Minister is empowered to make an order declaring them to be in default, and directing them to discharge their functions as the order may specify. The medical practices committee had been represented as a body of some independence, appointed by the Minister but not the Minister's agents. The Minister would undermine their independent status if he took the drastic powers proposed. In the next amendment on the paper Mr. BEVAN would propose with regard to these bodies and others that their members should forthwith vacate their office, and that the Minister would then carry on until someone else was appointed. He had made no provision for a public inquiry. The procedure was too summary and unlimited.

Mr. BEVAN said the Committee could not have two opposite principles, that was to say Parliament imposing the responsibility on the Minister to provide a service, and then creating an independent body in the service which could refuse to carry it out. These powers were necessary. In practice they would not be exercised summarily. If the Minister of Health set aside the medical practices committee without considerable discussion there would at once be a first-class debate in the House of Commons. Col. STODDART-SCOTT said that under the Clause as it stood if a teaching hospital failed to carry out one of the Minister's directions he could sweep away the privileges given to it without any inquiry whatever. The words proposed to be left out by Mr. REID were ordered to stand part of the Bill by 27 to 13. Mr. KEY then moved the amendment previously mentioned by Mr. REID to provide that except where the body in default is a local health authority its members shall forthwith vacate their office. After discussion the amendment was agreed to. Further amendments were made and the Clause as amended was ordered to stand part of the Bill. Discussion then followed on Clause 58, on the acquisition of land, which with an amendment was also approved.

GIFTS AND INTERIM DIFFICULTIES

Mr. WILLINK moved on Clause 59 to add hospital management committees to the bodies who are to have power to accept, hold, and administer property upon trust for purposes connected with hospital services. Mr. HASTINGS saw a danger in the amendment, and Dr. MORGAN hoped the Minister would not accept it.

Mr. BEVAN said it was intended that a proper proportion of the endowment fund should be allocated to the management committee. That committee was the body which would "warm up" the whole administration and maintain proper relationship between the hospital itself and the doctors and staff. But the Ministry wanted the system to be integrated. It seemed to him that it ought to be possible for the hospital management committee to take gifts because if not it was unlikely the gifts would go to the regional board. He agreed with the principle of the amendment and asked Mr. Willink to withdraw it on the understanding that on the Report stage it would be included. Mr. Willink withdrew the amendment.

Mr. LIPSON drew attention to the difficult financial position in which the hospitals would find themselves during the interim period. He urged the Minister to explain in a public appeal that under the State service the hospitals would still be the hospitals of the people, and that it was necessary to maintain them; and that there would be opportunities for the public to add to what the State was doing. He asked Mr. BEVAN to make clear that he was taking over the endowments only once, and that future gifts would be allowed to be retained.

Mr. BEVAN said the financial difficulties into which the hospitals were getting were not a result of the Government proposals. He admitted that knowledge that future provision for voluntary hospitals would be made by the State must freeze the flow of charitable endowments, but he hoped it would not have that effect too much in the next eighteen months. He appealed to people to support the hospitals in the intervening period. He could not give a guarantee that hospitals would be allowed in the future to keep all the money that went into

them, because no Parliament could bind another Parliament. It would take some time to disentangle the subterranean assets which the hospitals concealed all the while. The hospitals had run persistent overdrafts and detained considerable assets at the same time, the overdrafts being the vacuum into which they hoped to suck charitable endowments.

The Clause was ordered to stand part of the Bill, as was Clause 60 on the power of trustees to make payments to regional hospital boards and boards of governors.

QUALIFICATIONS AND REMUNERATION

On Clause 62 Mr. REID proposed to delete the provision that regulations may be made with respect to the qualifications of any officers employed by any body constituted under the Bill or employed by a local health authority or a voluntary organization mentioned in the Bill. He doubted whether the Minister appreciated that under the Clause he could make regulations with respect to the qualifications of doctors.

Mr. BEVAN said no Minister would try to meddle with the qualifications of doctors. Mr. SOMERVILLE HASTINGS said that for some doctors qualifications were required. Many local authorities thought it essential that medical officers of health should have the D.P.H.

Sir HENRY MORRIS-JONES said the only qualification which should be recognized was that a man was a fully qualified and registered medical practitioner. Mr. BEVAN said that nobody was interfering with that, and the amendment was negatived. Clause 62 was added to the Bill.

On Clause 63 Mr. COLLINS raised the position of certain mental hospital workers who were dealt with by the Asylum Officers Superannuation Act, 1909, which enabled them to retire at the age of 55. Mr. BEVAN said that where these people had a superior entitlement provision would be made to preserve it.

Mr. WILLINK moved an amendment on Clause 64 to provide for compensation for officers who had worked under contributory schemes linked with a group of hospitals. Mr. BEVAN resisted the amendment but guaranteed that the Minister of National Insurance and he would do their utmost to absorb these people into the new service. The proposed amendment was rejected by 12 to 19.

Further amendments were made on the motion of Mr. KEY, and the Clause as amended was ordered to stand part of the Bill. So were Clause 65 with amendments, Clause 66, and Clause 67, the latter with an amendment to ensure that the relevant section of the Public Health Act, 1875, was properly applied.

On Clause 68 the Committee accepted an amendment by Mr. KEY, and the Clause so amended was ordered to stand part of the Bill.

Specialists due for Release

Mr. BOWDEN inquired on June 27 whether Mr. Bevan knew that, through the failure of the Central Medical War Committee to call up specialist medical officers at a rate quick enough to replace those specialist medical officers in the Services who were due for release, it had been necessary to retard the release of these medical officers. He asked the Minister to speed the call-up of those specialists who were eligible for service, in order that serving medical officers could be released.

Mr. BEVAN said he was aware of the difficulty. His department was in close touch with the Central Medical War Committee, who, he was satisfied, were making every effort to find replacements for specialists due for release.

Tuberculosis Service

Sir THOMAS MOORE asked on June 27 for a statement on the future of the tuberculosis service; and how far the policy of the Minister of Health was in accord with the policy of the Joint Tuberculosis Council.

Mr. BEVAN said the new service would provide all facilities for handling tuberculosis, mainly through the new hospital and specialist services backed by all the supplementary domiciliary services of the local authorities. He added that he could not commit the Joint Tuberculosis Council.

Mr. SPARKES reported on June 27 that there were 600 cases waiting for admission to Middlesex County Council tuberculosis hospitals; that 200 beds were closed through shortage of staff, due in some measure to lack of suitable accommodation for them. He asked why Mr. Bevan declined to approve plans for new nurses' homes and extensions to the Harefield Hospital.

Mr. BEVAN said he knew of the shortage of beds for tuberculous patients in Middlesex, and of the difficulties raised by inadequate staff accommodation, but must have regard also to other pressing claims on building labour and materials. He was reviewing the case to see whether a part of the proposed building might proceed.

Medical News

Dr. Thomas Clarence Routley, General Secretary of the Canadian Medical Association, was appointed C.B.E. (Civil Division) in the Canadian Dominion Day Honours List published on July 1.

A meeting of the Pathological Society of Great Britain and Ireland is being held at the University of Aberdeen on Friday and Saturday, July 5 and 6.

Sir Francis Fraser, M.D., will deliver the Frederick Price Lecture in the hall of the Royal College of Physicians of Edinburgh on Friday, July 12 at 5 p.m. His subject is "Postgraduate Education and the National Health Service."

The Harben Lectures for 1946 will be given on Monday, Tuesday, and Wednesday, July 15, 16, and 17, at the Royal Institute of Public Health and Hygiene, 28, Portland Place, W.1, by Dr. William H. Feldman, of the Mayo Foundation, University of Minnesota. The general subject of the lectures is the chemotherapy of tuberculosis, including the use of streptomycin. The first lecture will be on the basic considerations of chemotherapy in tuberculosis; the second, an evaluation of the efficiency in tuberculosis of sulphonamides, sulphones, and certain other substances; and the third, on the effect on tuberculosis of antagonistic substances of microbial origin, with particular reference to streptomycin. Admission is free without ticket, and each lecture will begin at 3 p.m.

The Nutrition Society, with the help of the British Council, has organized an informal post-war conference of European Nutritionists, to be held in Great Britain between July 4 and 20, to enable research workers in ex-occupied territories to re-establish contacts with their colleagues in this country. The following open meetings, all of which will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., are included in the programme: Friday, July 5, 2.30 p.m.; Saturday, July 6, 10.30 a.m. and 2.30 p.m.; Monday, July 8, 10.30 a.m. and 2.30 p.m. These open meetings will be devoted mainly to papers by visiting scientists, describing nutritional conditions and investigations in their own countries during the war. All members of the Nutrition Society are invited to attend.

The annual meeting of the Medical Insurance Agency was held at B.M.A. House on June 14, with Sir Robert Hutchison in the chair. Sir Hugh Lett and Dr. L. G. Glover intimated their desire not to be re-elected to the Committee of Management; and the committee accepted these decisions with regret and with an expression of thanks for their past services. Sir Henry Tidy, Mr. A. M. A. Moore, F.R.C.S., and Mr. Ronald Raven, F.R.C.S., were elected to the committee; Lord Horder, Dr. Alfred Cox, Dr. J. A. Brown, Dr. James Fenton, and Dr. R. W. Craig were re-elected. Allocations to the Royal Medical Benevolent Fund and to the Royal Medical Foundation of Epsom College totalling about £5,600 were approved from the disposable surplus on last year's working. Sir Francis Fraser was appointed to the Conjoint Committee of Epsom College to represent the Agency should an invitation to do so be received. The proceedings ended with a vote of thanks to the chairman and to the honorary secretary, Dr. Henry Robinson, for their work during the past year.

A delegation of six scientists and educationists from the Netherlands is visiting this country for three weeks under the auspices of the British Council to make contact with British colleagues in London, Oxford, and Cambridge.

Films of microbiology and protistology made under the direction of Dr. Comandon by the Département de Cinémicrographie, Institut Pasteur, Garches, S. et O., have been brought to this country by M. Pierre de Fonbrune. They include those reviewed recently in the *British Medical Bulletin* (1946, 4, 72); and also films on *Amoeba verrucosa*, Karyokinesis, and *Lankesterella*. They are silent films on 35 mm. stock with captions in French. A selection of these films will be shown in London by the British Council at 5 p.m., on Monday, July 15. A limited number of seats are available and will be allotted in rotation on application to the British Council, 3, Hanover Street, London, W.1. Telephone: Mayfair 8484, extension 134.

At the Annual Meeting of Fellows of the Royal Society of Medicine on July 2, Group Capt. Antoni Fiumel, late D.G.M.S. to the Polish Forces, and Col. C. F. Koch, late D.G.M.S. to the Netherlands Forces, were admitted as honorary Fellows. Both Group Capt. Fiumel and Col. Koch escaped from their countries to Great Britain in the early part of the war. The other honorary Fellows elected are: Col. L. C. Montgomery, R.C.A.M.C., Sir Alan Newton, F.R.A.C.S., F.R.C.S., and Col. W. S. Middleton, U.S.A.M.C. Diplomas of Fellowship are being presented to Col. Montgomery and Col. Middleton by the President of the R.S.M., Sir Gordon Gordon-Taylor, at present on tour in the United States and Canada. Sir Maurice Cassidy has been elected president of the Society for the session 1946-7.

No. 24

EPIDEMIOLOGICAL NOTES

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 15.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	44	4	17	3	1	47	6	29	2	2
Deaths ..		4	1				1			
Diphtheria ..	262	18	99	25	13	438	25	113	69	17
Deaths ..	1	—	1	—	—	5	—	2	—	—
Dysentery ..	146	20	48	—	—	464	49	77	2	—
Deaths ..										
Encephalitis lethargica, acute ..	3	1	—	—	—	—	1	—	—	—
Deaths ..										
Erysipelas ..	—	—	34	13	2	—	—	47	11	1
Deaths ..										
Infective enteritis or diarrhoea under 2 years ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	41	6	9	3	5	45	4	8	34	3
Measles* ..	4,415	1081	660	36	23	7,890	412	351	70	9
Deaths ..	4	2	1	—	—	4	—	1	—	—
Ophthalmia neonatorum ..	63	7	14	—	—	57	6	27	—	—
Deaths ..										
Paratyphoid fever ..	4	—	1(B)	—	—	1	—	1(B)	—	—
Deaths ..	—	—	1(A)	—	—	—	—	1	—	—
Pneumonia, influenzal ..	505	27	9	—	2	389	20	16	1	4
Deaths (from influenza)†	11	4	—	—	—	14	2	—	—	2
Pneumonia, primary ..	—	—	141	10	—	—	—	194	18	—
Deaths ..	28	—	11	8	—	23	—	8	9	—
Polio-encephalitis, acute ..	—	—	—	—	—	1	—	—	—	—
Deaths ..										
Poliomyelitis, acute ..	12	—	1	3	1	6	—	2	1	2
Deaths ..										
Puerperal fever ..	—	1	17	—	—	—	1	15	—	1
Deaths ..										
Puerperal pyrexia‡	134	5	14	3	2	129	8	17	4	—
Deaths ..										
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..										
Scarlet fever ..	866	85	187	24	20	1,314	65	201	18	44
Deaths ..	—	—	—	—	—	—	—	—	—	—
Smallpox ..	2	—	—	—	—	—	—	—	—	—
Deaths ..										
Typhoid fever ..	7	—	1	7	3	5	—	2	2	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhus fever ..	—	—	—	—	—	1	1	—	—	—
Deaths ..										
Whooping-cough* ..	1,625	150	86	28	27	1,130	48	97	54	8
Deaths ..	8	2	—	1	1	4	1	2	1	1
Deaths (0-1 year) ..	337	50	54	22	22	305	34	55	19	22
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births) ..	4,189	647	557	193	129	3,901	573	548	189	117
Annual death rate (per 1,000 persons living)			12.3	12.4				12.4	12.2	
Live births ..	8,778	1371	1123	338	280	6,895	811	928	410	257
Annual rate per 1,000 persons living			22.6	21.7				18.6	26.5	
Stillbirths ..	230	32	33	—	—	238	30	42	—	—
Rate per 1,000 total births (including stillborn) ..			29					43		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Discussion of Table

In England and Wales 519 more cases of measles were notified than in the preceding week. The incidence of other infectious diseases declined, the chief falls being whooping-cough 124, scarlet fever 121, and diphtheria 42.

The decline in whooping-cough was most notable in Staffordshire 63 and Lancashire 57. In the south the incidence increased, and the combined counties of the south-east and south-west regions had a rise of 75 cases.

The only local variation of any size in the returns for scarlet fever was a decrease of 42 in Yorkshire West Riding.

London and the four surrounding counties had almost two-thirds of the total cases of measles. The largest rises were Middlesex 193, Surrey 90, Kent 70, Essex 64, Lancashire 56, Southampton 51; an exception to the general rise was a decrease of 54 in Yorkshire West Riding. Only 262 cases of diphtheria were notified. During the preceding five years 1941-5 the lowest weekly total recorded in each year was 674, 572, 493, 398, and 346. The largest falls in diphtheria during the week were Lancashire 21 and Durham 11.

The largest returns for dysentery were Lancashire 46, London 20, Kent 14.

In Scotland an increased incidence was recorded for scarlet fever 23, diphtheria 14, and dysentery 12. The rise in diphtheria was due to scattered cases. The increase in dysentery was contributed by Glasgow, where the cases rose from 4 to 23.

In Eire the only variations in the trends of infectious diseases were decreases—measles 12 and whooping-cough 17. Of the 28 cases of whooping-cough 26 were notified in Dublin C.B.

In Northern Ireland whooping-cough declined by 17; all the cases were notified in Belfast C.B.

Week Ending June 22

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 941, whooping-cough 2,026, diphtheria 274, measles 4,516, acute pneumonia 496, cerebrospinal fever 51, dysentery 93, acute poliomyelitis 13, paratyphoid 1, typhoid 4

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Alitology Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Bone and Joint Tuberculosis in Children

Q.—What are the advantages of the Swiss treatment of bone and joint tuberculosis in children? Is the treatment itself more or less standardized in England and in Switzerland, and does the only difference lie in the climate?

A.—The principles governing the treatment of bone and joint tuberculosis are the same whatever the joint involved and are largely independent of the age of the patient. They are as follows: (1) general treatment, fresh air, sunshine, good food, rest, and congenial occupation; (2) strict immobilization of the affected part, which may have to be continued for a long period after the disease has become quiescent, more especially if the affected part is weight-bearing; (3) as a terminal procedure, when the local lesion is no longer active, arthrodesis is often of value in converting an unsound fibrous into a sound bony ankylosis, thus rendering external splinting unnecessary; (4) it is occasionally possible to excise a localized bone lesion, but even in such a case general treatment is still necessary since the patient, and not merely the affected limb, is tuberculous.

The writer is not sufficiently familiar with the practice of all the main centres in Switzerland to say dogmatically whether

or not methods of treatment in that country are standardized. In England there is fairly general agreement about the principles of treatment, though there are differences of emphasis and in details of technique as between one centre and another. This is only to be expected, since our understanding of the vagaries of this serious disease is still incomplete; standardization in the absence of full knowledge would indicate stagnation. It is not unreasonable to suppose that Swiss surgeons, whose competence is generally acknowledged, are no more slaves to uniformity than we are. The writer's impression is that British surgeons, on the whole, are more strict in their methods of immobilization, and more in favour of terminal arthrodesis. There is an undoubted difference in the climate, and it is popularly supposed that the alpine sun is endowed with magical powers of healing. It certainly is not in other parts of the world where people see more of the sun than we do. All forms of tuberculosis occur with some frequency in the Kenya highlands, in South Africa, in Australia; and in the Mediterranean countries. Gauvain and Girdlestone, among others, believe, probably rightly, that variability in climate is more stimulating and beneficial to the patient than steady solar irradiation—in which case nothing could be better than the English climate, the only constant feature of which is its irregularity.

Patients with bone and joint tuberculosis recover well in hospitals in Switzerland and in the British Isles; some die in Switzerland; some die here. Reliable comparative figures are unobtainable. What is disturbing is that patients who appear to have made a good recovery in Switzerland sometimes relapse very rapidly after returning to England. The writer is not alone in believing that the best course is to treat the patient in the climate in which he will have to live subsequently, and if one of his own children had the misfortune to develop bone tuberculosis he would insist on the treatment being carried out in England.

Protein Hydrolysates

Q.—*Is protein hydrolysate useful in the treatment of selected cases of duodenal ulcer?*

A.—Although certain workers in the United States have shown enthusiasm for the treatment of duodenal ulcer with protein hydrolysates there is no clear indication for such a line of treatment, for the digestive and absorptive power of the gut is not seriously impaired. The clearest indication for the use of protein hydrolysates is in those relatively few conditions where the power to ingest, digest, or absorb protein is so adversely affected as to constitute a serious danger to convalescence.

Hyperhidrosis and Bromidrosis

Q.—*What are the causes of bromidrosis as distinct from hyperhidrosis?*

A.—Hyperhidrosis indicates an increased secretion of sweat, either general or local. Local forms express a state of physiological instability, often of emotional origin, and affect axillae, palms, and soles, but may be more widespread. Generalized hyperhidrosis is more usually the result of fever or general illness or of climatic and environmental conditions.

Bromidrosis may or may not be associated with hyperhidrosis and is of two main types. The first is the consequence of a macerated hyperkeratosis, which may accompany hyperhidrosis of the hands and feet, and some degree of bacterial infection of this macerated tissue. The most effective treatment is by small doses of luminal internally and the use of sodium hexametaphosphate locally, as a foot-powder or as a foot-bath in a strength of 10% or so. Bromidrosis may be a natural occurrence in women, particularly affecting the axillae, pubic, abdominal, and breast regions, and is connected with the activity of the apocrine glands in these sites. These are large sweat glands opening into the pilo-sebaceous follicles and related to the odoriferous glands of animals. Bromidrosis is sometimes checked by the administration of oestrogens.

Essential Hypertension

Q.—*A very plethoric woman aged 48 had a sudden hemiplegia eighteen months ago. She has completely recovered from the paralysis and now has attacks of giddiness with blurring of vision lasting several hours. The blood pressure is 230/180 mm. Hg. The urine contains no albumin. There*

is slight improvement with phenobarbitone and theobromine. Is venesection contraindicated in view of the past history of hemiplegia? Would the administration of thiocyanate be of any use? If not, apart from "taking it easy," is there any other treatment?

A.—One of the chief prognostic features in such a case would be the condition of the fundus oculi and the presence or absence of retinal haemorrhages (which are of very grave significance). Renal function tests are also advisable in a case like this, and if the results are not grossly abnormal the question of abdominal sympathectomy will arise for serious consideration. The decision is one which calls for the most deliberate consultation by physicians and surgeons with experience of this measure. Of medicinal remedies, thiocyanate is certainly worth a trial as being one of the few drugs which will reduce a raised blood pressure. It is a remedy to be used with caution, however, and over a short period only, as toxic symptoms are by no means uncommon. Venesection has but a transitory effect upon the blood pressure, and, in the absence of any clinical symptoms suggesting acute cerebral oedema, seems scarcely to be indicated.

Counting Spermatozoa

Q.—*How does one count spermatozoa? What are the upper and lower limits of a normal count?*

A.—It is usual to employ the Neubaur counting chamber and white blood cell pipette. Various diluted fluids are used, some containing stain, others not. Mix the semen well and fill to the 0.5 mark half-way up the pipette. Then fill the entire chamber with a solution of 5% sodium bicarbonate and 1% phenol (the phenol ensures absence of motility of the spermatozoa). This gives a dilution of 1 in 20. If the spermatozoa are few in number the dilution can be modified to 1 in 10. Having discarded the fluid from the stem of the pipette, transfer some from the bulb to the counting chamber and count the sperms in 1 sq. mm. Multiply by 10, to find the number in 1 cu. mm., and then by the diluting factor (20). Multiply finally by 1,000 to find density per ml. Some workers prefer not to use the pipette because of the difficulty of getting the semen evenly mixed. An alternative technique, using this time a diluting fluid which also stains, is as follows. Dilute the semen in bulk with an equal quantity of saline and mix well. Take 0.2 ml. of this and mix with 0.2 ml. of Lempert Kristenson's platelet solution (sod. cit. 1 g., mercuric chloride 0.002 g., brilliant cresyl blue 0.2 g., water 100 ml.). The mercuric chloride kills spermatozoa. Add 1.6 ml. of saline and mix well to obtain a dilution of 1 in 20. Fill the counting chamber and count as before.

A repeat count is desirable in each case, and more than one specimen of semen should be tested to exclude spontaneous variations. Caution is required in the interpretation of the result, and fertility cannot be assessed by sperm density only. The volume of seminal fluid, the survival capacity of spermatozoa, and their morphology, all have to be taken into consideration. Other things being equal, it is generally reckoned that good fertility is associated with a count of 100 millions per ml. and over, but any count over 60 millions is regarded as being within average limits. The tendency nowadays is to lower the standard and not to regard as indicative of significant impairment of fertility any count above 30 millions per ml. If the count is below 10 millions then fertility is extremely low, but it should be remembered that many men with counts of two millions per ml., and even less, have proved capable of producing children. For further details reference should be made to books such as *Fertility in Men*, by R. S. Hotchkiss, 1945. Wm. Heinemann Medical Books, Ltd.

Indecent Assault

Q.—*What exactly is the indecent assault which one reads of so often in the newspapers but which is not mentioned in books on medical jurisprudence?*

A.—Assaults of a sexual nature not amounting to rape or attempted rape are considered to be indecent assaults. Indecent assault is an indictable misdemeanour, and is referred to, but not defined, in the Offences against the Person Act, 1861, and the Criminal Law Amendment Acts of 1885 and 1922. These references, with one exception, are concerned with offences

against women or girls, and a charge of indecent assault is, of course, usually made in such a connexion. But it would appear that a similar charge can arise from an offence against a man or boy, for Section 62 of the Offences against the Person Act states that "whosoever . . . shall be guilty of any indecent assault upon a male person shall be guilty of a misdemeanour. . . ." In Scotland such cases would be dealt with under the common law as an aggravated form of assault, the aggravation being determined by an intent to gratify lewdness. Such intent might be present in an assault either on a female or on a male.

Penicillin Prophylaxis of Streptococcal Sore Throat

Q.—Are penicillin lozenges of any value in the prophylactic treatment of healthy children and adults who have recently been in contact with cases of (1) scarlet fever, (2) acute streptococcal tonsillitis?

A.—Although penicillin lozenges have been used with some success in the treatment of streptococcal tonsillitis, there are as yet no data on their value in the prophylaxis of sore throat and scarlet fever. One disadvantage of sucking antiseptic lozenges is that, contrary to expectation, the antiseptic is not concentrated on the tonsillar surface or on the pharyngeal wall. Experiments with tablets containing methylene blue have shown that the backward currents in the mouth carry the material along channels which largely avoid these surfaces. Partly for this reason and partly because the infecting organism gets into the tonsillar crypts, treatment of streptococcal throat infections with penicillin has lately been by systemic use of the drug. However, it may be possible by sucking lozenges to maintain a sufficient concentration of penicillin in the throat and nasopharynx to prevent invasion of the tissues by the haemolytic streptococcus, and controlled trials to this end will no doubt be carried out. There is probably less risk with penicillin of breeding drug-resistant streptococci than is the case with the sulphonamides. Penicillin-resistance cannot be induced very readily by test-tube experiments and organisms that have been rendered penicillin-resistant readily revert to the sensitive state when cultured in the absence of penicillin.

Dhobi's Itch

Q.—What is the best treatment for dhobi's itch?

A.—There is no routine treatment for dhobi's itch, as each case must be judged on its own merits, but if one remedy were to be selected in preference to others the choice would fall on Whitfield's ointment. The condition should not be overtreated, as is sometimes done, when the remedy is blamed for unsatisfactory results which are due not so much to the remedy as to its over-enthusiastic application. It may also be mentioned that the condition is sometimes diagnosed on rather slender clinical evidence, without microscopical confirmation, and in such cases the necessarily strong fungicides prove merely irritants.

Treatment of Chronic Rhinitis

Q.—A schoolmistress suffers from chronic catarrh which she attributes to long hours spent in a chalk-dust atmosphere. What is the treatment?

A.—The nasal discharge should be examined for pus cells and eosinophil cells, if necessary on several occasions. Pus cells indicate infection and eosinophil cells an allergic reaction. If pus cells and bacteria predominate involvement of one or more sinuses is likely and the appropriate investigation and treatment is required. If eosinophils predominate the catarrh is allergic in origin. Intradermal skin tests should be done and the results correlated with the history.

The commonest inhalants to cause allergic rhinitis areorris root (in face powder), house-dust, feathers, and various animal danders, while the commonest foods are wheat, egg, milk, potato, and chocolate. Chalk is not usually considered as an allergen, but as a non-specific or secondary irritant. The use of a damp duster to reduce chalk-dust at school is advisable. Foods, and where possible inhalants, suspected of causing symptoms should be completely eliminated for six weeks and the effect observed. House-dust sensitive cases are likely to benefit from "desensitization" (orris-root-free face powder, skin tests, and desensitizing solutions can be obtained from C. L.

Bencard's, Ltd.). Ephedrine gives symptomatic relief. Possibility of a psychological trigger should be fully re and a hormonal imbalance is sometimes responsible. boestrol and thyroid extract have in some cases benefited. When such measures fail, local treatment, su cauterization or ionization, should be carried out, espe when there is no superadded infection.

Soldiers' Dermatitis

Q.—I am M.O. to a small factory with employees engaged soldiering work. How can I prevent soldiers' dermatitis caused by "splashing" with Baker's solution?

A.—Baker's solution is acidic zinc chloride, and zinc chloride is the most irritating of zinc salts. Soluble salts of zinc cipitate albumin in the tissues and have a caustic action in st solution, and an astringent one in dilute solution. Zinc chloride is hygroscopic and therefore extracts water from organic tis to such an extent as to produce ulcers of the skin and of nasal septum. Cleanliness is the best method of preventing lesions. Washing facilities need to be provided and the wor encouraged to use them. Provision of barrier creams will some protection against Baker's solution—these are fully cussed by Thelwall Jones, *Brit. J. Industr. Med.*, 1946, 3, 8.

INCOME TAX

Employment: Purchase of Equipment

S. R. is a teacher of a surgical specialty. If he buys a clinical camera to assist him in this work can he claim a depreciation allowance?

****** It is assumed that S. R.'s income from this work is received in the form of payment for employment and accordingly is assessable under Schedule E. In that case he can make the claim only if he can show that the camera is "necessary" for his work. As it is normally assumed that an employing authority will find "necessary" apparatus S. R. may find the production of the required evidence impracticable.

Car Transactions

J. H. bought a car for £140 in 1939 and sold it for £275 in November, 1945, buying a second-hand car for £350. Depreciation was allowed on the old car. Can he claim any extra allowance for 1945-6?

****** In strict law such a claim can be made, because the rule that the depreciation allowance should be calculated according to the value of the car as at the date of the end of the account preceding the year of assessment did not come into operation for 1945-6. But if—as is presumably the case—J. H.'s depreciation allowance have hitherto been calculated on the usual "preceding" basis, the charge for 1945-6 might entail a revision of the allowances for previous years. The claim may not be worth while. As the car was sold before April 6, 1946, no "balancing charge" can be assessed on the "capital" profit made by the sale of the old car. For 1946-7 an initial allowance of 20% of £350=£70, and a depreciation allowance of 25% of £350=£87 10s. (i.e., £157 10s. in all) can be claimed in respect of the car bought in 1945.

LETTERS, NOTES, ETC.

Herpes Zoster and Variella

Dr. JAMES KAY (St. Helens) writes: A man, aged 42, began to have severe pain over the distribution of the second thoracic segment on the right side. Five days later the typical vesicles of herpes zoster appeared and two days after this a generalized chickenpox eruption was seen. The vesicles of the herpes were about half-an-inch (1.2 cm.) in diameter, very profuse, and associated with very severe pain. On the day the chickenpox eruption appeared 4 ml. of a liver extract was injected intramuscularly, and the effect on the herpes zoster was dramatic. The pain disappeared within twenty-four hours and the vesicles began to dry up. No fresh chickenpox spots appeared. The effect upon the herpes zoster, in view of the recent note in this *Journal* (June 15, p. 942), seems definite. The chickenpox eruption may have been mild without treatment, but it would be of interest to try the effect of similar therapy on a series of early cases of chickenpox. No rationale is offered for this line of treatment.

Penicillin Therapy Booklet

Messrs. Boots have issued a booklet entitled "Penicillin Therapy" which is intended to give practising physicians information on the principal uses of penicillin, dosage, and methods of administration. Copies may be had from the Medical Department, Boots Pure Drug Co. Ltd., Station Street, Nottingham.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 6 1946

METROPOLITAN COUNTIES BRANCH

Annual General Meeting.

The annual general meeting of the Metropolitan Counties Branch—the first such meeting since 1939—was held at B.M.A. House on June 18, Mr. A. M. A. Moore, chairman of the Branch Council, presiding in the absence of the retiring President, Sir Crisp English. At the opening of the meeting those present paid a silent tribute to the memory of Dr. A. Keith Gibson, secretary of the Branch, who died a prisoner of war in Germany in 1941.

In the report submitted to the meeting it was stated that during the war the membership of the Branch had fluctuated owing to the number of practitioners joining the Services, but the membership was now increasing and at present stood at 4,900, as compared with 4,674 at the corresponding date in 1939. Reference was made to the setting up by the Branch Council of two Protection of Practices Committees—one for London and one for Middlesex—and to the service of many Division secretaries as secretaries of the Local Medical War Committees.

Mr. Moore, as one of the representatives of the Branch on the Central Council, reviewed the Council's work during the war. The loss sustained by the Association and the Branch in the death of Dr. G. C. Anderson was grievous, and the recollection of the man and his work was still fresh in their minds. His successor, Dr. Charles Hill, had proved himself most valuable to the Association and to the profession at this critical time. The work of the Council might be said to have been divided into two parts—the routine business of committees, and the work in connexion with the projected National Health Service, both before and since the introduction of the Bill. He added that he and the three other members who had recently been elected to the Central Council by the Branch had had no opportunity, in the absence of a contest, of putting forward their own position, but he desired to say on behalf of all of them that they stood firmly behind the decisions arrived at at the recent Special Representative Meeting.

The election of officers then took place. The only nomination for President-elect was Dr. E. A. Gregg. Dr. R. W. Cockshut, Dr. Humphrey Nockolds, Mr. Eric Steeler, and Dr. H. H. D. Sutherland were elected Vice-Presidents; Dr. Alastair French was elected treasurer, and Dr. C. G. Martin honorary secretary, all of them unanimously. A vote of thanks was accorded to the retiring officers, including Sir Crisp English, the President, and Dr. L. G. Glover, who had acted as treasurer during the war while Dr. Alastair French was away on service, and also to Miss Wood, the clerk of the Branch Council.

Legal Problems in Obstetrical Practice

Dame Louise McIlroy was then installed as President of the Branch, and gave an informal address from the chair, discussing some legal problems in obstetrical and gynaecological practice. She remarked on the ignorance of the law often displayed by doctors. Whenever it was suggested that there should be special instruction in this subject the objection was raised that the curriculum was too full already. It would be a very great advantage to have, in connexion with, say, the University of London, a medico-legal institute, a centre for teaching graduates both in medicine and in law. The territory of the two professions adjoined, and it was not easy to say where the one ended and the other began. Graduates in law commonly knew as little of medicine as graduates in medicine knew of law. Many doctors made mistakes, especially at the beginning of practice, which were solely due to ignorance of legal requirements and procedure. For example, they had

never been instructed in the proper way of giving evidence in court. The inexperienced medical witness was generally inclined to talk too much and to give his own opinions rather than the facts which the court was seeking. The consequence of talking too much in the witness-box was a liability to self-contradiction, of which a cross-examining counsel was quick to take advantage.

She went on to discuss various questions in the field of obstetrics which were likely to come into the courts. One of these was infanticide. The proof of live birth was still a controversial point. In large cities, of course, an expert pathologist was generally available, but elsewhere the young general practitioner might find himself having to carry out the post-mortem examination of an infant. To determine whether the crime of infanticide had been committed was by no means easy, for injuries observed on an infant might well have been the result of difficult labour. After an extensive study of the literature she was convinced that there was no very definite test as to live birth. The law was sympathetic to the woman who, in a state of disturbed mind, had destroyed her child. The conception of puerperal insanity was giving place to something wider, perhaps an exhaustion psychosis.

One of the most difficult things even for the specialist was the diagnosis of pregnancy, and as for the general practitioner he, like the specialist also on occasion, was often a very unsuspecting individual and likely to take the word of the patient, accepting her story that she had missed certain periods and perhaps giving her a certificate stating that she was pregnant, of which she might make unscrupulous use. The diagnosis of pregnancy was less difficult when the Ascheim-Zondek test was available, and x-ray examination cleared up any doubt; but every precaution should be taken, especially in country districts where it was impossible to perform the usual tests. A great deal was to be gained by waiting; there was no need to rush to a decision in these cases. To determine the duration of pregnancy, which was often important from the legal point of view, was also difficult. If it could legitimately be done, in the case of a recently married couple, it seemed desirable to suggest prematurity of the infant rather than to cast a stigma. The determination of post-maturity also gave rise to difficulties, though here the radiologist could nearly always tell whether the child was post-mature.

As to paternity, what possible means were there of proving that a certain man was the father of the child? Blood-grouping was not of much use. The supposed father might refuse to have his blood examined, and the mother could refuse to have her blood grouped. On the debated question of sterilization of the woman, it was enough, in strict law, to have her consent, but it had to be remembered that the operation was denying to the husband the possibility of having more children, and it was always advisable to secure the husband's consent in writing, though legally this might not be necessary. Dame Louise McIlroy also mentioned the difficulty of giving an opinion in nullity suits. The appearance of the hymen might not furnish conclusive evidence of loss of virginity; it might be due to previous vaginal examination, the use of douching, or the placing of tampons in the vagina at menstruation.

Finally, she spoke of the need for maintaining strict confidence as between doctor and patient. If the patient did not desire her doctor to say what was the matter with her, no court of law should be able to extract it from the doctor. It was always most important to secure the consent of the patient both to examination and to the making of a report. It was sometimes difficult, when the husband was paying the fee and was naturally expecting to be told what was the matter with his wife; all that could be done in such cases was to give the report to the woman and to advise her to tell her husband.

British Medical Association

ANNUAL REPRESENTATIVE MEETING, 1946

The Annual Representative Meeting of the British Medical Association will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Tuesday, July 23, and succeeding days.

RESOLUTIONS BY DIVISIONS AND BRANCHES

PRELIMINARY

A Charter for Health

Amendment by PLYMOUTH: That the publication entitled *Charter for Health* should be subsidized by the B.M.A. and sold to the public at a considerably reduced price.

National Health Service Bill

Motion by DORSET: That in the opinion of this meeting, if the British Medical Association recommends the profession not to accept service under the proposed National Health Service, the B.M.A. should also recommend doctors not to give any certificate to their patients which could enable them to claim sick pay.

Motion by SHEFFIELD: That in the opinion of this meeting it is essential that the Representative Body give a lead to the profession as a whole, on procedure for the conduct of practice in the event of the Health Service Bill in its present form becoming law.

HOSPITALS

"General Practitioner" Hospitals

Amendment by TROWBRIDGE: That this meeting views with concern the implications of paragraph 15 of Appendix I of the Council's Report; and urges the Council to modify the policy therein outlined, and to assist rather than discourage the further development of general practitioner hospitals in small provincial towns.

Amendment by MID-CHESHIRE: That the severe limitations in scope suggested for the general practitioner hospitals be not approved as these smaller hospitals are the backbone of the practice of medicine and surgery in rural and semi-rural areas.

Amendment by REIGATE: That the Report on "General Practitioner" Hospitals be approved provided that no measure be taken to limit the freedom of judgment and action of a practitioner. A practitioner must not be prevented from carrying out such work as he is capable of efficiently performing provided that he fulfils standards required under the present N.H.I.

Motion by PADDINGTON: That this meeting welcomes the Minister's sympathetic attitude towards closer co-operation between the general practitioners and the hospitals.

Motion by WORCESTER AND BROMSGROVE: That this Representative Meeting commends the Council on its report on general practitioner hospitals and trusts that this will be kept much in mind and believes that any administrative difficulties will be overcome.

Chronic Sick

Motion by PLYMOUTH: That in the opinion of this meeting the problem of caring for the chronic sick would be appreciably minimized if more active steps were taken to attract women to nursing and work of a domestic nature.

Motion by WILLESDEN: That this meeting is of opinion that inadequate provision is at present made for the treatment and care of the elderly and/or infirm, and instructs Council to set up a committee to investigate the whole position and report.

Motion by WORCESTER AND BROMSGROVE: That this meeting considers that special provision should be made for the care of the elderly and infirm who are unable to receive attention in their homes and who do not require hospital treatment.

GENERAL PRACTICE

Fees for Life Insurance Examinations

Amendment by PLYMOUTH: That until the term "Modified Examination" is defined, this meeting does not agree to a modified fee for Life Insurance Examinations.

Private Practice under 100% National Health Service

(Para. 30 of Annual Report)

Amendment by WORCESTER AND BROMSGROVE: That sub-section 2 be approved, subject to the ethical rules of the profession.

Amendment by LIVERPOOL: That sub-section 4 be amended by the deletion of the words "except in an emergency."

Amendment by WORCESTER AND BROMSGROVE: That sub-section be amended (a) by the insertion of the words "or while the patient is temporarily resident away from home" after the words "exec in an emergency," (b) by the substitution of the words "as agreed with the local executive council" for the words "as agreed by the local executive council."

Amendment by LIVERPOOL: That sub-section 5 be amended by the substitution of the words "two weeks" for the words "as short as possible."

Amendment by LIVERPOOL: That sub-section 6 be deleted.

Para. 30 of Annual Report is as follows:

1. That the principle of collective responsibility obtaining under the present N.H.I. scheme should not hold in the new service.

2. A general practitioner who contracts to give service under the National Health Service should be entitled as a right to accept patients as private patients. He should be entitled to treat private any person who is not on his own list or that of any partner, assistant, whether on the list of another doctor or not. Where a practitioner has accepted a patient as a public service patient he shall be precluded from charging fees for any service he renders that patient as a general practitioner.

3. A practitioner should be free to give such certificates, prescriptions, orders, or reports to his private patients as would secure for them any of the statutory benefits under the National Health Service.

4. Except in an emergency a general practitioner should not be required to treat as a public service patient any person: (a) not on his list; (b) who resides outside the area of his practice (as agreed by the local executive council).

5. A general practitioner should have the right to refuse to accept any person as a public service patient without giving reason. Similarly, a patient should have the right, without giving reasons, to ask for the withdrawal of his name from a practitioner's list. A general practitioner should be entitled to ask for the removal of a patient from his list without giving reasons, but he should give notice of his intention to do so to the patient, and the patient should be allowed to continue treatment for a limited period until the patient is accepted by or is allocated to another practitioner. The interval for change of doctor (other than by consent) should be as short as possible.

6. Where a public service patient on a doctor's list desires to be treated privately by that doctor, the patient should be required to give notice of his intention to do so to the doctor, and the doctor should be required to give due notice of the withdrawal of his name from the doctor's list.

7. A member of a partnership who elects to remain outside the service should not treat as a private patient any patient on the list of another partner in the firm. He should be regarded as a deputy in these circumstances; but this should not preclude him from treating as private patients those seeking his advice as a consultant specialist.

8. Public general practice should be held to mean the treatment by the practitioner of persons on his list at the place appointed for the purpose—i.e., the health centre, the doctor's surgery, or the patient's home—but where public practice is conducted from the health centre private practice should be conducted at some place other than the health centre.

9. A patient should not be required to give official notification of his intention to obtain his general practitioner service privately. The doctor may obtain for his own use such evidence as he thinks desirable.

Motion by REIGATE: That, in agreement with the decisions reached at the S.R.M. in May, 1946, this meeting considers that it is essential that the financial and administrative arrangements should be such that neither doctor nor patient is penalized if he chooses to remain outside the service.

Motion by KENSINGTON: That Council be requested to give urgent consideration to the methods by which private practice may be maintained in the future.

Supplementary Clothing Coupons

Amendment by HARROW: That the Council be instructed to press the Board of Trade to take such action as will improve the supply of operating gowns, surgeons' coats and overalls, so that an issue of supplementary clothing coupons can be made with which to obtain these articles.

Amendment by WORCESTER AND BROMSGROVE: That this meeting urges the Council to press further for a supply of supplementary clothing coupons for surgeons' gowns.

Admiralty Surgeons and Agents

Motion by SOUTH ESSEX: That the Council be asked to take action in order that the scale of fees paid to Admiralty Surgeons and Agents be revised in order to conform with the revised fees now paid by the Service Departments to civilian medical practitioners in accordance with para. 42 of Council's Report.

NATIONAL HEALTH INSURANCE

Report of Spens Committee

Motion by DARLINGTON: That, in view of the findings of the Inter-Departmental Committee on Remuneration of General Practitioners, and particularly in the light of its findings as evidenced

Para. 19 of the Committee's report, and the reinforcement of these findings in Sir Ernest Fass's rider to the Report—para. 4 of the rider—this meeting is of opinion that the consideration of an appropriate capitation fee since 1939 should be considered "from the ground up"; that this should be done immediately; and instructs Council to proceed with negotiations with the Ministry of Health on the matter with all speed.

Motion by PADDINGTON: That this meeting regrets that in spite of the general raising of salaries and remuneration in the community, the remuneration of insurance practitioners has so far been increased from 9s. to 10s. 6d. only.

SPECIAL PRACTICE

Consultants and Specialists and a National Health Service

Amendment by HARROW: That the following words be added to the section (iii): "unless the consultant himself wishes to call in another consultant from outside the district."

Subsection (iii) of para. 52 is as follows:

Consultants should be available under the scheme for domiciliary work only within the district they serve.

Examination of Pensioners referred to Specialists

Amendment by LANCASTER: That the first paragraph be referred back to Council for further consideration.

ORGANIZATION

Subsistence Allowance of Representatives

Motion by OLDHAM: That the Representative Meeting requests the Council to consider again the question of payment of expenses on a standard scale (for example, the Whitley Council scale) to representatives when attending a Representative Meeting.

PUBLIC HEALTH

Salaries in the Public Health Service

Amendment by SHEFFIELD: That this meeting expresses dissatisfaction with the result of negotiations on the interim revision of the Askwith Scale and considers that the lives upon which these negotiations were conducted should not serve as a precedent for any future negotiations.

BRITISH MEDICAL JOURNAL

Motion by PADDINGTON: That this meeting urges that the *British Medical Journal* should contain more authoritative regular articles on "Recent Advances and Treatment of Diseases" for the general benefit of practitioners.

OTHER MOTIONS

Study Groups

Motion by EAST HERTS: That this meeting instructs the Council to advise every Division to establish, where not already in existence, one or more local study groups, in order to secure the wider discussion of medico-political problems, to ensure a more intimate sharing of views, and to attract the active co-operation of more medical men and women in the formation of policy.

Postgraduate Study

Motion by PADDINGTON: That this meeting wishes to emphasize the crying need of general practitioners for postgraduate study to keep abreast of the rapid advances in diagnosis and treatment; all the more so as the opportunities were few and far between during the war.

Alien Practitioners

Motion by SHEFFIELD: That alien medical practitioners who have served as such in the British or Allied Forces and who are now unable to return to their native country should be allowed to practise in the United Kingdom provided they conform with such regulations as may be required under the Medical Registration Acts.

The Nurses Bill (Northern Ireland), which has just been published, provides for a *Roll* of assistant nurses to be started and kept by the Joint Nursing and Midwives Council and for rules to be drawn up governing the training and experience necessary for admission to the *Roll*. There is to be an Assistant Nurses Committee of the Joint Nursing and Midwives Council. Any person using the title "nurse" who is not a registered or enrolled assistant nurse is subject to certain penalties, and no one may carry on an agency for supplying nurses without a licence from the Ministry of Health and Local Government.

Correspondence

N.H.I. Capitation Fee

SIR,—In the past attention has been drawn by letters in your *Journal* to the fact that the capitation fee paid under the National Health has not represented an economic return for services rendered, and that this service has in fact been subsidized by the private patient or by the private income of the doctor concerned. This view of the situation has now been confirmed by the Spens Committee, and the Winchester Division of the British Medical Association at its last meeting adopted the following resolutions:

This Division, having considered the Spens Report, notes:

(1) That the Spens Committee considered the capitation fee paid in 1939 to have been, and still to be, grossly inadequate; and (2) That National Insurance Medical Service has been subsidized by the private practice, and/or the private incomes of the general practitioners.

Arising from these observations the Winchester Division requests this meeting of the Representative Body to instruct the Council of the B.M.A.: (1) To demand an immediate increase of the N.H.I. capitation fee, with compensation to date back to the time when the B.M.A. first put forward its application for an increased rate. (2) To re-establish confidence in the integrity of the State in its contracts with the medical profession, to demand compensation from the State for its previous unilateral breach of contract whereby the income level of those to be eligible for medical benefit was raised arbitrarily, to the prejudice of the general practitioner already underpaid for his N.H.I. services. (3) That in any negotiations for capital repayment by the State regard must be had to the undervaluation of the goodwill due to this uneconomic N.H.I. capitation fee.

Our meeting felt very strongly that these points should be placed before the Government immediately, and it was hoped that other Divisions would give their vigorous support to them.—I am, etc.,

Winchester.

C. J. PENNY.

Feeding the Invalid by Permission

SIR,—Can you or your readers suggest a way of bringing home to the Ministry of Food that patients are not ill to a time-table; that a personal knowledge of patients is half the battle in treatment; and that the interpretation of rules by clerks who are not versed in medical matters is often a bar to the satisfactory treatment and progress of patients. The following cases will illustrate the situation.

1. A female infant suffering from coeliac disease was discharged from hospital on diet and advised to have a special issue of one egg, one banana, and 2 oz. liver per day, since she had been stabilized on these items in hospital. Four certificates and one statement of the case have been issued; the child is still without the special items after a fortnight.

2. A man of middle age had haematemesis during the night of June 4-5. The call to see him was received late in the morning of June 5. A food certificate was immediately issued and his wife instructed to take it to the food office the same afternoon, so that the patient might have available the necessary milk to commence diet when the time came. The wife reported that she could not have the milk supplied till the next week—and that with a long holiday week-end in between.

3. A boy aged 12 has been producing urinary calculi since the age of 3 months, and is so far as possible on a restricted calcium diet. An application was made for fruit juices to be made available for this case, action being taken in accordance with Med. 2, para 19. Application was made weeks ago: Maybe the Ministry has added it; anyway it has not reached yet.

Surely, Sir, the profession has not fallen into such disrepute that its certificates are not now recognized? One hears disturbing reports of the fate of foodstuffs sent to other countries: is it not time that we began to consider the needs of our own people?—I am, etc.,

Woolwich, S.E.18.

H. J. FENN.

Domestic Help for Doctors' Wives

SIR,—Thousands of doctors' wives—my own among them—have for some years past been putting up a gallant struggle, tied to the telephone and doorbell except when, as a pleasant change, they stand in queues while a very part-time woman "holds the

fort." Yet they manage, these unsung heroines, to keep smiling while looking after their children with one hand, doing the housework and often the bookkeeping of an unbusinesslike husband with the other, and even having an occasional baby. We ourselves start the day by getting in the sticks and coal (if any), cleaning the boots, looking to see what else has given way in the car, and performing many domestic chores for which a long and expensive education has so admirably fitted us; some of us have acquired a well-nigh perfect technique at the sink.

The question of "direction" to domestic service is, of course, a difficult one from the point of view of the employer and employee. From a Red Cross Hospital of which I was M.O. for three years but which had to close down for lack of domestic staff, in addition to the "would not works" who resented direction, we had to sack a prostitute, a convicted thief, a drunkard, and a Lesbian—an interesting criminological museum supplied by the Labour Exchange. That the Ministry of Health recognizes it is not entirely unconcerned is proved by the fact that various priority schemes have been evolved—on paper. Either the Ministry has not the influence necessary to co-ordinate these schemes with those of other Departments or it has just "folded up." In this particular area the two or three hard-pressed doctors' wives watch all available part-time domestic labour absorbed by an E.M.S. Hospital and a lunatic asylum. The scheme for importing domestic help from Ireland came to grief in our case because, although arrangements were complete, the immigration regulations were changed at the last minute. Now there is a new plan for importing Danish domestics for hospitals and doctors, but the Labour Exchange informs us that we have to know of a specific individual willing to come.

It is high time that the Ministry recognized the debt it owes to the G.P.'s wife for her share in enabling him to do the work (for which, at any rate in the case of panel patients, it has made itself responsible) with anything like efficiency during a difficult period. Let it therefore produce a scheme and get down to implementing it, to the relief of these overworked wives of ours. Until it does so my telephone and doorbell will not be attended whenever and for such periods as my wife wishes to be out on business or pleasure. Emergency panel calls and private, midwifery, or accident calls will be unheard, as in other doctors' houses also. When health centres are established in every village to which our telephones and waiting rooms are transferred, our wives will be able to lead an existence free from care. And they will have earned it—bless them.—I am, etc.,

Arlesey, Bedfordshire.

M. L. FARMER.

B.M.A. LIBRARY

The following books were added to the library during March and April, 1946:

- Annessa, G.: *Vita e Cancro*. Vol. I, Parts 1 and 2. 1945.
Baumgartner, J. G.: *Canned Foods: An Introduction to their Microbiology*. Second edition. 1946.
Beckman, H.: *Treatment in General Practice*. Fifth Edition. 1945.
Bicknell, F., and Prescott, F.: *The Vitamins in Medicine*. Second edition. 1946.
Blacker, C. P.: *Neurosis and Mental Health Services*. 1946.
Boppe, M.: *Traitement Orthopédique de la Paralyse Infantile*. 1944.
Brachet, J.: *Embryologie Chimique*. 1944.
Burbury, W. M., et al.: *An Introduction to Child Guidance*. 1946.
Cameron, A. T., and White, F. D.: *A Course in Practical Biochemistry for Students of Medicine*. Fifth edition. 1946.
Chamberlain, E. N.: *ABC of Medical Treatment*. 1946.
Clement, F. W.: *Nitrous Oxide-Oxygen Anaesthesia: McKesson-Clement Viewpoint and Technique*. 1945.
Cowan, A.: *Refraction of the Eye*. Second edition. 1945.
Crowdy, E. V.: *A Textbook of Histology: Functional Significance of Cells and Inter-cellular Substances*. Third edition. 1945.
Dunlop, D. M., Davidson, L. S. P., and McNee, J. W.: *Textbook of Medical Treatment*. By Various Authors. Fourth edition. 1946.
Farrell, J. T.: *Roentgen Diagnosis of Diseases of the Gastrointestinal Tract*. 1946.
Fishbein, M. (Editor): *Medical Uses of Soap: A Symposium*. 1945.
Frazer, W. M., and Stallybrass, C. O.: *Textbook of Public Health*. Eleventh edition (formerly by Hope and Stallybrass). 1946.
Ghosh, B. N.: *A Treatise on Hygiene and Public Health: With Special Reference to Tropics*. 1945.
Gifford, S. R.: *A Textbook of Ophthalmology*. Third edition. 1945.
Goldthwait, J. E., et al.: *Essentials of Body Mechanics in Health and Disease*. Fourth edition. 1945.

- Govaerts, A.: *Médecine, Education physique et Sports*. 1945.
Greisheimer, E. M.: *Physiology and Anatomy*. Fifth edition. 1945.
Grinker, R. R., and Spiegel, J. P.: *Men Under Stress*. 1945.
Heath, C. W.: *What People Are: A Study of Normal Young Men*. 1945.
Herdson, R. F.: *An Introduction to Essential Hypertension*. 1946.
Hewer, J. L.: *Our Baby: For Mothers and Nurses*. Revised by Scott-Brown, M. Twenty-third edition. 1945.
Hill, A.: *Art versus Illness: A Story of Art Therapy*. 1945.
Höber, R.: *Physical Chemistry of Cells and Tissues*. 1945.
Horder, Lord: *Health and Social Welfare, 1945-1946*. 1946.
Johnstone, R. W.: *The Midwife's Textbook and the Principles and Practice of Midwifery*. 1946.
Leger, L., and Olivier, C.: *Entorses du Cou-de-Pied et entorses du Genou*. 1945.
Lindner, R. M.: *Rebel Without a Cause: The Hypoanalysis of a Criminal Psychopath*. 1945.
Lowson, J. M.: *Textbook of Botany*. Revised by Howarth, W., and Warne, L. Ninth edition. 1945.
Lyman, R. A.: *American Pharmacy: Fundamental Principles and Practices: Pharmaceutical Preparations*. 1945.
McCulloch, E. C.: *Disinfection and Sterilization*. 1945.
MacNalty, Sir Arthur S., and Mellor, W. F.: *Health Recovery in Europe*. 1946.
Mainland, D.: *Anatomy as a Basis for Medical and Dental Practice*. 1945.
Mallet-Guy, P., and Maillat, P.: *Hypoglycémies Spontanées: le Traitement Chirurgical de l'Hyperinsulinisme*. 1944.
Marshall, F. H. A., and Halnan, E. T.: *Physiology of Farm Animals*. Third edition. 1945.
Montagu, M. F. A.: *Man's Most Dangerous Myth: The Fallacy of Race*. Second edition. 1945.
Mustard, H. S.: *Government in Public Health*. 1945.
Penicillin Therapy and Control in 21 Army Group (Published under the direction of the Director of Medical Services, 21 Army Group). 1945.
Rowe, A. H.: *Elimination Diets and the Patient's Allergies*. Second edition. 1946.
Rypin's Medical Licensure Examinations: Topical Summaries, Questions and Answers. Fifth edition. Revised by Bierring, W. L. 1945.
Sadler, W. S.: *Modern Psychiatry*. 1945.
Selling, L. S.: *Synopsis of Neuropsychiatry*. 1945.
Southmayd, H. J., and Smith, G.: *Small Community Hospitals*. 1944.
Tavernier, L., and Godinot, C.: *Traitement Chirurgical de l'Arthrite Séche de la Hanche*. 1945.
Thurel, R.: *Traumatismes de la Moelle et des Racines: Sciatique Traumatique*. 1944.
Trowell, H. C.: *Diagnosis and Treatment of Diseases in the Tropics*. Second edition. 1945.
White, M. M.: *The Symptomatic Diagnosis and Treatment of Gynaecological Disorders*. Second edition. 1946.

H.M. Forces Appointments

ARMY

- Major-Gen. G. Wilson, C.B., C.B.E., M.C., late R.A.M.C., has retired on retired pay.
Col. (now Major-Gen.) W. Foot, M.C., to be Acting Major-Gen. Col. (Acting Major-Gen.) R. W. Galloway, C.B., C.B.E., D.S.O., late R.A.M.C., to be Major-Gen.
Col. R. G. Shaw, O.B.E., M.C., late R.A.M.C., has retired on retired pay, and has been granted the honorary rank of Brig.
Lieut.-Col. D. H. Murray, from R.A.M.C., to be Col.

ROYAL ARMY MEDICAL CORPS

- Major (War Subs. Lieut.-Col.) V. C. Verbi, O.B.E., and Major H. C. Benson to be Lieut.-Cols.
Short Service Commission.—War Subs. Major W. Thomson has relinquished his commission, and has been granted the honorary rank of Major.
Capt. C. D. Salmond has been placed on the Half-pay List on account of disability.
Short Service Commissions.—Capt. H. Foster, D. B. Watson, D. W. Moynagh, R. M. Vanreenan, and J. H. Brodie have been appointed to permanent commissions.
Lieut. (War Subs. Capt.) C. C. Petrovsky, from Emergency Commission, to be Lieut., and to be Capt.
L. H. Pimm to be Lieut.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

- War Subs. Lieut.-Col. C. Donald, O.B.E., has relinquished his commission on account of disability, and has been granted the honorary rank of Col.
War Subs. Majors A. Gould and H. N. Levitt have relinquished their commissions, and have been granted the honorary rank of Lieut.-Col.
Major D. E. Jones has resigned his commission.
War Subs. Capt. E. L. Carter, A. A. Alderice, and W. Edgeworth have relinquished their commissions, and have been granted the honorary rank of Major.

War Subs. Capt. G. A. Wray and J. A. P. Evans have relinquished their commissions on account of disability, and have been granted the honorary rank of Major.

War Subs. Capt. A. T. Rogers and J. M. Mervis have relinquished their commissions, and have been granted the honorary rank of Capt.

War Subs. Capt. A. M. B. Tompkin, I. Lipman, W. M. Rich, A. C. Price, and J. Scott have relinquished their commissions on account of disability, and have been granted the honorary rank of Capt.

War Subs. Capt. L. Tajkef and S. Konarski have relinquished their commissions.

War Subs. Capt. D. F. Mehta and M. E. Winters have relinquished their commissions on appointment to the I.M.S.

To be Lieuts.: N. H. Ashton, D. A. N. Barran, A. Batty-Shaw, F. Cullis, T. M. J. d'Offay, W. J. L. Francis, W. M. Fyfe, E. Gilderdale, M. J. T. Hewitson, K. P. Higgs, J. L. Kelly, P. F. Lucas, A. B. G. Laing, W. G. Merriman, J. A. Martinez, A. G. Melfrose, W. C. Menzies, J. L. McConchie, I. MacDonald, R. J. McIlroy, N. A. Punt, C. J. Radway, G. H. Rees, P. L. Rhodes, T. A. Richards, R. E. Riley, R. Saffley, A. T. Sandison, R. H. Sewell, A. A. Shein, J. Simpson, A. G. Stansfield, A. A. B. Swan, T. J. Thompson, W. M. Van Essen, L. Vogel, D. Wilkes, J. R. F. Williams, E. Wood, J. F. B. Wyper, N. H. Rutledge, P. E. Baldrey, A. R. Beaton, A. R. Buckley, A. F. Catto, J. M. Fabricius, N. R. Fenton, P. B. S. Fowler, A. St. F. Henley, G. L. G. Hine, T. W. Howat, A. W. R. Jenkins, N. G. Johnston, G. F. Jolly, G. D. Lees, R. Majdalany, M. Usiskin, J. M. Walshe, P. Watson, and W. Tausig.

WOMEN'S FORCES

EMPLOYED WITH R.A.M.C.

War Subs. Capt. (Mrs.) L. V. Rosenbloom, (Miss) M. M. Shepherd, (Miss) A. E. Anderson, (Miss) H. O'Hara, and (Miss) E. L. Peters have relinquished their commissions, and have been granted the honorary rank of Capt.

War Subs. Capt. (Miss) M. M. Stern and (Miss) O. Bernstein have relinquished their commissions.

Mrs. Clara Lee and Miss Viola E. Shafto to be Lieuts.

ROYAL AIR FORCE

Gp. Capt. W. G. L. Wambeck has retired and is re-employed. Squad. Ldr. (Temp. Wing Cmdr.) J. H. Cullinan has reverted to the Retired List, retaining the rank of Wing Cmdr.

Squad. Ldrs. (Temp.) R. McP. Cross and H. W. Whittingham to be War Subs. Squad. Ldrs.

J. P. Sewell to be Fl. Lieut. (Permanent).

Flying Officer H. A. N. Hamersley to be War Subs. Fl. Lieut.

ROYAL AIR FORCE VOLUNTEER RESERVE

Fl. Lieut. (Temp. Squad. Ldr.) C. L. Clinton-Thomas has resigned his commission, retaining the rank of Wing Cmdr.

Fl. Lieut. (Temp. Squad. Ldr.) O. H. Sennett has resigned his commission, retaining the rank of Squad. Ldr.

Fl. Lieuts. (Temp. Squad. Ldrs.) W. Mirkin and K. C. Donovan have relinquished their commissions on account of medical unfitness for Air Force service, retaining the rank of Squad. Ldr.

To be Squad. Ldrs. (Emergency): N. W. Nisbett, D. Barton, V. H. Bowers, D. P. V. Meurs, R. A. Piachaud, W. T. H. Waies, W. McKechie, and W. M. Martin.

Fl. Lieuts. C. R. Naish, H. A. Wilson, and G. I. Davies have relinquished their commissions on account of medical unfitness for Air Force service, retaining their rank.

Fl. Lieut. P. R. Henson has relinquished his commission on reversion to the Southern Rhodesian Forces.

Flying Officers C. M. Shafto, R. W. Barter, L. N. Cook, B. V. Earle, W. A. Eggeling, G. W. Garland, F. G. Grant, R. K. Hay, D. T. Kay, M. S. Miller, W. A. Robson, H. O. C. Gammeltoft, W. L. Burrows, V. Altmann, A. Brown, D. W. R. Lyle, J. D. G. Turner, and A. B. Sclare to be War Subs. Fl. Lieuts.

To be Fl. Lieuts. (Emergency): T. A. Copp, K. G. Cumming, K. A. Butler, B. R. Little, M. G. Marks, St. J. G. O'Connell, G. R. Fisk, D. O. Williams, T. A. Grimson, H. Buckley, I. M. Hill, A. M. Howard, H. E. Vickers, R. F. Welch, and S. E. McConnell.

Flying Officer M. L. Van Baden has relinquished his commission.

To be Flying Officers (Emergency): A. A. Cohen, M. Evans, I. H. Foy, W. Hamilton, J. T. Hutchison, D. Leigh, D. Macleod, A. R. Makey, J. Rubin, P. H. Thomas, P. West, T. A. Evershed, J. J. Flemminger, D. P. Greaves, B. A. J. C. Gregory, D. G. Jones, W. K. Jones, B. H. McCracken, N. B. Malleson, S. H. Manners, J. H. Murphy, P. R. Ormrod, I. A. Porter, T. M. Roulston, W. Nick. Sandeman, G. H. Seale, D. W. S. Sheldon, J. R. Anderson, M. M. Andrew, G. M. Burns, A. Campbell, D. L. Davies, R. T. D. Esmond, P. Foster, J. Freedman, W. J. Jenkins, R. Just, G. McL. McGillivray, T. P. Magee, I. H. Mercer, I. S. Mudie, W. J. W. Sharrard, L. Shuck, E. Silver, R. D. Simpson, C. J. W. Soutar, R. H. Stillman, J. B. Stirling, H. F. Sugden, H. D. Symon, J. M. Thomas, D. K. M. Toye, J. D. Willins, R. R. Wilson, R. Vereker, J. D. Abbott, W. C. Adam, E. M. Allen, J. A. Cameron, J. A. Chalmers, J. D. Chalmers, R. S. Crow, L. D. Davidson, P. S. Dearden, H. Debovitch, J. Edwards, T. Ellis, D. Emslie-Smith, D. I. Ferguson, A. G. C. Findlater, J. K. Fleming, J. A. Gavin, C. Gething, H. S. Heddie, W. N. Kingsbury, J. R. McPherson, J. B. Maxfield, P. F. New, J. C. Reid, J. B. Russell, D. A. Sherman, T. J. Thomson, and W. S. T. Thomson.

WOMEN'S FORCES

EMPLOYED WITH THE MEDICAL BRANCH OF THE R.A.F.

Flying Officers C. P. Cathcart, M. K. Keech, and J. S. Deans to be War Subs. Fl. Lieuts.

THE INDIAN MEDICAL SERVICE

Lieut.-Col. A. N. Sharma to be Col.

Majors F. M. Collins and D. P. Lambert to be Lieut.-Cols.

EMERGENCY COMMISSIONS

Major E. G. Michelson has relinquished his commission on account of ill-health, and has been granted the honorary rank of Major.

Capt. P. N. Swift has relinquished his commission on account of ill-health and has been granted the honorary rank of Capt.

Association Notices

GROUP OF ANAESTHETISTS

Notice is hereby given of the formation by the Council of a Group of Anaesthetists, which shall be composed of all those members of the Association who are engaged predominantly in the practice of anaesthetics. Members of the Association who claim to conform to this definition, including those serving with H.M. Forces, are requested to complete and return the appended form to the Secretary, B.M.A. House, Tavistock Square, W.C.1. The first general meeting of the Group will be held at a date to be subsequently announced in the *Supplement*.

CHARLES HILL.

Secretary.

June 22, 1946.

BRITISH MEDICAL ASSOCIATION

GROUP OF ANAESTHETISTS

FORM OF APPLICATION FOR MEMBERSHIP

To the Secretary,
British Medical Association,
B.M.A. House, Tavistock Square,
London, W.C.1.

I wish to apply for membership of the Group of Anaesthetists. I am a member of the Association and am engaged predominantly in the practice of anaesthetics.

Signed.....

Address.....

Date.....

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

Diary of Central Meetings

JULY

11, Thurs. Journal Committee, 10 a.m.

Branch and Division Meetings to be Held

SOUTHERN BRANCH.—At Polygon Hotel, Southampton, Wednesday, July 24, 2.30 p.m., 70th annual general meeting. Address by Dr. J. D. Lendrum: Miniature Mass X Ray.

Meetings of Branches and Divisions

PLYMOUTH DIVISION

Dr. G. D. KERSLEY chose the subject of "Occupational Therapy and Rehabilitation" for his B.M.A. lecture to the Plymouth Division on March 23, when Mr. C. F. Mayne presided. Occupational therapy, he said, might be described as "the application of occupations, crafts, and trades for their therapeutic effect on the physically and mentally unwell," while the word rehabilitation denoted

the complete process of treatment and training necessary to make the disabled fit to be of the utmost service to the community. As far back as the 2nd century A.D. Galen maintained that occupation was Nature's best physician, but this maxim was adopted only as a vague principle and only by the very wise until the later stages of the 1914-18 war. Good progress was made then, but afterwards little general interest was taken in the subject until 1940, though in 1936 the British Association of Occupational Therapy was founded. In 1940 the Army started a school for occupational therapy at Taunton, and later the E.M.S. asked the Dorset House School, then just moved from Bristol to Bromsgrove, to take over the training of technicians for its service.

Describing the establishment of an occupational therapy service in the Army, Dr. Kersley said that over-seas the diversional value was much greater than in this country, because of need for fostering morale in the convalescent who could not go on sick leave. Staffing had been possible only at hospitals with orthopaedic or psychiatric centres and at the convalescent depots. Here masseurs, and later masseuses, trained in occupational therapy at Taunton were employed, but at all hospitals there were diversional occupation centres staffed by sisters and nursing orderlies who had been trained in crafts at schools set up for the purpose in Egypt and Palestine. Treatment was prescribed by the physician in charge of the case on a special form providing space for diagnosis and indications and contra-indications, and the patient's capabilities and wishes were translated by the occupational therapist into a craft, a particular project and the tools being selected with a view to fulfilling the wishes of the doctor and at the same time gaining the patient's co-operation. At the hospitals soft toy-making, leather work, and embroidery were very popular, while at the convalescent depots and special centres the occupations were carpentry, metal and leather work. Improvisation and use of salvage were the order of the day; for instance, at one depot the whole lighting system was made by the occupational therapy department from parts of captured enemy vehicles. The department, once started, should be almost self-supporting, because the patient, if he wished to retain the article he had made, usually paid the cost price of the materials plus 10% for wastage, and other articles were sold.

Occupational therapy, as compared with remedial gymnastics, had the advantage that the exercise was carried out in a natural way, was spread over a longer period with the minimum of that fatigue engendered by boredom, and at the same time concentration on the disability was avoided. Moreover, it might be used to assess the patient's readiness to return to his normal duties. Co-ordination between occupational therapy, re-vocational training, and sheltered workshops and settlements had been attempted at the Ministry of Labour's Rehabilitation centre at Egham where, during the final stages of treatment, the patient was observed in the workshops, to decide what occupation he was mentally and physically capable of after discharge or the Government Training Centre to which he should be sent. If occupational therapy was used in its broadest sense and carried to its natural conclusion in this way, concluded Dr. Kersley, it might act as a link, helping to hold together the whole rehabilitation programme.

ABERDEEN DIVISION

"Population" was the subject of a B.M.A. lecture given by Mr. RICHARD TITMUSSE to the Aberdeen Division in the Medico-Chirurgical Hall, Aberdeen, on April 9. He said that 100 years ago one in every five confinements was an eighth or subsequent pregnancy; in a London Hospital in 1939 over 5% of the cases were first pregnancies and only 2% were eighth or subsequent pregnancies. This constituted a social revolution without precedent—i.e., in less than three generations sex had been completely separated from parenthood. It was the rate of change not only in fertility but in economics that created the crisis of modern society. Man had not diminished in procreative power—that is, the change was voluntary not involuntary.

The birth rate started to decline in the years 1873 to 1896 and continued to decline until the first World War. In 1919-20 there was a sharp rise, but in 1923—a significant year in fertility history—it fell below replacement rate—that is, one mother was not being replaced by a potential mother. In 1933 it reached its lowest level. After 1941 there was a rise to 1944, when a decline set in again. There was generally thought to be a big gap between the fertility rate of rich and poor. This gap was widest in 1911, when the fertility rate was 80% higher in the working class than in the professional and upper classes. The fall since 1911 was due to increased knowledge of contraception among the working classes; by 1930 the fertility rate among miners was lower than among mine owners and managers. This could explain the man-power shortage in the mines to-day.

During the war there had been no fall in the birth rate; this was probably due to the increase in marriages—an artificial inflation of the birth rate. In the same period there was no real increase in illegitimacy; before 1939 30% of first pregnancies followed pre-nuptial conceptions. There was, however, a remarkable decline

in third-plus births, and the fertility of women under 30 continued to decline throughout the war. A provisional analysis of the war years showed (1) fewer childless couples; (2) many fewer unmarried people of marriageable age; (3) no fundamental change in decline in the birth rate, which was below replacement rate, and there was a potential for a further fall.

Assuming the birth rate remained at its present level, the population in England and Wales within 30 years would have fallen by 2,000,000 and the number of people over 65 would have risen by 2,000,000. The working population between 15 and 64 would be smaller by 5,000,000.

For the next 50 years we were to see an ageing of the working classes. This was more important than any real reduction in numbers. The same was generally true, too, of Western Europe and the Dominions—that is, a problem of the white people.

In 1919 the population of U.S.S.R. represented half the population of Europe; by 2,000 A.D., if present fertility rate continued, it would be 5% more than the rest of Europe.

Concluding, Mr. Titmuss said that voluntary parenthood was an innovation which was transforming population problems. Western civilization was entering upon a new phase of social development in which replacement of numbers would depend upon the production of wanted children. When children were something like a compulsory levy on married couples it did not matter to society how great the difficulties of parenthood might be. These difficulties did not prevent children from being born, although they might be condemned to a short and wretched existence. To-day, to a growing extent, people had children because they wanted them, or not at all. All the difficulties, real or imaginary, all the fears, rational and senseless, which had always beset child-bearing and rearing, had to-day, because parenthood was voluntary, been converted into obstacles to child-bearing. This new freedom of parenthood marked the end of the epoch of automatic replacement of population. Henceforth replacement would depend upon the strength of the desire for children in the community and the extent to which that desire was not thwarted by adverse circumstances. This voluntary parenthood therefore obliged society to adopt a population policy which must recognize all the obstacles to parenthood and take action to remove them.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Experimental Medicine and Therapeutics.—Tues. 5.30 p.m. Annual general meeting: Election of Officers and Council for 1946-7. Short papers by Dr. J. H. Humphrey and Dr. H. J. Jones: Penicillin Inhalation for Pulmonary Infection; Dr. F. Avery Jones and Dr. J. H. Humphrey: Management and Biochemical Studies in Severe Oliguria following Abortion.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, W.C.—Tues. 5 p.m. Dr. R. T. Brain: Electro-therapeutics.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Mon. 8.30 p.m. Discussion on Nutrition to be introduced by Dr. Simon Yudkin and Prof. John Beattie.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Tues. 5 p.m. Mitchell Lecture by Dr. P. M. D'Arcy Hart: The Search for Chemotherapeutic Agents in Human Tuberculosis during the Past 100 Years.

APPOINTMENTS

HILLIARD, L. T., M.B., B.Ch., D.P.M., Medical Superintendent, Fountain Hospital (L.C.C. Mental Health Services).

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BIBBINGS.—On June 17, 1946, at Woodhayes, Exeter, to Joyce (née Webb), wife of Ralph Bibbings, M.R.C.S., L.R.C.P., a daughter—Alison Mary.

MALCOMSON.—On June 23, 1946, at Staunton-on-Wye, Hereford, to Madeline, M.B., Ch.B., and E. W. Malcomson, M.B., Ch.B., a son—James Martin.

NISBET.—On June 22, 1946, at Twyford Nursing Home, Bognor Regis, to Mary (née Haile), wife of Squad. Ldr. N. W. Nisbet, F.R.C.S.Ed., a daughter—Lesley McGregor.

SMALLPEICE.—On June 25, 1946, at "Felcroft," Felbridge, East Grinstead, to Olive (née James), L.D.S., R.C.S., wife of John Smallpeice, M.R.C.S., L.R.C.P., a son.

MARRIAGE

WILLIAMS—PLIMPTON.—On June 24, 1946, John Llewelyn Williams, M.B., Ch.B., to Freda Joan Plimpton, both of Chirk.

DEATH

WILLIAMSON.—On June 27, 1946, at 2, Camp Terrace, North Shields, James Burtell Williamson, M.B., B.S., formerly Medical Superintendent of Preston Hospital, North Shields.

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PROGRESS OF AVIATION MEDICINE IN THE ROYAL AIR FORCE AND ITS APPLICATION TO THE PROBLEMS OF CIVIL AVIATION*

BY

Sir HAROLD E. WHITTINGHAM, K.C.B., K.B.E., LL.D.Glasg., F.R.C.P., F.R.C.S.Ed.

Air Marshal, lately Director-General of Medical Services, Royal Air Force

In choosing a subject for this lecture in memory of the immortal William Harvey, physician and biologist, I feel that it would be appropriate, so far as the Royal Air Force is concerned, to give you a brief survey of the progress made in the physiology of aviation during the war and its application to the problems of civil aviation. Though aeronautics were unknown in Harvey's day, he was deeply interested in circulatory and respiratory phenomena, and these are much involved in certain important flying problems, particularly those of high acceleration and altitude. Harvey would have rejoiced to see how the experimental method has been applied to the biology of flying and would have marvelled at the progress made in this branch of medical science, also at the way that contemporaries and the public have accepted it and recognized its importance. Although Harvey discovered the circulation of the blood in arteries and veins, his conception of the circulation of the blood to the lungs was very wide of the mark: he thought that the inspired air cooled the blood and so prevented it from boiling at ground level. We know now that the blood actually boils at altitudes of over 60,000 ft. (18,280 metres) if compression is not employed.

Harvey applied the experimental method to gain knowledge for the benefit of humanity. I propose, therefore, to try to indicate to you some of the blessings to man that have accrued from aviation medicine researches in the Royal Air Force during the war and how many of these can be applied to the physiological and psychological problems of civil aviation.

Before the war the control of civil aviation, including licensing for civil flying, was vested in the Secretary of State for Air, and a special department existed at the Medical Headquarters in the Air Ministry to deal with the medical aspects, particularly the assessment of fitness to fly. After the outbreak of war this work still continued to be done by the Air Ministry, but on a diminished scale, as civilian flying was limited to testing and delivering aircraft and to manning a mere handful of passenger aircraft. Very little research in aviation medicine was done specifically on behalf of civilian flying, as practically all new developments were confined to Service types of aircraft. A few *ad hoc* problems were dealt with as they arose, and were common to civil and R.A.F. transport aircraft alike.

With the return of peace and the formation of a Ministry of Civil Aviation the relation of Service to civil aviation medicine has altered somewhat, the position being as follows.

Present Position of Medicine as Applied to Civil Aviation

The Ministry of Civil Aviation does not possess a medical branch of its own, but relies on the extensive knowledge and experience of aviation medicine available at the Air Ministry. A close liaison is maintained between the Ministry of Civil Aviation and the Air Ministry Medical Directorate, which continues to advise generally in this country on aviation medicine matters. The Ministry of Health, however, is responsible for the sanitary control of civilian aircraft and passengers

arriving at or leaving airfields in England or Wales: the Scottish Department of Health is similarly concerned in Scotland. The Royal Air Force Medical Branch has behind it the results of many years of experience and practical observations on medical aviation problems, and has a highly skilled staff of specialists to give appropriate advice and investigate problems as they arise. In addition, the valuable services of the Flying Personnel Research Committee† and its subcommittees are available to the Ministry of Civil Aviation. This committee reports direct to the Secretary of State for Air. It consists of a body of eminent scientists representing physiology, psychology, neuro-psychiatry, neurology, hearing, vision, and statistics; it advises on researches into the medical aspects of all matters affecting personnel which might conduce to safety and efficiency in flying, including problems associated with the scientific selection of flying personnel. The Director-General of Medical Services of the Royal Air Force is an *ex-officio* member of the committee. There are executive members of Air Staff representing operations, training, and research, a medical and an executive member for the Fleet Air Arm of the Navy, and a scientific officer (non-medical) of the Ministry of Civil Aviation. Other medical and non-medical individuals representing the practical interests involved are co-opted as required. The researches carried out under the aegis of this committee are done mainly at the Institute of Aviation Medicine at Farnborough, the Psychological Department of Cambridge University, and in the field by the Flying Personnel Medical Officers of the various flying Commands.

It would not be economical to duplicate these facilities purely to give civil aviation medical independence. Moreover, even if this were considered desirable, it would be some time before a new and separate staff of medical men could attain the knowledge necessary, unless either appropriate personnel were seconded from the Air Force or retired officers were employed. It would be an asset, however, if there were a Medical Adviser in the Ministry of Civil Aviation to make liaison with the medical authorities and scientists engaged in aviation medicine matters—civil, Service, and international—and to help keep the human factor in flying in proper perspective and abreast of progress of the machine. Otherwise there will be a tendency to revert to the pre-war attitude, when man's requirements were a secondary consideration to those of the aircraft. To obtain the best results the machine and its equipment must be designed and built to fit man.

I propose now to review a few of the more pressing problems of aviation medicine that confronted the Royal Air Force during the war. To enable aircrew to handle powerful aircraft of all types it was first necessary to learn how to select the best human material by physiological and psychological

† The composition of the committee is as follows: Sir Edward Mellanby (chairman), Prof. F. C. Bartlett (psychology), Dr. E. A. Carmichael (neurology), Mr. C. S. Hallpike (hearing), Prof. A. Bradford Hill (statistics), Dr. B. H. C. Matthews (physiology), Sir John Parsons (vision), Air Vice-Marshal Sir Charles Symonds (neuro-psychiatry), Surg. Capt. R. C. May (Fleet Air Arm), Air Cdre. T. McClurkin (Chief Executive Officer), and Air Marshal Sir Harold Whittingham (Director-General of Medical Services, R.A.F.).

* Harveian lecture delivered before the Harveian Society of London at the Royal College of Surgeons on May 27, 1946.

methods; then to buttress their natural attributes by providing mechanical aids to enable them to withstand the abnormal conditions encountered at higher altitudes, in all climates, by day and night, as well as in manoeuvres of combat involving high acceleration, and to ensure, so far as was possible, survival in emergency—that is, during and after bailing out, ditching, or crashing.

Selection

The general medical examination for fitness for flying, including special tests for cardiovascular stability and neuromuscular and respiratory efficiency, introduced in 1919 and called the "Flack Physical Efficiency Tests," has proved its value. This examination is devised to ensure that those who pass are alert in body and in mind and have accurate vision, good muscle tone, quick reaction time, and a good sense of balance. These tests do not predict the individual's aptitude to learn to fly; they do, however, materially aid in the assessment of general physical fitness to withstand the stress of flying.

During the war additional tests were introduced to select personnel for particular aircrew duties; the chief of these were used to help assess power of co-ordination, cardiovascular stability, tolerance for rarefied atmospheres, night visual capacity, and hearing efficiency in aircraft.

(i) *The sensorimotor test* was devised to judge deftness of hands and feet and co-ordination between the limbs, eyes, and ears. Extensive investigations have validated this apparatus as an effective means of picking out those individuals who would fail to learn to fly on account of poor co-ordination. Approximately 25% of those who fail to learn to fly do so because of being too heavy with their hands and feet, while the other 75% fail chiefly for temperamental reasons. Unfortunately, no satisfactory test for temperamental fitness for flying has proved valid as a sole arbiter in the selection of aircrew on entry, except in the case of severe predisposition to nervous breakdown.

(ii) *The cardiovascular stability test* is done with a tilt-table to detect those who have a low diastolic blood pressure which fails to rise on change from the horizontal to the vertical position, indicating instability for aerobatics.

(iii) *The high-altitude test* is carried out in a decompression chamber, where rarefied atmospheres are simulated up to 40,000 ft. (12,180 metres), or more if necessary, at the rate of climb of a modern aircraft. This test is used to eliminate those who are liable to suffer from decompression sickness or "bends," due to the nitrogen dissolved in the body fluids coming out of solution under greatly lowered atmospheric pressure more rapidly than it can be disposed of by the lungs. It has been found that about 25% of all aircrew tested suffer from "bends" when submitted to this standard test, whereas only 10% of young fit pilots so suffer.

(iv) *The rotating hexagon test*, intended to provide a visual task simulating that performed by a night fighter pilot, has proved to be only a rough guide to the assessment of night visual capacity, owing to uncontrollable factors which affect night vision in degrees varying with the individual. The test has therefore been used only to prevent grossly night-blind individuals from being allocated to night-flying duties: this means the elimination of about 3% of candidates for flying. As regards the remainder, it is considered that the best way to approach the problem is to give them night-vision training, to teach them how to look and to perceive, and to refer to an ophthalmologist for special examination, including a scotometry test, anyone whose night vision appears to be below normal during this training.

(v) *The hearing efficiency test* is performed with a gramophone audiometer, and is designed to measure ability to receive normal speech signals in both ears as transmitted through telephones in the presence of a background of intense aircraft engine noise. This was introduced because the whisper test at 20 ft. (6.1 metres) cannot be standardized, owing to variables such as the tester's voice and noise background. It is also uncertain whether the whisper test passes individuals who would be inefficient in hearing telecommunication messages in the presence of aircraft noise. In addition to the gramophone audiometer, a pure-tone audiometer is used to test pure-tone reception at 5 frequencies (4,000, 2,000, 1,000, 500, and 250 cycles per second in either ear) and at a subjective level of 20 decibels above the normal threshold. Candidates with a threshold hearing loss greater than 20 decibels at any of the frequencies are rejected. These are good tests, but have the defect of needing special apparatus which requires to be kept standardized.

The Royal Air Force, with its vast number of aircrew, opportunities for carefully controlled observations, and accurate personal records, has been in an ideal position to assess the value of various selection tests. Such Service experience has been

used in formulating suitable tests for the licensing of civilian pilots, of whom there are two classes. The private pilot must hold a Class A licence, and pilots and other members of air crew of public transport or those employed as test pilots must possess a Class B licence, which entails passing a higher medical standard. As civil flying necessitates air travel over many countries, an international standard of medical examination for fitness to fly has been laid down by agreement of the appropriate authorities of the various countries concerned. Until January, 1946, the authority for this was the International Convention for Aerial Navigation (ICAN), with its head office in Paris. Now it is the Provisional International Civil Aviation Organization (PICAO), with headquarters in Quebec. The standard medical examination set for Class B licences is in some respects even higher than that for R.A.F. aircrew, particularly as regards physical fitness and hearing; good physical fitness is essential to help ensure against the fatigue of long flights, and perfect hearing is very important in connexion with modern radio aids to navigation for blind flying at night and in fogs. All aircrew of civilian airlines must be up to the PICAO medical standards for their particular duties (pilot, wireless operator, engineer, etc.), though extra tests and safeguards may be introduced if any company thinks fit. When stratosphere liners become the vogue a decompression test, of the lines of that in use in the R.A.F., will doubtless be included in the routine tests laid down by PICAO, in case mechanical failure or explosive decompression did occur.

There are important branches of aviation other than aircrew that have benefited from the Flying Personnel Research Committee's researches into the problems of selection of personnel. For example, psychological tests were devised to select Fighter Controllers, whose duties included direction of fighters in interception tactics and on offensive sorties, also of patrols on convoy duty. These tests proved successful in picking candidates with the intellectual capacities required, and demonstrated a strong positive relationship between test scores and operational efficiency. The adoption of these tests resulted in a reduction in training wastage of Fighter Controllers. Somewhat similar methods were applied with success to Filterers, who co-ordinated information received from a number of radar stations simultaneously to help plot the position and movements of aircraft. The results of these investigations and a study of Service Air Traffic Control Officers proved of value in determining the standard of candidates to be selected for the very important job of Air Traffic Controller in civil aviation. The recommendations were made regarding the qualities required in a Control Officer, also regarding promising sources of recruitment and selection procedure. Recently these tests have been modified and added to with a view to selecting for civil aviation the best pilots for safe flying. Here two tests deserve mention—namely, the *controlled approach* (which is an extension of the Cambridge cockpit test), to pick out those who tend to under- or over-shoot in their landing approach, and the *grid location test* (in which small objects on a grid-scale have to be accurately located), to select those with deft touch, imperviousness to turbulence in face of delay and error, and the ability to learn the sequence of controlled movements rapidly.

The wide Service experience gained with the decompression test to assess fitness for high-altitude flying has also proved of value in helping to formulate instructions for employees engaged in testing pressure cabins on the ground in aircraft work: to exclude those not suited for such pressure changes, and to ensure a safe rate of pressure change for a normal individual. It has been recommended, therefore, that all intended employees on this work should be medically examined to exclude diseases of the alimentary, circulatory, or respiratory system, including upper respiratory tract infections; also that they should be instructed how to ventilate their middle ears during ascent and descent, and, where possible, should be given a decompression-chamber test. The rate of pressure increase should not be greater than 1/2 lb./sq. in. (0.035 kg./sq. cm.) per minute for inexperienced operatives, and gradually increased up to 2 or even 3 lb./sq. in. (0.14 kg.–0.21 kg./sq. cm.) as experience is gained; decrease in pressure can be at the rate of 5 lb./sq. in. (0.35 kg./sq. cm.) per minute for the healthy.

It is convenient now to consider the problems of high-altitude flying, particularly those of adequate oxygen supply, decompression sickness, and explosive decompression.

Altitude Flying

In this country at the outbreak of war neither those engaged in Service nor in civil flying were really oxygen-minded. Moreover, the continuous-flow system of oxygen supply then in use allowed two-thirds of the oxygen to go to waste. The Medical Branch was therefore faced with two urgent problems: first, to make every member of aircrew oxygen-minded, and, second, to devise an oxygen supply system and mask that could prevent oxygen waste, give the maximum of comfort to the user, and be reliable in the severest cold when sitting or moving about the aircraft or on baling out. To make aircrew oxygen-minded, demonstrations of the ill effects of oxygen at various altitudes and current rates of ascent and descent could be mulated. As regards improvement of oxygen supply, an economizer and mask were quickly designed and developed to prevent oxygen going to waste during expiration, and to be foolproof against stoppage of flow should the breathing of the wearer be minimal, as during shock or unconsciousness. His new system more than doubled the operational range of aircraft from the oxygen point of view.

Several improved types of mask were subsequently developed as the result of operational experience, so that the latest mask (Type H) is practically ideal, combining the qualities of comfort, smallness, lightness, and perfect fit even during strenuous aerobatics.

To assess the relative merits of oxygen masks and systems under various conditions an anoxia meter was designed and reduced to estimate the amount of oxygen in the blood for any length of time without puncture of an artery, as had to be done formerly. The apparatus is simply clamped lightly to the ear and the oxygen content of the blood is measured by means of two photo-electric cells.

This provision of good oxygen equipment was vain unless aircrews and passengers co-operated by using it to the greatest advantage. All aircrew and passengers therefore had to be instructed regarding the value of oxygen in maintaining normal erebration, vision, and hearing at altitudes over 10,000 ft. (3,045 metres), as well as its role in delaying the onset of fatigue and the ill effects of cold. In addition, a mask-leak ester was developed and introduced to check the fit of oxygen masks before all flights in which oxygen was likely to be used.

Other oxygen equipment developments were mobile decompression chambers for testing and instructional purposes, a plant for separating oxygen from the air during flight, a portable oxygen set (weighing 5½ lb. (2.38 kg.) and containing 10 minutes' supply of oxygen) to enable aircrew to move about away from their station at oxygen-requiring heights, and a very light bale-out oxygen bottle (weighing 3½ lb. (1.47 kg.) and containing 10 minutes' supply) fitted into the parachute pack as a stand-by for those who might have to bale out at altitudes above 30,000 ft. (9,140 metres): this emergency oxygen supply is permanently connected with the oxygen mask and can be turned on immediately by pulling a release handle on the side of the parachute pack.

These Air Force oxygen researches, developments, and experiences have been a boon to civil aviation, and have provided all the data required to fix the necessary rates of flow of oxygen at various altitudes for crew and passengers, including invalids. The new civil aviation mask for passengers was designed and developed at the R.A.F. Institute of Aviation Medicine, and it is a direct descendant of Type H, modified to meet civilian needs. It is extremely light (weighing only 1½ oz.: 42.5 g.), is a good fit (being made in four sizes), and is of aesthetic appearance: it had also to be of the cheapest possible construction compatible with proper function, as the policy is to make these masks an individual issue of the "throw away when finished with" type, owing to difficulty of sterilization. The portable oxygen set is being adopted for use by stewards and passengers to enable them to move about in aircraft at oxygen-requiring heights, also as a stand-by for invalids at even lower altitudes: in this case the bottle is slung over the arm of the passenger's seat. Some of the Service decompression chambers will probably be utilized in the near future by civil aviation organizations to train members of aircrew, especially with the advent of stratosphere flying.

Stratosphere flying at altitudes above 37,000 ft. (11,270 metres) brought two further problems—namely, how to prevent the occurrence of decompression sickness or "bends," and the best means of compressing the oxygen breathed so as to maintain the normal sea-level amount in the blood. The obvious answer to both was to supply the right amount of pressure. Exactly how this could best be done required much



FIG. 1.—Oxygen mask designed and developed at the R.A.F. Institute of Aviation Medicine for use in civil aviation.

research. First, pressure suits were developed, and it was in one of these, filled with oxygen under a pressure of 2½ lb. per sq. in. (0.176 kg. per sq. cm.) that Fl. Lieut. M. J. Adams in 1937 attained the altitude of 54,000 ft. (16,450 metres): such suits were clumsy to wear and greatly hampered movements, so they quickly fell into disuse. The next step was the development of pressurized cabins to give full freedom of movement with adequate comfort and warmth. Researches in pressure-cabin design were based on applying a pressure of 7½ lb. per sq. in. (0.51 kg. per sq. cm.), so that at an altitude of 44,000 ft. (13,200 metres) the pressure within the cabin would be equivalent to that of the atmosphere at 18,000 ft. (5,480 metres). The question arose of the effects of sudden decompression on the occupants if the cabin pressure were lost owing to mechanical failure or to puncture by shellfire or to a port blowing out. From the results of experiments on animals it was assumed that the sudden change of pressure from the equivalent of the atmospheric pressure at 18,000 ft. inside the cabin to that of 44,000 feet outside would cause such violent expansion of the lungs, stomach, and intestines that serious bodily damage or death would result. This was disproved in the Physiology Laboratory at Farnborough in 1942. The experiment has been repeated hundreds of times since, and it is quite clear that a fit man suffers little or no ill effects from such explosive decompression, provided that at the time of the explosion he is breathing oxygen, as he should be for an atmospheric pressure equivalent to that of an altitude of 18,000 feet.

These researches have provided the knowledge necessary for civilian pressurized aircraft for altitudes envisaged at present. In fact, the present aim is for an internal pressure of 6½ lb. per sq. in. (0.46 kg. per sq. cm.), so that at 20,000 ft. (6,100 metres) the cabin pressure would be equivalent to that of the

atmosphere at 8,000 ft. (2,400 metres), and oxygen would not normally be needed except to turn on in emergency.

While awaiting the production of pressurized-cabin aircraft it was necessary, in answer to the appearance of the German pressurized JU86, to devise some temporary measure to permit operations between 38,000 and 44,000 ft. (11,570 and 13,200 metres). A pressure breathing equipment was therefore developed in conjunction with the Royal Canadian Air Force. By this means positive pressure is applied to the lungs so that the total pressure in them is greater than that of the surrounding atmosphere. This is done by increasing the pressure in the mask while a counter-pressure is applied to the thoracic and abdominal walls to make expiration less of an effort. The equipment consists of a "Mae West waistcoat," which also serves as an oxygen reservoir. It maintains a continuous pressure of 1/4 lb./sq. in. (0.0175 kg./sq. cm.) to chest and abdomen: greater pressure cannot be applied in this localized manner without seriously impeding the return flow of blood to the heart. This device therefore has a ceiling of about 46,000 ft. (15,000 metres). It is reasonably comfortable to wear, was used during the last year of the war by photographic reconnaissance units, and proved to be a valuable interim measure.

Aircraft were not only attaining to higher and higher altitudes but were reaching greater and greater speeds, which kept ever to the fore the problems of the effects on man of high acceleration and deceleration.

Acceleration and Deceleration

During the war extensive researches were carried out on problems of acceleration and deceleration in relation to aerobatics, crash landings, ditchings, and baling out and ejection from aircraft.

As aerobatics play little part in ordinary civilian aviation only brief reference will be made to this problem. Blacking-out during a tight turn or loop at high centrifugal acceleration leads to momentary loss of control of the aircraft by the pilot, maybe during a critical manoeuvre. It was therefore necessary, during the early stages of the war, to introduce anti-measures without delay and with the minimum of interference with the pilot and the structure of the aircraft, as every man and every machine were needed in the air. Researches had already shown that blacking-out was due to the blood, under the force of high centrifugal acceleration, being drained to the lower part of the body, particularly the legs, so stopping the circulation of the blood to the eyes and brain, and that this usually occurred in the normal sitting position after exposure to a force of about 5 "g" for 4 seconds. It was found that abdominal belts alone did not prevent blacking-out, but interfered with the return of blood from the lower part of the body to the heart when the force of "g" was released, and so did more harm than good. The immediate answer to the problem was the introduction of the crouch position, which raised the individual's blacking-out threshold by about 2 "g": thus the average pilot can withstand up to 7 to 7½ "g" for 4 seconds, which was sufficient at that time. To achieve this crouch posture all that was necessary as regards structural alteration to aircraft was to raise the rudder-bar position 6 in. (15 cm.) by fitting a simple stirrup with a heel support to prevent the foot slipping during tight turns.

Further developments were hydrostatic and pneumatic anti-"g" garments designed to equalize automatically the internal pressure built up in the body fluids by the accelerating force, so preventing the blood from pooling in the lower part of the body. During the past three years great progress has been made, by close liaison between U.S.A. and British workers, in the development of a pneumatic suit of light type capable of being put on or taken off almost as easily as an ordinary pair of trousers. The latest suit weighs only 3 lb. (1.36 kg.), can be worn either as underclothing or over slacks, and can be put on within two minutes and taken off in half that time. These suits apply pressure as required by means of inflatable bladders to the lower abdomen, thighs, and calves, and so prevent pooling of blood in the lower half of the body. The air pressure is derived from a source within the aircraft, such as the instrument pump, and, by means of a regulating valve, is increased or decreased proportionately to the force of "g"

applied. The valve can be set to cut in at a predetermined force of "g," as it is uncomfortable to have the pressure functioning for low forces of "g," such as are encountered when flying in bumpy weather and while taking certain evasive action. This type of suit raises the threshold for blacking-out by at least 2 "g," and in addition, by ensuring good circulation of blood to the head, lessens fatigue and helps to maintain good reaction time even in long and arduous flights. It is unlikely, however, that such suits will be required by pilots of civil air lines, except possibly to prevent fatigue on very long journeys.

There are problems of linear acceleration, however, that are applicable to civil flying, particularly those connected with crash landings, ditchings, and baling out and ejection from aircraft.

Crash Landing.—In crash landings various injuries, lethal and otherwise, are apt to occur as the result of the body being carried forward with the momentum of the aircraft and striking against some hard object or bending on itself to such a degree as to cause a wedge fracture of the spine. The commonest injuries are fractures of the skull or simply bruises and lacerations of the scalp and face, and fractures of the bones of the lower limbs and of the spine. The wearing of a safety belt low down near the pelvis is unsatisfactory, as it allows of so much forward flexion that fracture is apt to occur in the dorso-lumbar region, with serious immediate and after results: whereas a safety harness which supports the shoulders allows only slight forward flexion of the spine, and if fracture does occur it is in the upper dorsal region and the prognosis is therefore more favourable. Compression fractures of the spine are not so common in aircraft crashes as in parachute descents.

During the past three years extensive study has been made of the forces which the human frame can withstand without injury or without injury sufficient to endanger human life, with the aim of collaborating with aircraft makers in the stressing of airframes and the design of safety devices to reduce crash injuries to the minimum. The extent of injury sustained during aircraft crashes depends on the magnitude of the force applied, the area and site over which the forces are spread, the duration of the forces, and the relative movement between supported and unsupported parts of the body. For example, if the skull receives the first impact the area of contact is usually small owing to the curve of the skull, so that the pressure per square inch is high. The skull is strong, but the deflector which it can withstand without fracture is small: if fractured, the chances of survival are much lower than for fractures of other bones. The mortality rate for fracture of the skull in flying accidents is 94%. If the back and buttocks receive the first impact the area of contact is much larger, and appreciable deformation of tissues may result. Injuries to aircrew and passengers during crashes can be reduced by supporting the body over as large an area as possible, and by preventing the skull from hitting unyielding objects of small size. A posture facing backwards therefore give better protection from serious injuries than one facing forwards: whether supported by harness or not. Harness gives relatively poor protection against injury, as the area of the body covered is small compared with support of the whole back by the seat. From the physiological aspect, the ideal posture during crashing or ditching, is to lie or crouch with arms and legs flexed, the back and head fully supported, facing towards the rear of the fuselage. These postures reduce the effects of vertical deceleration on the spine, and are the basis of crouch positions adopted with success in various types of R.A.F. aircraft. A new safety-type harness has recently been developed to withstand the stresses liable to occur under existing conditions. A survey is being made of the important aircraft types, including jet-propelled machines, to find the maximum forward deceleration which can be withstood, and the anchorages of seat are being reviewed. The immediate aim is to produce a safety harness and seat which will withstand 25 "g."

A simple protective measure for passenger aircraft would be to place all seats facing to the rear instead of to the front; then, in the event of a forced landing, the passengers should be instructed to lean back in a crouched position with the head pressed firmly against the soft back of the seat and protected by the hands clasped tightly round the back of the neck. Generally speaking, if passengers' view from an aircraft would not be materially affected by this back-facing arrangement of seats. A special safety cell has been designed for crashes, but to carry these would occupy valuable space and unnecessarily increase the pay-load, for the padded seats reversed as suggested functions as a safety-cell.

Baling Out and Parachute Descents.—A considerable amount of research has been done to assess the decelerating forces involved when parachutes open at various altitudes and speeds: the higher the altitude and speed the greater is this force. The decelerating force applied to the parachute harness attached to a man of about 10 st. (63.5 kg.) in weight, at the moment of opening of the canopy at altitudes up to 25,000 ft. (7,620 metres) is usually less than

25 "g," and the standard parachute with its rigging is capable of withstanding this degree of stress: the harness is stressed to withstand over 40 "g." This decelerating force acts for only a second or so—the greater the force the shorter the duration—so that blacking-out rarely occurs unless the parachutist is anoxic at the time, as well be may be. Experiments with dummy men fitted with accelerometers indicate that forces up to 30 "g" occur at altitudes of 35,000 to 40,000 ft. (10,660 to 12,180 metres) if the parachute is opened almost immediately after baling out. Such decelerating forces may seriously damage the parachute and its rigging. It is essential at these higher altitudes, therefore, for the user to allow the rate of fall to slow down to terminal velocity before pulling the rip-cord: this takes about 12 seconds.

It is convenient to consider here the danger of unconsciousness and even death from anoxia resulting from baling out in the stratosphere. Members of the staff of the R.A.F. Institute of Aviation Medicine took part in a number of experiments to find out how long a man could live at altitudes varying between 44,000 and 25,000 ft. (13,200 and 7,620 metres) during parachute descent, even though unconscious. These experiments were done in the laboratory, the subject being suspended in the air by the standard parachute harness. In this way, by simulating the atmospheric oxygen conditions from 40,000 ft. (12,180 metres) down by the use of nitrogen-air mixture, at the rate of descent of an open standard parachute, it was found that man could remain unconscious and yet live up to a period of 7½ minutes. This is not adequate to ensure a safe descent, as it would take 7½ minutes to reach 20,000 ft. (6,100 metres) if baling out took place at 35,000 ft. (10,660 metres). Moreover, the unconscious parachutist would become limp and the head would fall forward and so be liable to cause respiratory embarrassment; while the cold is intense (-55°C.) at these altitudes and would materially reduce the chances of survival. A quicker descent could be made by doing a delayed drop from 35,000 to 20,000 ft. (10,660 to 6,100 metres), which would take 1½ minutes; by this time the individual might be so anoxic as to fail to pull the rip-cord. For this reason the emergency bale-out oxygen set was introduced, and has added greatly to the confidence of those flying at higher altitudes.

An R.A.F. medical officer, an expert parachutist, was installed at the Airborne Forces establishment in this country when the training of air-borne troops was first taken seriously in 1941, and remained there throughout the war. His duties were to advise on parachuting from a medical aspect, and, for this purpose, to make liaison with the Army Airborne Forces and the R.A.F. Institute of Aviation Medicine. Researches he undertook show that liability to injury on landing by parachute varies with age, weight, force of wind, and type of terrain. Statistics revealed that injuries were more frequent in those over 25 years of age than in younger persons; that the injury rate rose rapidly in those over 12 st. (76.2 kg.) in weight; and that the stronger the wind the greater was the risk of injury from wrong stance on landing. The commonest parts to be injured during training jumps were the legs (64% of those injured) and the head (24% of cases). The incidence of injuries during training was initially 4% of jumps, but, subsequent to improved attachment of parachute harness and landing stance, as suggested by this parachutist medical officer, it was reduced to 0.5% of jumps. In addition, a considerable amount of research has been done with different kinds of parachute to ascertain the most foolproof type, as regards both certainty of opening and the minimizing of the final deceleration on touching down. For this purpose visits have been paid to the parachute-training establishments in the United States of America and in Canada, also in Germany.

Critical analysis of rates of survival after baling out from multi-seated aircraft has given valuable information regarding difficulties of escape, such as the angle of the aircraft, the force of "g" resulting from spinning, jamming of hatches, and temporary amnesia. The findings stress the necessity for aircraft to be designed so that all occupants can leave within two seconds of the order to abandon aircraft. In this connexion anthropometrical research has given valuable information to aircraft designers regarding the size and shape of exits necessary to prevent fouling or injury.

All this information is applicable to civil aviation, for, when stratosphere flying becomes a commonplace, passengers and crew will very likely have to be provided with parachutes for use in emergency even if it becomes possible in future to eject the cabin complete with occupants.

Ejection.—As the result of a fatality in January, 1944, when a pilot tried to escape from a jet-propelled aircraft which was out of control, it became evident that the force of the slipstream in aircraft of very high speed is so great that the unprotected human body cannot withstand it for more than a fraction of a second, else limbs are evulsed against the machine. The problems involved were whether quick ejection of the man plus his seat would avoid this evulsion, and whether man could withstand the high force of positive "g" necessary to eject him clear of the tail of the rapidly moving aircraft.

It was first necessary to ascertain what was the maximum force that can be applied vertically to the spine through the seat without

injuring the spinal column, spinal cord, skull, or brain. The Martin-Baker test rig, at an angle of 30° off the vertical, proved best for this purpose. It was found that a man could tolerate in this way up to 20 "g" for a period of a tenth of a second, provided he was well strapped in with safety harness and that there was an appropriate device to prevent his head flexing forcibly and

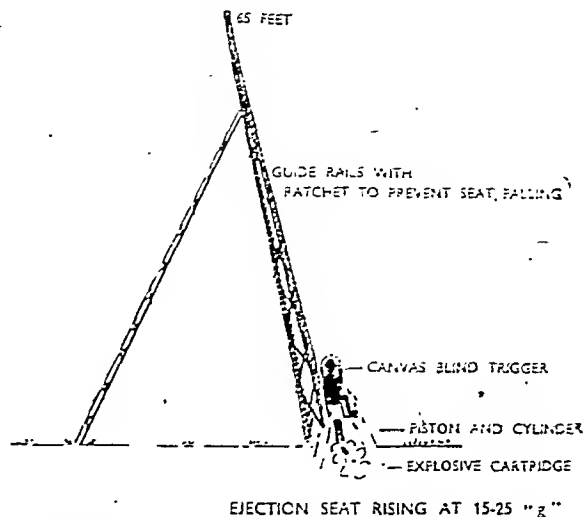


FIG. 2.—Diagram to show how a man, strapped down with safety harness and provided with a canvas hood device to activate explosive ejection as from an aircraft, can tolerate a force up to 20 "g" applied vertically through the spine for 1/10 second. (The Martin-Baker test rig.)

acutely as the force of "g" was applied. Unless the head is protected it will fall violently forward on the chest, owing to the centre of gravity of the head being in front of the line of thrust of the spine. Trials with dummies in aircraft have shown that it is necessary to arrange for a 40-ft. (12.2-metre) ejection, with an ejection stroke lasting for one-tenth of a second at between 15 and 25 "g" upwards through the seat. This is attained by means of an explosive charge under the seat; the charge is activated by the pilot pulling a roller-blind affair of heavy canvas over his head by means of two rubber handles. When the handles reach the level of the diaphragm the pull activates the cartridge, and the resulting ejection with its high force of "g" makes the bands pull the protecting hood tightly down over the head. In addition to holding the head in position to avoid injury, the hood is intended to protect the eyes and prevent the oxygen mask being torn off by the force of speed.

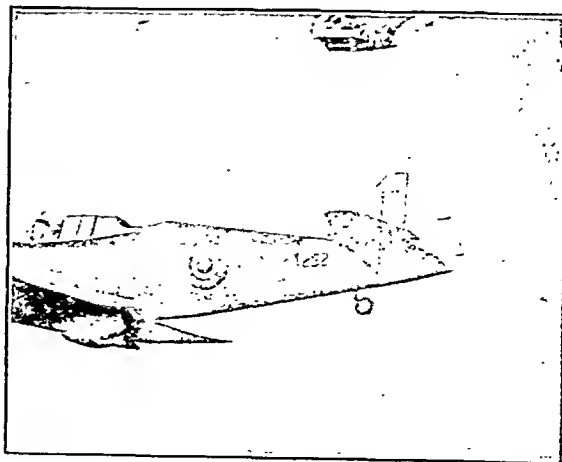


FIG. 3.—Ejection from aircraft in flight of a dummy man complete with seat as a result of a 40-ft.-per-second explosive charge. The parachute, which operates automatically, is just opening. (Crown copyright photograph of official test done on Oct. 5, 1945.)

It is envisaged that civilian flying in the near future will be in very fast aircraft travelling in the stratosphere, and that arrangements will have to be made for the whole cockpit or cabin to be ejected in emergency. The detached cabin will require to be fitted with suitable parachutes to land it intact or to retard its speed so that

occupants can escape individually by parachute in the usual way at a convenient altitude.

This leads to a consideration of aircraft accidents in general, their causes and prevention.

Aircraft Accidents

It has often been stated that flying accidents are due to human error in at least 80% of cases, but this statement has never been validated: it can be assumed, however, that the human factor plays a very large part in the majority of air accidents. It is of prime importance, therefore, to eliminate from flying duties those who are accident-prone and to provide aids to increase safety in the air, particularly for blind flying, landings, and take-offs.

With these aims in view, researches were instituted to devise tests to predict the accident-prone individual. It was conceded that heavy-handed and leaden-footed individuals, or those visually defective owing to eye-muscle imbalance or gross night-blindness, were accident-prone as regards flying, and they are eliminated by appropriate tests on entry, as already indicated. There still remain a large group who are labelled temperamentally unsuitable to fly, and many of these are accident-prone. Attempts to predict these individuals by psychiatric and psychological methods have been disappointing, except in the case of the Cambridge cockpit test. In researches with this test, pilots were set a relatively complicated task analogous to flying an aircraft, and many aspects of their performance were scored and rated. It was found that those who sustained accidents or became casualties on operations had obtained high error scores in the test, and had been predicted unfavourably. The incidence of non-fatal accidents was highest in those who, though they obtained normal scores, had been rated unfavourably in one or more aspects. The rating was intended to indicate the stability and skill of the individual when obliged to carry out, for a relatively long time, a task in which he was unable to achieve a high degree of accuracy. Stability under stress is regarded as a more important attribute in avoiding accidents than the ability to learn the skill of flying.

Investigations have shown that *fatigue* is conducive to flying accidents, and a considerable amount of research has been and is still being done to assess the relative importance of the many factors involved in flying fatigue and the best means of overcoming or mitigating them. There are various causes of fatigue in aviation, such as the stress of taking-off with heavily laden machines or landing under adverse conditions and at high speed; the mental anxiety of night flying or flying through fog; the discomfort of a cramped and confined position; the effect of noise on the auditory sense; loss of vitality as the result of exposure to cold; and oxygen lack to the body cells when the supply is inadequate. As the cumulative effect of even small irritations is a potent cause of fatigue, there has been a constant endeavour to improve the design and fitting of all flying equipment so as to give the greatest efficiency with the maximum of comfort.

Researches into measures to abate these fatigue-producing factors have resulted in improved radio apparatus and direction finders to simplify night and blind flying without straining the eyes; improved cockpit and instrument lay-out, including dial markings and the best position for all controls so as to obtain the maximum human efficiency with the least fatigue; proper design of seats from an anthropometrical and physiological aspect, to avoid cramping and to lessen vibration; sound-proofing of cockpits and cabins to minimize engine noise; air-conditioning of cabins to maintain an agreeable temperature in all climates and at all altitudes; and the provision of an adequate oxygen supply, including design of mask to give maximum efficiency and comfort. The results of all this work have been passed on for use by civil aviation, including designers of aircraft, and it is hoped that the various improvements suggested will materialize in the new civilian aircraft now under construction and development.

Fatigue in aircrew has been shown to be usually of the skill variety, and results mainly from prolonged repetition of highly skilled performance. The individual concerned is often unaware of his condition and tends to blame the flying instruments for his mistakes. Researches have proved that this inability to make mistakes when fatigued can be countered if the individual has been instructed that fatigue is a normal

sequence of long periods of concentrated mental or physical effort, and that his performance can be almost as effective as when fresh if he realizes he is open to errors and exercises special care, particularly towards the end of the task.

The "beam approach" may be cited as one example of aids to flying and the prevention of accidents in which medical research has played an important part. This is one of the blind-flying devices on which a pilot has to rely in homing at night or in bad day visibility—that is, at a time when he is fatigued and liable to make errors. In addition to the beam approach indicator, a pilot has ten instruments on his blind-flying panel which have to be read and their meaning fitted into one whole before he can make a safe landing under blind conditions. It is of the greatest importance, therefore, that all instruments should present their messages as simply and clearly as possible. The beam approach briefly consists of a radio beam which gives two types of clue to the pilot—one auditory, the other visual. At first these clues were wrongly presented. The auditory clue, which was Morse, did not use the letters that could be picked up with least error; and the visual clue, which consists of a small luminous plan of the aircraft and its relation to the beam, was confusing, as the pilot had to remember to reverse the signal for right and left turn when coming in to the airfield in the opposite direction to the normal approach. Pilots, especially when tired, found this confusing, and often made a wrong response which resulted in a landing accident. The logical visual presentation is that which necessitates the minimum of thought. As a result of these psychological researches, correct aural and visual clues were introduced. The application of this to civil aviation needs no stressing.

Intensive researches into the causes and prevention of flying accidents are being continued by the Air Ministry; every crash is thoroughly investigated. From a medical point of view, statistics are collected covering such data as the type of aircraft involved; estimated speed of impact; posture adopted by each occupant before the crash, whether standing, sitting, facing fore or aft; parts of the aircraft which caused injuries to occupants; sites and nature of injury in each case; and any precautions taken to prevent injury. Appropriate action is taken to correct any faults found either in the structure or design of aircraft or equipment, or in the crash position or the drill of the occupants. It is hoped that, as a result, the incidence of air accidents will become progressively less, and that in those that do occur the survival rate will be high.

Survival after Crashing or Baling Out

Researches in connexion with problems of survival after baling out or ditching in the sea have been carried out by members of the Institute of Aviation Medicine in European waters. Some of these problems were tackled and solved in conjunction with the Admiralty, such as the production of drinking-water from salt water, the provision of the best type of survival ration, and general measures to preserve life when cast away at sea.

The first problem tackled was the development, in 1942, of an *immersion suit* for pilots of aircraft in the catapult armed merchant ships operating with convoys in North Atlantic and Arctic waters. The catapulted aircraft could not land on these ships, and the pilots had to bale out into icy waters, so that a suit was needed to enable them to withstand the severe cold on immersion for at least half an hour before they could be picked up. A suit was produced that was comfortable at stand-by on the ship and yet watertight. Immersion trials of this garment were carried out in Icelandic waters by a member of the physiology team to enable it to be perfected. It was made of a light waterproof gaberdine which allows perspiration to take place through it, yet by virtue of its texture and the arrangement of its fibres holds back water applied to it in the form of rain or during immersion. This suit, modified to meet requirements, was adopted by the Fleet Air Arm. Following the success of this garment, a watertight suit was developed to protect crews of high-speed launches of the Air-Sea Rescue Service against wind and spray.

In 1945 a lighter, inflatable *suit to guard against exposure* was designed and developed for aircrew to don either just before baling out or ditching, should time permit, or after entering the dinghy. It is made of balloon fabric, has a double

lining for inflation purposes, and is quilted to loculate the air to ensure that there is always a layer of air even at points of pressure. It weighs only 2½ lb. (1.25 kg.), and rolls up to form a stole for the "Mae West." There is a short tube at the neck for inflation by the mouth, and a hood to complete the protection. Even if it is not put on until the dinghy is boarded, it will protect the wearer against further loss of body heat despite wet clothing underneath.

Researches were also carried out with various *life-saving jackets* to assess their efficiency to prevent an injured or unconscious man from drowning. For this purpose a member of the physiology team was kept continuously anaesthetized while immersed in a swimming-bath wearing various types of life-saving jackets in turn, the body being pulled face down from time to time to see if it would right itself. Artificial waves were created to imitate rough water. Though the R.A.F. "Mae West" kept the nose and mouth of the unconscious individual clear of the water, it was improved for use in rough seas by a 2-lb. (0.9-kg.) lift in the back. A new jacket was therefore designed incorporating this and other improvements.

The immersion suit and the "Mae West" life-saving jacket, which are light and easily stowed, will be welcomed by civil air lines, particularly now that land planes are replacing flying boats on most, if not all, cross-sea and ocean flights.

Some Flying Problems

Time does not permit of more than passing mention of many other problems tackled, and solved, to improve man's efficiency in flying, whether in a Service or a civil capacity—for instance:

- (i) The protection of vision against *sun and searchlight glare* by special glasses and other devices.
- (ii) Means of obtaining and maintaining the *maximum night visual acuity*, by pre-adapting with red goggles, and using red or ultra-violet lighting reduced to the minimum to illuminate instruments and maps.
- (iii) Improved design of *microphones* and *earphones* to increase acoustic reception and so lessen fatigue.
- (iv) Design and development of *flying helmets* to give perfect fit with comfort even when worn for hours.
- (v) Proof of the occurrence of *high-tone deafness* as the result of flying for 100 or more hours without ear protection in non-sound-proofed cabins.
- (vi) Means of preventing and treating acute *altic barotrauma* by x rays or gamma radiation.
- (vii) Study of the causes of *dental pain at altitude* and its prevention, by proper conservative dentistry, using cement of the correct pH and avoiding undue heat near the tooth pulp.
- (viii) Study of *air-sickness* and its prevention, and discriminating between true air-sickness and emotional tension.
- (ix) *Design of cockpits and seats* for comfort; removal of projections likely to cause injury; placing of all controls in the most favourable position. The problem is whether the controls most often used or those needed in emergency should have place of vantage.
- (x) Simplification of *instrument dials* for ease of reading; grouping of instruments so as to cause the minimum of error and fatigue.
- (xi) The *disinsectization of aircraft*, and the *control of mosquito breeding* by aerial spraying of D.D.T.
- (xii) The *cooling of aircraft* on the ground in hot climates and protection of those servicing aircraft.

It is evident from the foregoing that the majority of aviation medicine researches carried out on behalf of Service flying have a direct or indirect bearing on civil aviation problems. For this reason, when considering the establishment of the new Institute of Aviation Medicine at Farnborough, it was decided to design, equip, and staff it to meet the requirements of civil aviation as well as of those of the Services—Royal Air Force, Fleet Air Arm, and airborne troops. Throughout the war there has been the closest liaison in all this work not only between the Services but also with the Dominions and our Allies: their scientists have worked alongside ours in the Institute, and in some instances still continue to do so. No less important has been the liaison with aircraft designers and scientists on the material side. It was by this whole-hearted co-operation and fine team spirit that such excellent and rapid progress was made in aviation medicine during the war; it is sincerely hoped that this friendly collaboration will continue

in peace to ensure the fullest support for aviation in general so as to make it the safest, most comfortable, and quickest mode of travel.

This is a high-speed aerial review of the progress made in aviation medicine during the war, and, as in an aerial view, the ground covered is extensive but detail is lacking: you get only glimpses of this new country through the clouds of obscure description and so your imagination must fill the gaps. Likewise, as you cannot see the whole world in an hour, even in the fastest of aircraft, so this picture of aviation medicine covers only a small portion of the valuable work done by as fine a team of scientists and medical officers as anyone has ever been privileged to direct.

I wish to pay high tribute to all those who have given so much and often risked so much in these researches—physiologists, psychologists, Flying Personnel Medical Officers, and Squadron Medical Officers, and to those who gave all—Group Captain Hugh Corner and Squadron Leader D. A. H. Robson.

INADEQUATE FEEDING IN HOSPITALS

A STUDY OF CONTRIBUTORY FACTORS*

BY

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Loss of weight, which is sometimes considerable, is not an uncommon occurrence in patients admitted to hospital. In Royal Canadian Army Medical Corps hospitals in Canada losses of weight have been noted in over half the patients observed, and ranged from 10 to 60 lb. (4.53–27.2 kg.).^{1,2} Lyons³ has reported similar losses of weight in soldiers in U.S. Army hospitals. Such findings are certainly not confined to those treated in military establishments, for Elman,⁴ Taylor,⁵ and others have recorded similar observations in civilian hospital patients. At the end of 1943 this state of affairs in Canadian military hospitals in Canada was surprising, since the raw food-stuffs available for hospital use were, according to accepted standards, and practices, more than ample.

In this paper, therefore, we record measurements made on actual food intakes of patients in Canadian military hospitals in Canada, and we report observations made during the past few years on factors which have contributed to inadequate protein and caloric intakes. We will also discuss briefly the relationship of so-called "toxic destruction" of protein to loss of body mass and to protein and caloric requirements. Finally, we will present some data to illustrate the effects of a campaign planned to maintain high standards of nutrition in the sick.

Methods

Dietary histories were taken and measurements were made of the food consumed by patients in Army hospitals in Canada. These men were subsisting on the ordinary ("full") hospital diet; they had normal gastro-intestinal tracts and were convalescent after surgical procedures. Over a three-day period all food actually offered to each patient was weighed before and after the meal. Hospital supplementary feedings were measured, and all patients kept a list of extra food supplied by friends or obtained from the Red Cross or the hospital canteen. Food platters were chosen at random so that the servings would represent those usually given by the nursing sister. The caloric, protein, fat, and carbohydrate values of the ingested food were calculated from National Research Council tables of food composition. The results were analysed statistically.

Various aspects of hospital catering which might affect intake of food were studied in over 30 hospitals. Observations were made on supplies of food available in depots, the ordering of

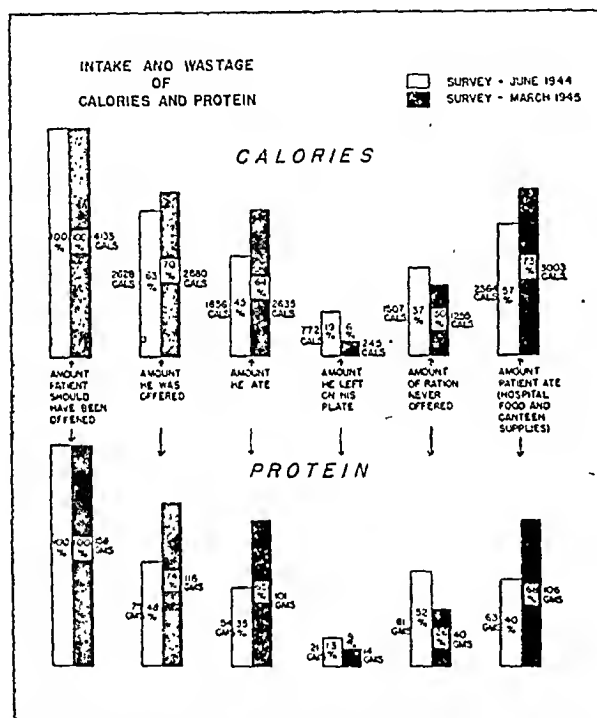
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food, kitchen and ward equipment, the ability and training of cooks, methods of cooking and serving food, and the attitude of the medical staff, the nursing staff, and the patients themselves toward food intakes.

Results

The ration scale for R.C.A.M.C. hospitals in Canada from which ordinary or "full" diets are prepared consists of 156 g. of protein, 144 g. of fat, and 539 g. of carbohydrate, and provides approximately 4,100 calories. From these sources the patient got three meals a day and sometimes supplementary feedings such as egg-nogs (100 to 200 calories and 10 to 20 g. of protein), milk, cocoa, and biscuits.

We found three main reasons why patients did not ingest their full ration. First, although foodstuffs were plentiful in depots, hospital staffs did not indent for their full entitlement; secondly, some wastage occurred during preparation of the food in the kitchen and through failure to use food left over; thirdly, considerable amounts of food were left on the plates by the patients. Improvement in food intakes which was noted some months after an educational campaign was instituted is here shown in a graph.



Graph showing the daily intake and wastage of calories and protein of patients in a Canadian military hospital before (white) and after (black) an educational campaign planned to improve hospital nutrition.

The results of the observations have been recorded for two hospitals in the accompanying Table. The average quantity of

Table showing the Total Intake of Protein, Fat, Carbohydrate, and Calories of each Patient each Day in Two R.C.A.M.C. Hospitals in Canada. The Amounts of Food Left on each Plate are also shown

Per Man Per Day	Proteins in Grammes		Fat in Grammes		Carbohydrate in Grammes		Calories	
	Hosp. A	Hosp. B	Hosp. A	Hosp. B	Hosp. A	Hosp. B	Hosp. A	Hosp. B
Food actually ingested	54	74	73	93	239	276	1,856	2,272
Food left on plate	21	12	22	11	119	69	772	428
Food served to patient	75	86	95	104	358	345	2,628	2,700
Food never obtained and kitchen wastage	102	70	71	40	300	194	2,279	1,435

food ingested by each patient each day, from hospital sources, provided 74 g. of protein and 2,210 calories. The lowest intake for each day of the three-day period was 25 g. protein and 764 calories, and six patients had less than 1,600 calories a day.

The highest intake in any individual was 114 g. protein and 3,094 calories. In one hospital in Canada the patients average only 54 g. of protein and 1,856 calories.

Factors Contributing to Hospital Malnutrition

The Medical Officer and Nursing Sister.—Generally speaking, at that time malnutrition was rarely considered as a cause of delayed convalescence or rehabilitation. The present emphasis in R.C.A.M.C. hospitals in paying particular attention to the food intakes and nutritional status of the individual patient was not widely recognized, and these and other points had to be stressed in educational programmes. For example, medical officers had to be told of the necessity for taking steps to see that patients were actually eating the food which had been ordered in the ward order books. This was essential, as we had observed in civilian hospitals²⁹ that, in general, a gross discrepancy existed between the surgeon's or physician's impression that an adequate diet was being ingested and the actual intake achieved by the patient. The following cases illustrate this point.

A patient in a surgical ward suffered from Pott's disease. Because of this and a prolonged attack of infective hepatitis he was placed on a high-protein diet. When his intake was measured it was found that he was getting only 86 g. of protein each day and 2,69 calories. Another patient was recovering from a compound fracture of the femur and developed jaundice. Orders were written for him to have a high-protein low-fat diet. When measurements were made he was found to be taking a relatively high-fat low-protein diet for his protein intake was only 67 g. a day. In neither instance had the discrepancies been noted by the attending medical officers.

The necessity for frequent consultations between the medical officer, the dietitian, and the nursing staff regarding special diets, special foods, and special feeding techniques for individual patients who required special nutritional care was also pointed out.

It was found, too, that, during their training, nursing sisters had not been taught the importance of ensuring adequate intakes of food in the average patient who was not subsisting on "special" diets. This was not surprising, since the medical profession has only recently recognized that ensuring adequate food intakes is a therapeutic measure which speeds recovery and rehabilitation. Consequently, nursing sisters, as in civilian life, looked upon feeding the patient as a routine measure and let the individual patient's appetite be the guide to intake. We therefore encouraged them to see that food was served hot and in an attractive manner, to offer second helpings, to persuade patients to eat, and generally to attend to the intake of protein foods by the individual patient.

The Patient.—The majority of patients correctly believed that the caloric requirements of a man in bed are much lower than those of a man doing work. But they made no distinction between the requirements for a healthy man lying in bed and those of a sick man in bed. The patient's appetite was poor immediately after trauma, operations, and burns, or during the acute phase of an illness. Poor appetites persisted, and patient got into the habit of not eating unless they were stimulated by attractive food, or through education, suggestion, or persuasion given by the attending medical officer. Patients often disturbed their appetite by eating chocolate, biscuits, and other confections just before or between meals. In summer, especially aerated soft drinks were consumed in large quantities and disturbed appetite considerably.

The Dietitian and Cooks.—Nearly all dietitians and cooks were anxious to prevent waste, and in some hospitals did not provide enough food. Consequently helpings served to the patients were often skimpy. There was also a tendency to serve too many stodgy and unappetizing dishes made from inexpensive types of food, such as bread and flour, in an effort to keep down costs. Such dishes contributed to much wastage on the plates.

The Hospital Administrative Staff.—The hospital administrative staff, quite rightly, attempted to keep costs down when purchasing food, but in a considerable number of hospitals the amount of money spent on raw foodstuffs was ludicrously small, and consequently food purchases did not cover nutritional requirements.

Spacing of Meals and Supplementary Feeding.—In many hospitals, although meals are supposed to be properly spaced,

found patients getting breakfast late in the morning and rich being served at noon or soon after. Since the midday meal was the main meal of the day, patients who had had a breakfast left food on their plates. The common practice of serving supper at 4.30 or 5 p.m. meant that many patients went without food, save for cocoa and biscuits, for 15 hours or longer. Supplementary feedings, such as egg-nogs, were used frequently. Water and sweetened orange juice were the main fluids provided at the bedside, and none of these drinks contributed much to either the caloric or the protein intake of the patient.

Equipment.—Special modern equipment, such as Hobart mixers, which help cooks and dietitians to prepare and serve attractive food, was often not in sufficient supply. Chipped white enamelware and cracked crockery, which was used occasionally in some hospitals, certainly did not stimulate the appetites of those who were ill.

Discussion

Peters⁶ points out that, despite the discovery of new agents and techniques which have reduced mortality, complications, and permanent disabilities, the overall duration of the period in hospital and of disability has not been reduced. He states that loss of strength and undernutrition were prominent among the factors which appeared to retard convalescence and rehabilitation.

In our experience many physicians and surgeons who regard loss of weight in hospital patients as inevitable explain wasting as "disease atrophy" or believe that most of the loss is due to harmless utilization of body stores of fat at a time when appetite is poor and the body requires some source of energy. The investigations of Shaffer and Coleman on typhoid fever⁷ in 1909 showed that the wasting which occurred in that disease was due to breakdown of protein tissue with excretion of large quantities of nitrogenous substances in the urine. Since then this phenomenon, which by long usage is still described as "toxic destruction of protein," has been shown to occur after burns,⁸ injury and elective operations,^{9,10} hemorrhage,¹¹ and other conditions.^{12,13}

In some patients the excretion of nitrogenous end-products is very large. Browne of McGill¹² reports excretions of between 25 and 35 g. of nitrogen in the urine each day in convalescent surgical patients. This is equivalent to the metabolic breakdown of $1\frac{1}{2}$ to $2\frac{1}{2}$ lb. (0.68–1.13 kg.) of muscle tissue. In one obese patient who suffered 20% burns marked weight-loss occurred. Investigation showed that he too was excreting nitrogenous waste products. This was the probable cause not only of the loss of weight but also of failure of skin grafts to take. Correction of his diet, which ensured large intakes of protein and cut down the overall nitrogenous loss from the body, resulted in a gain of $1\frac{1}{2}$ lb. (227 g.) a day in weight and considerable improvement in the appearance of the granulating areas. The next attempt at skin grafting was successful, and the grafts took excellently.

As yet there is no adequate explanation of the factors which produce the metabolic or "toxic" breakdown of protein that follows upon insult to the body. However, it is rational to associate it with the loss of strength, loss of weight, and atrophy which we have seen in patients in military hospitals. While no specific therapy is available to stop the body protein from breaking down, Taylor,¹⁴ Elman,¹⁵ Mulholland,¹⁶ Browne,² and others have all shown that the phenomenon can be controlled by adequate feeding, with larger quantities of protein and calories than has been the practice.

Taylor advocates¹⁴ a daily intake of about 2 to 3 g. of protein and between 50 and 60 calories per kilogramme of body weight (approximately 150 g. of protein and 3,500 calories for a 70-kg. man). In some individuals he has had to feed (by use of gavage or intravenous methods) up to 300 g. of protein a day to maintain body mass. Browne and his colleagues² suggest similar intakes of food to maintain adequate nutrition in the average hospital patient.

As the food intake of patients in R.C.A.M.C. hospitals in Canada fell short of the above-mentioned standards, and as so many of our soldiers were losing weight, a vigorous educational campaign was launched in the summer of 1944 to increase the intake of protein and calories. Studies¹⁷ made some eight

months later showed a satisfactory improvement (see Graph). These and other observations indicated that about 100 g. of protein and approximately 3,000 calories were probably as much as the average patient would consume at three meals by means of the ordinary diet, and that protein and calories above these amounts would have to be provided through supplementary feedings.

By the end of 1944 the Research and Development Branch of the Directorate General of Medical Services, in co-operation with the National Research Council of Canada, MacDonald College, and the Royal Victoria Hospital, McGill,^{18,19} had developed a satisfactory powdered high-protein milk-shake mix* with five assorted syrup flavourings which was easily reconstituted into a palatable and acceptable drink. The tinned powder stored well, could be made up in large quantities in the kitchen, and provided high food value in small bulk: this was also important, as the patient judged his food intake by volume rather than food value. By this means an extra 72 g. of protein and 1,100 calories could be given in the form of two small and one large milk shake taken during the day.

By clinical trial it was found that the most suitable routine was to serve the meals exactly at 7.30 a.m., 12 noon, and 5 p.m., and to give one 8-oz. (227-ml.) milk shake at 10 a.m. and another at 2.30 p.m. A 16-oz. (454-ml.) milk shake was taken at bedtime, usually 9 p.m. In some patients one or two of the supplementary feedings were omitted because it was considered that their requirements for protein and calories were at a lower level. It was found to be impracticable to give more than 8-oz. feedings at each of the two daytime supplementary feeds, as a larger quantity interfered with the appetite for the next meal. For the same reason it was imperative to ensure that the meals and supplementary feeds were served on time.

With increased food intakes, such as occur with the regime outlined above, clinical improvement in our military patients is noticeable. It is our belief that civilian patients would obtain similar benefits. Therefore we recommend adoption by civilian hospitals of the educational and catering programmes mentioned in this paper.

Summary

The cause for the loss of weight of patients in military hospitals in Canada has been investigated. Primarily this appears to depend on the "toxic" or metabolic destruction of body protein, but is aggravated by the inadequacy of the usual hospital diets. These diets were particularly inadequate in proteins and calories, having reference to the requirements of these patients.

The cause for the inadequate diets was found to lie in: (1) tendency of hospital staffs to economize; (2) lack of proper supervision of dietary intakes by the medical and nursing staffs; (3) improperly spaced meals and lack of appetizing dishes. Correction of these faults and the introduction of a high-protein milk shake raised the food consumption to satisfactory levels. The average maximum tolerable consumption has been defined.

The advisability of applying the lessons learned in military hospitals to civilian hospitals has been discussed.

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THE ITCHY PATIENT

BY

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The skin has been picturesquely described as the mirror of the mind because it reflects the emotional state of the individual. This process is illustrated by such common phenomena as blushing with shame, blanching with fear, and sweating with anxiety. Other cutaneous responses may be peculiar to the individual—for example, in a subject who develops goose-flesh, accompanied by a feeling of "the teeth being set on edge," when an apple is peeled in her presence. A number of purely subjective cutaneous responses to emotion are also observed, including tingling and a sensation of warmth when the "start" reflex is excited, and "cold shivers" aroused by various emotions.

Itching may also be a manifestation of anxiety, as in one of our patients who would find himself scratching when under emotional stress; and in another, a worry-prone and eczematous individual, whose mental and physical disability disappeared after learning that his domestic and business problems had been solved.

Psychological Factors

The psychopathology of skin disease does not constitute a special problem; it is not fundamentally different from those disorders which it is now customary to call psychosomatic, and in this sense certain dermatoses are as much members of the group as asthma. Thus an attack of eczema may follow such diverse events as a near-miss by a bomb, worries over finance, besides contact with irritating solutions; for psychiatric investigation shows that in addition to a purely physical mechanism there are a great number of psychological factors which may operate in the production of those disorders of structure and function of body and mind which are covered by the term "psychosomatic."

Sir William Gowers's chapter on headache in his celebrated textbook may here be usefully recalled as illustrating psychological factors producing subjective sensations—e.g., itching. He calls attention to the effects of directing the thoughts to the vertex of the skull, pointing out the diverse unpleasant sensations which result from this exercise even after a short while. "It is easy," he adds, "to understand that such a sensation may be increased by constant attention, to an unpleasant and even distressing degree, especially if some real sensation originally 'drew' the attention to the part" (Gowers, 1888). This experiment can be applied to the skin: by focusing attention upon a selected area a sensation of itching may there be produced without any peripheral cause. With certain individuals obsessional preoccupation with some region of the skin, independent of or in association with minor skin disease, may be enough to evoke a sensory result at least similar to that produced by severe structural changes.

Physical Factors

Now itching, like pain, is a symptom which can be evoked at various levels of the nervous system; according to Walshe (1942) it is a variant of pain. Peripherally it may be excited by parasitic diseases such as scabies and pediculosis, or by systematized diseases such as psoriasis. At the cortical level it may be excited by such agents as cocaine. At the highest level, the level which it is convenient to regard as that of the mind, irritation may also originate. Even when moderate, itching can, if prolonged, occasion considerable distress; but when severe it becomes as tormenting as pain, and, like pain, may drive the unfortunate victim to almost any extremity. It compels the sufferer to inflict upon his skin secondary changes in the form of excoriations and a peculiar thickening, termed "lichenification." This latter symptom-complex, often referred to as neurodermatitis, might perhaps be better described as psychodermatitis. Patches of lichenification either may arise in an objectively normal skin as a result of itching and scratch-

ing or may appear as a complication of and an addition to an itching eruption. Lichenification is especially common atopic (allergic) eczema.

Treatment

It can therefore now be accepted that in the production of itching, as in the production of pain, both mental and physical factors are recognizable. When itching is physically determined, no more than local treatment, which removes the cause or restores the skin to its normal state, may be necessary. When psychological factors predominate, treatment of the individual as a whole calls for the co-operation of the psychiatrist. If, however, the urge to scratch can be, for a time at least, abolished by sedation or local therapy, "cure" may result because a vicious circle has been broken.

As a first trial in an endeavour to break a vicious circle sedation by intravenous medication was attempted. For this purpose one gramme of novocain in one litre of glucose-saline was delivered in a hundred-minute period into a vein daily for one week. This procedure was based upon the effect observed in the treatment of superficial burns—which, it was recorded, became insensitive for many hours—and upon effect noted in the control of the pruritus of jaundice (Gordon, 1944; Lundy, 1942; Tovell). Although itching could be allayed for 10 to 15 hours by this means the period was found to be too short to be effective, and as there was a risk of producing toxic effects larger doses were not favoured. Further, the procedure lacked any useful psychological effect.

For the second trial a form of chemical sedation was chosen which could be made to act longer with less risk of poisoning, having in addition a beneficial influence on the depression and anxiety so often present. There is nothing new in the principle Macbeth's desire for "sleep that knits up the ravel'd sleeve of care . . . balm of hurt minds" is probably as old as mankind. In the nineteenth century sedation by opium and inhaling ether and chloroform was employed in the treatment of mental illness. In the early twentieth century chloral and bromides were similarly used; and later barbiturates, which facilitated the development of continuous sleep, as a form of treatment. In applying a method of inducing continuous sleep for the relief of conditions characterized by itching it was hoped, in a series of cases, to achieve two ends: first, cessation of scratching, thereby permitting local healing; and, secondly, amelioration of the accompanying mental symptoms, thereby breaking the vicious circle of mental and physical distress, worry, depression, scratching, → increasing distress. When recognizing that this form of treatment has the disadvantage of being symptomatic, it has nevertheless been effective.

The technique of continuous narcosis followed that described by Sargent and Slater (1944), aiming at 20 hours' sleep out of the 24 over a period not longer than a fortnight. The main drug given, morning and evening, was "somniafina," and a supplementary drug paraldehyde. The results have seemed to us sufficiently instructive to warrant the description of a series of 17 cases. It should be clearly understood and emphasized that continuous narcosis is a dangerous form of treatment requiring experience and adequate nursing accommodation; first, to avoid mishaps which may even be lethal, and, second, to secure peaceful sleep of sufficient duration and depth to produce the desired object. It is undesirable to attempt continuous narcosis except under carefully selected conditions.

The series of cases treated and under review can be divided into four psychological groups, as follows:

1. Those who were psychologically normal and, if worried or depressed, were judged to show a normal reaction to the disability. This group numbered 5.
2. Those who showed mood disturbances which preceded exacerbations of the skin disorder, numbering 7.
3. Those in whom the relationship of the mood disturbance to the dermatosis was uncertain, numbering 3.
4. Those unclassified, because not examined psychiatrically, numbering 2.

Analysis of Cases

The accompanying table summarizes the clinical types, treatment, and the results of treatment. The association of mental and physical changes has long been recognized in what is called atopic eczema, "atopic" meaning strange or unusual, provided

Summary of Clinical Types, Treatment, and Results of Treatment

Case	Age (years)	Disease	Duration	Psychological Characters	Physical Characters	Narcosis	Mental Results	Physical Results
1 M	24	Atopic eczema	24 years	Cyclothymic type; depression precedes skin attack	Three weeks' severe exacerbation uninfluenced by rest and local applications	14 days; uneventful	Worry and depression relieved	Improved, and improvement maintained when reviewed after 6 months
2 M	25	"	25 "	Epileptic; cyclothymic type; mentally backward	Eruptions extensive and continuous	14 days	Less depressed	Improved, and improvement maintained
3 F	29	"	25 "	Worry-prone; anxiety exacerbates skin disease	Eruption almost constantly present over 25 years	10 days; uneventful	Improved	Improved, and improvement maintained when reviewed after 8 months
4 M	48	Eczema	5 "	Cyclothymic type; depression precedes skin aggravation	Eczema chiefly arms and face; recent intolerable itching	10 days; uneventful	"	Improved, and improvement maintained when reviewed after 4 months
5 M	39	"	15 "	No psychiatric examination	Chronic eczema hands and feet; recent exacerbation	6 days; patient uncooperative	—	Improved, and improvement maintained when reviewed after 3 months
6 F	41	"	6 mths.	"	Extensive eczema following scalded foot	11 days; uneventful	—	Improved, and relapsed. Systemic penicillin for sepsis of foot
7 M	43	Pruritus ani	2 years	Depression and anxiety secondary to disability	Pronounced objective condition	12 days; patient uncooperative	Improved	Unchanged
8 F	36	Pruritus ani et vulvae	8 "	Normal personality	Followed childbirth	10 days; patient uncooperative	—	Improved, and improvement maintained when reviewed after 2 months
9 F	41	"	7 "	Worry-prone; anxiety increases itching	Much aggravated after childbirth 2 years previously	11 days	Improved	Improved, and improvement partly maintained when reviewed after 5 months
10 M	34	Pruritus ani	7 "	Worry-prone; scratches under stress	Some perianal lichenization	14 days; patient uncooperative	"	Improved, and improvement maintained when reviewed after 2 months
11 F	42	Pruritus ani et vulvae	7 "	Cyclothymic type; depression and skin trouble not established	Infective eczema ano-genital region	8 days; stopped because of vomiting	Slight improvement	Slight improvement, not maintained
12 M	39	Generalized dermatitis	20 "	Normal personality	Better and worse over 20 years	10 days; uneventful	—	At first worse, then improvement, maintained when reviewed after 6 months
13 M	53	Exfoliative dermatitis	2 "	Depression secondary to disability	Intermittent attacks of dermatitis becoming exfoliative and generalized	10 days on 2 separate occasions	No change	After each narcosis improvement, then relapse
14 F	42	Psoriasis	38 "	Normal personality	Chronic psoriasis, becoming acute with violent itching	10 days	—	Itching relieved, psoriasis unchanged
15 F	53	"	13 "	Cyclothymic type; depression precedes exacerbations of psoriasis	Severe itching, 6 months, following gold injections for arthropathy	10 days	Less depressed	Slight decrease of itching
16 F	31	Atopic eczema	30 "	Cyclothymic type; relationship between skin disease and depression uncertain	Itching 1 year, began during pregnancy	5 days; patient uncooperative	Some improvement	Improved for 3 weeks only
17 F	40	General pruritus	1 year	Cyclothymic type; over-dependent	Itching with excoriations	5 days; patient uncooperative	Worse	No improvement

a convenient label for a group where eczematous reactions are found in association with the allergic disposition. Four of these cases are included in the series. Atopic eczema is a comparative rarity. As contrasted with common infantile eczema, which is without allergic affinities and almost always clears up by the second year, atopic eczema tends to settle early in the flexures of the elbows and knees and to continue to puberty or adolescence. In the severe forms the eruption becomes almost universal, with extensive secondary lichenization, persisting throughout life, with perhaps some degree of seasonal fluctuations—a variety often called Besnier's prurigo. No. 16 was an example of this severe type, and, apart from a temporary improvement, the record of failure is otherwise complete. In contrast, No. 2 improved both physically and mentally; this patient is now for the first time in his life in regular employment. An associated improvement in both the mental and the physical states was recorded in 7 cases (Nos. 1, 2, 3, 4, 7, 9, 10) and to a lesser degree in others (11, 15, and 16), which is evidence of the relationship between mental and physical states.

The cases under consideration include conditions with very different clinical characters; they have in common itching rising to such a degree as to require exceptional measures. Apart from this, their chronic and rebellious nature is revealed in the long duration—up to 38 years in one case. Taking into consideration these circumstances, improvement can only be relative, and in this sense most of the patients were relieved to a greater or lesser degree, and a crisis of almost insupportable itching, which was the motive for the continuous narcosis, was controlled.

Summary

Study of a group of itching dermatoses has shown that local treatment is adversely affected by scratching and by the psychological disturbances which commonly occur either as a prelude or as a sequel to the skin disease. These dermatoses are regarded as typical examples of psychosomatic disease.

A form of general treatment is described which has been found effective in controlling (1) the itching and scratching, and (2) the depression and anxiety, present in these cases.

In a series of 17 rebellious and chronic cases most of the patients were relieved after continuous narcosis.

No attempt was made to treat these patients by other than physical means. As they received no psychotherapy, treatment may be considered incomplete.

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TROPICAL ULCERS AND PENICILLIN

BY

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In South China tropical ulcers are a very common cause of suffering and disability, sometimes resulting in crippling and even death. The following notes, based on seven years' experience in that region, give some idea of the nature of these ulcers and of their remarkable response to treatment with penicillin.

Aetiology

The causative organisms are said to be Vincent's spirochaete and *B. fusiformis*. In smears of pus from the ulcers in the early stages I have constantly found *B. fusiformis*, but in only one case (not in the series here recorded) did I find spirochaetes as well. It is possible, then, either that the spirochaete is only occasionally present as an additional infection, or that it may occur only in the deeper tissues and not often appear in smears of the discharge. The finding of *B. fusiformis* in the smears has therefore been of diagnostic value, and indicates the response to treatment that may be expected.

The occurrence of the ulcers apparently depends on three factors:

1. *Portal of Entry for the Infection.*—This is usually the foot or lower leg, where any lesion, from an insect-bite to an extensive wound, may become infected. When ulcers occur on the hand the infection is usually secondary to scabies lesions between the fingers. Occasionally, in severely debilitated persons, they may occur on the outer side of the thigh, and these are the worst. Elsewhere on the body they are rare, as in the case of a man who had his scrotum pierced by a piece of sharp bamboo and developed an ulcer in the wound.

2. *Presence of the Infecting Organisms.*—The question arises whether these organisms live an active life outside the body and, if so, where their usual habitat is. Many of those with multiple ulcers on their legs are soldiers who are covered all over with scabies lesions and scratches, yet on the trunk these scratches do not develop into ulcers. Peasants and soldiers who constantly go through mud with bare feet most frequently develop tropical ulcers. It is very rare to find them in anyone who keeps his feet well washed.

3. *Poor Resistance to Infection.*—Tropical ulcers are rare in the robust. They occur usually in those who are undernourished and debilitated from disease; hence they sometimes appear almost like an epidemic among badly fed and disease-ridden Chinese troops.

large ulcer on the front of the leg, and, both during and after the healing stage, a recurrence of ulceration with fusiform bacillus infection is very probable.

The above description is of a severe ulcer, but many of them are comparatively benign. Some begin to heal when they are only half an inch (1.25 cm.) in diameter; in others the invasion progresses slowly over a period of weeks without surrounding inflammation or fever. However, there are three characteristics common to all these ulcers in the invasive stage: first, the progressive necrosis of skin and subcutaneous tissue; secondly, the blood-stained offensive discharge; thirdly, the presence in the pus smear of fusiform bacilli with or without a mixed infection of cocci.

Treatment

Until the arrival of penicillin the best treatment that I could find for the invasive stage was the application of magnesium sulphate paste to the cleaned ulcer twice a day. In the case of an acute ulcer this application is very painful for about half an hour, but the patient feels sufficient benefit to come back next day for treatment. After about four days the ulcer becomes clean, and in a week the healing stage may have begun.

Summary of Ten Cases of Tropical Ulcer

Case	Time from Onset to Start of Treatment	Site of Ulcers	Number of Ulcers	Size	Fever	Pus Smear	Treatment with Penicillin
A	One month	Scrotum	Single	1½ in. (3.8 cm.)	99° F. (37.2° C.)	Fusiform bac., few; mixed cocci +	Dressings; local injn., 10,000 units
B	3 days	Hands	Multiple	½ to 1 in. (1.27–2.54 cm.)	98.4° F. (36.9° C.)	Fusiform bac. +; mixed cocci, few	Dressings; I.M., 90,000 units
C	6 weeks	Legs	"	¾ to 1½ in. (1.9–3.8 cm.)	98.6° F. (37° C.)	Fusiform bac. ++; mixed cocci, few	Dressings only
D	4 days	"	"	¾ in. (1.9 cm.)	101.4° F. (38.5° C.)	Fusiform bac. only	Dressings; I.M., 90,000 units
E	Primary, 5 mths.; relapse, 7 days	Dorsum of foot	Single	2½ in. (6.3 cm.)	103° F. (39.4° C.)	Fusiform bac. ++; mixed cocci, few	" " "
F	2 weeks	Legs	Two	3 in. (7.6 cm.)	102° F. (38.9° C.)	Fusiform bac., few; mixed cocci +	Dressings; local injn., 10,000 units; I.M., 90,000 units
G	1 week	Legs and hands	Multiple	1 in. (2.54 cm.)	100.4° F. (38° C.)	Fusiform bac. +; mixed cocci +	Dressings; I.M., 60,000 units
H	6 weeks	Ankle	Single	1 in. (2.54 cm.)		Fusiform bac. only ++	Dressings; local injn., 10,000 units
I	Primary, 3 yrs.; relapse, 10 days	Leg	Two	2½ and 4 in. (6.3 and 10.3 cm.)	101° F. (38.3° C.)	Fusiform bac. only ++	Dressings; I.M., 75,000 units
J	3 days	Hands	Multiple	¾ to 1 in. (1.27–2.54 cm.)	99° F. (37.2° C.)	Fusiform bac. only	Dressings; I.M., 90,000 units

Yet I have not seen evidence of direct infection from one ulcer to another. Although ulcers may occur at any time in the year, there is a seasonal prevalence in August and September, when debility from malaria and dysentery is most widespread.

Clinical Manifestations

There are two definite stages in the progress of a tropical ulcer—that of invasion and that of healing. In the early stages of an acute ulcer there is a small black area of wet gangrene covered by cuticle only (the original wound, if small, has usually closed before the ulcer starts). This is surrounded by inflammation and oedema, which may extend over the whole foot or leg. The affected area is extremely painful and tender, and there is varying constitutional disturbance, which in severe cases amounts to a fever in the region of 103° F. (39.4° C.), and a muddy "toxic" complexion. In the course of a week or so the area of necrosis increases until it extends over perhaps one-third of the circumference of the limb or digit. The cuticle will have broken off in the early stages, and a copious blood-stained discharge of thick pus pours from the surface of the ulcer. It has a strong offensive odour which is characteristic and unforgettable. When the discharge is washed away the base of the lesion presents a ragged bleeding surface the colour of decomposing blood.

The edge of the ulcer is raised and indurated, except in very acute cases, when it is punched out. The necrosis is usually confined to the skin and subcutaneous tissues, but sometimes muscles, tendons, and even the bone may be invaded. Unless the tendons are involved there is seldom any tough adherent slough, and the invading organisms seem to have the power of complete cytolysis.

If the ulcer is untreated the length of the invasive stage and the extent of the damage are unpredictable. But the process will be arrested spontaneously, and the lesion then begins to heal—but slowly, owing to the induration of the underlying tissues. It may take years for skin to form completely over a

I have given 0.6 g. of intravenous neosarsphenamine in the early stage, and the invasion has progressed as if untreated. Sulphanilamide, whether administered internally or locally, has no beneficial effect that I have seen.

In May, 1945, a friend in the U.S.A.A.F. gave me a batch of penicillin to try out on special local diseases. I admitted 10 cases of tropical ulcer in the invasive stage and treated others as out-patients. Treatment with penicillin, even in the small doses to which we were restricted, had very good results. In one to three days, according to the severity of the case, the fever and the surrounding inflammation subsided, and the ulcer presented a smooth clean granulating surface. The inflammation disappeared so rapidly that the thick base of tough scar tissue which makes the healing of ulcers so slow did not form.

Penicillin was given locally and by injection. In every case a solution of 500 units per ml. in distilled water or saline (both were effective) was applied on gauze to the cleaned ulcer twice a day. In addition, all except the mild cases received intramuscular injections of 15,000 units three-hourly up to a maximum of 90,000 units. Two cases were given an injection of 10,000 units into the tissues beneath the base of the ulcer. The milder cases, which had only external applications, cleared up as quickly as those having injections.

Treatment in the healing stage is similar to that of varicose ulcers, in that rest in bed considerably hastens the healing, and, apart from skin grafting, the best local treatment is to bind the ulcer in elastoplast, which can be changed after seven to ten days.

Conclusion

The tropical ulcers of South China here described appear to be a pathological entity caused by infection with *B. fusiformis*. Penicillin has a powerful therapeutic action on them, and, when the drug becomes more widely available for their early treatment, an immeasurable amount of suffering and disability will no doubt be saved.

ANGIOBLASTOMA OF THE BREAST COMPLICATING PREGNANCY

BY

J. B. ENTICKNAP, M.B., B.S.

Late House-surgeon, Charing Cross Hospital

Since 1920 about one case of mammary haemangioma a year has been reported, in approximately equal numbers of cavernous and capillary types, and with evidence of malignancy in eight of these. Menville and Bloodgood (1933) describe eight examples, only one of which was malignant, in 3,000 consecutive breast biopsies examined histologically. As probably all angiomas, and not all carcinomas, would be examined, this may well be a high proportion. This is the only case treated at Charing Cross Hospital over a period in which about 1,000 breast tumours were seen. This suggests a general incidence of not more than 0.1% of all mammary neoplasms, while the incidence of malignant haemangioma may possibly be as low as 0.3%—truly a rare condition. No recorded case, however, appears to have been associated with pregnancy, nor has the tumour reached such an enormous size as this one; and the malignant cases were generally of much lower grade. These three factors may possibly be interrelated, and, I think, make this case worth recording. The high degree of clinical malignancy, shown by the rapid recurrence and fatal outcome within nine months, was not predictable on histological grounds. Microscopically there was actually very little tumour tissue to be seen, which explains the earlier biopsy being quite negative even after re-examination in the light of subsequent findings.

Menville and Bloodgood, in their review, point out that there is often enough clinical evidence for the diagnosis to be considered pre-operatively. Although this tumour was clinically atypical, the extremely rapid increase in size in April, due presumably to an interstitial haemorrhage, was suggestive.

It has long been recognized that pregnancy may be associated with a particularly virulent form of carcinoma of the breast, but here we have an example of the mesoblastic tissues undergoing a malignant change under the influence of pregnancy. There was probably a pre-existing simple angioma which was stimulated into activity by hormonal influences similar to those which possibly produce carcinomas. It seems less probable that the process is a two-step one, the epithelial tissues, themselves stimulated by circulating hormone, causing a local stimulation of the surrounding mesoblastic tissues; for then one would expect mammary angioma to be much commoner than the above figures suggest.

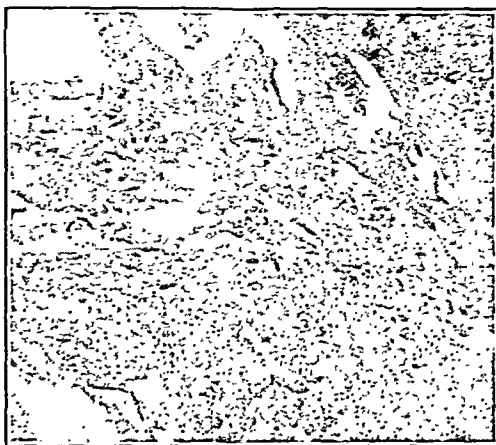
Report of Case

A primipara aged 20 was admitted on April 17, 1945, with an enormous tumour of the left breast. The patient became pregnant in October, 1944, and three months later first noticed that the breast was becoming hard. Ten days before admission, for a reason not then apparent, the breast rapidly swelled and became tense, painful, and discoloured. She had a swinging temperature up to 103°F. (39.4°C.), and her pulse rate was 120 a minute. A diagnosis of probable suppuration was made, but attempted aspiration yielded only blood, which on culture was sterile. It then seemed likely that the condition was a lactation carcinoma or a sarcoma, and the patient was transferred to Charing Cross Hospital for radiotherapy. She was immediately started, but the tumour continued to increase in size as judged by circumferential measurement. At this stage the appearance of the tumour was of a very large rounded mass, 72 cm. in circumference, in the position of the left breast. The thin overlying skin had ulcerated, the ulcers being produced by the coalescence of the original aspiration punctures, each of which had been stretched to form a circular hole by the rapid increase in size of the tumour. They were thus serpiginous in outline, the edges being free from the underlying tissue, which appeared to be organizing blood-clot.

The patient's general condition deteriorated steadily; her temperature remained high and her haemoglobin fell to only 4.8 g. % owing to several gross haemorrhages from and into the tumour. A biopsy was taken of the skin and underlying tissue and of material from the centre of the tumour, but no neoplastic cells were found, the sections showing suppurative reaction only. Local amputation after transfusion was decided upon, being performed on May 7 (by Mr. Norman C. Lake) under nitrous oxide anaesthesia with no ill effect

on the pregnancy. Her temperature immediately subsided, and her haemoglobin rose rapidly to 10.3 g. % on iron therapy.

Two weeks after operation a minute plum-coloured recurrence appeared in the scar. This resolved with radiotherapy, but recurred again, ulcerated, and bled. Subsequently a diffuse mass was felt in the right breast; this also disappeared on treatment. She had a forceps delivery of a healthy female child at full term—July 12—



Photomicrograph of the tumour

and was given testosterone to dry up the right breast. She was discharged to the out-patient department, but attended twice only. A follow-up showed that she went rapidly downhill and died on Sept. 13 from pneumonia consequent upon direct invasion of the lung, as shown by the fact that she suffered greatly from pleural pain. Necropsy was not performed.

At operation the tumour came away easily, but was found to infiltrate the pectoralis major over a small area. It was not possible to decide whether it originated in the muscle or infiltrated this from the breast. It weighed 2,400 g., had a maximum circumference of 75 cm., and on incision appeared macroscopically to consist entirely of semi-organized blood-clot.

The report on its morbid histology (Dr. H. W. C. Vines) was: "The growth is essentially haemangiomatous in type and has given rise to extensive haemorrhage. The appearances are fairly representative of a capillary angioma, but in some areas the cells are more anaplastic and a small number show mitoses. These are more suggestive of an angioblastoma, and it should be regarded as such."

I wish to thank Mr. Lake for his encouragement and permission to publish this case, and Dr. Vines for his pathological report and advice.

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Menville, J. G., and Bloodgood, J. C. (1933). *Ann. Surg.*, 97, 401.

Medical Memoranda

A Case of Cerebral Malaria on Board a Troopship

The following case of cerebral malaria is thought worth recording because of the bizarre mode of onset. It should be explained that the ship left the United Kingdom with a large draft on board, and that on calling at a port in a highly malarious area a few personnel were embarked; these were berthed in scattered accommodation available through the ship.

CASE RECORD

When two days out from the malarious port a seaman aged 22 was brought into the troop hospital with the history that he had been found on the mess deck in a fit. The man was screaming and yelling, was throwing himself about, and had carpo-pedal spasms. He did not look ill; general physical examination was negative, his reflexes being normal but brisk. His pulse rate was 110; it was impossible to take his temperature. He appeared to be in a typical hysterical fit, and was treated as such, by slapping and cold water. He did not respond, and after about 20 minutes was given morphine 1/4 gr. (16 mg.) and scopolamine 1/150 gr. (0.43 mg.) and was restrained in a Neil-Robertson stretcher. In the meantime his messmates were again questioned, but nobody knew him. Eventually a man who had also embarked at this port stated that he thought the patient had been in hospital with malaria. Blood films were taken, and one of them showed a moderate number of M.T. rings.

The patient remained more or less in the same condition, though more quiet after the morphine. He was incontinent of urine and faeces. His temperature was now 101.6° F. (38.7° C.) and pulse 80. A rectal drip saline was started, and he was given quinine dihydrochloride 10 gr. (0.65 g.) intramuscularly. Under general anaesthesia (ether) a lumbar puncture was done; the fluid was not under pressure and was quite clear. Ten hours after the injection he had a convulsion. This consisted of the slow onset of tonic spasms of all his flexor and facial muscles; his jaw was firmly clenched, and he went black in the face. The spasms gradually relaxed, the whole convulsion lasting about 40-60 seconds. Two hours later he was given 8 gr. (0.55 g.) of quinine in 20 ml. of normal saline intravenously. Four hours and six hours after the intravenous quinine he had two more convulsions similar to the one described.

The next morning, 12 hours after the intravenous injection, he was given quinine 10 gr. (0.65 g.) intramuscularly, and this was repeated in 12 hours' time. He was now having very short periods when he was almost conscious, responding to external stimuli and talking disjointedly, but on each occasion he relapsed into coma. Altogether he was in a coma for approximately 50 hours. During all this time he was nursed in a Neil-Robertson stretcher, well padded. He retained his rectal salines reasonably well, and during any conscious periods fluids were given by mouth. His general condition was fairly good all through, though his pulse rate rose gradually and became very thready and rapid after convulsions. His temperature was irregularly remittant between 100 and 104° F. (37.8 and 40° C.). He was now conscious and was given quinine 10 gr. t.d.s. for the next four days, during which time his temperature settled, and he was put on to mepacrine. His condition gradually improved, and he was transferred to a shore hospital; on transfer he was still dazed and disorientated. He was seen five days later in hospital and had then fully recovered. His blood films were now all negative for malaria. On inquiry at the hospital six weeks later it was found that he had been discharged to sick leave fully recovered.

In all he had had three intramuscular injections of 10 gr. of quinine and one intravenous injection of 8 gr. at twelve-hourly intervals during his period of coma, followed by 10 gr. t.d.s. by mouth for four days.

G. D. S. BRIGGS, M.R.C.S.

Drug Eruption due to Sodium Pentothal

Pentothal anaesthesia is so safe and pleasant, from the viewpoint both of the patient and of the doctor, that it seems ungracious to draw attention to unpleasant side-effects associated with its use. These reactions appear to be decidedly rare when one considers the vast number of cases in which the drug is administered, and that harbiturates seem particularly liable to cause drug eruptions. Lundy (1942) stated that he had observed in some cases an urticarial reaction during anaesthesia with pentothal, while Hunter (1943) has seen urticaria and a rash resembling erythema multiforme after pentothal administration. Idiosyncrasy to the drug was seen in two cases by Davison (1943), a fine scarlatiniform rash with pyrexia appearing a few hours after the injection and disappearing in 48 hours.

In the case now reported the patient had developed on three occasions a punctate purpuric rash following the use of pentothal.

CASE REPORT

Capt. X., aged 24, though a fit and athletic young man, had been anaesthetized on many occasions. He had had chloroform once, ether-chloroform mixture twice, and nitrous oxide on several occasions with no ill effects. In December, 1943, he was given sodium pentothal before operation on a wound. Two days later a rash appeared on both flanks, the sides of the chest, and the lumbar region. There was no malaise, pruritus was not severe, and the rash faded within a week. In January, 1944, he was again wounded; pentothal was once more given, and an exactly similar rash appeared and faded within a week. In March, 1945, sodium pentothal was administered before tonsillectomy, and next evening a rash appeared over both inguinal regions and spread over the sides of the chest, affecting also the axillae and lumbar area. The eruption took the form of fine purpuric spots, and disappeared entirely within a week. The rash was not itchy, and apart from slight malaise there were no constitutional signs or symptoms.

As expected in this type of drug rash, patch, scratch, and intradermal skin tests, using 2.5% pentothal, were all negative.

Grateful acknowledgment for permission to publish this case is made to Col. W. J. F. Craig, O.B.E. (Officer Commanding a General Hospital at that time); Brig. G. Y. Fegetter (Consulting Surgeon, C.M.F., lately Officer i/c Surgical Division); and Dr. D. J. Collier (E.N.T. Specialist in charge of the patient).

G. A. GRANT PETERKIN, M.B., F.R.C.P.Ed.,

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Reviews

FRACTURES

A Complete Outline of Fractures. Including Fractures of the Skull. For Students and Practitioners. By J. Grant Bonnin, M.B., B.S., F.R.C.S. Second edition, revised and enlarged. (Pp. 658; illustrated. 30s.) London: William Heinemann. 1946.

The treatment of fractures has attracted a good deal of attention of late years and, despite its limited field, numerous monographs on the subject have appeared. The war has perhaps concentrated this interest and has certainly afforded an increase in experience of various methods.

The volume under review is a second edition of a work which first saw light in 1941. The book has been considerably enlarged in the process of revision and by the addition of chapters on open operations and war surgery. The section on fractures of the face and jaw has been rewritten by Mr. Barron. Injuries of the ankle are treated in greater detail, and this chapter contains observations on the mechanism of that joint which are of no little interest. The treatment of this important group of injuries is fully dealt with. The revision as a whole reflects, both in its convictions and in its precision of statement, the extended practical experience of the author. The use of local anaesthesia for the reduction of displacement is favoured in selected cases and under suitable conditions; an excellent outline is given of the methods advocated. The technical details of the use of plaster and other mechanical devices are clearly set out. The descriptive writing throughout is commendably clear and precise. Occasionally, as in the legend under Fig. 328, the author reverts to the old and confusing use of the term "extension" when traction is meant. The new chapter on open operations though short, contains a judicial and almost conservative survey of the subject. The author does not overlook the historic developments concerned, and in summing up the pro and cons of operative treatment he is well content to reproduce the conclusions of the B.M.A. Fracture Committee of 1910. The problem of fracture treatment in childhood is given due representation in the text as a whole. The process and results of osteogenesis in the growing bone present such differences from those in the adult that one may perhaps look for a special chapter on this subject in the next edition.

This volume is to be commended alike to student and to house officer: it will afford sound instruction for the first and reliable guidance for the second.

ENDOCRINOLOGY OF GESTATION

Endocrinologie de la Gestation. By Robert Courrier. (Pp. 396; illustrated. 465 francs.) Paris: Masson et Cie. 1945.

Prof. Courrier's name is well known for his work on sex endocrinology and his many writings on the subject in the years between the two wars. In this book—he brings together the results of his previous work and, fitting them into a review of the literature, presents a working picture of the hormone interplay which accompanies conception, pregnancy, and labour. The author points out that the writing of the book occupied several years, and during the later ones he was deprived of access to all except Continental literature. The book has not noticeably suffered on this account, and any omissions are to some extent compensated by the inclusion of some recent Continental references with which readers in this country may not be familiar. The subject-matter is concerned mainly with laboratory experiments, and, in applying them to the human being, due regard is paid to species differences. The book is arranged in five major sections, the first two being concerned with maturation and fertilization of the ovum, placenta formation, and the changes that occur in the various organs of the body during pregnancy. Then follows a brief account of the chemistry of the sex hormones and of their occurrence in body tissues and fluids during pregnancy. The author next deals with the factors concerned in the maintenance, prolongation, and termination of pregnancy. In the final section he sets out his concept of the hypophysial-corpora-luteum-placenta system and the part it plays in pregnancy, also mentioning the transmission of hormones through the placenta from mother to child and vice versa.

It seems fair to say that this book does not contain anything new, but it is a survey of present-day knowledge with an account of the main experimental findings on which that knowledge is based. None of the subjects is dealt with in any great detail and the bibliography has been kept within reasonable bounds. The illustrations are few and not of high quality, and the production is of utility grade. This, however, is not surprising when one thinks of the conditions under which it must have been prepared; indeed, the author is to be congratulated on having produced the book at all in what must have been difficult circumstances.

EVERYDAY PSYCHOLOGY

Abnormal Behaviour. By R. G. Gordon, M.D., D.Sc., F.R.C.P.Ed. (Pp. 75, 5s.) London: Medical Publications, Ltd. 1946.

It is still difficult to answer the question "Where can I find a sound commonsense book on practical psychology?" Dr. Gordon has already helped notably by his earlier book *The Neurotic Personality*. While on war service in West Africa, away from reference books and other psychiatrists, he wrote this little essay on commonplace abnormal behaviour from recollection of his long psychiatric experience. He is dealing here not with the criminal, the delinquent, or the nearly certifiable, but with the unhappy, aggressive, anxious or bag-ridden person whom we meet every day and whose tiresome peculiarities are mirrored faithfully, though perhaps not quite so intensely, in our own characters.

The first part of the book consists of 29 admirable pages on the normal, a subject to which psychiatrists have given practically no attention in the vast literature of their subject. In very small compass Dr. Gordon contrives to give the reader a clear inkling of what he means by behaviour, appetite, fear, conflict, responsibility, adjustment, and all the principal features of the normal psychological anatomy. Then he deals in the same commonsense language with the various types of abnormality—epileptic, cycloid, schizoid, and the rest—and sketches the common defence mechanisms of fantasy, depression, elation, suspicion, and so on with which we are wont to evade our problems. His chapter on bad habits is informed by a sane, positive humanity, and his account of mental deficiency reminds the layman of a factor which ought never to be, but which often is, forgotten in seeking for psychological causes. In dealing with lying, stealing, destructiveness, prostitution, and the other common forms of anti-social behaviour, Dr. Gordon shows his gift for putting a finger on the hub of a problem. In the final section on treatment, the department in which most writers on psychology betray their weakness, he contents himself with laying down general principles: positive, creative action rather than restriction and deterrence, and the need for knowledge, understanding, and love. It is hardly within his scope to indicate the manner in which these qualities can be profitably applied to particular types of abnormal behaviour. This application, the real difficulty, probably could not be taught by the longest book. In his opinion that no one in this country need feel out of reach of expert help he is perhaps optimistic, but it is typical of his practical mind that he gives the reader the address of the National Association of Mental Health as at any rate the first step.

V.D. IN GENERAL PRACTICE

Venereal Diseases in General Practice. By Svend Lomholt, M.D. With a Supplement on Penicillin, Mapharside, Sulphathiazole, etc. (Pp. 234; 39 illustrations in colour in 12 plates, 78 illustrations in black-and-white. 25s.) London: H. K. Lewis and Co. 1946.

Readers of this book by Svend Lomholt should note that it was completed before the war, which will explain why it does not appear to be up to date; this is compensated for by the inclusion of a supplement dealing with penicillin, intensive arsenotherapy, pyrethotherapy, the newer sulphonamides, and the culture of gonococci.

It is easy to see that Prof. Lomholt is primarily a dermatologist and syphilologist; the chapters on syphilis, particularly those on the various skin manifestations and their differential diagnosis, are quite outstanding, while the illustrations are first class; in fact, anything more nearly approaching the real thing than the coloured plates it would be hard to imagine. The three main venereal diseases—syphilis, gonorrhoea, and soft chancre—are dealt with on conventional lines, and the author's

views correspond very closely with those held and taught by most British venereologists; the concurrent-intermittent, and alternating-continuous methods of treating syphilis with arsenic and heavy metal are described and a preference is shown for the former. The value and importance of bismuth, a drug which has been rather underestimated in some countries, are very rightly stressed, while mercury is not considered so out-of-date as is sometimes suggested. With regard to gonorrhoea, the Neisser injection treatment is preferred to Janet irrigation as being more suitable for the patient to carry out himself. Other diseases which, though not necessarily venereal in origin, are commonly associated with V.D. include lymphogranuloma inguinale, granuloma venereum inguinale, balanoposthitis, herpes genitalis, condylomata acuminata, and simple (non-gonococcal) urethritis; these are dealt with very briefly. *Trichomonas vaginitis* is not mentioned.

It can be said without hesitation that the teaching of this book is eminently sound and many pearls of wisdom are included; nevertheless, there are many points which call for criticism. The author has an excellent knowledge of English but is not completely master of it, with the result that curious words, such as "clinician," are included and others—e.g., phenomena—are repeated *ad nauseam*. It might have been better if the original had been translated into English by an Englishman. The description of the Wassermann test is far from good, and much more might have been said about the incidence of false positive reactions; the Lange reaction is not considered worth while, and only tertian (presumably benign) malaria is mentioned in the treatment of G.P.I., nor is trypanamide advocated in addition. There are several serious errors. The amboceptor used in the complement-fixation test for gonorrhoea is not "the inactivated serum of rabbits treated with injections of an extract of guinea-pig kidney" (p. 175), at least not in Great Britain; and to give a dose of 0.15 g. of neoarsphenamine (p. 124) to a patient who had suffered from a severe arsenical dermatitis seems like asking for trouble. There are between twenty and thirty typographical errors which suggest that the proof reader or the printer is more blameworthy than the author. The general format of this book, the paper, and the clarity of the print are excellent, but the cover suggests continuous forked lightning or an attempt to present jazz music in a visible form and is bizarre.

Notes on Books

A B C of Medical Treatment, by Dr. E. NOBLE CHAMBERLAIN, is published in London by Oxford Medical Publications at 10s. 6d. The first impression left by this concise and excellently arranged little book might be that no qualified medical man should need it—an impression from which one cannot wholly escape while at the same time paying tribute to the care and skill with which it has been compiled. As will be seen, our criticism is directed against practitioners as the author appears to know them, rather than against the author.

Mr. H. W. L. MOLESWORTH has prepared a second edition of his small book *Regional Anaesthesia* to replace copies destroyed by enemy action. In revising it he has stuck to his original plan of relying on his personal experiences in the practice of a general surgeon. The publishers are H. K. Lewis and Co., and the price is 8s. 6d.

The proceedings of a conference on science and human welfare held last February in London have been published by the Temple Fortune Press (Mildner Works, Herbal Hill, London, E.C.1) at 2s. 6d. The conference was sponsored by the Association of Scientific Workers, supported by a number of other bodies, including the Physical Society and the Nutrition Society. Among the contributors are Sir Robert Robinson, Sir Robert Watson-Watt, Prof. A. V. Hill, Dr. Julian Huxley, and Mr. F. Le Gros Clark.

The February and April numbers of the *Surgical Clinics of North America* are now available in book form from W. B. Saunders Company, London and Philadelphia. The first is a Chicago number comprising a symposium on surgical technique, in which a group of surgeons, active in several fields, discuss their methods in a variety of operations. The second volume, a New York number, presents a symposium on surgical diagnosis, with six additional papers on other subjects. The main symposium, discussing some of the commoner problems of diagnosis, is chiefly by surgeons in the New York area, but there are also papers from the Montreal General Hospital and McGill group and from surgeons in the Services. Six numbers of the *Surgical Clinics* are published each year; the annual subscription is 55s. (paper covers), and 75s. (cloth covers).

Nova et Vetera

PHYSIOLOGY OLD AND NEW

Celsus said that Hippocrates' confession of a mistake in diagnosis was "more scilicet magnorum virorum et fiduciam magnarum rerum habentium." An associated trait of moral and intellectual greatness is shown by how a man whose scientific researches are epoch-making speaks of long-dead and largely forgotten predecessors who failed where he has succeeded. Small men speak with contemptuous pity of remote predecessors, great men respect them; Harvey and Newton deeply respected men whose conclusions they disproved; they recognized their peers.

These reflections are suggested by a perusal of Sir Charles Sherrington's monograph on Jean Fernel,¹ the shadow of a name to most physicians and physiologists of our time. It is a model of how one great man appraises another. Fernel was the first writer to entitle a treatise *Physiology*; we may call him a physiologist, although to his contemporaries he was primarily known as a wise physician. Between a Fernel and a Sherrington there is a great gulf set; it is not only that a physiologist of the 20th century knows much that was unknown and unknowable in the 16th century; there is a spiritual difference. As an individual human being Fernel was, if possible, as modest as Sherrington (who, in his exposition of what all the world now believes about the central nervous system, never even hints how much of this knowledge the world owes to him). Though his undergraduate career was successful, Fernel was dissatisfied with himself and determined to become better acquainted with the old masters of philosophy and science; geometry attracted him—as it had attracted Galen 1,300 years before—and his first book, published when he was 30, was mathematical. Three years later he graduated in medicine, in 1530. At first Fernel may have thought that in astrology—which made a subtle appeal to both the logical and emotional sides of the human soul—he had the key of medicine. But, just as his intellectual honesty had earlier led to doubt of the sufficiency of what we perhaps should call pre-clinical medical training, so increasing experience of clinical medicine made him doubt the value of judicial astrology, and his *Physiology*, published in 1542, is "altogether restrained as to astrology." The time was to come when he "condemned astrology utterly, with its genitures and divinings invented from the stars by the superstitious, and giving predictions of I-know-not-what portents and falsehoods."

But though Fernel was, as an individual human being, humble, he did share the intellectual arrogance or, perhaps it would be better to say, confidence of the Greeks that thinking could solve all the problems of Nature.

"Physiology in the treatise of Fernel is an orderly, logically constructed subject, so rounded-off that few loose ends remain to it, and hardly a growing-point. It is suspiciously complete. The four elements by their four qualities introduce the temperaments, the temperaments invite the humours, the coctions presuppose the organs, the organs require the spiritus, the innate heat demands the heart, the faculties consummate the occult, and are themselves consummated by—crowning concept—the 'life-soul,' the *anima*. In result, that which was to be demonstrated is demonstrated, Q.E.D. Contrasted with this self-contained theorem, the physiology of to-day appears a thing of patches, ragged, untidy, fringed with loose ends, amorphous, confessing uncertainties, but, on the other hand, bristling with facts and growing-points. And, by comparison with Fernel's, how versed in Nature, how capable in daily life, how relatively effective in the sick room!" In fact, "The system which Fernel unfolded was logical but artificial, too humanly logical to resemble Nature."

Fernel, though a humbler individual than Galen, did have Galen's pride in the intellect of man. To Galen, the apostle's dictum that "the foolishness of God is wiser than men: and the weakness of God is stronger than men" would not have appealed even if for "God" one read "Nature." Yet Galen did write of the creative power of Nature:

"Aristotle dealing with this very subject, wondered whether there was not a beginning more divine, something greater than just heat

and cold and moist and dry. Wherefore I think it wrong of men to draw such rash conclusions in matters so great and assign to the qualities alone the power of shaping the parts. It is possible that these are nothing more than the instruments and something else the master-hand."

There is no doubt that, in his practice, Fernel gave more weight to practical experience than theory. This, according to his pupil and house-mate Plancy, was his view of how one should become a physician:

"After a thorough grounding in the principles and elements of philosophy, to learn straightway from some terse and well-written medical précis such details as have to be known of the nature of the human body; then to master the flavours, powers, and virtue of medicaments simple and compound; and then to learn to distinguish the signs and symptoms of the several diseases and their causes, and to gather these together, as a store within the memory then, finally, to follow, long and attentively, the art of practice of some elderly practitioner, capable and experienced in treatment, and to observe in the sick patients themselves what you have read in the books and heard in the lecture-room. He held that there was much in the theoretical part of medicine which could not be explained truly, nor understood, except by way of long practice and experience. He judged that no one can get through on books alone; numerous although books are. The best instructors in medicine were, in his view, practice and experience; they clear up the obscure and equivocal which so embarrass and obstruct the beginner, and they fortify him."

Fernel, who had for years eluded his king's desire to have him physician-in-chief, had yielded in 1556 and was in attendance on Henry in the campaign against the English; he returned to Fontainebleau after the fall of Calais on Jan. 1, 1558; in the early spring his wife fell sick of fever and died; he soon fell sick, and died on April 23. He was probably 61. Perhaps enough has been said to encourage a reader to obtain Sir Charles Sherrington's monograph, although nothing has been said of the scholarly care with which the author has verified every detail, in a way which would have been creditable to a young historian at work in peacetime.

M. G.

EARLY MEDICINE IN ASSYRIA AND BABYLON

La Médecine en Assyrie et en Babylonie, by Georges Contenau (Paris: Librairie Maloine). This book deals with the dawn of medical civilization. Little is known of this period (4,000 B.C. of the Assyrian and Babylonian regions, for up till then writing had not been invented. By the third millennium history marks its records of the political struggles between Sumerians and Semites on cuneiform clay tablets. The second and first thousand years B.C. saw much rivalry between these two kingdoms, and it is chiefly this period which Dr. Contenau describes in all its aspects, including the famous Hammurabi code of Babylonian law. It is interesting to note, even then, the distinction made between medicine and surgery. State medicine under this code flourished throughout the land, though, under the system of theocracy, medical men were sacred until they began to practise surgery, which then brought them into the code. Medical secrecy was insisted on: "to repeat to the King what a doctor has been told, even under oath, is punishable by death."

Minor surgery was practised by barbers. Much palaeo-ethnological work done by Keith, Buxton, and other British scientists has proved, by craniology, the racial differences between Occidental and Asiatic peoples. The two leading types were dolicocephalic and brachycephalic, but transitions between them have also been found in mummies and other remains. Physiology was non-existent; the heart was believed to be the seat of the soul, and the kidneys of bodily vigour; the liver was concerned with the emotions and was also the seat of life. In the list of foods used by these early races (3,000 B.C.) we see that they are similar to those eaten by the fellaheen of to-day.

Dr. Contenau, who has already written thirteen books on Oriental antiquities, has brought his wide experience and powers of clear exposition to make this a useful and readable volume on this particular subject.

¹ *The Endeavour of Jean Fernel*. By Sir Charles Sherrington, O.M. Cambridge University Press. 16s.

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SAMPLE SURVEYS

The growth of the modern State since the development of the industrial revolution, to go no further back in time, has led, and now almost daily leads, to a further and further extension of State control over our habits and actions. The political hue of the Government in power may dictate the degree of control which is regarded as desirable at a particular point of time, but, whatever the hue, it seems inevitable that authority, both central and local, will legislate increasingly on a wide range of subjects which affect all citizens, or sometimes a particular class of citizens, throughout their daily lives. That being the situation, whether we like it or not, it is certain that the better informed these authorities are the more appropriately will they frame their laws and regulations. It will be of benefit to them to know what the man-in-the-street and the housewife in the home think of their plans, though good government must often guide and lead rather than follow public opinion. Of still greater benefit will be factual information bearing on the proposed line of action; without such knowledge State direction will not only frequently fail but will damage rather than assist the society it governs. One of the difficulties in the modern State is to secure this information over the vast range of subjects involved. There is a limit to the census technique, whether it be a census of population, production, or distribution. Such methods to cover the whole population can be employed only at relatively wide intervals of time, some 5 or 10 years, and the amount of information that can be demanded of the form-filler must not go too far. A still stricter limit should be laid upon the present popular habit of distributing questionnaires from the hundred and one interested parties to the ten thousand and one uninterested.

The modern development is, therefore, turning more and more towards the sample survey in which a trained interviewer, emulating the Ancient Mariner who "stoppeth one of three," approaches a randomly selected sample of the population and extracts the required information by a series of ingenious, and sometimes ingenuous, questions. Experience shows that up till now this method is successful in so far as refusal to take part in an inquiry is limited to some half per cent. of those approached, whereas up to 50% may consign a questionnaire to the waste-paper basket and thus vitiate the returns. But, clearly, too wide a development of this relatively new technique may lead to an increasing revolt on the part of Mr. John Doe and Mrs. Richard Roe, and the third or fourth earnest seeker after truth will be told what to do with his or her form

and not always politely. There is need, as PEP stresses in a recently issued broadsheet,¹ for co-ordination in this field, co-ordination between Government Departments, between the central and local authorities, and between these and scientific and social institutions, university departments, and commercial organizations. Without such co-ordination there is bound to be not only an overlapping of inquiries and much wasted effort, but a cluttering up of the field with technically inefficient investigations and with conflicting results due to a lack of agreed definitions and methodology. There is, however, no doubt that in this sampling of human populations for the purpose of obtaining factual data and, rather more doubtfully, opinions lies an important development of social and statistical work in the next few years. PEP's broadsheet is, therefore, a timely and valuable discussion of its problems.

Initially, it defines the Social Survey as an objective and unbiased investigation of habits, environment, or views of a group of people (in total or a sample) through investigators going to the people themselves, in their homes, workplaces, or elsewhere. Two fundamental points are rightly stressed: the selection of a sample that is representative—not at all an easy task in practice; and the framing of questions to which the answers will in the main be trustworthy—an even more difficult job. In both these aspects fundamental research is urgently required: for example, how far the opinions of the interviewed, or even their apparently factual data, may be distorted by the technique of the interviewer or emotionally coloured through his, or her, own opinions on the subject. There is, indeed, already some evidence that this is a factor to be watched and guarded against if true objectivity is to be attained. Obtaining an originally unbiased sample may sometimes be relatively easy, sometimes very difficult, sometimes quite impossible. For instance, a good sample of men serving in an R.A.F. command might well be based upon the fact that each man has an individual number. A sample of 1 in 10 might, therefore, be extracted by merely taking those whose numbers end in the digit 6, or 1 in 100 by taking those whose numbers end in 66. To secure a sample of 3,000 from a population of 45 millions is not nearly so simple. It is usually based upon a choice of "representative" areas of the country in their correct proportion and then a random selection of persons within each. Research into this methodology is needed. Practical difficulties continually arise in samplings of human populations.

Another factor to which PEP draws attention is memory. To what extent will the interviewed accurately recall the event to which their cross-examination is being directed—for instance, their sickness experience in the past months, the age at which their children were immunized, their breakages of domestic crockery over some interval of time? All this needs much thought and the introduction of checks for the consistency and "reasonability" of the data. PEP is, perhaps, a little optimistic in affirming that most people can describe correctly what they have eaten in the previous 24 hours, and that the housewife can remember to a few days when the supply of milk was

¹ *The Social Use of Sample Surveys*. Broadsheet No. 250; 1s. 10d. including postage, from PEP, 16, Queen Anne's Gate, S.W.1.

cut, although it happened three months previously. Again, there is scope for research and the accumulation of accurate evidence to justify such assertions.

Much of the broadsheet is given to a useful account of the Government's wartime developments in this field through its Wartime Social Survey. With a large field staff and relatively small headquarters staff for the analysis and reporting of the results, it has been continually, and to a large extent successfully, active on behalf of Government Departments. To take a few examples: it has studied the impact of propaganda upon the population—e.g., the kitchen front, diphtheria immunization, venereal diseases, and "coughs and sneezes spread diseases." For the Board of Trade it has kept a continual eye upon clothing needs and shortages, and the supply of various household goods and demand for them. On behalf of central and local authorities it has made surveys of housing problems, lighting and heating, and the planning of estates. Other important subject-matters include an inquiry into the occupations of old people, journeys to and from work, the social dislocation due to aerial attack, road accidents, and a monthly index of national morbidity to supplement the mortality data upon which our evidence of the health of the nation is to-day principally based. All such work has been based upon samples of the whole population. Much of it is clearly devoted to *ad hoc* inquiries, some limited to the war conditions; but with increasing Government intervention there is likely to be more rather than less of them needed in future, and, as already said, an urgent need for deeper research into the foundations of the method and its various characteristics. Given more freedom to carry out this research, there is a strong case, as PEP urges, for the permanent retention of this Governmental Survey Unit, not necessarily with a monopoly of Government work, and to a large extent carrying out its tasks in close collaboration with other organizations—learned societies, universities, and other institutions. By the publication and open discussion of its results (so far hardly attempted) a higher standard of work will be achieved and the use of more efficient techniques be introduced. Government assistance is essential because wide-scale inquiries, necessary to ensure satisfactory sampling, are expensive and time-consuming.

To those who object to samples it should suffice to point out that many of our beliefs and conclusions must be necessarily based upon them. The cost-of-living index is derived from a sample of working-class budgets; dietary studies are made on a sample of families (and not at all likely to be representative); the efficiency of a method of treatment is judged upon a sample of patients, and so on. The problem is to get the right sample. Even at its lowest the Social Survey may achieve the success of the U.S.A. Office of War Information, which, PEP reports, numbered among its noblest ventures the demonstration that a new income-tax form was incomprehensible to a substantial part of the public. "As a result of this survey a new form was devised which everyone could understand"—certainly no mean achievement—"and the Treasury gained millions of dollars from the increased revenue." This at least should touch the heart, and pocket, of the Chancellor of the Exchequer, and ensure the future of the Social Survey and the right development of its techniques and uses.

PENICILLIN: D-DAY TO VE-DAY

Under the title *Penicillin Therapy and Control in 21 Arm Group* there has been published in book form¹ a series of 60 individual reports on the use of penicillin for treating wounds or disease, all based on experience on the Continent between the landing in Normandy and the end of the war with Germany. Those dealing with wounds are the product of a planned investigation organized by the consulting surgeon, Brig. A. E. Porritt, and the adviser in penicillin and chemotherapy, Lieut.-Col. G. A. G. Mitchell, which sought answers to 17 specific questions. Readers interested in the surgery of trauma will find a wealth of material here, including masses of statistics, from which to draw their own conclusions about how to combat sepsis. There is general agreement that penicillin was more effective than any of the "contrast agents" (chiefly sulphoamides and acridines) in preventing wound infection, and most surgeons credit it with an important share in the vast improved results obtained in this campaign, though rapid evacuation, resuscitation measures, and first-class surgery are also largely accountable for them. How good the results were may be gathered from a table in an appendix giving the mortality of different types of wound, based on almost complete returns for the whole campaign. Among 50,201 casualties the deaths totalled only 2,564, and in many categories, including most open fractures and joint injuries, the recoveries were over 99%. It seems also to have been fairly generally agreed that combined sulphonamide treatment added little if anything to the protection obtainable with penicillin. Most surgeons found the clinical condition of the wound a better guide to treatment than a bacteriological report, and were willing to do without the latter. An interesting feature is the improved results obtained in abdominal wounds: it was doubtless a mistake to regard penicillin as inapplicable to wounds involving the bowel because some of the bacteria more easily cultivated from faeces are insensitive to or destroy it. If *B. coli* was in fact the chief cause of peritonitis after a perforated bowel, penicillin would be of little use in preventing or treating it, but anyone who has examined the exudate in such cases by rather more thorough methods than usually known that many other bacteria are often concerned, some of which belong to generally penicillin-sensitive genera. There is much else to be learned from this section of the book about the technique for treating wounds involving different structures. The reader has to delve for it: there is no summary of the whole of this material, with the result that it is somewhat fragmentary and repetitive.

The medical and laboratory section contains reports on an almost bewildering variety of subjects: some of these are the treatment of venereal disease, Vincent's gingivitis, skin diseases, staphylococcal septicaemia, and Weil's disease, the distribution of penicillin in the body, its stability in various preparations, and matters of technique in administration. This is by far the most important publication on penicillin since the special number of the *British Journal of Surgery* devoted to it in 1944, and makes public for the first time a mass of Army experience previously available only to those with access to confidential reports. Its interest

¹ Published under the direction of the Director of Medical Services, 21 Arm Group, 1945.

ot ceased with the end of the war, for surely there are lessons here which should be applied in civilian practice? Penicillin will now be used with increasing freedom for preventing sepsis after injuries of all kinds. Perhaps the most important question in this connexion is one which his book does not answer: is it possible to achieve good results by the simple and economical method of local application? There were indications in much earlier Army observations, including those made in 1943 by Cairns and Florey, that early penicillin powder treatment reduced the frequency of sepsis. The applicability of this method to civilian casualty work seems a subject worthy of study.

HEREDITY IN EXOPHTHALMIC AND NODULAR GOITRE

It has from time to time been pointed out that heredity may be a factor in the causation of goitre, though little seems to have been done in the way of large-scale or systematic studies. A recent paper by Martin¹ is therefore particularly welcome. His series is relatively large and he is able to put forward a plausible genetic hypothesis which can be readily tested in future investigations. He classifies his cases into two groups: (1) primary exophthalmic goitre; (2) nodular goitre, whether toxic or non-toxic. He argues that toxic and non-toxic nodular goitres alike arise from simple colloid goitres, that it is sometimes difficult to separate toxic from non-toxic cases, and that thyrotoxicosis may supervene at any time in the possessor of a nodular goitre. This broad distinction certainly appears to fit the genetics of these conditions and is largely responsible for the relatively clear-cut results.

The sample included 90 cases of primary thyrotoxicosis and 111 cases of nodular goitre. The striking finding in the former category is that there is a definite familial incidence—i.e., affected sibs occur much more often than affected parents or children. This points to the action of a recessive gene. Inquiries were not made as to consanguineous union among the parents. It is unlikely, however, that much would have been revealed; in so common a disease the excess of cousin marriages would be small and very large numbers would be required in order to demonstrate it. It is suggested in a genetical note by R. A. Fisher that there is strong evidence for a single recessive gene favourable to the disease, and perhaps necessary for its occurrence, and that, if this is the case, of those potentially abnormal about half the females and a quarter of the males actually develop the disease. Primary exophthalmic goitre is now widely considered to be a psychosomatic condition and not primarily a disease of the thyroid gland. The well-known role of mental shock, infection, and so forth in precipitating the disease could be fitted into this genetic scheme, for something is needed in addition to the genetic factor before the disease can become manifest. A recessive factor with a frequency of manifestation in women of 70% to 80% is also the hypothesis of Bartels, whose work is quoted by Martin in an appendix. Bartels' survey was made in Copenhagen, and is, in Martin's opinion, somewhat complicated in interpretation by the grouping together of primary and secondary toxic cases.

It is possible that the hypothesis may turn out to be too simple. One difficulty in Martin's figures is the peculiar sex-ratio of affected persons among the sibs of the original cases. The sex incidence of toxic goitre is well known. The Registrar-General's figures for deaths show a constant ratio of 7 or 8 women for every man. This is also true of

morbidity. Julia Bell² found almost exactly seven to one in a sample of some 1,200 hospital in-patients. Martin's original index cases show just the same sex-ratio, yet among the sibs affected men are nearly as common as affected women. The discrepancy is highly significant and raises the doubt that there may be something peculiar about his sample.

The incidence of thyrotoxicosis is affected by race. An admirable and detailed study by McEwan³ gives the distribution of deaths in 1936 for England and Wales. It was pointed out by Fraser Roberts⁴ that McEwan's maps bore a startling resemblance to ethnographical maps showing stature, brunetteness, and the like. He showed that the correlation between McEwan's figures for counties in 1936 and the "index of nigrescence" in Beddoes' *Races of Britain* of 1885 was no less than 0.42. It may be that the recessive gene is commoner among the Celtic peoples of these islands, or perhaps it is the frequency of manifestation which is different. Either result would appear somewhat unusual, though by no means impossible.

The distinction between primary thyrotoxicosis and nodular goitre seems largely justified, though on the figures presented it is not perfectly clear-cut; moreover, the sex-ratio is just the same as in toxic cases. In nodular goitre there is no suggestion of a familial incidence. Affected relatives of all kinds are commoner than in the general population, but in view of the complexities due to such factors as iodine deficiency, Martin hesitates to conclude that his results provide any evidence in favour of a genetic basis for this variety of goitre.

The results of this study are suggestive rather than conclusive. They have the great merit of pointing the way to future studies on a larger scale.

OESTROGENS FOR PROSTATIC CANCER

That oestrogens improve the lot of certain patients with carcinoma of the prostate is now well established, but little is known of the manner in which the hormones influence the neoplastic tissue, or of the process of retrogression which the tumour undergoes, and no exact measure is available for assessing the effect of therapy. Schenken, Burns, and Kahle⁵ recorded histological comparisons of material removed from malignant prostates by repeated transurethral resection during the first two months of treatment. Fergusson and Pagel⁶ have correlated the clinical and biological findings with the histological progress of the disease as illustrated by serial biopsy over periods of six months to two years.

Not all cases of prostatic cancer are suitable for an investigation of this character. Some patients are too ill to permit serial biopsy and others are too well to require it. Fergusson and Pagel's necessarily small series is thus not free from the defect of selection. They studied five patients; four were treated with stilboestrol and one with dienoestrol, and all were subjected to repeated transurethral resection by the Gershom-Thompson cold punch. On each occasion the material resected was studied histologically. Progressive alterations in the architecture of the tumour are shown by tables, graphs, and photomicrographs. The cytological changes included (1) a progressive reduction in the number—and usually also in the size—of tumour units per square millimetre, (2) pyknosis, (3) concentration of nuclear chromatin, and (4) a reduction in nuclear diameter. The first and last of these effects can be mathematically expressed and may be used to measure the effect

² *Ann. Exteries*, 1940, 10, 370.

³ *British Medical Journal*, 1933, 1, 1037.

⁴ *Ibid.*, 1933, 1, 1174.

⁵ *J. Urol.*, 1942, 43, 99.

⁶ *Brit. J. Surg.*, 1945, 33, 122.

¹ *Quart. J. Med.*, 1945, 14 (new series), 207.

of oestrogen therapy, provided the sections are removed always from the same locality and provided the effects of repeated trauma can be neglected. Fergusson and Pagel claim to show only that regressive histological changes are a fairly constant accompaniment of oestrogen therapy—in none of their five cases did carcinoma disappear from the samples of tissue removed. They concede that in other patients, whose favourable progress excluded them from the series investigated, a complete resolution of symptoms may have been the expression of "cure," but they demand more direct evidence of this favourable result than is at present available.

The same authors regard the level of the serum acid phosphatase as the most valuable measure of the efficacy of the oestrogens in any individual case of prostatic cancer. The persistence of an elevated serum acid phosphatase, despite massive doses of oestrogens, suggests that prostatic epithelial activity remains unchecked and the histological picture correspondingly unaltered. The degree of elevation of the serum acid phosphatase represents the general activity of all deposits of tumour, both primary and secondary, for the phosphatase content of resected fragments of prostate bore no constant relation to the serum value. Fergusson and Pagel have shown that the response of prostatic cancer to oestrogen treatment offers a broad opportunity to the pathologist no less than to the surgeon and the chemist. The next phase in our growing knowledge of cancer may well centre in the prostate. The histological nature of tumour regression, until recently one of the rarest of pathological phenomena, is transcended in interest only by the chemical process which brings about regression. It is fortunate that a disease which so invites repeated histological study should, almost alone among tumours, sometimes require repeated biopsy as a standard method of treatment.

DECORTICATION IN ACUTE EMPYEMA

An advance in surgical treatment that has emerged from the war is the use of decortication in the management of clotted haemothorax and of infected haemothorax. If ineffective conservative treatment is continued in these cases the time spent in hospital may be long, and permanent disability may ensue. A covering of organized exudate prevents the lung from expanding, and a fixed contracted chest with crowded ribs and severe scoliosis result. By decortication the lung is freed and can be made to fill the chest completely, or only a small residual space is left which can be obliterated by a few days of post-operative suction. Healing is achieved in most cases in a short time, and a virtually normal chest results, the severe crippling of a "frozen" chest, or of total thoracoplasty, being avoided. The importance of decortication in haemothorax has been stressed by Lush, Nicholson, and Stevenson,¹ by d'Abreu, Litchfield, and Hodson,² and by Barrett.³

Price Thomas and Cleland⁴ have given a detailed account of the management of these cases, and have applied the same principles to the treatment of other forms of acute empyema. For most cases orthodox methods of drainage suffice—namely, drainage by rib resection, removal of all fibrin clots, and encouragement of lung expansion by proper breathing exercises and early mobilization of the patient. There are two conditions, however, in which chronicity threatens: total empyema in which the upper lobe is often not only unexpanded but has fallen down over the lower lobe; and multilocular empyema. Decortication

can prevent this and lead to healing in a very short time. Open thoracotomy is essential, either by resection of a long segment of a rib or by a long incision in the sixth inter-space. Intratracheal anaesthesia is needed, and a blood transfusion must be given during the operation. Decortication in acute empyema may be more difficult than in clotted haemothorax, and may be accompanied by much oozing. The whole lung, including the interlobar fissures, must be freed and by positive pressure must be made to fill the chest, which is then closed with a basal and an apical suction catheter. Sanger⁵ prefers to use two anterior and two posterior suction catheters, which can be removed in two to four days.

Penicillin has made this procedure possible in severely infected cases. Even so, as the operation is a severe one it is unsuitable for many patients with acute empyema who are in poor condition, toxic, and wasted. In most cases of simple posterior basal empyema it is quite unnecessary, but it should be borne in mind in every case of total empyema or of empyema complicated by multilocular cavities, in which it offers prompt relief to what can otherwise be a long and disabling illness.

PARIS CLINICAL ASSEMBLY

A three-day meeting under the auspices of the Faculty of Medicine of Paris was held recently at the Hôpital Broussais to discuss recent developments in medicine. In addition to a large attendance of French doctors, visitors were present from Great Britain, Belgium, Holland, Switzerland, and Czechoslovakia. It was stated to be an occasion for the resumption by French medicine of its traditional role in the diffusion of medical knowledge. The sessions were presided over by, among others, M. Leveque, Director-General of Public Assistance, M. Duhamel, of the French Academy, M. Marx, representative of the Service of Cultural Relations of the Ministry of Foreign Affairs, and M. Paul Rivet, representing the Municipal Council of Paris. The expositors were, in the main, members of the Paris Faculty. At the first session problems of endocrinology were discussed, especially in relation to the female generative organs, also the value of synthetic oestrogens and of subcutaneous hormonal implants. After this came an exposition of recent work on hyperthyroidism and the favourable results obtained on the thyroid of recent synthetic products. The extension of knowledge concerning vitamins was also discussed, and the session ended with a survey of the refinements to which the radiological diagnosis of gastric carcinoma can now be carried. The second day was devoted to renal physiology and pathology, the indications for nephrectomy in states of arterial hypertension arising from a unilateral urinary lesion; and the study of the function of the liver, with the effect of benign or malignant hepatitis, without cirrhosis, in causing a generalized oedema. The third day was largely taken up with a discussion of the value of arsenical compounds and of the sulphonamides in the treatment of syphilis. Penicillin also came under review, and some warnings were issued against excessive enthusiasm. A demonstration was given of the success of skin grafting in extensive third degree burns, in which the healing process was aided by penicillin or the sulphonamides. The important discovery of the Rh factor in the blood was the subject of a further exposition. Electrocardiographic technique and modern methods of dealing with the psychoses were also on the programme. Dr. Pasteur Valléry-Radot, professor of clinical medicine of the Paris Faculty, who was largely responsible for the gathering, summed up the results of the three days' deliberations.

¹ *Lancet*, 1944, 2, 467.

² *Ibid.*, 1944, 2, 197.

³ *Ibid.*, 1945, 1, 103.

⁴ *Ibid.*, 1945, 1, 327.

⁵ *Surg. Gynec. Obstet.*, 1946; 82, 71.

PSYCHIATRIC CASES REFERRED BY AFTER-CARE OFFICERS IN REGION 7

BY

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130,312 Army cases diagnosed as neurosis or psychopathic personality 26,275 were discharged to civil life, as against 445 out of 7,925 psychotics (Rees, 1945). Another 100,000 neurotics are in process of demobilization. What is their after-history?

In the last two years 20 ex-Service men and women have been referred to me by the after-care scheme organized by the provisional National Council for Mental Health in conjunction with the Board of Control. These patients, of course, represent only a small number of the total cases dealt with by the regional after-care officer, and are a mere fraction of the number of cases referred for psychiatric advice to other psychiatrists. But some common features which seem worthy of consideration emerge when the group is studied as a whole.

The personnel referred can be classified on the basis of their illness into four categories—organic nervous disease, psychosis, neurosis, and psychopathic personalities.

Organic Nervous Disease: Psychotics

There was one organic case—that of a man of 39 who was epileptic. The need for further advice in his case, however, arose out of a complex of social factors.

Five of the patients were psychotic cases. The disposal of these cases from the Army seems to depend on a decision of their relatives. They may be sent to a civilian mental hospital or be discharged to the care of their relatives. Brig. Rees (1945) gives the following figures for disposal of psychotic service men from the Army:

To Duty	To Civil Life	To Care of Relatives	To Civil Mental Hospitals	To Other Hospitals	Died
7.4%	26.9%	38.5%	7.5%	15.0%	4.7%

It is to be expected that a number of these patients, the majority of whom are discharged to the care of their relatives, should turn out to be a greater responsibility than their families could tackle.

Psychotic Cases

	Age	Illness	Disposal
R.A.A.F.	25	Depression	Voluntary patient civilian mental hospital
Private	31	Schizophrenic	Left home town
R.A.F. cadet	23	Paranoia	Certified
Private	30	Paranoia	Unemployed
Runner	29	Depression	Mental hospital

Among this group was a single man aged 31, a former teacher at a preparatory boys' school, whose case was diagnosed as a simple schizophrenia with a recommendation for prolonged analysis on discharge. This man attended for nine psychiatric sessions, but became progressively more inaccessible, and finally left his sister's house to stay with relatives at the other end of the country. It was recommended that he should enter a mental hospital as a voluntary patient.

Another single man, aged 23, an ex-R.A.F. cadet, was sent home from his training-school. He quarrelled with his family, developed ideas of reference, behaved in a bizarre fashion at his place of work, abandoned his lodgings, and took to sleeping out in sheds. He was reported to the relieving officer, admitted to the observation ward, certified, and placed in a mental hospital. He suddenly burst into my consulting-room one afternoon, dishevelled and bleeding, having escaped from the hospital over a wall topped with bottle glass.

A W.A.A.F., aged 25, joined the Services in an attempt to break off a homosexual attachment. Her self-imposed cure was unsuccessful, and she attempted suicide on one occasion by throwing herself in the way of an aircraft taking off. After a stay in a convalescent home, excellent lodgings were found for her, and she started work. But she failed to make progress, and was admitted to a general hospital in a very excited condition. A course of continuous sedation relieved her, but she failed to settle down at work on discharge

from hospital, and at her request was admitted to a mental hospital as a voluntary patient.

A man who was a misfit in his previous occupation found service in the Army a partial solution to his difficulties, but on his discharge could not bring himself to face returning to his old post. In spite of the greatest consideration by his employers, he developed an elaborate system of ideas of reference and persecution. Certification will probably be necessary.

Psychopathic Personalities

There were 3 patients who could be classified under this heading.

One was a young man, aged 22, who, after failing to gain the school certificate three times at his public school, volunteered for the Fleet Air Arm and failed twice in navigation. He joined the R.A.F., was selected as a cadet; but again failed twice in navigation. He tried to join the Army with the idea of obtaining a commission, but was advised against this. He then tried to join the Royal Navy, still hoping for a commission. On his discharge from the Services he applied for a grant for training in medicine. His attitude was completely egotistical, and each effort was concerned with his own social promotion—a fact which he admitted quite openly.

Another man, aged 26, an only boy of elderly parents, had noticed his homosexual tendencies before joining the Army. Life in the Services exaggerated his conflict, and he was discharged. Though of good physique, he abandoned jobs found for him by the Labour Exchange which involved some physical exertion, and was placed as an assistant in a draper's shop.

Another man, aged 22, had six jobs after leaving his private school; he joined the R.A.S.C., and staged an accident when in France in order to get back to England. He boasted to me of his successful malingering. While still in the Army he married a girl against her parents' wishes. Since his discharge from the Army he has had six different jobs. He has shown no consideration for his wife, knocks her about, and grumbles at the struggle involved in providing for his baby.

Neurotics

The remaining 10 subjects can be classified as neurotics. Eight of them had entered the Services with severe conflicts unresolved. Of the remaining two, one had broken down after severe combat experience, and the other was severely disturbed by his failure to obtain a pension. Their conflicts had been chiefly based on the usual adolescent problem of detaching oneself from the home, adjusting to the opposite sex, and finding a satisfactory outlet in work. In several cases all three main problems were involved.

Only one case appeared to be precipitated by combat stress. This was that of a naval rating who had an alarming experience when he fell between two ships and was in danger of being crushed. Subsequently, at the invasion of Sicily, he was serving on a battleship in a position high up on the superstructure, and saw his friends serving in an A.A. battery below him killed by a bomb from an enemy aircraft. He was discharged from the Navy and returned to his job as cinema operator. But in the projection chamber, high above the audience, he was in a similar position to that in the traumatic episode, particularly when the sound track was reproducing noises of gunfire and bombs, and it was not surprising that under these conditions he broke down again.

The man who suffered from a "compensation neurosis" was a sergeant in the paratroops who had joined the Army from an orphanage at 15 and had been transferred to the paratroops. He made one drop with a faulty parachute, and fell 500 feet into a ploughed field, landing on the buttocks. He developed a severe rectal haemorrhage, and was subsequently operated on for what was described as a rectal polyp. The operation left him with a discharging fistula. At the Pensions Board, "attributability" was denied, and his appeal was dismissed. He was very resentful about what he naturally considered a raw deal.

Of the remaining 8 subjects, 3 had joined the Services, driven unconsciously to satisfy their underlying conflicts.

One, an officer in the R.A.F., was afraid his father would put him into the family business when he left his public school. A casual encounter with a squadron leader took him to the Air Ministry, where he applied for training. He enjoyed the life in the Service, and, as he put it, if he could not fly there was no sense in living. He rarely went home on leave, and was miserable when "grounded." He developed psychosomatic symptoms, tried to mask these by heavy drinking, and was eventually discharged after an interview with a psychiatrist. Since his discharge he has turned down 117 jobs, and still sees no way of coping with reality except by "flying" away from it.

Another man, aged 25, the only earnest and conscientious member of an easy-going, happy-go-lucky family, deliberately joined the

Infantry in order to test himself out. The rest of his family managed to stay civilians as reserved men and women. But by the fortunes of posting in the Army he time and again missed actual combat service, and his repeated frustration and disappointment resulted in an anxiety state. Since his discharge he has become engaged, but evidently regards this as another test situation.

Finally in this group, a trooper, aged 32, was forced into trade by his father when he left school. He always had an urge to go abroad and travel, but was rejected when he tried to enlist in the Navy. He had a breakdown after his parents had interfered with his friendship with a girl, and joined the Merchant Navy. After a year he returned home, but found it hard to settle down. He volunteered for the Army, and would have liked to go over-seas, but was retained in England as an instructor. Once more he tried to get away over-seas, by volunteering for the N.A.A.F.I., and when this was refused he developed effort syndrome and was given a job as a civilian in the N.A.A.F.I. Here he felt "cooped up," and tried to rejoin the Army or the Merchant Navy to get abroad once more. He was successful in being retransferred to the Army, but six months later was no happier, as he was still in England.

Another group of neurotics was illustrated by 3 young men, who were emotionally and socially immature when they were called up, and on discharge from the Service found themselves unprepared to make any choice or decisions in civilian life.

An aircraftsman, aged 21, had been called up from the University. The medical board failed to notice his stammer, and he was posted to radiolocation in Northern Ireland. After vegetating there for more than a year he found his stammer had disappeared, and applied for a commission. He in due course had instructions to report in London, and set off cheerfully, believing he had been accepted as a cadet, to find, when he arrived in town, that he had been posted to a course in Japanese. The stammer quickly reappeared, and he was discharged. He returned home to his widowed mother, quite unable to make up his mind what to do. The mother treated him as a little boy, resumed her training in his table manners, and found him a job as a filing clerk. Analytical treatment of the stammer uncovered a series of episodes of "transvestism." When these had been discussed and dealt with he decided to read for a degree in commerce at the University, and applied himself with enthusiasm to the job.

Another aircraftsman, aged 26, had gone round with a gang when a boy. He was living at home with elderly parents when called up, was posted to the Bahamas, where he had little to do, and became very lonely. Faced with this limitation in his own resources, he became depressed, and subsequent transfer to California, where there was plenty of social life, failed to improve him. On discharge from the R.A.F. he returned home, but could not pick up old friendships, and felt that English girls treated him as an inferior. Unable to cope with English post-war civilian life, he has a vague wish to return to the U.S.A.

A mechanic from the Fleet Air Arm, aged 21, had been brought up in a Devonshire village, and was well adjusted at school, being on easy terms with both boys and girls before the war. When he left school his father found him a job in a garage just before the father was called up as a reservist. But he got on badly with his employer; he wanted "to get away," and applied for training in a Government Training Centre. City life confused and upset him, and when his course was completed he took the first job offered him in a different town, but was soon up against the landlady, who he felt favoured the other lodger. He was called up, refusing to use the reservation to which he was entitled, but in the training camp became depressed, spent some months in a Naval hospital, and found himself once more on another civilian training course. He was so used to being "parked around," as he called it, that he found himself unable to make any decisions about a job when his course was finished.

Summary

Although the majority of Service psychotics were discharged to the care of their relatives, very few of them could be managed successfully at home. In the majority of cases after-care should be directed to persuasion to enter mental hospitals as voluntary patients.

All three psychopaths were ready to avail themselves of the after-care service, but were using it as a screen to avoid further social responsibilities. It is doubtful whether an overloaded service should attempt to deal with this category.

The group of neurotics, all volunteers, had used the Services as an escape mechanism from adult responsibilities. When discharged they found themselves faced with the original unsolved problems, and all wished they were back in the Services. One succeeded in rejoining. Resettlement is unlikely to be successful in such cases without prolonged individual treatment.

Another group of neurotics are those young men who were socially and emotionally immature when called up. Service life relieved them from the need for making choices and decisions. On discharge at

ages ranging from 21 to 25 they are still fixed at emotional levels of 14 to 15, and are unprepared for individual independence. Some form of group therapy and training would seem to be indicated for these, and their relatives need advice as to their necessity for further support and encouragement.

Combat neuroses are comparatively infrequent—a tribute to the prompt measures of dealing with these cases in the Services.

"Compensation neuroses," based on decisions of pensions boards naturally occur. There are bound to be "hard cases," but the impression received is that more time spent in explanation of the decisions by trained personnel would prevent a great deal of unavoidable resentment and subsequent maladjustment.

There is a grave lack of out-patient facilities for treatment, as distinct from diagnosis, of these neurotic persons. Many of these men were seen in private time, without charge, as no out-patient time was available for them.

I am grateful to Dr. Rees Thomas, of the Board of Control, for permission to publish, and to Miss Evelyn Fox, C.B.E., for her kind interest. I wish to thank Miss Howarth, Regional After-care Officer, Region 7, for her invaluable help in the social work.

REFERENCE

Rees, J. R. (1945): *The Shaping of Psychiatry by War*, London.

SCOTTISH EMERGENCY HOSPITALS SECRETARY OF STATE'S DECISION

The Emergency hospitals in Scotland built by the Government to deal with wartime needs are to continue to be administered by the Department of Health until the National Health Service is set up. These needs now require only a part of the resource available, and the balance will be available for general hospital purposes. Announcing this decision, the Department state that "while the Secretary of State's obligations under the scheme cannot be discharged at present without substantial reservation of beds in local authority and voluntary hospitals, he is anxious to reduce these reservations to a minimum and as far as possible to restore complete freedom to hospital authorities in the selection of patients to be admitted." Voluntary hospitals may continue to arrange for the admission of patients from their waiting list to the Department's own hospitals, whose resource will also be used as at present to help local authorities to offset their statutory responsibility for tuberculous and orthopaedic cases.

The Emergency Hospital Scheme was created and developed under powers contained in the Civil Defence Act, 1939, which places on the Secretary of State the responsibility for ensuring that facilities would be available for the hospital treatment of casualties occurring in this country from enemy attack. The scope of the scheme was progressively widened to cover the treatment of Service personnel, marine casualties, evacuated persons, workers in war industry suffering from fractures, transferred war workers, and other classes.

To meet the additional needs a substantial building programme had to be undertaken. Several new general hospitals with over 4,000 beds on a peacetime standard were built and are under the direct management of the Department of Health. In determining the sites of the new hospitals attention was paid both to strategic considerations and to probable post-war requirements. 24 hospitals were extended by the erection of new annexes varying from two ward huts (60 beds) to 40-ward huts (1,200 beds). Purely temporary accommodation was also obtained by various means, including the use of 60 large private houses as convalescent or auxiliary hospitals.

In addition to the new hospitals and the hospitals at which annexes were built, the Emergency Hospital Scheme embraces almost all Scotland's voluntary hospitals—including cottage hospitals—and a large proportion of the local authority hospitals in Scotland. These hospitals were required to keep a proportion of their beds always vacant to receive casualties or other persons entitled to treatment under the scheme. The Government made a payment to the hospital authority both for beds occupied by patients falling within the scheme and for unoccupied beds kept vacant. Thus the large bulk of the hospitals in Scotland have been linked up during the war years in a single comprehensive service under the general control of a central authority.

Special units of various types were set up in 17 hospitals, for orthopaedic work, plastic surgery, brain surgery, and many other types of specialized treatment. The units were equipped with up-to-date apparatus, and arrangements were made for the services of eminent surgeons and other specialists. Where these special units were located in the new hospitals they will now be continued for the benefit of the civilian population. The largest of these hospitals are at Stracathro, Angus; Bridge of Earn, Perthshire; Law, Lanarkshire; and Ballochmyle, Ayrshire. Others are at Killearn and Raigmore near Inverness.

Reports of Societies

BRITISH ORTHOPAEDIC ASSOCIATION

The spring meeting of the British Orthopaedic Association was held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on May 24 and 25, under the presidency of Mr. George Perkins.

Mr. E. A. NICOLL reported upon 150 miners who had suffered fractures of the thoracic or lumbar spine, which he classified into (a) simple anterior wedge, (b) lateral marginal fracture (whose special features he defined), (c) fracture-dislocation, and (d) fracture of the neural arch. The results of simple wedge fracture did not depend necessarily upon the presence or absence of deformity. Hyperextension treatment would not promote repair of a concomitant intervertebral disk injury and was often self a source of chronic lumbar strain; consequently he now referred early exercises with no more restraint than bed rest.

Mr. J. K. STANGER dealt with cases of fracture-dislocation of the spine, which occurred mostly in the thoraco-lumbar and mid-cervical regions. Paraplegia was commonest with injuries to the narrowest parts. Recoverable cases of paraplegia could not be distinguished from irrecoverable, and hence reduction could be attempted. In open reduction of cases with locked facets partial facetectomy was rarely needed; and exposure might even reveal that spontaneous reduction had begun, only hyperextension being required for its completion. Although the results of open reduction in these cases with locked facets and paraplegia were exceedingly disappointing, and although closed reduction could be achieved, Mr. Stanger did not yet feel able to advocate the latter as the usual procedure. Fixation was by plaster jacket, or by plaster bed if posterior structures were fractured. Redislocation, which was frequent, did not cause recurrence of cord symptoms and was often followed by bony ankylosis. The first evidence of recovery from paraplegia might appear as late as six weeks after the injury, and the extent of delay was no measure of the prognosis. Patients with various degrees of recovery after paraplegia from fracture-dislocation were shown.

Mr. W. GRANT WAUGH gave a restrained account of his researches into the pH of acute and chronic joint effusions, and of his attempts to modify this by the injection of appropriate liquids. A clinical estimate was given of the results of treating the joints in osteoarthritis and rheumatoid arthritis by intra-articular injections of a solution of lactic acid and procaine of approximately constant pH. The injections were followed by exercises, and later manipulations, which were facilitated by the injections and formed an integral part of the treatment. Procaine solutions were not a satisfactory substitute. Mr. Waugh asked for trial of the method by others. Some present were able to report encouraging results.

Mr. K. H. PRIDIE advocated excision of the calcaneus in very severe cases of comminution and showed film strips to demonstrate the supple feet, good gait, and powerful plantar flexion power which might follow this procedure if continuity of tendo Achillis and plantar fascia was maintained. He considered that the subcutaneous fibro-fatty pad and the partially regenerated bone provided a serviceable heel. In the lively discussion which followed, the consensus was in agreement with Mr. Pridie's condemnation (following Eastwood) of immobilization of these fractures, strong in advocacy of early movement without weight bearing, but condemnatory of so drastic an operation, and particularly its performance, through a longitudinal dorso-plantar incision.

Mr. E. W. KNOWLES had found that mid-tarsal dislocation might follow either a fall from a height or a torsion injury such as that resulting from a fall with the forefoot trapped. Reduction was very insecure. Consequently he advocated transfixion of the joint with a Kirschner wire passed through scaphoid and talus and incorporated in plaster-of-Paris for four weeks.

Mr. J. B. REID had investigated the results of McMurray's displacement osteotomy of the femur in osteoarthritis of the hip and in ununited fracture of the femoral neck. Of 36 patients with osteoarthritis, 28 were completely relieved of pain. Among 13 patients with ununited fractures, union followed in 7, and one patient died.

Mr. P. H. NEWMAN, M.C., discussed the clinical diagnosis of fat embolism, which had been frequent in war injuries and, if sought, would probably be found to be correspondingly frequent in civil life. Mention was made of the psychological changes, pyrexia, tachycardia, increased respiratory rate, raised blood pressure, petechiae of characteristic distribution, fundus-changes, presence of fat in the last-voided urine, and the lack of information given by the sputum. The importance of efficient splinting and transport of patients with fractures was stressed. Mr. Newman had ligated the deep femoral vein in two cases, one of which had recovered.

Mr. A. GRAHAM APLEY gave a preliminary demonstration of a test designed to aid discrimination between meniscal or other soft tissue injuries of the knee. Clinical cases shown included unilateral adolescent coxa vara (slipped upper femoral epiphysis) in father and each of twin sons (Mr. C. GORDON IRWIN), tendon transplantations (Mr. J. GILMOUR and Mr. DAVID BROWN), melorheostosis, osteoid osteoma (Dr. W. MACKENZIE), and some results of nerve suture (Mr. F. G. ST. CLAIR STRANGE).

Mr. JOHN GULL demonstrated an ingenious invalid armchair which would hoist the patient on to his legs in an upright position or conversely lower him gently into the sitting position, the power being provided by an electric motor.

SPREAD OF INFLUENZA

Opening a discussion on June 28 at the Royal Society Empire Scientific Conference at Cambridge on the spread of influenza, Dr. C. H. ANDREWES said that there were two apparently conflicting views as to the epidemiology of influenza, and both might be right.

According to one view, influenza always reached a country from somewhere else. Epidemics over here had thus been called the Russian or the Spanish or some other kind of influenza according to their supposed place of origin. Outbreaks in Britain usually lasted for at most three months, and virus A—the more important of the two known influenza viruses—might not be recognized at all in this country for the twenty-one months or so before another outbreak occurred. Was its normal existence a progression round the world, producing epidemics, passing from the northern to the southern hemisphere and back again according to season? Recorded data as to the periodicity of influenza in different parts of the world did not support such a view. Epidemics in Britain, on the European continent, and in North America tended to appear at about the same time, but there had been no discernible regular relation to those in the southern hemisphere.

The second view supposed that the influenza viruses were always with us, perhaps in the respiratory tracts of some people who were carriers, perhaps causing, between epidemics, sub-clinical infections or sporadic respiratory ailments. Then, after the lapse of time, the immunity of the population waned to a suitably low level, and some climatic or other as yet undefined factor set the stage for a greater or lesser outbreak. An argument for such a view was the occurrence, as in Britain in 1937, of a number of antigenically distinct variants of influenza virus A, all in one outbreak. There were, too, a number of examples on record in which viruses A and B had turned up in one and the same epidemic. Shope had made out a very strong case for believing in the genesis of an outbreak of swine influenza by simultaneous activation of latent virus in a number of separate droves of pigs.

Behaviour of B Virus

Dr. Andrewes said that he was practically convinced of the truth of this latter view of the endogenous origin of human influenza epidemics until virus B began causing trouble in June, 1945, in Hawaii and Guam. Thereafter it spread East, and epidemics—all mild ones—appeared in the next few months in the Caribbean area, the more northern parts of S. America, and in Texas. Thence a rather slower spread occurred in the U.S.A., but B was widely prevalent in that country by November. In Europe it did not appear till December, in Holland and Belgium; the peak in Britain was in January. From the Pacific the virus apparently went also southwards and caused an outbreak in Australia at what was for them an unusual time of year—November. There were two reasons for believing that

there was a true spread over the world. First, B strains recovered recently in Australia and Britain were antigenically very closely related and decidedly different from the standard B strain Lee isolated in America in 1940. Second, the disease showed rather unusual epidemiological features, and those which Burnet had described from Australia were identical with those seen lately in this country. In both countries the incidence had been very patchy, but with a high incidence in school-children and very little in adults, noticeably little in the Army. Dr. Andrewes wondered, therefore, whether the influenza viruses might not be endemic in every country, but at the same time so labile that they easily produced mutant forms sufficiently distinct antigenically from the stock to be able to infect a substantial number of people who were resistant to their endemic strain. Virulence might soon be raised and further extension made possible. Thus a country-to-country spread could be quite commonly superimposed upon endemic influenza. What had perhaps occurred during the past year with virus B might be not unlike the happenings of 1918-19, except that in contrast to the pandemic virus last year's antigenic variant of B caused only a mild disease, not readily differentiated from the local endemic influenzas.

It would not be possible to find out whether there was a country-to-country spread as a normal occurrence unless there was co-operation between countries in collecting and comparing strains from outbreaks. In every considerable region within the Empire there should be trained observers capable of collecting and comparing strains, or at least collecting and transmitting to centres where detailed comparisons might be made. The global epidemiology of influenza might be in a state of transition as a result of the enormous increase in air transport. If so, it was most important to be able to observe accurately what was happening.

Correspondence

The Hypochondriac's Treatment

SIR,—Dr. Edith Summerskill has told us that "In future no doctor need prostitute his science by pandering to the hypochondriac." Dr. Alfred Cox in his letter to the *Times* (June 14) writes: "I would rather see them making concessions to patients who mistakenly think they are ill, than being bound by the regulations which are intended gradually to make the doctor into a Civil Servant whose primary duty is not to his patient, but to his employers." Dr. Lindsey Batten (June 29, p. 999) assumes that the doctor is more free than he would be in a State Medical Service to discard the hypochondriac.

None of these authorities differentiates between the treatment of the hypochondriac's complaints and the treatment of his hypochondria. They all assume that the hypochondriac is incurable, and that the only treatment available is the treatment of his alleged symptoms. This assumption is inadmissible unless a serious approach along psychological lines has been attempted and failed.

But this out-of-date assumption is implicit in the teaching of the medical schools. Students learn "not to waste time" on the hypochondriac's symptoms; this is an excellent precept but it gets us nowhere. The hypochondriac is not a conscious delinquent to be ousted from the sphere of medical treatment and professional sympathy. He is a victim of fears he does not understand; his symptomatic figments are the result of conflicts in his personality; he is even more exasperating to himself than he is to his doctor; he needs treatment badly, even when his alleged symptoms are fatuous.

Will Dr. Summerskill tell us who is to teach the next generation of doctors the science—and art—of treating the hypochondria of the hypochondriac?—I am, etc.,

Harrow-on-the-Hill.

H. CRICHTON-MILLER.

Psychology in the Child's Education

SIR,—One cannot but agree with Dr. D. W. Winnicott's forthright letter (June 29, p. 998) on the integrity of the home, and on the principle of rendering to Caesar the things that are Caesar's. But his statement on keeping children sad when they

are in hospital by allowing their parents to visit them surely calls for strong evidence.

My best psychiatric social worker, a lady of some erudition and personal charm, gave me two papers to read written by London-psychiatrists. She did so, obviously feeling sorry for me, in order to draw my attention to the dangers of "hospitalization." Both authors quoted at length case histories of neurotic children associated with separation of the mother: an early age for hospital purposes. But no controls were described. In argument against these papers the hospital histories of hundreds of people without gross neurosis are in existence.

I do not think there is any doubt that serious cases of psychiatric trauma occur in some young children going to hospital. But is not the damage done at the time of separation? Is the separation not in most cases mishandled by anxious mother or too businesslike nurses? Should nurses not have more training on this particular point? Should the mother not receive some few minutes' coaching on how to behave when the child is leaving?

The emotional disturbance of visiting-hours which occurs in some children's wards is obvious evidence that the separation has done damage, and those physicians and surgeons who frown on parental visits are on good psychiatric ground. I would like to agree with my psychiatric social worker on her point, but until the separation of the child from its mother is more skilfully handled along tactful psychiatric lines, I would deplore the necessity of re-enacting the psychic trauma by having parental ward visits which could be avoided. Much more would I avoid deliberately "keeping them sad."—I am, etc.,

Surrey.

JOHN A. McCLUSKIE.

SIR,—It is quite likely to be useful if doctors will give the ideas about education in its wider sense—i.e., as an education for life, because they see an aspect of life which is not accessible to the general public or to teachers. They see people during periods of emotional stress, and consequently know a side which is not usually thrown into relief. In my opinion they should confine themselves to this, for when they begin to put forward views on the curriculum they are in danger of falling into the trap of telling teachers what they already know very well. Let us therefore leave teachers to their own job and try to give them our knowledge about living people. Such knowledge can only enrich their work.

When one comes to the subject of citizenship doctors can give something, for citizens are living people, whom we know at their best and at their worst. We know something about where they triumph over adversity or fail in their citizenship. One thing stands out: we can say, and this should by now be known, that becoming a citizen is not a matter of words but a question of behaviour. Consequently we can tell teachers that it is useless to talk on the subject unless they themselves are good citizens, whatever that may mean. We can also tell them that if they are good citizens it is only of secondary importance what they say to children.

The same kind of argument applies to teaching psychology. I myself feel confident that children would like to hear adults talking about psychology—in fact I know they do—and the deeper the better, because it is near what they experience. But we should, however, not expect that this will make them any better people. Psychology is essentially a two-way affair. To be effective in education it must express something the teacher knows and applies in his actual life, otherwise it is just hot air.

In conclusion I must return to my doubts about teaching the teachers, especially since they really do know quite a lot about children, indeed much more than most doctors. We know that our profession itself is in urgent need of education about handling children. Let us beware, therefore, that in setting ourselves up as authorities in the realm of another profession we do not lay ourselves open to the reproach of "living in glass houses."—I am, etc.,

London, N.W.1.

MICHAEL FORDHAM.

Gas Gangrene of the Gall-bladder

SIR,—Mr. W. R. S. Hutchinson in his article on gas gangrene of the gall-bladder (June 15, p. 915) quotes seven cases from the literature and adds an eighth, but he does not attempt to explain the rarity of this infection in cholecystitis. MacLennan was in the same quandary when he posed the question: "Wh

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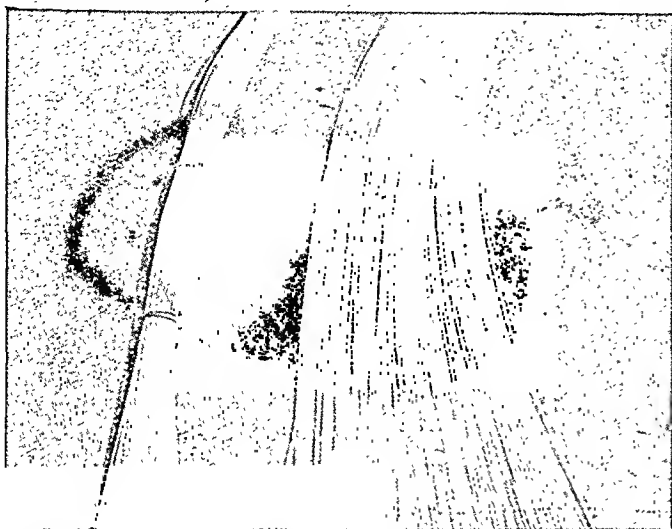
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BASINGSTOKE AND LONDON

it that only 1% of war wounds infected with clostridia develop gas gangrene?" Quoting Gordon-Taylor and Whitby, Jr. Hutchinson shows that *Cl. welchii* are found in 1 out of very 11 cases of cholecystitis. It would be a grotesque misapprehension to assume that gas gangrene occurs in this proportion of cases. It is not strange, then, that some other cause must be found for the infrequency of this infection.

I have reported 16 cases of gas gangrene in war wounds May 12, 1945, p. 656) and showed that clostridia could not flourish on healthy muscle, and that ischaemic or necrotic muscle was essential for the establishment of gas gangrene resulting from arterial damage or occlusion. I believe that gas gangrene of the gall-bladder can only occur when this organ is partly or wholly deprived of its blood supply. This is obviously a rare occurrence and can only be accounted for by pressure on the cystic artery, the most likely cause of which is inflammatory oedema, especially when stones are impacted in the cystic duct. An abnormal position of the cystic artery may also be a predisposing cause. If the artery is partly occluded, it is the fundus of the gall-bladder which first becomes ischaemic, as apparently happened in this case. Should the artery be totally occluded the whole organ becomes necrotic. Once the gall-bladder is removed (as when all ischaemic or necrotic muscle is removed in war wounds) there is no cause for anxiety: gas gangrene cannot develop in the healthy muscles of the abdominal wall.

Mr. Hutchinson's statement that "Fulminating gas gangrene of the liver, following cholecystectomy, occasionally provides an unwelcome reminder of their presence" has a distinct bearing on my hypothesis. I believe it can only result from ligation or injury to the hepatic artery at the time of operation, for primary gas gangrene of the liver is otherwise unknown. Clostridia are ubiquitous. They are in our clothes, on our skin, in our air-passages and alimentary tract. They are ever in search of ischaemic or necrotic tissue, and it is only when this is forthcoming that they can do us any harm.—I am, etc.,

Hereford.

R. WOOD POWER.

Jittery Legs and Burning Feet

SIR,—Dr. K. P. Hare (June 22, p. 968) appears to be interested to know when the term "burning feet" was introduced. I used the phrase first in 1911, but Strachan mentioned "burning pains in the palms and soles" in 1888 when describing a condition he called malarial peripheral neuritis, but which I later brought evidence to show was a deficiency state. Long before this, however, in 1825, a paper was read in Calcutta by J. Grierson, Esq., attached to the Arracan division of the Army, "On the Burning Feet of Natives," and the term was probably in common use even earlier.

In 1936 I collected together a number of descriptions of the affection, and in 1942 suggested that the symptom might form part of a larger neurological syndrome due to a deficiency of riboflavin and/or some closely associated factor. The work of C. Gopalan would now appear to show this to be folic acid.—I am, etc.,

London, W.1.

HUGH S. STANNUS.

Black Tongue and Oral Penicillin

SIR,—With the release of penicillin for sale by pharmacists on medical and dental prescriptions, its administration will become general. I venture to predict that one of its most common uses in general practice will be in the treatment of sepsis of mouth and throat by means of lozenges and sprays. I have personally observed melanoglossia in two instances as a concomitant of such treatment, and, having heard of a third from a colleague, infer that the condition will be seen with increasing frequency. This letter is written in order to apprise those who have not yet administered penicillin as oral lozenges or throat spray of a complication of treatment which, though innocuous in itself, may occasion alarm. It is hoped that bacteriological investigation of a sufficient number of these cases will elucidate the cause of this puzzling condition.

Case 1.—A previously healthy male aged 28 reported with sore throat, hoarseness, and slight malaise of two days' duration. He was a moderate smoker (10 a day), not subject to sore throats. T. 99° F. (37.2° C.), P. 78; teeth and gums healthy; tongue clean; oro- and nasopharynx injected; tonsils moderately enlarged; R. tonsil oozing pus from several crypts; tender R. tonsillar lymphadenitis;

no abnormality detected in other systems. Treatment: penicillin lozenges (gelatin base; 250 units per pastille), one to be inserted into the buccal sulcus and retained as long as possible; another to be inserted as soon as the first dissolved, and so on during the waking hours. The patient continued at work. He was advised not to smoke. No other treatment was given. *Second Day* (after 12 lozenges): T. 98.2° F. (36.8° C.), P. 72; subjectively much improved; tongue clean; tonsils settling, pus not expressible from either; lymph glands not tender. *Third Day* (after 9 more lozenges): Feels quite well; T. 97.8° F. (36.5° C.), P. 72; tongue lightly coated with yellowish fur; tonsils clean; R. tonsillar lymph gland palpable but not tender; oro- and naso-pharynx normal. Treatment discontinued: patient discharged cured. Total number of lozenges administered 21. *Fifth Day*: Reported with "black tongue." The tongue was covered on its dorsal surface with a dark-brown fur. The edges and tip were clean and normal. The coat was thickest posterior to the circumvallate papillae and in the median sulcus anteriorly; it faded towards the tip and edges. The colour was most intense, indeed quite black, where the coat was thickest—i.e., in the median sulcus and on the posterior surface; these places looked like worn black velvet, the "pile" being about 1/8 in. (3 mm.) in length. The edges of the coat were a dark brown, and the whole tongue had a moth-eaten, furry, velvety appearance. It was covered with a musby brown detritus which left a dark-brown speckled stain on gauze; its removal did not materially affect the appearance of the tongue. Apart from the tongue, there was no abnormality on examination. There was no malaise, no fetor, no unpleasant taste, and no dyspepsia. He admitted recommencing smoking yesterday. He denied the use of mouth-washes or the ingestion of coloured confections; he had not sucked Brompton or other liquorice lozenges; he had drunk strong tea, but this was his normal practice. He was reassured; no treatment was advised, and he was kept under observation. *6th to 10th Days*: No appreciable change. *11th to 16th Days*: Gradual thinning and disappearance of the fur from the lateral edges medially. The last area to clear was in the median furrow for about 2 cm. anterior and posterior to the circumvallate papillae. *18th Day*: The tongue presented a perfectly normal appearance. He had remained symptom-free throughout. He had never suffered from the condition before. There was no family history of melanoglossia.

Case 2.—Male aged 31; reported with sore throat and dry, irritating cough following a "cold in the head, which always goes to my chest" three days previously. T. 98.2° F. (36.8° C.), P. 72; oro- and nasopharynx injected, dry, and glazed; tonsils absent (removed at age 23); tongue, teeth, and gums normal; other systems revealed no abnormality. Treatment: penicillin pastilles as for Case 1 (gelatin base, 250 units per lozenge) and penicillin throat spray (250 units per ml.), inhaling deeply with each squeeze of the bulb, six squeezes half-hourly during the waking hours. No other treatment was given. He was advised not to smoke. All symptoms and signs had subsided after two days and treatment was discontinued (number of penicillin lozenges 19). Two days later (i.e., four days after commencing penicillin therapy) he reported with a heavily coated dark-brown tongue which, by the next day, was similar in every respect to that in Case 1. He had not smoked, gargled, nor used a mouth wash. He had sucked no coloured confection. He presented no sign of syphilis or other disease. There was no fetor, dyspepsia, or unpleasant taste, but he had suffered some embarrassment from facetious comments from his acquaintances. The condition remained *in statu quo ante* for five days and then rapidly regressed. Sixteen days after his first reporting, his tongue had regained normality.

There was no connexion either socially, geographically, or in type of employment between the two cases. Bacteriological investigation was not possible in either case, as laboratory facilities were not available. "Black tongue" receives scant mention in the standard medical textbooks. Dermatological reference books describe two types (true or idiopathic, and false or pseudo) of black tongue (syn.: melanoglossia, lingua nigra, black hairy tongue, hyperkeratosis linguae). Sutton (*Diseases of the Skin*, 1931) considers the condition a rarity and states that only 50 authentic cases had been recorded since Rayer's original description in 1835. In discussion following a meeting of the Dermatological Section of the R.S.M. (*Brit. J. Derm. Syph.*, 1937, 49, 243) this view was questioned by Parkes Weber, who suggested that black tongue was seen not rarely in the out-patient departments of ordinary hospitals. The "true" black tongue is characterized (Sutton, 1931, Andrews, 1938) by well-defined, circumscribed, thick, stable, soft, fur-like, brown to black patches with filaments 1/4 to 1/2 in. (6 to 12 mm.) long on any part of the surface of the tongue but especially that area immediately anterior to the circumvallate papillae. The "false" is characterized by its instability, evanescence, its covering of soft mushy detritus, and its shorter length of filament. Andrews (*Diseases of the Skin*, 1938) includes

among the "pseudo" variety a "mycotic" type, and a photograph in his book exactly mirrors the condition of the two cases described above. Heidingsfeld (quoted by Sutton and Andrews) considers the condition to be a congenital abnormality developing in later life and attributes the colour to changes in the horny cells of the hypertrophied filiform papillae as in the dermal hyperkeratoses. Oppenheim (quoted by Andrews) produced hypertrophy and hyperkeratosis of the filiform papillae by painting with vegetable tinctures and compares the effect to that produced on the skin by tar and aniline products. Prinz (quoted by Andrews) ascribes the pigmentation of the elongated papillae to a deposit of pigment from external sources (a reaction between the haemoglobin of the blood and sulphur and ammonium compounds derived from protein debris or tobacco). The appearance in mycotic black tongue is said to be due to the filamentous mycelia of fungi growing as moulds on the dorsum (Andrews, 1938). Thompson and Montgomery isolated an actinomycete from two cases. Wiedman grew *Microsporon minutissimum* from a case. This worker (quoted by Sutton) connects black tongue with trichomycosis—i.e., suggests a symbiosis between the fungus *Nocardia tenuis* and a black-pigment-producing bacterium, *Micrococcus ingrescens* (Castellani, quoted by Sutton). The *Journal*, in answer to a question on the subject (1943, 2, 317) considered the black colour due to the fungus *Aspergillus niger*, but suggests that a yeast or a chromogenetic bacterium might be implicated. Among the exciting causes are listed tobacco, sulphenamides, atropho-neurosis, gastric hyperacidity, irritant mouth-washes, syphilis, antiseptics, astringents, and colouring matter introduced into the mouth.

The two cases described above were, I have very little doubt, of the "mycotic pseudo" variety, and, although they may have arisen fortuitously, the role played by penicillin is strongly suggestive of a cause-and-effect relationship. A likely aetiological view is that the fungal spores (and chromogenetic bacteria) are not uncommonly present in the air and mouth, but their growth is inhibited by the products of the normal buccal symbiotic flora. When penicillin alters this biological balance (cf. sulphaguanidine and streptomycin in the bowel) conditions then become less inimical to the growth of the organisms of "black tongue," which clinical condition may then arise. Such a theory would explain the "mycotic" cases unconnected with penicillin, the normal biological balance being disturbed by certain local irritants and antiseptics.—I am, etc.,

Leeds.

P. D. BEDFORD.

Notification of Venereal Disease

SIR,—Mr. C. M. Ockwell (June 15, p. 929), in urging the adoption of some system of notification of venereal disease, says: "The two chief types who are mainly concerned in the spread of venereal disease are: (1) defaulters; (2) the irresponsible professional and amateur." Is there not a third type? i.e., the persons by whom the "irresponsible" ones have been infected. Many people appear to believe that women and girls who lead promiscuous lives somehow originate V.D.! I do not suppose Mr. Ockwell to be one of these, but he does not seem fully to appreciate the fact that while men are of course infected by diseased women each of these women has been infected by a diseased man.

Every scheme for notification so far put forward has ignored some factor which must limit its possibility of success when put into practice. Mr. Ockwell, for instance, proposes penalties for anyone who "knowing that he is suffering from an infectious disease exposes other persons to the risk of infection." Even with universal notification—of private patients as well as of those attending clinics—there would still be enough people who could not be proved to have known that they had V.D. in an infectious form to make a considerable leakage.

Regarding defaulters from treatment, it must always be an open question whether the number of persons deterred from defaulting by the weapon in the background would equal the number deterred by it from ever coming to the clinic at all. It is obviously very misguided not to want to come and be treated, but Mr. Ockwell says such people "are mostly sub-normal or abnormal mentally or psychologically," so what can we expect? Not that I agree with his statement. Practical experience in social work shows how many reasons there are why regular attendance at a clinic for a long period is ex-

tremely difficult, involving, as it often does, much absence from work or from pressing home and family duties, and calling for exceptional qualities of perseverance and moral courage. More over there are two deeply ingrained common instincts. First the instinct to resist being driven by threats; secondly, unwillingness to undertake anything without seeing just what it may involve. To the question, "If I start this treatment have I got to follow it up?" the answer, "You'll be silly if you don't but no one can make you," is very often successful where "You'll be punished if you don't" would certainly fail.

The free confidential system of treating venereal disease was meeting with considerable success before the war. There seems no reason why with more education, more and better staffed and equipped clinics, and more social workers of the right kind with no whips up their sleeves, its future success should not be still greater. It must be gradual, and it is difficult not to be impatient, but apparent short cuts by way of penal legislation are likely to prove a much longer way round.—I am, etc.,

KATHARINE B. HARDWICK,

General Secretary,

Association for Moral and Social Hygiene.

London, S.W.1.

P.S.—Dr. S. M. Laird, in his letter (June 29), recommends that official action under Regulation 33b should be allowed to be taken on one notification. This step seems likely to increase both the number of persons deterred from seeking treatment, and the difficulties of the social workers who are now tracing once-named contacts for the clinics. These workers often attribute their success to the very fact that they come a friends with no authority to enforce their advice.

Medical Future of the Colonies

SIR,—The correspondence in your columns may benefit us in the Colonies little since the B.B.C. has announced the appearance of a White Paper which promises basic pay for Colonial civil servants irrespective of race and domicile. If this means equal pay for equally qualified African and European medical officers, as demanded by Dr. Thomas (April 27, p. 663) and others, then either (a) recruitment of Europeans will cease since none will come to the Colonies, or (b) Africans will be grossly overpaid. If the market value of a young medical man in Britain is £x per annum, then he must be granted £x plus some kind of "danger" or "expatriation" allowance to compensate him for all that living in, say, West Africa entails—separation from home and family, isolation from professional contact, a definite risk to health. The West African, enjoying some kind of immunity to the local diseases and living, perhaps, in his own home town, is to be given the same "danger" money and enjoy an income greater than his market value of £y per annum. No European will come to West Africa for the same salary as he can command at home. I can hardly imagine even a Colonial Financial Secretary approving a salary for an African greater than that he could obtain in Britain. For many years we in the Colonies have demanded basic salaries for holders of similar posts, but we must insist on the provision of expatriation allowance for non-native officials.

Dr. Thomas states that the schooling of our children left behind in Britain need cost us nothing. Having enjoyed an excellent free education and disliking the public school system I thoroughly agree, but the children must be fed, clothed, and housed. I know of no British education authority which provides these items free for men of professional standing. Moreover, the upkeep of European children in a temperate climate is rather more costly than the upkeep of African children attending the numerous excellent schools run by Government or State-aided missions in the larger coastal towns here; inclusive fees for board and tuition may be £25 to £50 p.a.; only light drill outer garments are necessary. Regarding higher university education, our African colleague is in a most favourable situation. In order to produce local graduates scholarship of up to £350 p.a., which may be increased to over £400, are offered to any African child who can pass a university entrance examination. Although we Europeans pay the same local tax, our children do not enjoy these lucrative scholarships.—I am, etc.,

"WEST AFRICA."

SIR,—I would like to add my support to the observation made by "Another West Coaster" (June 15, p. 931). For many years I was able to observe newcomers to the service,

ome of whom on arrival were imbued with a warm and yearning desire to 'do good' by the African. But with the passage of time initiative and enthusiasm were dissipated and finally lost in a maze of monotonous routine duties which should devolve on clerks.

In recruitment for the Colonial Medical Service a totally misleading emphasis is laid on the opportunities afforded for clinical and research work. Opportunities there certainly are, material is rich, and the urge to grapple with them not lacking, but the dead hand of officialdom weighs heavily and ever more heavily. Innumerable returns, daily cash collection for the sale of drugs, the checking by auditors and Boards of Survey, elegant clinical work to the background. Interest in the microscope is discarded for a fanatical obsession with "store issue vouchers." Dexterity with a scalpel is replaced by deftness at the typewriter. The outlook of the medical officer becomes completely reorientated until he finally regards efficiency not as the ability to make contact with the people and by raising his clinical standards in his hospital to gain their increasing trust, but as ensuring that his returns are correct, his figures or the annual report impressive, his proposals for the future not too demanding. The impulse to act imperatively in any direction towards betterment must be curbed. Chaos would result. Soon his remaining characteristic is a dexterity for *not* getting things done.

What a waste to the service of imponderable but valuable assets! Surely it is now time to realize that the best will join its ranks only when imagination and driving force are directed towards sustaining a livelier interest in the chief human problem of the country—the sick African—and this not through the medium of clerical routine but by arduous clinical work and profitable research.—I am, etc.,

"STILL ANOTHER WEST COASTER."

Irish Representation on G.M.C.

SIR,—At the present time the power of the General Medical Council is being severely criticized. It has been said that it is very much out of date. I think that its constitution is rather obsolete in regard to the representation of the practitioners of Ireland. As reported in the *Journal* of June 22 (p. 968), one member has been elected to represent the practitioners of Ireland. As the majority of people in England know, Ireland has been divided for almost 25 years into two separate states, the Irish Free State—or Eire, as it is now called—and Northern Ireland. During this time the health services of Northern Ireland have progressed to a much greater extent than those of the Free State. In the latter the only State-aided services are to be found in the "dispensary system"; there is no "panel" service. On the other hand, in Northern Ireland the "panel" service has been instituted for about 15 years (the dispensary system is still present but only serves a very small proportion of the people).

The Minister of Health for Northern Ireland, the Rt. Hon. William Grant, M.P., has stated that it is his policy to introduce a similar health service to that of Great Britain, but not necessarily by the same means. So far as I am aware no such health service is in the policy of Mr. De Valera or his Government. The point I wish to raise is that it is useless for a practitioner from Eire to try and represent the practitioners of Northern Ireland. How can he know anything about conditions of practice in Northern Ireland when he is far from the nearest "panel doctors"? Surely the practitioners of Northern Ireland are to have a direct representative in the General Medical Council. It is most unfortunate that their representative is a man from a State where the way of practice and the way of living are as different as night is from day.—I am, etc.,

Gateshead.

J. S. ELWOOD.

Socialism and the Pay-bed

SIR,—I cannot support too strongly the letter of Mr. J. B. Macalpine (June 22, p. 968). Having worked seven years in a municipal hospital and seen what he describes many times over I feel sure he is right in his protest. If the Hippocratic Oath means anything it binds us to do our utmost to relieve suffering. No political allegiance should be allowed to modify this obligation. In my opinion there is no agony more difficult

to bear than that of the refined, sensitive, and intelligent forced into contact with the foul and the obscene.

What is one to do with a patient who blasphemes and curses, is insolent to the staff and quarrelsome with the other patients? In hospitals under political control this issue is often buried. A patient may make a complaint to a local politician if he is rebuked as he deserves. I have seen nurses and sisters in tears and decent patients boiling with rage because someone is behaving in a detestable manner. Medical superintendents are often afraid to do anything about it. My own remedy on occasion was to put the offender in a side-ward on a milk diet, no smoking, and a rigorous regime, ostensibly for his physical good. Sometimes it worked. But there is no sense and no humanity in compelling people who dislike this sort of thing to make contact with it.—I am, etc.,

Colchester.

G. C. PETHER.

SIR,—Mr. Jas. B. Macalpine's letter (June 22), answering the letter from the medical officers of the Middlesex County Council, expresses admirably what many of us are thinking. What a pity that socialists will try to drag everyone down to a common level. The aim should be privacy in hospital for all those who wish for it, a dragging up to a higher level. Living in a highly socialistic industrial area one has had the opportunity of observing the reactions of leading local socialists to a sick body. Privacy and privileges are wanted, and they are even anxious to pay for them.

Is there not a great deal of humbug in this? Would these medical officers prefer to suffer their next severe illnesses in private or in the company of their social inferiors? Would they put their wives in a general ward or would they get the best they could for them? Unless they are willing to put their socialistic theories into practice on themselves and their families, which is contrary to my experience, they are not justified in their advocacy.—I am, etc.,

Rotherham.

ERIC COLDREY.

SIR,—The whole-time medical officers employed by the Middlesex County Council passed a resolution that "The pay-bed system in hospitals should terminate altogether; patients should receive extra privacy, etc., solely on medical grounds" (*Journal*, June 1, p. 847). This seemed to be so glaringly wrong as to be unworthy of comment, but now that Mr. J. B. Macalpine has written condemning it, I feel compelled to point out that the objections to this resolution are far wider than he states in his letter.

These doctors postulate a new and most frightening ideology. Most of us consider that some control should be placed on extremes of wealth and poverty. Perhaps there are a few who honestly believe that all should have exactly the same regardless of ability or work. But the suggestion of controlling what a man may spend his savings on is new to me. Yet that is what this resolution does. It says in effect: "You shall not be ill in privacy, even if you wish, and we will see that you cannot by not providing the facilities." What right has anyone to say this? If a man wants his wife to have the comfort of privacy during illness, at the cost of giving up smoking for a year, what right has anyone to deny him the chance of spending his money as he wishes?

What would these doctors say if a restriction were placed on the provision of home comforts, so as to bring all homes to a bare level? Is it conceivable that furnishing firms should pass a resolution saying "Hard beds are the best and black curtains the most efficient, therefore we will provide no other." It would be an unsolicited and impertinent effort to manage the public, and so, in my opinion, is the statement of the whole-time medical officers of the Middlesex County Council.—I am, etc.,

London, N.W.1.

R. HALE-WHITE.

Health Service Bill

SIR,—I too am one of the many doctors who view with misgiving the Government's proposals for a National Health Service. I have not seen as yet the pamphlets published by the B.M.A., for distribution by the doctors to their patients. I cannot, however, allow the letter of Dr. A. Angus (June 29, p. 999) to go unchallenged.

In company with many other M.O.s in the Naples area I received orders on the treatment of patients suffering from gonorrhoea which laid down exactly how much sulphonamide was to be given at what intervals and for how long. It also ordered the use of a mixture at specified intervals containing a specified amount of pot.-cit. The terms of this document were specific. They read: . . . "the patient will be given 1 gramme, etc., every four hours for 48 hours" . . . "will be given a mixture containing grs xxx pot.-cit." The whole course of treatment was laid out without hope and room for deviation from beginning to end. I mention this example because the dose of sulphonamide ordered was hopelessly inadequate. Nevertheless, it was some weeks before this highly dangerous order was rescinded.

Dr. Angus must also know that all preventive inoculation treatment in the Army is standardized. An M.O. can only get the material provided by the Army for this purpose and must use it in the way laid down. It may be that for the purposes of the Army it is a highly desirable thing to have doctors whose prime object is to make all ranks fit for duty (though sometimes this was attempted merely by certifying them fit for duty, when the disability was what is now described as psychological). Such doctors are very necessary also in a fascist or communist State. But it is against this very conception of the prime function of a doctor that so many of us are fighting. In common with many other doctors I regard the prime object of a doctor as being "to heal his patient." Furthermore I regard his relationship with his patient in doing so as a highly personal one, and one in which the State and its desires for certification and standard lines of treatment should play little or no part. The patient has in my view good cause to be apprehensive.—I am, etc.,

London, W.9.

A. LEWIS.

SIR,—The statements made by Dr. J. V. DOCKRAY (June 29, p. 999) are inaccurate and, however well-intentioned, may do our cause much harm, and I should like to correct them. On the appointed day all doctors then in practice will have the right to have their names included; those, however, who decline to be at liberty to do so, and therefore the question of a strike does not arise. This could only happen if those doctors who had actually joined the scheme became dissatisfied and refused to work it. I personally have found no indication that the majority of people are in favour of the Bill.—I am, etc.,

Warrington.

THOMAS REES.

Assistants and the Bill

SIR,—The common sense, honesty, and clear thinking evident in Dr. Shackleton Bailey's two letters (June 1, p. 847, and June 29, p. 999) came as refreshing breezes in the somewhat murky atmosphere created in my mind by spokesmen of the B.M.A. and many of your correspondents. We dogsbodies of general practice, the assistants, read with mixed feelings this kind of thing *ad nauseam*:

1. B.M.A. Council's "Principles of the Profession" (March 30, p. 468): "IV. Doctors should, like other-workers, be free to choose the form, place, and type of work they prefer without Governmental or other direction." (My italics.)

2. My old chief, Sir Alfred Webb-Johnson, at Hendon last May 5 (May 11, p. 730): "Ever since Magna Carta it had been the right of the citizen to follow his employment how, when, and where he wished." (My italics.)

3. Dr. Charles Hill at the same meeting: "*We want to avoid the situation that a man or woman, after years of arduous study, and after being recognized as a fit and proper person to practise medicine, finds himself or herself debarred from the area of choice.*" Mr. Bevan has described the procedure as 'negative control,' which does not seem very different to some of us from direction; *by closing certain areas to doctors they will be forced into other areas.*" (My italics.)

We assistants seriously doubt the honesty of purpose of these high-sounding words when we have clauses in our agreements which read like this one (it is operative at the moment in my case although I have chosen to live here mainly because my children are happy and healthy here, and because we love the countryside and its people):

"The assistant agrees with the principals that he will not during this contract of service save in the employ of the principals nor within the space of five years thereafter practise or cause or assist any other person to practise in any department of medicine, surgery,

or midwifery, nor accept nor fill any professional appointment whether wholetime or otherwise, whether paid by fee, salary or otherwise, or whether honorary, within a radius of 10 miles from — aforesaid.

And if the assistant shall so practise or cause or assist any other person to practise within the radius aforesaid or in any way violate this provision he shall forthwith pay to the principals, or as they shall direct, or to their successors in title, the sum of one hundred pounds for every month or part of a month during which he shall violate or continue to violate this provision as ascertained and liquidated damages and not by way of penalty and without prejudice to the right of the principals or their successors in title to obtain an injunction to restrain such violation."

It is the wish of the vast majority of the community here that I should continue to be their family doctor, and a good deal of feeling has resulted from the way I have been treated by the principals. But that is another story. To Dr. R. McIntosh's classification of assistants (June 15, p. 928), however, I would add a fourth group—namely, those of us who, relying on another business contract, the Protection of Practices Scheme found ourselves badly let down and forced to the level of the assistant in order to earn a salary, and so avoid charity to keep our families out of the P.A.I. It has been but one more experience which has convinced me that our profession is by no means as honest and honourable and dignified as the B.M.A. spokesmen would have the world believe. Their hypocritical statements in word, letter, and leaflet are rapidly ensuring the disgust and disdain of many thinking people inside and outside the profession. How much more honest and dignified I would have been to have co-operated wholeheartedly in the Government's task of creating a comprehensive health service which will, without any doubt, not only benefit the patient but the medical profession also. It will, I devoutly hope, raise our status from the business level to which it has sunk during the past 30 years.—I am, etc.,

C. G. JONES.

Ministerial Statements

SIR,—The irresponsible statements of medical policy on the part of responsible Ministers verge on the fantastic. A recent "beauty" to the effect that the best hospitals are located in the wealthiest areas twanged in me a long chord of memory. For as kids my brothers and I were often taken to hospitals, or left outside them, to await the departure homeward of distinguished relatives. And I well remember a small brother, aged 5 or less, in the two-hundred-questions-a-minute phase inquiring: "Mummy, why do they put nasty little houses round all the hospitals?" A long-suffering parent patiently explained that the nasty little houses constituted the original accumulation, the hospital having developed secondarily as an institution designed to benefit the sick and suffering inhabitants of the "nasty little houses"; hence the juxtaposition, and, conversely, the paucity of hospitals in pleasant places.

A much shorter chord vibrates in resonance with another recent statement, expressing a Ministerial preference for survival in the cold efficient atmosphere of a large hospital to dissolution in the warm sympathetic environment of a small one (there being, I take it, no small municipal institutions in the country). I well know a hospital of sufficient proportions to commend itself to the Minister, in which every medical or surgical patient of 70 or over expires most peacefully of broncho-pneumonia within 48 hours of admission. I have conferred with other practitioners whose experience is the same, and we can only attribute the consistency of the result to the preternaturally fine ventilation of the place, the windows being opened wide on the patients all night long in conformity with an official order. "Cold efficiency" is the phrase, the refrigeration proceeding with mathematical precision from first night of warding to mortuary slab. Old folk kept in the warm stuffy atmosphere of their fuggy and ill-ventilated houses (and given the most incompetent and cursory treatment) do not always die, at any rate in the case of normally self-limiting diseases.

Are these Ministerial statements made deliberately falsely, or with reckless indifference to their accuracy or otherwise? It is the differential diagnosis between knavery and folly, and a unique problem in that the greater the degree of the condition the harder it becomes to classify it as the one or the other.

the practical point is that truth and justice go hand in hand, and (whether truth be averted by design or by accident) a government that will not speak truth is not going to do justice. —I am, etc.,

Stratford-on-Avon.

PETER PARRY.

In the Words of Eliza Doolittle

SIR,—After the unfriendly comment of Dr. M. Curwen on Dr. Andrew S. Barr's letter I think it only fair to say some words in support of Dr. Barr. Dr. Curwen must not forget that there are different types of practices in this country. It is an acknowledged fact that practices in industrial and poor urban areas are much harder-worked and poorer-paid than in residential areas with comparatively wealthy populations. If I invited Dr. Curwen to come to County Durham he would be surprised at the low fees and the hard work attached to a club and panel practice, and I believe the same applies to Glasgow. Doctors in this district are really forced to look after far more patients than a single man should do without assistants, even in peacetime, as the overhead expenses—e.g., free medicine and treatment for club members—do not allow the cost of an assistant or partner. In any case, even if the letter of Dr. Barr was slightly exaggerated, I think it was the finest piece of humour I have read for a long time in the *Journal*, and my colleagues in this area share my opinion.—I am, etc.,

Spennymoor.

E. BRAUER.

SIR,—When I wrote my letter some weeks ago, on the day after publication of the Spens report in the *Journal*, I had little expectation of it seeing the light of print, and still less of it raising a furore or a controversy. It seemed to me I could put in less ponderous form, for any plain man or woman to read, the conditions of service under which thousands of general practitioners labour. My letter was neither constructive nor destructive, neither *pro* anything nor *con* anything, just a plain unexaggerated account of what life means to thousands of G.P.s, and a side of the question which is not too well known or appreciated by the general public when our terms of remuneration are discussed—and they are going to be very much discussed in the near future. That I was not unsuccessful in striking a chord in the hearts of many of my colleagues (and their wives) is evident by my mail, which began to arrive within twenty-four hours of the appearance of the letter, and which was to me a striking testimonial to the eagerness with which our *Journal* is read, if to nothing else. My one mistake was in quoting the figure of £1,500—it was too near the desideratum suggested in the Spens report and could be taken as some reflection on it, or some suggestion that it was too low. Nothing could have been further from my intentions. If I had said £10,000 it would have suited my case quite well, and would have avoided any ambiguity, the whole case being that many of us are subject to hours and conditions of labour that no other trade or occupation would tolerate, and it is good that the public should know this when our professional remuneration is discussed.

I am afraid, Sir, that Dr. M. Curwen (June 22, p. 968) is a little off the mark in his observations. Conditions vary in different parts of the country, and it is most undesirable, if not odious, to compare one's remuneration with that of one's colleagues. As he has made some rather unkind inferences, however, I claim the right to inform him that if £1,500 is the target I have never come within sight of it, and I am certain, as the Spens report testifies, that thousands of my colleagues are in like position. His insinuations and innuendoes are therefore invalid, but one would have hoped that a professional colleague would have made sure of his facts before committing his inferences to print. In any case I doubt very much if the principal's paradise envisaged in his letter could ever come to pass, at least in this part of the world, where we try to honour our obligations as laid down in Terms of Service, para. 11 (8).

The answer to his last question as to what would happen if I refused to answer requests at my meal hours is simple. The door-bell would continue to ring (requests have to be made before they can be refused) and the summons would be answered, I hope, with native courtesy by wife or maid, while the local butcher, baker, and candlestick-maker enjoy their meals with their families in the peace and quietness to which they are absolutely entitled.—I am, etc.,

Glasgow.

ANDREW S. BARR.

Obituary

GEORGE JESSEL, M.A., M.D., D.P.H.

The sudden and entirely unexpected death of George Jessel has thinned once more the ranks of the old guard of tuberculosis officers who took office in 1913. Ambitious, able, clear-headed, he was a stout fighter for all the best methods in the prevention and treatment of tuberculosis; and he had good scope in Lancashire and on many councils and committees to use his abilities, which were much above average level. Exacting and sometimes difficult to his subordinates, he never spared himself either in his own work or where assistants required defence. He combined first-rate clinical work with that degree of administrative ability which together makes the outstanding tuberculosis officer.

He graduated in 1906 from University College, Oxford, took his M.A. in 1909, and qualified from the London Hospital the same year. Resident for a year at the London, where he had won the Anderson Prize in clinical medicine, and also for a year at the Great Ormond Street Children's Hospital, he then spent two years in private practice. The D.P.H. at Manchester in 1913 under Delepine, when he was first man of the year, and the M.D.Oxon in 1917 completed a varied and successful medical training.

It was in 1913 that Jessel started work in tuberculosis, when he was appointed tuberculosis officer for a Lancashire County area and also for the County Borough of Wigan. This, like other similar appointments, was an interesting experiment which failed because the tuberculosis officer was under two masters. He also was acting M.O.H. of Wigan from 1914 to 1917. In 1919 he became consultant tuberculosis officer of the Lancashire County Council. Thus for 33 years he was in charge of Dispensary Area 4 containing a population of some 370,000, and including the Peel Hall Pulmonary Hospital, of which he was the visiting medical superintendent. There he did excellent work, especially with artificial pneumothorax. He introduced a system of graduated work and hobby occupations for the patients to vary the monotony and benefit the patients physically and mentally. In his own words: "The tuberculosis officer who aims at realizing the ideals of his office must undertake somewhat the role of schoolmaster and cleric as well as medical specialist." And no mean part of his reward lay in the volume of appreciation of the patients. The integration of hospital with clinic and domiciliary work carried out by a team, which has been the foundation of the Lancashire scheme, had its birth in Dr. Jessel's area, and his successful advocacy and carrying out of this sometimes difficult union played a prominent part in its adoption for the whole administrative county.

For many years Dr. Jessel was connected with the N.W. Branch of the Society of Medical Officers of Health and the N.W. Tuberculosis Society, and was a past president of both these bodies. He took a great interest in the Joint Tuberculosis Council, for long was its treasurer, and at the time of his death vice-chairman. His wide knowledge of tuberculosis and clear vision of its public health and social implications were always at the service and to the benefit of the many committees of the council on which he served. His main hobby was photography, hence his enthusiasm for x-ray work, which he carried out at a high level and which made him a valued member of the Minister of Health's committee which prepared the way for mass miniature radiography.

To his widow, son, and two daughters we extend our sympathy in their bereavement.

G. L. C.

JAMES TAYLOR, M.D., F.R.C.P.

Dr. F. M. R. WALSHE, F.R.S., writes:

An old house physician of Dr. James Taylor, a warm admirer of him as man and as physician, and the recipient from him of many kindnesses and much encouragement, I may not forbear to add my modest tribute to the one paid by Dr. Gordon Holmes to his memory. It is an act of historical justice to recall that Taylor's was the first adequate account given in this country of the malady

we now know as subacute combined degeneration of the spinal cord. In his paper (*Medico-Chirurg. Trans.* 1895, 78), based upon the complete clinical and pathological study of two cases, Taylor recognized the two clinical variants of the malady, the spastic and the flaccid, and correlated them with the relative incidence of the lesion in the posterior and lateral columns of the cord. Of this lesion he gave an excellent account and some admirable photomicrographs. There can be no doubt that our modern clinico-pathological notion of the malady dates from the appearance of this paper. Perhaps, however, those of my generation may feel that his major contribution to British neurology was the handing on of the tradition and the legend bequeathed by the great figures of the golden age of neurology in this country. If we who have inherited these succeed in passing them intact to those who must follow us, we shall not have toiled or taught altogether in vain.

By the death of EDGAR HENRY WILKINS the school medical service has lost one of its most active minds. His father was headmaster of the Dublin High School, his uncle, Prof. George Wilkins, was a leading personality in Trinity College, and his mother was one of the early entrants at Newnham College, Cambridge, so his student days were spent among notable men. He graduated M.B., Ch.B. at Dublin University in 1912, and took the London Conjoint D.P.H. in 1924. Apart from his enthusiasm for school medicine, Wilkins was a keen athlete and a successful racing cyclist. He also climbed the mountains in Wicklow and in Wales, and was an authority on the bird life in the countryside around Dublin. Many leisure hours he spent in the intensive study of chamber music; but as a keen gardener and carpenter he found his greatest pleasure in his home life or in the company of his devoted wife and family. After qualifying, Dr. Wilkins spent ten years in New Zealand, where he worked with Sir Truby King and became director of the Dominion school medical services. On his return to England he was appointed to the school medical staff at Birmingham, and in that capacity he served for the rest of his life. He was interested in all phases of public health, but his chief enthusiasm was school medicine. He put his heart into this work and viewed it from a wide angle. He had all the keenness of a pioneer without the fanaticism. To his school work he brought not only sound clinical knowledge but also deep personal interest in the patient. His influence was widely appreciated, and his loss is deeply felt by the parents of the children in a crowded industrial area to whom he devoted his energies and talents, as also by the teachers of schools under his care. At the recent link-up between the Birmingham School Health Service and the Institute of Child Health, the choice naturally fell upon Wilkins to represent the school health activities in relation to the institute.

We regret to announce the death of Dr. HOWARD HENRY at Debenham, Suffolk, on June 24, aged 70. Son of James Henry, of Dublin, he had his medical education in that city at Trinity College, graduating B.A. in 1897, M.B., B.Ch., B.A.O. in 1900, and M.D. in 1906. Before leaving Dublin he served as medical and surgical resident at Adelaide Hospital and Stevens' Hospital, and took the L.M. at the Rotunda Hospital. It was about that time that he contributed a note to these columns on calculation of the date of delivery in pregnancy. Dr. Henry served with distinction in the war of 1914-18 as a major in the R.A.M.C.(T.), winning the Military Cross and the Territorial Decoration. On returning to civil life he was for a time medical superintendent of Leopardstown Park Hospital (for neurasthenic cases) under the Ministry of Pensions. He joined the B.M.A. in 1904, was elected chairman of the South Suffolk Division in 1928, and represented it at two Annual Meetings. He was for some years medical officer and public vaccinator for the Debenham district.

Many people will have learned with sorrow of the death on June 26 of Lieut.-Col. ALFRED WHITMORE, M.D. Cantab., who had a distinguished career in the I.M.S. Apart from his service with the Army in the 1914-18 war, most of his service was in the Civil Department in Burma. He was for some years pathologist to the Rangoon General Hospital, and afterwards one of the Rangoon civil surgeons. He had a great deal to do with the early development of the Burma Medical School, and he was an original and stimulating teacher, for whom students, nurses, patients, and all his colleagues had a warm affection. After his retirement from the I.M.S. he worked in the pathological department at Cambridge, and although he underwent an extremely serious operation three years ago and had grave disabilities, he stuck to his work with great fortitude until a few days before his death. Whitmore was a most lovable man with a very keen sense of humour, and all who knew him well

were greatly attached to him. He seemed to radiate something buoyant and joyous, and the outlook always seemed brighter when he was about. Those who had the privilege of his friendship will miss him sorely. He leaves a widow and two sons, both of whom are medical men. R.K.

The following further tribute to Squadron Leader R. W. S. MARSHALL comes from Dr. J. Kinloch McCollum: "I knew Robert Marshall in his late school years and as an undergraduate at medical school. I met him again during the war years, first in Assam and later throughout Burma from time to time. I had looked forward to meeting Robert again on the Burma-China border, where he was expected to take up an important duty, and news of his loss came as a profound shock to me. We all refused to believe that he had been killed, and kept on hoping that he would eventually be recovered by comrades on patrol or by friendly natives; this was not to be. Robert had the grand gift of making genuine friends, of being able to give more than he ever expected to receive, of sincerity and lovable charm. He had a modest disposition, and his frank and open personality created for him true and lasting friendships. I met Robert for the last time less than two months before he embarked on the detail of duty which was to mean his death. He talked to me of his home, of how he was looking forward to his approaching repatriation, of his experiences and how he meant to benefit by them in his future relations with mankind. His outlook was filled with high ideals of service, and his motto was 'deeds not words.' He had a deep affection for those with whom he served, especially his men and N.C.O.s. This was a reciprocal affection, and based on mutual regard of men for each other who daily faced the reality of living and the uncertainty of life. Robert was always happy when giving not only professional advice to his sick, but also when he was able to help and succour those in need, and these were many in the dark days of 1943 and 1944 in Burma. He carried a flame of hope to all in pain, and was a source of comfort to those in trouble. Robert, I know, willingly gave his life, not only for King and Country, but also for principles which he believed in and which he had the conviction to effect; greater courage hath no man than this."

The Services

Major-Gen. O. W. McSheehy, C.B., D.S.O., O.B.E., has been appointed Col. Cmmtd. of the R.A.M.C., in succession to Major-Gen. H. P. W. Barrow, C.B., C.M.G., D.S.O., O.B.E., who has attained the age limit.

Col. (Temp. Brig.) A. E. Richmond, C.B.E., late R.A.M.C., has been appointed Honorary Surgeon to the King in succession to Major-Gen. G. Wilson, C.B., C.B.E., M.C., late R.A.M.C.

Col. R. W. Galloway, C.B., C.B.E., D.S.O., late R.A.M.C., to be D.D.M.S., and has been granted the acting rank of Major-Gen.

Col. F. M. Collins, I.M.S., has been appointed Consulting Surgeon, India Command.

Temp. Surg. Lieut.-Cmdr. R. G. S. Whitfield, R.N.V.R., has been awarded the D.S.C., and Surg. Lieut. A. W. Dawson-Grove, R.N.V.R., has been mentioned in dispatches, for distinguished services during the defence of Hong Kong and while prisoners of war in enemy hands.

DEATHS IN THE SERVICES

Flight Lieut. IAN ARCHIBALD McLEAN THOMSON, who was killed in a flying accident on June 25, was born in October, 1916, studied medicine at Glasgow and qualified L.R.C.P.&S., L.R.F.P.S. in 1942. After holding house appointments at the Glasgow Royal Infirmary, he was granted a commission as flying officer in the Medical Branch, Royal Air Force Volunteer Reserve, in January, 1944, becoming Flight Lieut. a year later.

On June 20, Surgeon General Thomas Parran, chairman of the U.S. Delegation to the International Health Conference, was nominated chairman of the Conference. After serving in 14 States on public health research and administrative duties, and from 1930 to 1936 as Commissioner of Health for the State of New York, Dr. Parran was appointed Surgeon General of the U.S. Public Health Service. He was reappointed in 1940 and 1944 and on numerous occasions was representative to international conferences. In February, 1941, he came as a member of the U.S. Commission to England to study health conditions, epidemic control, transportation, and evacuation of children in Great Britain.

Medical Notes in Parliament

HEALTH SERVICE BILL

On July 2 the Committee resumed discussion of Clause 69. Mr. BEVAN explained that the question at issue was the matters contained in the Bill which should, respectively, be subject to affirmative resolution by the House, to negative resolution, or to Orders.

DISTRIBUTION OF HOSPITALS FUND

Mr. WILLINK raised the status of the Minister's actions under Clause 7, subsection (5c), under which the Minister could make regulations for apportioning among the regions the capital value of the hospitals fund. The Minister was going to put into one pot the gifts which countless people had made to hospitals throughout the generation. In some areas substantial sums would be added, and from other areas substantial sums would be subtracted. The Minister was being entrusted with a function which the Bill should bind him to explain to the House. As the Bill stood, what the Minister did in that respect would only be subject to a negative resolution.

Mr. BEVAN said the qualitative issue, whether this fund should be used in this way or not, had already been determined. The House of Commons did not want to bother with the quantitative distribution of the fund because that aroused the utmost prejudice in different parts of the country.

Mr. WILLINK pointed out that, since the issue of the White Paper, Parliament had not been told whether the Minister was moving in the direction of a large number of regions—say 16 to 20. It had been told that the regions were not to be geographical areas, but had not been told whether the L.C.C. would be the local authority for an area which was also the area of a regional hospital board, or whether there was to be something like the sectors of the Emergency Hospital Service. Those interested in Wales did not know whether Wales would be a region. All that the Conservative Opposition desired was apportionment among the regions, not among the hospitals.

Mr. BEVAN said it should be remembered that the Ministry would deal with the competing claims of different hospitals, and that one hospital would be given money out of the fund at the expense of another. The "global" figure would remain the same. No Minister worth his salt was going to distribute that fund except with the intention of having the healthiest kind of service in the areas, and in the most equitable fashion. This was the sort of thing which the House of Commons could properly leave to administration, just as it had set aside the sum of £66,000,000 for compensation for the loss of the sale of goodwill. The apportionment of that money to the doctors concerned was also a matter of complexity, and possibly acrimony, and the House of Commons would prefer it to be left to the civil servants.

The amendment proposed by Mr. Willink was defeated by 22 to 10. The Committee then accepted an amendment moved by Mr. BEVAN to make subject to a negative resolution of Parliament any order of the Minister varying the constitution of the central health services council. The Clause as amended was ordered to stand part of the Bill. Clauses 70 and 71 were accepted in their original form.

On Clause 72 Mr. BEVAN moved an amendment which he said was necessary because in certain circumstances under the Asylums Officers Superannuation Act, 1909, a visiting committee paying a superannuation allowance to a retired employee was entitled to call upon other visiting committees who had previously employed him to make a contribution towards the allowance. The purpose of the amendment was to see that no injustice was done to individuals in these cases. The Clause with this amendment was ordered to stand part of the Bill.

Mr. KEY moved an amendment on the passage dealing with the definition of hospitals in Clause 73. He proposed to leave out the words "providing treatment" and to insert "the reception and treatment of persons." He said it was desired to make plain that the hospital was a residential building for the reception of people for convalescent and rehabilitation treatment. This amendment was accepted, as was a further amendment moved by Mr. Key specifying dental as well as medical treatment in the definition of illness requiring treatment. The Committee also accepted Mr. Key's definition of "superannuation benefits" as meaning "annual superannuation allowances, gratuities, and periodical payments payable on retirement, death, or incapacity, and similar benefits."

DEFINITION OF A SPECIALIST

During discussion on the motion that Clause 74 stand part of the Bill Mr. WILLINK pointed out that the Clause did not

provide any definition of "consultant" or "specialist." Mr. MESSER said the National Institute for the Blind were anxious to know whether blindness was an illness. He further inquired whether deafness was to be an illness. He thought it would be better if the Bill said that "illness" included mental illness and any injury or disability, without requiring medical treatment or nursing. In London at the Tavistock Clinic there were medical men, but a stage arrived when the cases were referred to a lay psychiatrist when what was wanted was not so much medical treatment as social welfare treatment.

Mr. BEVAN said the less Members attempted to penetrate into this topic the less difficulty they would get into. He agreed with much that Mr. Messer had said. He would take the advice of the medical profession on the definition of "specialist." At the moment he did not know what it was, and the profession had not a definition which was precise enough to put into the Bill. Furthermore, there would be general medical practitioners who, although they were classified as such, had shown that they could be relied upon to give a particular form of treatment as well as a specialist who had academic qualifications in the subject. The Ministry wanted to leave the question to the advisory bodies operating through the Minister and the regional boards to define those particular general practitioners *ad hoc* as specialists for the purposes of the administration. That was the more necessary because there was an inadequate supply of specialists with objective specialist qualifications. Mr. Bevan promised that in this matter he would move with the greatest possible caution.

The Clause as amended was ordered to stand part of the Bill, and Clause 74, the last Clause of the Bill, was approved without discussion.

PROVISION OF SPECIAL SCHOOLS

Mr. KEY then moved a new Clause. This provided that a regional hospital board or board of governors of a teaching hospital might, with the approval of the Minister, arrange with any local education authority or voluntary organization for the use of any premises forming part of a hospital administered by the regional hospital board or, as the case might be, forming part of the teaching hospital, as a special school, and for the maintenance of children other than patients attending such a school. Mr. Key said that normally children receiving this instruction would be patients in the institution, but there were cases where subnormal children were brought from their homes to classes in some of these institutions.

The Clause was added to the Bill, as were other new Clauses dealing with exemptions from stamp duties on certain documents required for the purposes of the Act, and with the supply of goods by local health authorities.

INDUSTRIAL MEDICINE

A new Clause moved by Mr. PIRATIN enjoined the Minister to prepare within five years a scheme for the study and control of conditions of work; prevention of occupational disease and injury, placement, and periodic medical examination of workers, health education of workers, record-keeping and research. Dr. MORGAN remarked during the discussion that up to the present research into industrial medicine in the United Kingdom was slight. There was not even a decent industrial diseases museum. Mr. BEVAN said a preventive health service would cover the whole of the ground with which Mr. Piratin dealt. Nutrition and housing would go most of the way towards providing that service but had nothing to do with this Bill. In the course of time the health service under this Bill would assimilate by its administrative momentum a considerable amount of industrial health services. Many of the provisional facilities which were now given in some workshops would be provided by the general health service. He hoped that before the end of this Parliament the Government could envisage the future industrial health service more clearly than at present, though he could not promise legislation. The proposed new Clause was withdrawn.

Mr. SOMERVILLE HASTINGS moved a new Clause on the application of the Bill to London, but it was negatived.

NOXIOUS NOSTRUMS

Mr. Linstead moved but withdrew a new Clause to provide that the Minister should appoint a committee, including persons expert in medicine and pharmacy and persons having practical experience of the proprietary medicine industry, to prepare for submission to the Minister a list of medicines the prescribing of which by medical practitioners for the purposes of the Act was not recommended, or with respect to which the public were cautioned as to their use because they were without physiological effect, or the price at which they were sold was excessive, or they were advertised by claims that were false or exaggerated.

Mr. BEVAN said he sympathized with the intention behind this Clause. These noxious nostrums were so seductively advertised that hard-headed people were taken in. The subject, however, was too wide to bring in at the end of a Committee stage and doctors themselves would say that the Clause as drafted was an interference with their right to prescribe. Herbalists and other people would insist on being heard before legislation of this kind was introduced. The time had arrived when the public of this country should be protected against the ramp that was going on, but the subject must be dealt with in entirely separate legislation. He regarded the matter as of some urgency.

Col. STODDART-SCOTT said the new Clause did not suggest that Parliament should deprive the community of such useful drugs as Eno's, Californian syrup of figs, or senna pods, but only the bogus things, such as one saw advertised every day.

Mr. WILLINK moved but withdrew a new Clause proposing that the Minister could make grants to national bodies engaged in securing improvement in the physical or mental health of the people, and instanced the Provisional Council of Mental Health and the Tuberculosis Council. Mr. BEVAN said these words were unnecessary as he already had wider powers under the Health Act, 1919, and under Clause 1 of the Bill.

THE CENTRAL COUNCIL

Several amendments were down to the First Schedule, and the Chairman, Mr. Bowles, allowed a general discussion. Capt. BAIRD said that under the Bill there were six *ex officio* members of the Central Council, including the Presidents of the three Royal Colleges, the Chairman of the British Medical Association, and so on. The dental practitioners claimed to be represented by the Chairman of the Dental Board. The medical profession had 20 representatives and the dentists only three.

Mr. WILLINK said he had tabled amendments. The Committee did not want a medical hegemony in the National Health Service. The most admirable physicians and surgeons were often most unpractical in thinking out administrative methods. The five persons with experience of hospital management and the five persons with experience of local government who were to be placed on the central council should not be doctors but should be the lay elements on the council. Mr. BEVAN said he agreed with this. He hoped there would be no auctioning of seats on this council. He thought the doctors were in a position because they had an over-all responsibility for the health services and covered services like radiology and surgery. The Committee would work more through sub-committees than as a whole. The Ministry wished to bring into the central council the fresh air of lay approach. It was necessary to have strong lay representation to get an effective service.

Mr. HASTINGS said he inclined to look on the council as an overdoctored area. The Committee accepted amendments to provide that the ten members of the council mentioned by Mr. Willink should not be medical practitioners. Other amendments were withdrawn.

Mr. BEVAN then moved an amendment to provide for the payment of expenses to members of committees or sub-committees set up by the central council. This was carried by 23 to 11, and the Schedule as amended was agreed to.

On the motion that the Second Schedule stand part of the Bill, Sir H. LUCAS-TOOTH said under the Schedule compensation was payable for hospital buildings and land, and also for equipment, furniture, and so on. The total compensation paid in respect of a hospital would be merely for the break-up value of the undertaking. Mr. BEVAN pointed out that arbitration was provided. The Committee agreed to the Schedule.

REGIONAL HOSPITAL BOARDS

On the Third Schedule Mr. WILLINK said that as the Schedule stood there was no guarantee against representation of a particular branch of those interested. It would be possible to get the regional hospital boards too medical or too lay. He suggested that the representation should be made up of university, professional, local health authority, and other persons, and, in the first instance, of those representative of the old voluntary hospitals. Provision should be made for the appointment of persons having experience both of public service and of financial and commercial affairs. Due regard should be had to the representation on a board of members of boards of governors of teaching hospitals.

Mr. BEVAN said it would be better to keep this matter within the administrative powers of the Ministry. Regional boards would vary considerably in size. It had been suggested there should be one regional board for Wales, but Wales had only one university medical school, in Cardiff, and there might be administrative convenience in having one regional hospital board for Wales with both Cardiff and Liverpool universities

represented on it. Hospital administration and economy were not necessarily jobs which doctors could do best. Individually they were most charming and educated persons, but because of their immersion in their profession their collective sagacity was not the sum of their individual intelligence. He asked the Committee to retain the language already in the Bill. He added that the Ministry must call upon the rich experience in the field of voluntary hospital administration.

Mr. WILLINK withdrew his amendment, and Mr. KEY secured approval for amendments to provide for consultation between the management committee appointed for a particular voluntary hospital and the committee which had previously been responsible for running the hospital. By 19 to 8 the Committee rejected an amendment proposed by Mr. WILLINK empowering a hospital management committee to co-opt not more than three persons.

CONSTITUTION OF BOARDS OF GOVERNORS

On July 3, resuming the discussion of the Third Schedule, Col. STODDART-SCOTT moved an amendment dealing with the constitution of boards of governors of teaching hospitals. It suggested that the boards should consist of such number of members to be appointed by the Minister as he thought fit, but that one-sixth should be nominated from the universities, one-sixth by the regional hospital boards, one-sixth by the medical, dental and other members of the teaching staff of the hospital, one-sixth after consultations with the local health authorities, and that other persons should be appointed from the governing bodies of the hospitals. Boards of governors should have power to co-opt not more than three persons, and should have the opportunity of electing their own chairman with the concurrence and agreement of the Minister.

Mr. BEVAN said if the balance of the Bill was altered grievances would be established. Mr. WILLINK said the proposed constitution would be better for a body of a quasi-university character. In such institutions as Guy's Hospital and St. Thomas's there was a special claim for continuity with their past. He hoped the Minister would agree that after something like two-thirds of a hospital board had been appointed by him after nomination, the remaining one-third should be chosen from the existing board of governors so as to give continuity. Why did the Minister wish to choose the chairman for a body of this kind? The normal thing was that all bodies chose their own chairman though the Committee had conceded that the Minister should nominate the chairman of regional boards and management committees.

Mr. SOMERVILLE HASTINGS thought the one-fifth representation proposed in the Bill for universities was too little. He would oppose its reduction from one-fifth to one-sixth.

Mr. BEVAN said university people would argue that universities ought to be more represented, but the Government did not wish to over-emphasize the academic aspect. Teaching hospitals were part of the general hospital service and were expected to give general hospital facilities. That was why it was necessary that the teaching hospital in its administration of the general hospital service should be as much an agent of the Minister as the regional board. In the appointments of these new boards of governors the Ministry would have regard to the existing boards. The more the distinct position of the boards of governors was increased the more the Committee would appear to reduce the status of the regional boards. The Ministry must resist the importunities of the teaching hospitals. At the moment the universities had scarcely any representation, and this Bill for the first time regularized the relationship between academic medicine and hospital administration. That was what the Goodenough Committee recommended. Mr. BEVAN added that he thought it reasonable in this as in all other cases that the chairman should be a person agreeable to the rest of the board of governors but a person appointed by the Minister.

The amendment moved by Col. Stoddart-Scott was negatived and drafting amendments were made on the motion of Mr. KEY.

Mr. WILLINK moved to provide that where a teaching hospital comprised more than one hospital a committee should be appointed by the board of governors of the teaching hospital for each such hospital. Mr. BEVAN said this should be left to be decided in the circumstances concerned. Mr. Willink withdrew his amendment. Mr. REID moved but withdrew an amendment to provide that representatives of the Press should be admitted to the meetings of every regional board. The Third Schedule as amended was then agreed to.

LOCAL HEALTH AUTHORITIES

On the Fourth Schedule Mr. KEY moved a series of amendments which were accepted. He explained that one of them was designed to enable the local authority to give to its health committee functions which it had under other Acts in addition to those which it had in connexion with child welfare, midwifery, lunacy, and mental deficiency.

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Mr. WILLINK moved an amendment to ensure that every health committee of a local health authority should include one or more medical practitioners providing general medical services in the area or specialists serving on the staff of a hospital within the area.

Mr. BEVAN said he had considered this point when the Bill was being framed, and had rejected what was now proposed on the ground that the scheme which he had devised provided a great degree of professional self-government and professional participation in the health services as a whole. Very often these professional people were elected as councillors, and it would be resented if an elected body were compelled to elect some persons who had not taken the trouble to stand for election. If a medical practitioner were not too busy to serve on this important body for three years he could take the trouble to stand for election. The amendment was negatived and the Fourth Schedule as amended was agreed to.

EXECUTIVE COUNCILS AND LOCAL MEDICAL COMMITTEES

On the Fifth Schedule Dr. CLITHEROW asked the Minister to consider allowing a representative from the optical practitioners committee on the executive council. He remarked that the provision of two members appointed by the pharmaceutical committee appeared to be rather small as there were 14,000 contracts with the Ministry of Health to carry out pharmaceutical services.

Mr. BEVAN said the ophthalmic services would be a feature of the regional boards and not of the executive councils. The executive council was the body supervising the general medical practitioner service in the area. It had been constituted with scrupulous care, and any attempt to upset the balance would have repercussions almost as great as the atomic bomb.

The amendment was negatived and the Committee agreed on the motion of Mr. KEY to insert "Local Medical Committee" instead of "Medical Practitioner Committee" in the provision that seven members of each executive council should be appointed by this body whose title had previously been changed.

MEDICAL PRACTICES COMMITTEE

In the Sixth Schedule the Committee negatived a proposal by Mr. WILLINK to provide that the chairman and members of each such committee should be appointed by the Minister "from among medical practitioners nominated for the purpose by such organization or committee." The Schedule was then agreed to. Amendments were made on the motion of Mr. KEY in the Seventh Schedule. The deputy chairman of the tribunal would be appointed by the Lord Chancellor and not by the Minister, and one member would be a layman. The Committee agreed to the Schedule with these amendments, and also to the Eighth Schedule.

More than 50 amendments were made in the Ninth Schedule. Mr. BEVAN said the extension of the existing lunacy machinery was a very complicated affair. The Committee was not altering the lunacy code but was extracting mental institutions and care from a whole series of enactments and services. It had been discovered during the Committee stage that some enactments or parts of enactments had been overlooked. This series of amendments was necessary to put the matter right.

All the amendments proposed by Mr. Bevan were accepted, the Schedule as amended was agreed to, and numerous administrative amendments were made in the Tenth Schedule, which, with these changes, was also accepted.

This was the last Schedule and the Committee agreed that the Bill as amended should be reported to the House.

Control of Penicillin

On June 27 Mr. E. P. SMITH moved that the Control of Penicillin (No. 1) Order, 1946, dated May 21, be annulled. He said the Order was too limiting and restrictive in one respect and slightly too wide in another. He recalled that Sir John Mellor had asked on June 20 why this Order required prescription of penicillin by a registered medical practitioner whereas prescription by a duly qualified medical practitioner satisfied the Pharmacy and Poisons Act, 1933. The Government reply had been that by the Medical Act, 1858, the two expressions were synonymous, and that current drafting practice favoured the former. Mr. Smith objected that the Order which he challenged made no mention of the unregistered medical practitioner and his patient. Doctors who had been struck off the Register by the G.M.C. for reasons unconnected with their medical skill would be debarred from the use of this invaluable drug. The offences for which a doctor might be struck off varied, but the one charge which the G.M.C. could not bring against the doctor was that his theory of medicine was wrong. That was specifically mentioned in the Act of 1858. Doctors who had been struck off the Register were free to practise but they could not sign a death certificate

and could not prescribe dangerous drugs. He went on to refer to the case of Dr. Hennessy.

The Speaker ruled that on the Order under discussion the House could not debate the actions of the G.M.C.

Mr. C. S. TAYLOR suggested that because penicillin was not a dangerous drug it should be permitted to people who were not qualified medical practitioners. The Speaker replied that this might be so, but it would not be in order to go into the details of unregistered people who might supply this drug. Mr. TAYLOR seconded the motion for rejection of the Order. He said there was no excuse whatever for limiting penicillin when anybody could go into a chemist's shop, buy a bottle of aspirins, and kill himself. There was a consensus of opinion in the medical profession that penicillin would not do any harm. It would not necessarily cure, but it would not kill.

Mr. DAVID ECCLES said penicillin was a drug which was useful for animals, and experiments were going on which would be very useful indeed in the livestock industry. He asked how it was possible for a veterinary surgeon to get the drug under this Order.

Replying for the Government, Mr. LEONARD said the production of penicillin had been widely developed, and in the United Kingdom £3,000,000 had been spent in plant and factories; of that total £2,000,000 was Government money. Penicillin was one of the most potent cures for certain diseases but was not a universal cure. Its indiscriminate use might be attended by grave consequences. There was a danger of spreading strains of bacteria which were resistant to penicillin if it was improperly used. There were two methods in the production of penicillin. The earlier was that of surface culture. That method would be substantially departed from by the end of June, leaving the new deep culture responsible for by far the greater bulk of the production, which would come mainly from a factory at Speke and another at Barnard Castle. The average monthly production of penicillin in 1943 was 300 mega units. In 1944 it was 3,200 mega units. In 1945 it had grown to 6,000 mega units a month. Penicillin made available by June production this year would be about 300,000 mega units. From this total some 56,000 mega units would be allocated to the Services. Export licences had been granted for 130,000 mega units, leaving about 120,000 for home consumption. Production was expected to increase substantially over the next few months. Britain was not now importing penicillin. Greater production had made distribution possible through commercial channels from June 1, and such statutory control as remained had been arranged largely at the request of the trade. The supply situation would not allow of uncontrolled distribution which might result in the experience of America, where penicillin was diverted to trivial uses. It was impossible to forecast the civilian demand for penicillin. Until commercial distribution had been in force for some months the Ministry of Supply must ensure that it was available in full quantity for the genuine medical user rather than for general needs. On the advice of the bodies concerned it had been decided to make it freely available to hospitals, doctors, and dentists, and for it to be sold to the general public by chemists only on production of a certificate from a qualified practitioner. It was also decided to restrict the manufacture of items with penicillin content to such things as the Minister of Supply, with the approval of the Minister of Health, should advise.

With regard to the veterinary use the position was still as stated on May 20 by Mr. Tom Williams. There were sufficient supplies for approved veterinary research, but until the demand for human needs was known it would be impossible to indicate what supplies would be available for the treatment of dairy cows generally. Penicillin was of particular efficacy in the treatment of mastitis, and adequate supplies had been made available to the Ministry of Agriculture for experiment, and large-scale field trials were being carried out. Penicillin was not a poison or a dangerous drug, but might produce harmful results if used without medical guidance. The main reason for limitation was to prevent it being frittered away on trifling uses. The reference in the Order to Government departments was put in to enable penicillin to be used for veterinary purposes. The question of medical practitioners was one for the Minister of Health.

Sir IAN FRASER said he was not convinced that drugs which were controlled should be made available to unregistered medical practitioners, but he objected to the control of drugs unless they were poisons.

Col. STODDART-SCOTT asked whether Mr. Leonard in his remarks referred to liquid and crystal penicillin or to preparations made from penicillin, like toothpaste, creams, and ointments. The public ought not to have to go to a doctor to get a prescription for penicillin toothpaste as soon as it became available. It should be used by everybody, and the creams and ointments should be in every household as a protection against simple ailments. He hoped the Government departments

would be able to issue penicillin for human research as for agricultural research, because some of the qualified medical men who carried on research in the great medical schools preferred to have none of the inhibitions of the G.M.C. associated with them, and therefore they had not their names on the *Medical Register*.

Mr. Smith's motion to annul the Order was defeated by 145 to 45.

Propaganda against Immunization.—Sir E. GRAHAM-LITTLE inquired on June 18 whether Mr. Bevan had considered the printed circular which the National Anti-Vaccination League sends to parents of newly born children, declaring that immunization against diphtheria is dangerous and ineffective; and what action he proposed to take to prevent this interference with his Department's immunization campaign. Mr. BEVAN said he was aware of these circulars. He was confident that parents would look at the facts rather than at propaganda of this sort. He made it his business to make the true facts well known.

Universities and Colleges

UNIVERSITY OF OXFORD

At a Congregation on June 15 the degree of D.M. was conferred on R. D. Newton, and that of B.M. on T. J. Thompson.

On July 1 the degree of D.Sc., *honoris causa*, was conferred on Prof. James Bertram Collip, F.R.S., director of the Research Institute of Endocrinology at McGill University, Montreal, and chairman of the Associate Committee of Medical Research of the National Research Council of Canada.

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

FINAL M.B.—Part II (Principles and Practice of Physic, Pathology, and Pharmacology): D. M. C. Ainscow, G. S. Andrew, A. V. G. Bibby, M. O. Birkbeck, E. A. D. Boyd, D. K. Briggs, B. H. Brock, J. A. Bulleid, E. H. W. Burt, H. C. Churchill-Davidson, I. F. J. Churchill-Davidson, L. W. Clarke, J. W. Coleman, G. Cox, D. J. Crockett, P. S. Davis, J. R. B. Dixey, W. M. Edgar, H. S. Eyre, J. G. Franks, J. B. Frost, T. C. Gibson, L. Haas, A. W. I. Hall, J. G. Harrison, P. L. M. Hartley, W. J. Hay, P. M. R. Hemphill, Hetherington, P. F. C. Jackson, J. H. Jacobs, K. E. Jefferson, A. G. Jessiman, W. Ker, G. L. Leathart, J. D. Lever, R. H. G. Lyne-Pirkis, E. L. McDonald, Melver, R. W. J. MacLure, W. D. Mail, K. E. Marsh, H. G. Mather, T. R. E. P. G. Michell, D. T. Milnes, D. R. Morgan, I. M. Ormerod, J. V. Owen, I. M. Ramsden, R. Randall, P. Rhodes, J. S. Rivers, O. C. A. Scott, J. G. Selwyn, M. Shirley, D. R. Smith, J. S. Swallow, C. E. D. Taylor, R. J. D. Temple, K. Till, M. K. Towers, H. W. Trusted, S. Vakil, W. van't Hoff, D. R. Wallace-Jones, D. B. Wallis, W. Wardill, I. W. Whitmore, H. B. Whitmore, R. J. Williams. *Women:* R. S. J. Baker, Mrs. H. F. Barner, J. E. G. Brieger, J. Chivers, F. M. Fountain, J. F. Grant, M. Hobson, P. A. Howard, E. G. Howe, G. M. Hunt, C. M. E. Jones, H. M. J. Lawn, B. M. Leach, G. A. Meigh, Mrs. M. H. Miller, Mrs. A. M. P. Pantin, A. M. Sibly.

R. Nigam, M.D., M.S.(Lucknow), has been appointed University Demonstrator in Anatomy, and J. A. R. Miles, M.B., B.Chir., and G. R. E. Naylor, M.B., B.Chir., have been appointed temporary University Demonstrators in Pathology, for three years from Oct. 1, 1946.

At a Congregation held on June 24 the following medical degrees were conferred:

M.D.—R. Daley, A. E. de la T. Mallett.
M.B., B.Chir.—C. H. Hoskyn, *G. S. Ostlere.

* By proxy.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examinations indicated:

FINAL M.B., Ch.B.—14 Margaret E. Bailey, 123B. N. Catchpole, 1D. A. N. Hoyte, 123D. Longson, 122J. Marshall, 1K. A. Rowley, Ruth A. Ainsworth, R. H. Broughton, W. B. Browne, D. A. Chadwick, C. P. Chivers, J. F. Cogan, J. K. Craie, Annie Cross, K. S. Daber, A. M. Davies, I. M. Gow, H. G. Herrmann, H. P. Hilditch, C. B. Hindley, D. P. Howarth, E. V. Hulse, E. Jaffe, P. D. Kelsall, 2P. B. Lacy, Theresa P. Lee, E. Levy, E. S. Lomas, Winifred M. McIlwrick, D. A. MacLeod, N. S. Moores, J. A. Noblett, M. Panikkar, I. W. Payne, E. Priestley, D. W. Purser, Anne R. Quinn, R. G. Rooney, V. E. Sherburn, K. D. Stewart, Roberta A. Stewart, 2J. B. L. Taylor, J. H. M. Thomas, Hilary M. Thompson, H. W. Wyllie. *Part I (Forensic Medicine and Hygiene and Preventive Medicine):* Mary K. Astin, Margaret Bagshaw, M. S. Barnett, Mary L. Barrett, K. Benger, Kathleen Burn, D. L. Chadwick, Elizabeth H. Clow, A. Coady, P. J. C. Davies, L. Dawson, J. Dubberley, R. D. P. Eaton, M. B. Feingold, J. R. C. Flett, P. D. Fowler, Ruth Good, J. Hampson (née Gannon), Thelma B. Hoyle, A. K. Karfoot, R. A. Kershaw, N. P. Lancaster, W. Lees, D. C. Lindars, Muriel Lister, G. P. Love, H. G. Lowe, V. T. Mason, J. G. Mathie, H. L. Matthews, I. O. Miller, C. L. Moss, G. N. L. Mulliner, A. Murphy, J. Naginton, J. A. Nightingale, L. M. Norburn, Mrs. Barbara Oldham, R. Ormerod, F. A. Rainford, J. Rimington, K. Robinson, A. E. Shelswell, Margaret E. R. Stoneman, D. B. Stott, Margaret E. Thorpe, J. T. L. Unsworth, Joan M. Waterfall, G. W. Waters, R. J. A. Webb, H. W. Wilson, Letitia E. Woodvine, D. H. Wright.

1 Second-class honours. 2 Distinction in Medicine. 3 Distinction in Surgery. 4 Distinction in Obstetrics. 5 Distinction in Forensic Medicine.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated:

M.D.—H. Cantor, Eva V. Cooper, J. B. Hannah.
Ch.M.—W. R. Hunter, R. A. C. Owen.
M.B., Ch.B.—*Part III:* G. H. Daglish, Joan Evans, R. L. Goldson, Ailsa M. Heath, Vivien P. Helme, Maureen M. Hoey, D. T. L. Hughes, G. C. Hunter, H. S. Levy, F. W. Sheffield, Dorothy E. M. Thomas, Maureen M. Tickle, E. H. Wilson. *Passed in Separate Subjects:* G. B. Brown (Medicine and Surgery), P. Hampson and L. Robinson (Medicine and Obstetrics and Gynaecology), Nellie Hughes (Surgery and Obstetrics and Gynaecology). *Part II:* G. Frew, M. F. Holt, P. F. Jack, A. B. Jones, H. Keidan, G. H. Lucas, W. A. L. Thompson, W. P. Wilson. *Part I:* C. Alexander, C. E. Arkle, June P. Arnold, N. O. Ascroft, W. B. Ashby, D. J. B. Ashley, Barbara B. Ball, J. F. Bell, G. Bilsbarrow, Joyce L. Blakeley, L. B. Bruce, Anthea M. Bushby, 2 C. R. Cartwright, A. Dalzell, F. J. Dunn, E. C. Edwards, J. D. E. Edwards, J. A. Finnigan, G. Frew, H. L. Goffman, T. D. H. Gray, E. Gruber, Sylvia S. C. Hinde, C. I. Hood, A. W. Howell-Evans, Gwen E. Hughes, T. J. M. Hughes, J. Humphreys, Mair Humphreys, P. F. Jack, Dorothy M. Jennings, Elizabeth M. Johnson, C. Jones, C. H. Jones, W. W. Jones, Gwyneth H. Kendrick, P. Kilburn, Christine Lewis, 1 J. F. Lynch, A. G. MacKinnon, Mary K. Marchant, G. Marsh, E. Martindale, Margaret J. Miller, 12 Helen T. Morgan, E. G. Myerseough, J. O'Donoghue, Mary G. O'Hare, N. C. W. Owen, W. R. Parkes, W. H. Parry, Leslie M. Pinkerton, Gwyneth E. Pritchard, Freda M. Roberts, J. R. Roberts, R. V. Roberts, 2 Kathleen M. Roby, Barbara F. M. Shirley, H. M. Thomas, Joyce K. Watkin, 2 W. K. M. C. Watkins, D. B. Wilkinson, D. P. C. Williams, 12 H. T. G. Williams, W. P. Wilson. *Passed in Separate Subjects:* A. J. Bathurst and J. H. Murray (Pharmacology and General Therapeutics), J. N. Rimmer (Pathology and Bacteriology).
D.P.H.—*Part II (New Regulations):* G. P. Barclay, P. L. Bernard, T. B. D'Costa, E. C. Dymond, Thelma R. Gaunt, Eirwen M. Jones, A. E. Roberts, J. H. M. Tilley, Gwendoline Williams, W. R. Williams. *Old Regulations:* H. R. G. Davies.

1 Distinction in Pathology and Bacteriology. 2 Distinction in Pharmacology and General Therapeutics.

UNIVERSITY OF EDINBURGH

At a graduation ceremony, held on June 28, the honorary degree of LL.D. was conferred on Dr. John W. Bone, treasurer of the General Medical Council and of the British Medical Association, and Mr. J. W. Struthers, consulting surgeon to the Edinburgh Royal Infirmary and past-president of the Royal College of Surgeons of Edinburgh; also on Prof. Frédéric Joliot and Madame Irène Joliot-Curie, and on Mrs. Lilian Lindsay, honorary librarian and president of the British Dental Association.

UNIVERSITY OF ST. ANDREWS

The following candidates have been approved at the examinations indicated:

M.D.—*H. A. Haxton, J. D. B. Macdougall, *G. H. Smith.
M.B., Ch.B.—*J. W. Black, *R. M. Allan, *D. A. McGreal, *Marjorie S. Millin, *Mary I. Milne, *H. G. Morgan, *Valerie N. Naim, *W. F. Ross, *I. M. Stewart, *W. F. Walker, Joan E. Alexander, Maryan G. Anderson, Marjory W. Bervick, Doreen M. Bottonne, Katerina Bramley, Jean F. Brown, Laetitia M. Bruce, D. W. K. Buchanan, Athene M. A. Cochrane, Joan E. Cozens, J. M. Dunbar, Margaret Duncan, R. M. Duncan, G. Fyfe, Kathleen M. Graham, Anne E. Grant, W. G. Hood, Olive M. J. Johnston, M. A. Lambert, D. A. Lewtas, W. Lothian, C. E. MacDonald, H. MacKenzie, F. McKerracher, J. N. MacLennan, H. S. McWalter, A. C. Millar, Anne D. Miller, Elsie Morison, Sheila M. P. Morphy, Rhoda G. Nicoll, Alison Oberlin-Harris, Elizabeth J. Page, T. J. Parkinson, D. A. Petrie, Sheila M. Ross, S. A. Smith, Sheila M. Tocher, J. C. Walker, Charlotte J. S. White, S. Whitfield, Clare E. Wildeboer, Frances M. E. Wylde.

* With commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

On July 4 three Fellows were elected into the Council to fill the vacancies caused by the death of Sir Girling Ball and the retirement in rotation of Mr. Victor Bonney and Mr. Ernest Finch. The following Fellows were elected for the period of eight years:

Ernest Frederick Finch (Royal Infirmary, Sheffield) ..	625
Robert Paul Scott Mason, M.C. (Birmingham United Hospital) ..	379
Julian Taylor, O.B.E. (University College Hospital) ..	364

The following were the other candidates:

Ronald Ogier Ward, O.B.E., D.S.O., M.C. (St. Peter's Hospital) ..	356
Arthur Lawrence Abel (Princess Beatrice Hospital) ..	341
Rodney Honor Maingot (Royal Free Hospital) ..	288
Grant Massie, C.B.E. (Guy's Hospital) ..	276
Arthur Espie Porritt, C.B.E. (St. Mary's Hospital) ..	276
John Basil Hume (St. Bartholomew's Hospital) ..	262
Sir Stanford Cade, K.B.E., C.B. (Westminster Hospital) ..	204
Harold Clifford Edwards, C.B.E. (King's College Hospital) ..	196
William Hugh Cowie Romanis (St. Thomas's Hospital) ..	187
Norman Claudius Lake (Charing Cross Hospital) ..	166
William John Ferguson (West Middlesex Hospital) ..	94

In all 1,484 voted; in addition 12 votes were found to be invalid.

At the request of the Ministry of Health and Local Government of Northern Ireland; the Central Council for Health Education has established an area office in Belfast so that the work it undertakes on behalf of Government Departments and local authorities will now include Northern Ireland as well as England and Wales.

No. 25

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 22.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever* ..	51	3	26	2	—	46	3	25	1	2
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	274	20	99	32	17	422	22	99	76	14
Deaths	2	—	1	1	—	4	—	1	1	—
Dysentery	93	8	36	—	—	287	49	97	6	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	35	10	2	—	—	35	15	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	50	—	—	—	—	43	—
Deaths	49	5	13	8	1	41	5	8	11	5
Measles*	4,516	977	540	27	10	6,626	342	405	39	10
Deaths	4	—	1	—	—	5	—	—	—	—
Ophthalmia neonatorum	57	9	26	—	—	78	1	21	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	1	—	—	—	—	4	—	3(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	496	25	3	2	1	376	22	3	5	2
Deaths (from influenza)*	7	—	1	—	—	7	—	—	—	—
Pneumonia, primary	—	—	173	16	—	—	—	184	21	—
Deaths	—	26	7	6	—	—	22	15	9	—
Polio-encephalitis, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	13	—	1	3	—	6	—	—	—	2
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	1	13	—	—	—	3	21	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	137	13	14	1	—	132	9	13	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	941	77	173	25	15	1,237	47	207	18	33
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	4	—	1	2	—	7	—	5	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,026	142	89	36	34	1,117	70	96	33	8
Deaths	4	—	2	2	—	2	—	2	1	—
Deaths (0-1 year)	365	51	55	30	20	304	42	47	27	20
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births)	4,129	625	559	143	110	4,010	551	582	197	115
Annual death rate (per 1,000 persons living)	—	—	12.3	9.2	—	—	—	13.2	12.7	—
Live births	9,672	1536	1054	410	266	7,031	834	887	402	288
Annual rate per 1,000 persons living	—	—	21.2	26.3	—	—	—	17.7	25.9	—
Stillbirths	261	38	34	—	—	219	24	38	—	—
Rate per 1,000 total births (including stillborn)	—	—	3.1	—	—	—	—	4.1	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* an increased incidence was recorded for most infectious diseases; the rises included whooping-cough 401, measles 101, and scarlet fever 75. The only large decline in notifications was dysentery 53.

The increase in whooping-cough was mainly confined to the north, the largest increases being Lancashire 85, Yorkshire West Riding 48, Staffordshire 47, and Derbyshire 38. The only large fall was in Essex, where 34 fewer cases were notified than in the preceding week.

The largest rises in measles were Cheshire 76, Warwickshire 53. Scarlet fever increased slightly in most areas, and notably in Staffordshire 26 and Middlesex 21.

Last week's record low level of diphtheria increased by 12; the only large local variation was a rise in Staffordshire 12.

Returns for dysentery were the lowest for two and a half years. Only one county, Lancashire 35, had more than 10 cases.

In *Scotland* the largest variations in the trends of infectious diseases were a decrease in measles 120, scarlet fever 14, and dysentery 12, with an increase of 32 in acute primary pneumonia. Although the total for diphtheria remained unchanged a rise of 15 occurred in Glasgow. The largest returns for dysentery were Edinburgh 14 and Glasgow 10.

In *Eire* the chief feature of the returns was an increase of 26 in diarrhoea and enteritis. The largest returns were Dublin C.B. 33 and Waterford C.B. 10.

In *Northern Ireland* a decrease was recorded for measles 13 and scarlet fever 5, while an increase was reported for whooping-cough 7.

Week Ending June 29

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,063, whooping-cough 2,073, diphtheria 313, measles 4,177, acute pneumonia 440, cerebrospinal fever 39, dysentery 123, paratyphoid 9, typhoid 6.

Medical News

The twenty-third annual meeting of the Mental Hospitals Association is being held to-day, Friday, July 12, at 11 a.m. in the Guildhall, London. The programme includes a paper by Dr. Thomas Beaton, physician-superintendent of St. James Hospital, Portsmouth, on the National Health Service in relation to mental health.

The final programme has now been issued for the 105th annual meeting of the Royal Medico-Psychological Association to be held in Edinburgh on July 17, 18, and 19 at the Royal College of Physicians, 9, Queen Street. After election of officers and transaction of business at the first morning session, with Lieut.-Col. A. A. W. Petrie in the chair, Prof. D. K. Henderson will be inducted to the office of president at 2 p.m. and give his presidential address. On July 18, at 10 a.m., papers will be read on education in relation to psychiatry, and at 2 p.m. on the legal aspects of psychiatry. On July 19, at 10 a.m., there will be papers on the social aspect of psychiatry.

A provincial meeting of the Tuberculosis Association will be held at Oxford on July 18-20 in the Sir William Dunn School of Pathology, South Parks Road. On Thursday, July 18, at 2 p.m., Dr. F. R. G. Heaf and Dr. Donald Stewart will open a discussion on "The Tuberculosis in Industry," and Dr. William H. Feldman, of the Mayo Foundation, will read a paper on "streptomycin in experimental tuberculosis" at 5.15. On Friday morning Dr. Hans Jacob Ustvedt, of Oslo, and Dr. S. Roodhouse Gloyne will open a discussion on the relationship between primary and adult pulmonary tuberculosis. In the afternoon there will be papers and demonstrations on sarcoidosis. On Saturday morning Dr. André Bernou, of Chateaubriant, and Dr. Carl Semb, of Oslo, will open a discussion on the treatment of tension cavities.

The President and Council of the Royal Institute of Public Health and Hygiene have arranged a ceremony at 23, Portland Place, W., on Monday, July 22, for the presentation of the Harben medal to Sir Alexander Fleming, and the Smith Award to Dr. John J. Buchan. Guests will be received at 3 o'clock by the Right Hon. Walter Elliot.

The British Social Hygiene Council, Tavistock House North, Tavistock Square, W.C.1, will hold a summer school in social biology at Wadham College, Oxford, from Aug. 1 to 15. The fee is £13 15s. plus £1 1s. enrolment fee (not returnable). Applications and inquiries should be addressed to the Secretary of the Council in London.

At a meeting of the directors of the Society for Relief of Widows and Orphans of Medical Men, held on July 3, with Dr. A. Ware, senior, vice-president, in the chair, the death of a member was reported, also that of one of the widows, who had been in receipt of relief for 35 years and who was 83 when she died. She had received in grants from the society on behalf of herself and her two children the sum of £2,475. £1,937 10s. was voted for the payment of the half-yearly grants to the 53 widows entitled to them. Every Service member is requested to communicate with the secretary on demobilization and give his present address. This is very important, as until their arrears of subscriptions are paid they are not considered members of the society. Relief is granted only to widows and orphans of deceased members. Membership is open to any registered medical man who, at the time of his election, is residing within a twenty-mile radius of Charing Cross. Full particulars may be obtained from the secretary, 11, Chandos Street, Cavendish Square, W.1.

In June, 1945, a research unit was set up by the Medical Research Council and the Ministry of Fuel and Power to investigate the problem of Pneumoconiosis in South Wales. During the past year it has been expanding and starting various lines of work, including: (1) A study of disabled miners in order to discover the most suitable types of employment for them after leaving the pits; (2) An investigation into methods of treatment, for which purpose a ward has been set aside at Llandough Hospital by Cardiff City Council; (3) A long-term study of working miners and the air they breathe to make certain that methods of dust suppression are adequate to prevent the disease developing in the future; (4) An attempt to discover improved methods of detecting the disease in its earliest stage before the lung is permanently damaged. The research unit was opened officially on June 25, 1946, by H.R.H. the Duchess of Kent.

The Scottish National Blood Transfusion Association has appointed Dr. Douglas A. C. McRae as director of the Edinburgh and South-East of Scotland Blood Transfusion Service and of the Association's Central Depot (Eastern Area) at Edinburgh, in succession to Dr. C. P. Stewart, who has held these posts in an honorary capacity for several years. Dr. John Wallace has been appointed director of the Glasgow and West of Scotland Blood Transfusion Service, and of the Association's Central Depot (Western Area) at Glasgow, in succession to Prof. J. P. Todd, Ph.D., who has acted in an honorary capacity for several years. Dr. Stewart and Prof. Todd will continue their association with the work as honorary consultant directors.

Higher salaries for midwives have been agreed by the Rushcliffe Midwives Salaries Committee, and the new scales have been accepted. Mr. Aneurin Bevan, Minister of Health, who will recommend their adoption to all employing authorities. The increased salaries, which will have effect from Jan. 1 last, cover midwifery teachers, departmental midwifery sisters, midwifery sisters, and staff midwives working in hospitals and maternity homes, non-resident domiciliary midwives, and pupil-midwives. Higher payment is also recommended for midwives giving part-time service.

The appointment of Dr. Peter Reid, of Buckie, Banffshire, as chief medical officer to the U.N.R.R.A. Mission, Czechoslovakia, is announced. Dr. Reid has been in the R.A.M.C. since the outbreak of war in 1939, from which he has been released to take up this appointment. Previously Dr. Reid had spent many years in Peru as chief medical officer to the oilfields there, and in 1932 he went on to a similar position as chief medical officer at Basrah, Iraq.

The National Association for the Prevention of Tuberculosis, which has already conducted medico-social surveys on tuberculosis in various parts of the British Commonwealth, is now undertaking, in co-operation with the Government of the Gold Coast, a survey of the problem in that Colony. A Research Fellow, who will be a specialist doctor and have a technical assistant, is to be appointed to conduct a twelve-months medico-social survey, and the N.A.P.T. will publish a report of his findings.

Announcement is made by Surgeon General Thomas Parran of the U.S. Public Health Service that a grant for the establishment of 125 Fellowships to train American physicians and sanitary engineers in public health has been approved by the National Foundation for Infantile Paralysis. Each Fellowship provides a year's graduate training in a school of public health or a school of sanitary engineering.

Six senior administrators of the Greek nursing services are visiting Britain under the auspices of the British Council and the Royal College of Nursing to learn of nursing and hospital developments and meet British colleagues. In London they will visit the Peckham Health Centre, the Florence Nightingale International Foundation hospitals, and nursing organizations.

The new *Register of Speech Therapists* has been published by the Board of Registration of Medical Auxiliaries, and medical practitioners can obtain a copy free on application to the Registrar of the Board, B.M.A. House, Tavistock Square, London, W.C.1.

Letters, Notes, and Answers

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Airborne Cardiac Case

Q.—A patient, aged 49, has an enlarged heart with aortic and mitral valvular disease due to old rheumatism. She gets about quite well and leads an active social life. Should she be allowed to travel by air to Switzerland—a journey of four hours at between 2,000 and 5,000 feet?

A.—At high altitudes the pressure of oxygen in the inspired air is less than normal. The work of the heart in supplying the tissues with an adequate quantity of oxygen is correspondingly increased. It is generally held that altitudes up to 5,000 feet (1,500 m.) increase very little the burden on the heart. In the case under consideration, although heart disease is well developed, there is obviously a reasonable cardiac reserve as the patient leads an active social life. It may be predicted, therefore, that this individual will tolerate the journey of four hours at an altitude not exceeding 5,000 feet without distress at the time or undesirable after effects. It has to be borne in mind that other factors come into play, such as the temperament. A neurotic or highly strung disposition would facilitate the development of symptoms from minor causes, but would be hardly likely to represent a serious hazard in the present instance.

Quick Twins

Q.—A young woman is due to have her second confinement in four months' time. She says she knows she is going to have twins because (a) her husband is a twin, (b) her own sister has had twins, (c) she feels no movements and has been told that this is a sign of twins. Is there anything in the belief that lack of quickening is a sign of twins?

A.—I have never previously heard of this belief, although it may well appear in the older writings and some reader can perhaps supply a reference. The idea may have arisen as the result of the association of multiple pregnancy and hydramnios. In the latter condition the patient is sometimes unconscious of foetal movement. The more common view is the opposite—i.e., that excessive foetal movement is a sign of twins, and this undoubtedly is sometimes true. In this case the strong family history of twins is more significant than anything else. It should be added that a large proportion of women think that their second pregnancy is multiple. This is because they feel "larger" than they did in the first pregnancy, because the tone of the abdominal and uterine muscles has deteriorated, and they are more conscious of foetal movements.

Progressive Muscular Atrophy

Q.—Has the cause of progressive muscular atrophy been discovered? What treatment is possible in a case intolerant to atropine? What is the prognosis?

A.—The cause of true progressive muscular atrophy has not yet been discovered. In view of a somewhat similar picture arising at times in association with neurosyphilis, an examination of the cerebrospinal fluid and of the blood Wassermann should be done. There is no form of treatment known which has the slightest effect. Drugs of the atropine class are used only for

their effect in diminishing secretions where bulbar symptoms raise a risk of inhalation pneumonia; they are not necessary otherwise in uncomplicated cases of progressive muscular atrophy. The duration of life varies from a few months to a few years, the average being two years. Cases with bulbar involvement run a shorter course.

Chronic Pancreatitis

Q.—What is the best treatment for chronic pancreatitis?

A.—Chronic pancreatitis may cause symptoms either as a result of inflammatory and obstructive lesions or by defective production of enzymes governing protein and fat digestion and absorption and carbohydrate utilization, as well as other functions not yet elucidated. Treatment of the first type is surgical and should eliminate factors such as infection and stones from the gall-bladder and common duct; treat symptomatically the recurrent attacks of abdominal pain. In the second group, since cases have been recorded of patients with no symptoms save for loose stools, though necropsy has shown almost complete replacement of pancreatic tissue by fat, no therapy may be needed. However, between such patients and those who go downhill rapidly with severe upsets in protein, fat, and carbohydrate metabolism all varieties of defect may be encountered.

Successful substitution therapy with pancreatic extracts effects improvement in both fat and protein absorption (Rekers, Pack, and Rhoads¹; Beazell, Schmidt, and Ivy²). Unfortunately, commercial preparations have varied in activity, so it is important to give adequate and effective doses—at least 5 g., and in some cases up to 20 g., daily in enteric-coated capsules by mouth—to ensure benefit. Much of the abdominal discomfort and diarrhoea can be controlled by a high-protein, low-fat diet. If steatorrhoea is present, advantage should be taken of the extra meat allowed under the present rationing scheme. A high-fat diet, although increasing the actual amount of fat absorbed, leads to an exacerbation of the abdominal symptoms. The diabetes sometimes associated with chronic pancreatitis should be controlled with insulin. Finally, upsets of liver function have been demonstrated and a lipotropic effect of certain pancreatic extracts claimed. The significance of these observations is not yet fully understood, and no therapy which can be recommended for routine use is, as yet, available.

Sulphur Dermatitis

Q.—I recently treated a case of scabies with a proprietary ointment containing sulphur. What is the treatment of sulphur dermatitis?

A.—Dermatitis from sulphur applications is very common, both from individual sensitivity to sulphur and as a result of direct irritation. The treatment is to avoid sulphur internally or externally and any strong applications to the skin. The course depends upon the extent of the trouble and the type and health of the patient. For mild cases advise baths followed by calamine lotion or liniment. For more severe cases Lassar's paste diluted with an equal quantity of soft paraffin. Rest, alkalis, and mild sedatives are of value.

Schick Test and Pseudo-reactions

Q.—Our local health authorities are using the Schick test without a control. Is this the recognized practice nowadays?

A.—The Schick test is commonly used for two main purposes: (1) to test the susceptibility of a child or a community to diphtheria, and (2) to test the efficacy of artificial immunization—sometimes called the Schick-conversion rate. If in a community where the test is being used as an index of susceptibility there are older children, some of whom will probably give pseudo-reactions, the control material should always be used, for the severe local or systemic upsets which sometimes follow the injection of the prophylactic reagent occur most often among these pseudo-reactors. It is wiser not to give them any injection. If on the other hand the Schick test is being used to check the efficiency of a particular method of immunization in a group of young children, the control test need not be used since we are not concerned with the occurrence of pseudo-reactions.

Phytic Acid and Osteo-arthritis

Q.—If phytic acid stops the absorption of calcium (May 18, p. 784), would not foods containing it be of service in hypertrophic osteo-arthritis?

A.—No. The primary lesion in osteo-arthritis is erosion and fragmentation of articular cartilage. The hypertrophic bony changes are an attempt to replace a damaged joint surface. There is no increase in the serum calcium in osteo-arthritis and to cause decalcification by any method in this condition might lead to osteoporotic changes in the affected joints, such as are found in rheumatoid arthritis. Decalcification might also cause the serious general effects of a low serum calcium level.

Blood Pressure and Emotion

Q.—Do nervous and neurotic states influence the blood pressure?

A.—From everyday experience it is known that the blood pressure responds easily to emotional stimulation. Fahrenkamp demonstrated that in hypertensive patients the level of blood pressure is subject to considerable fluctuations according to their emotional state. Knauer observed in soldiers with healthy blood vessels increases in blood pressure, up to 180 mm. Hg, immediately after a fierce bombardment; this increase subsided only after a few days' rest in hospital. As a result of their systematic investigations, Dunbar, Alexander, and Saul came to the conclusion that the common characteristic of hypertensive patients is their inability to deal with their aggressive impulses. They are friendly and easy to get on with in their social contacts, but repression of hostility which is near to the surface leads to anxiety, which, in turn, finds expression in hyperpiesis. Dunbar draws attention to the increased tension, and sometimes spasm, of voluntary or involuntary muscles, or both, commonly encountered in hypertensive patients, which may be alleviated as unconscious conflicts become conscious. She feels that this tension is part of the whole defence mechanism psychologically and physiologically—a general attitude of being on guard. Psychological treatment of selected patients suffering from hypertension was strikingly successful.

INCOME TAX

Employee "Living In"

B. S. employs a secretary-dispenser and in addition to paying him a salary provides him with board and lodging—computed "to be worth £3 a week." Can B. S. deduct £3 a week as a professional expense?

•• Yes—with the proviso that the amount should represent the cost to B. S., not necessarily the amount which the board and lodging is "worth" to the employee.

Temporary Residence in the United Kingdom

"MATA" expects to come to the United Kingdom in the autumn for a course of special study. Will the date of his arrival affect his income tax liability?

•• Yes. Although he is coming for a temporary purpose only he will be liable as if resident here for any financial year in which he spends six months in this country. If he arrives after Oct. 5, 1946, he will not be liable for 1945-6. If he arrives before Oct. 5 he will be so liable unless he absents himself from the United Kingdom for a period long enough to reduce his stay here before April 6, 1947, to a period less than six months.

Recoveries from Debts Written Off

"D." is partner in the firm of E. and D. The practice was formerly owned by B. and E., and outstanding debts were valued yearly and the income tax allowance accordingly received in respect of bad and doubtful debts. E. and D. bought the debts at a valuation (presumably that amount was the closing figure in B. and E.'s accounts) and have since recovered more than the aggregate paid for the debts. Is the excess liable to be brought into the accounts of E. and D. for income tax purposes?

•• It is assumed that E. and D. wish to be treated as continuing the practice, and not as commencing a new one. The validity of the general ruling of the Revenue authorities (i.e., that the amounts recovered in excess of the net amount that have been credited for income tax purposes shall be brought in as income) was recently supported by a decision of the Court of Appeal, and any objection "D." might raise on appeal against the decision of the Inspector

of taxes would accordingly fail. If, on the other hand, the firm of E. and D. should elect to be charged to income tax, as if they had commenced a new practice, the basis of the decision would not seem to apply, and it might be possible to exclude receipts in question. But, of course, other factors would have to be taken into account before it was decided to make such an election.

Car Transactions

F. E. bought a car "V" in 1939 for £200 and has been allowed £170 depreciation on it. It was sold on March 26, 1946, for £280, showing a capital profit of £260—(£200—£170=) £30—i.e., £250. Car "S" was bought for £505 on March 12, 1946, and taken over on March 25, 1946.

** No "balancing charge" is due on car "V" as it was sold before April 6, 1946. Claims should be made in respect of car "S" for 1947-8 as follows:

Initial allowance	£50 @ 20%	..	..	£ 01
Wear and tear	£505 @ 25%	..	..	£125
				<u>£227</u>

The capital value to carry forward for the 1948-9 allowance will be £505—£227=£278.

"EQUITY" bought a car "A" in 1939 for £200 and has received wear and tear allowances on it amounting to £132. (A further £17 will be allowed on it for 1947-8, reducing the value to £51) He sold it on April 8, 1946 for £560, and on the same day bought car "B" for £703. How is his liability affected?

** The transactions do not affect the tax for the years 1946-7 and 1947-8. For 1948-9, however, "EQUITY" will be liable on a balancing charge of £560—£51=£509, and can claim in respect of car "B" the initial allowance (20% of £703=£141) and the wear and tear allowance (25% of £703=£176).

A. R., who is in general practice, bought a new car on March 5, 1946, for £614, selling his old car for £250.

** For the purposes of the initial allowance the car will be deemed to have been purchased on April 6, 1946—this is in accordance with the Income Tax Act, 1945. Consequently the initial allowance will be due for 1947-8 not for 1946-7. If the accounts of the practice are made up to a date not earlier than March 5, depreciation allowance—i.e., 25% of £614—can be claimed for 1946-7, but if the accounts are made up to, say, Dec. 31, the depreciation allowance for 1946-7 will not be affected, though it will be, of course, for 1947-8.

P. J. will practise as a locum tenent from Aug. 1 to Sept. 30 and will buy a car for £500 in August. On Oct. 1 he will become a partner in an existing practice.

** Assuming that it is necessary for P. J. to have a car to perform his duties as a locum tenent he will be entitled to set against his earnings in that capacity the initial allowance on the car—i.e., 20% of £500=£100 and wear and tear at 25% of £500=£125 for two months—i.e., £21. The practice is presumably assessed on the basis of the previous year, and P. J. will be liable for tax on his share of that assessment. That tax will accordingly not be affected by the purchase of the car in the current year.

Cash Basis or Earnings Basis

"DEMOBBED" returned in May, 1945, to a practice which was carried on for him in his absence. Income tax was assessed for that period on the basis of the cash received. Can he make his return for 1945-6 on the basis of the cash received in 1944-5, and his return for 1946-7 on the basis of the cash received in 1945-6?

** We advise him to do so. This is not a case of a practice having ceased and been restarted: it was carried on as a continuing practice, though for a time necessarily in a different manner. "DEMOBBED" and the Revenue authorities both applied the cash basis on those lines, and no doubt hitherto to the detriment of the former. Law and equity both justify the continuance of the cash basis for the years subsequent to demobilization.

Schedule E Car Expenses

W. S. receives a car allowance of £150 per annum as a whole-time M.O.H. Can he claim as an expense the excess of his expenditure (plus depreciation, etc., allowances) over the £150 received?

** He is so entitled in law provided that he can prove the expenses to be "necessary" in the performance of his duties. But he will no doubt find it difficult to show to the satisfaction of the appeal commissioners that the Local Authority does not pay an allowance large enough, taking one year with another, to meet the "necessary" expense.

LETTERS, NOTES, ETC.

Treatment of Sterility in Women

Mr. TERENCE ROBINSON (South Shields) writes: Many cases of infertility are relieved by curing a cervical erosion, which has been produced often by the use of vaginal tampons during menstruation. This highly unphysiological practice is increasing along with the cult of douching the vagina with various chemicals. The advertisements of the vendors suggest that the vaginal douche should form part of the normal toilet. If this were desirable, Nature in her wisdom would have arranged, no doubt, for the urinary meatus to emerge in the anterior fornix. In conclusion I would plead for the substitution of "infertility" for "sterility." Although both words mean the same, infertility does not suggest the complete barrenness and lack of life associated to-day with "sterile." The diagnosis could be altered to sterility in the final summing-up after the menopause.

Intractable Major Epilepsy Controlled by "Epanutin" and "Luminal"

Dr. T. G. BAYLE (London, W.13) writes: A girl aged 16 first came under my care in January, 1946. She had a history of major epileptic attacks extending back four years. The attacks occurred during the day and numbered 7 to 10 a week. She had been treated with bromides and phenobarbitone without effect. A few years ago an attempt was made to control the attacks with "epanutin" (sodium diphenylhydantoinate). This was discontinued as the patient developed suicidal tendencies, and she was returned to "luminal" gr. 1 thrice daily. Her attacks continued to be 7 to 10 weekly, all occurring in the daytime. On consideration I decided that this was a case which might be benefited by treatment with epanutin and luminal, and I put her on epanutin gr. 1½ and luminal gr. 1/2 twice daily after food. She was free for a month but then had an attack at the menstrual period. After this attack in February, 1946, I put her on epanutin gr. 1½ thrice daily after food, with luminal gr. 1/2 twice daily—i.e., gr. 1/2 morning and gr. 1/2 at night. Since then she has remained free from all attacks. She was dull and apathetic whilst on luminal. Under present treatment she is bright and cheerful, has regained complete confidence, and has taken up an office job. She is entirely free from toxic and psychotic effects. This is an example of the type of case which may benefit by treatment with epanutin, which of course should not be instituted until more usual methods have failed. The control of the severe psychotic effects resulting from its combination with so small a dose of phenobarbitone as gr. 1/2 twice daily is worthy of note.

Bread Rations for Doctors

Dr. T. E. SEYMOUR LLOYD (Luton) writes: The Government's proposed scheme for bread and flour rationing overlooks the claim to an increased ration of a hard-working and vitally important section of the community—namely, the medical profession. In actual expenditure of energy, doctors by virtue of their long hours of work and mental strain undoubtedly exceed many classes of manual workers. If corroboration is required, reference may be made to the findings of the Spens Committee. The coming winter promises to be a time of great hardship for the community with its overcrowding due to housing shortage, insufficient warmth, and inadequate dietary, which in small families may approach starvation level. In consequence a deterioration in the nation's health with increased sickness is probable, which will further overtax the doctors, who, if they are to function efficiently as guardians of the health of the community, must be guaranteed a minimum diet consistent with their caloric requirements. I urge, therefore, that the medical profession should make strong representation to the Government that, on grounds of vital necessity, active members of the profession should, in view of the arduous nature of their work, receive the same bread and flour ration as manual workers.

Sir William Macewen

Mr. D. LIGAT, F.R.C.S., writes from St. Leonards-on-Sea: When I was dressing for the late Sir Alfred Pearce Gould, I asked him who he thought was the greatest surgeon of the century. He said without hesitation, "Kocher or Macewen, and I think Macewen just has it."

Corrigendum

The authors of "A Short Survey of Trilene in General Practice" (July 6, p. 10) wish to make the following corrections: (1) The heading to Table II should read: "Results with Trilene (All Cases)." (2) Table III should be headed: "Midwifery: Extended Analysis Table II (Selected)"; and "Cases" should be substituted for the word "Cases" at the top of its second column. (3) The second line of the subheading "midwifery" on p. 12 should have been: "In less than 20% of cases complete amnesia followed its use."

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 13 1946

British Medical Association

ANNUAL REPRESENTATIVE MEETING, 1946 ADDITIONAL RESOLUTIONS BY DIVISIONS AND BRANCHES

Report of Agenda Committee

Motion by WINCHESTER: That this meeting be informed what action has been taken in connexion with Minute 11 of the S.R.M. of May 1, 1946, and what method is being adopted to deal with the congestion of business at Representative Meetings.

PRELIMINARY

Ex-Service Practitioners

Motion by WESTMINSTER AND HOLBORN: That this meeting considers that steps should be taken to cause the appropriate authority to be empowered to give some assistance to practitioners leaving the Services to acquire premises which may be used as surgeries.

NATIONAL HEALTH SERVICE

Motion by SWINDON: That in view of the imminent threat to the traditions and freedom of the profession contained in the proposed National Health Service Bill this meeting proposes that a suitable covenant be drawn up by the Association and signed by all medical men as a guarantee of unity.

Motion by WESTMINSTER AND HOLBORN: That this meeting is of opinion that in the future National Health Service the extent of certification should be strictly defined and adhered to, that special payment should be made for this service, and that if certification is extended additional payment should be made.

Motion by WESTMINSTER AND HOLBORN: That the Association set up an Advisory Committee to advise doctors on the sale and value of practices prior to the introduction of the State Medical Service, and the position of members of partnerships after this event.

Motion by BOURNEMOUTH: That for the safeguarding of private practice, whether general or special, an essential is the preservation of independent private nursing institutions apart from the hospitals, and there should be no power vested in the Minister under a National Health Service Act to acquire such institutions without the consent of the owners, nor power to prevent the establishment of such institutions.

Motion by MERIONETHSHIRE AND MONTGOMERYSHIRE: That this meeting urges the Council to emphasize in all negotiations with the Government the extreme importance of adequate mileage payment to practitioners in mountainous areas with a sparse and scattered population.

Motion by WESTMINSTER AND HOLBORN: That it shall be provided in the terms and conditions of service under the National Health Service that any accusation against a medical officer employed by a local health authority for the purpose of procuring dismissal or reduction of status of that officer shall not be brought before the local authority in the absence of the officer without reasonable notice, or without giving him or her the opportunity to answer such accusation or criticism.

Motion by BROMLEY: That in the event of the goodwill of practices being acquired by the State and of compensation being paid, the practices of those doctors who were killed or disabled by enemy action during the war should rank for compensation on the basis of the 1939 income in those cases where the goodwill has not already been sold.

Motion by ISLE OF WIGHT: That local meetings of the profession be called immediately to draw up Terms and Conditions of Service which will be acceptable to the profession.

Motion by NORTH GLAMORGAN AND BRECKNOCK: That in the analysis of results of a referendum of the profession, due regard be taken to age, particularly with reference to purchase and sale of practices.

Motion by NORTH STAFFORDSHIRE: That, in view of the possibility of the National Health Service Bill in its final form being unacceptable to the profession, this meeting is of opinion that Council should take further steps towards decentralization of the Association by the provision of local organizers either medical or lay on a regional basis.

Motion by NORTH STAFFORDSHIRE: That in any future medical service the Council shall take steps to ensure that a suitable body be appointed on the lines of the Spens Committee or a Whitley Council to whom all differences between the profession and Government regarding remuneration can be referred.

NATIONAL HEALTH INSURANCE *Report of Spens Committee*

Motion by WESTMINSTER AND HOLBORN: That this meeting considers that the Association should press with the utmost energy for an increase in the capitation fee, such increase to be retrospective.

Motion by WESTMINSTER AND HOLBORN: That in any negotiations with the Minister the Association be represented by counsel to deal with legal points.

Motion by WINCHESTER: That this meeting instructs the Council—

(1) To demand an immediate increase in the N.H.I. Capitation Fee, with compensation to date back to the time when the B.M.A. first put forward its application for an increased rate.

(2) To re-establish confidence in the integrity of the State in its contracts with the medical profession, to demand compensation from the State for its previous unilateral breach of contract whereby the income level of those to be eligible for medical benefit was raised arbitrarily, to the prejudice of the general practitioner already underpaid for his N.H.I. services.

(3) That in any negotiations for capital repayment by the State regard must be had to the undervaluation of the goodwill due to this uneconomic N.H.I. capitation fee.

Motion by SOUTH-WEST ESSEX: That in view of the fact that the Spens Committee has now reported, an immediate increase in the capitation fee is demanded. Such increase should be retrospective to the date of inception of the Spens Committee.

Regional Medical Service

Amendment by HENDON: That the Representative Body is strongly opposed to the introduction of any machinery whereby the Regional Medical Officer may refer a patient to a specialist for a second opinion without affording the patient's own doctor an opportunity of selecting the consultant and effecting the necessary arrangements.

SPECIAL PRACTICE

Access to Ancillary Departments of Hospitals

Amendment by WEST SUFFOLK: That experience having shown that the advantage of the policy of the "open door" outweighs the disadvantages, it should be adopted as a uniform system throughout the country.

Status of Group Committees

Motion by WEST SUFFOLK: That, with reference to para. 50 of the Council's Report, local meetings of consultant and specialist groups should be open to all such consultants and specialists, whether whole or part-time.

Part-time Consultants and Specialists

Motion by ISLE OF WIGHT: That, whilst approving para. 51, this meeting requests Council to take the action passed by A.R.M., July, 1945 (Min. 71), in order to allay the present widespread apprehension.

(Minute 71 is as follows:

RESOLVED: That this A.R.M. requests Council to inform part-time consultants and specialists on hospital staffs what steps are being taken to safeguard their position and future employment.)

Examination of Pensioners referred to Specialists

Amendment by SWANSEA: That, with reference to the first section of para. 53, this meeting is of opinion that the fees paid by the Ministry of Pensions for cases referred to specialists should be £2 2s. for each of the first two cases, and £5 5s. for a session of two hours, with a maximum of three cases.

PUBLIC HEALTH

Salaries in the Public Health Service

Amendment by NORTH STAFFORDSHIRE: That this meeting urges that pressure be applied to obtain early agreement on revised Askwith scales and expresses the opinion that the interim adjustments are unsatisfactory.

National Maternity Service

Amendment by BRADFORD: That this meeting reaffirms the following Minute 127 of the A.R.M., 1945:

That, with reference to para. 32 of the Annual Report of Council, this Representative Body is determined to pledge itself to resist the introduction of any new criteria of qualification in midwifery that would, if officially recognized, deprive any registered medical practitioner of the right to practise midwifery in a National Service,

and submits the following rider:

That this meeting considers it irrational that a student should be instructed and qualified to practise in midwifery, and subsequently be refused permission to practise that subject without further instruction following qualification.

Amendment by HENDON: That the Council be instructed to oppose the introduction of new criteria of qualification sponsored by the Royal College of Obstetricians or the Ministry of Health, which would have the effect of precluding any competent general practitioner from engaging in the practice of midwifery among public or private patients, if and when he so desires.

Fees for Practitioners called in by Midwives

Motion by NORTH STAFFORDSHIRE: That this meeting is of opinion that the minimum fee for attending a full confinement under local authority arrangements should be £5 5s.

Motion by NORTH STAFFORDSHIRE: That in the opinion of this meeting the fee payable by a local authority for a full ante-natal examination and report should be £2 2s.

Doctors employed Part-time by Local Authorities

Amendment by HENDON: (i) That the fee for immunization at a doctor's surgery should be 5s. per injection; (ii) that the fee for visiting a child at home and giving injections there should be 7s. 6d. a visit.

Milk

Motion by ISLE OF WIGHT: That this meeting is of opinion that legislation should require that all milk sold to the public should be either pasteurized or from tubercle-free herds.

ORGANIZATION

Subsistence Allowance of Representatives attending Representative Meetings

Motion by LEEDS: That Representatives, members of Council, members of standing committees or other committees set up by Council be paid a subsistence allowance of £1 ls. per day or part of a day when attending the appropriate meetings of the Representative Body, the Council, the standing, and other committees.

Motion by NORTH GLAMORGAN AND BRECKNOCK: That Divisional Representatives be paid a subsistence allowance out of central funds when their attendance at Representative Meetings involves staying away from home.

Elections to Committees

Motion by SOUTH-WEST ESSEX: That in the future all nominations as candidates for elections to seats on committees which are voted upon by the A.R.M. should be published three weeks prior to that meeting.

NAVAL AND MILITARY

Demobilization

Motion by WESTMINSTER AND HOLBORN: That this meeting does not regard the release from the Services as satisfactory, and considers that establishments are overstaffed.

OTHER MOTIONS OF DIVISIONS AND BRANCHES

Bread Rationing

Motion by ISLE OF WIGHT: That in the opinion of this meeting doctors and nurses, owing to their long irregular hours and seven-day week, should be placed in a category which receives higher bread rations than sedentary workers.

PUBLIC RELATIONS

Motion by LINCOLN: That in view of the small amount of newspaper publicity given to B.M.A. opinion, advertising space should be used in the national press.

Motion by WESTMINSTER AND HOLBORN: That this meeting feels that relations with the Press are still not satisfactory.

HOSPITALS

"General Practitioner" Hospitals

Motion by GATESHEAD: That in any hospital area it is essential that facilities should be afforded general practitioners, either in

general practitioner or other hospitals, to attend their own maternity cases either privately or otherwise.

Motion by NORTH STAFFORDSHIRE: That the Association should demand the provision of general practitioner hospitals under any new Health Service Scheme.

Nursing and Domestic Staffs of Hospitals

Motion by WESTMINSTER AND HOLBORN: That, with reference to para. 22 of the Council's Report, this meeting views with anxiety the lack of nursing and domestic hospital staff, and considers that energetic steps should be taken to rectify it, and suggests that every inducement should be offered to those leaving the Services to continue in nursing.

GENERAL PRACTICE

Fees for Life Insurance Examination

Motion by CITY: That this meeting recommends that when a doctor is requested by an insurance company or a solicitor to be present at the examination of his patient by another doctor for the purpose of assessing a claim arising out of the patient's injury or illness the fee payable should be not less than £2 2s.

Private Practice under 100% National Health Service

Amendment by HENDON: That the patient who elects to obtain medical advice privately shall not be required to pay for drugs and appliances.

Amendment by ISLE OF WIGHT: That, with reference to para. 30 (2), the words "of his" be substituted for the words "of any partner or."

Amendment by ISLE OF WIGHT: That para. 30 (7) be referred back to Council.

Telephone Facilities for Doctors

Motion by WESTMINSTER AND HOLBORN: That this meeting is of opinion that representations should be made to the Postmaster-General that the telephone service should provide facilities at each exchange for taking messages during such times as a doctor may notify that his telephone will be unattended.

Post Office Medical Officers

Motion by HENDON: That the Council take steps to secure an increase of the visiting fee from 3s. 6d. to 5s. and the abolition of the over-riding quarterly maximum of 14s. paid by the Post Office to Post Office medical officers for attendance on postal employees living out of the district of their employment.

Coroners Act

Motion by HENDON: That the Council be invited to review and submit a report on the working of the Coroners Act since its introduction, paying special attention to the difficulties attendant upon pathological examinations, fees payable to medical practitioners as witnesses, and other difficulties experienced by the profession in carrying out the statutory and other directions of the coroner.

SALARIES OF WHOLE-TIME PUBLIC HEALTH
MEDICAL OFFICERS*Interim Revision of Askwith Memorandum*

Agreement has been reached between representatives of the British Medical Association and representatives of local authorities for an interim revision of the Askwith Agreement. At a conference at the Ministry of Health on March 26 the following were represented: County Councils Association; Association of Municipal Corporations; Urban District Councils Association; Rural District Councils Association; London County Council; Association of Education Committees; Mental Hospitals Association; Metropolitan Boroughs Standing Joint Committee.

In Circular 140/46 of July 4, it is pointed out that the interim revision has now been accepted by all parties to the Askwith Agreement, which came into force on April 1, 1930. The interim revision is being circulated to all local authorities by the Minister of Health. The Minister has been asked to make it clear that all parties accept the interim revision as embodying scales of salaries recognized as being appropriate to public health medical officers.

Details of the new recommendations correspond closely with the proposals put forward by the Council of the British Medical Association and recorded in the *Supplement* of April 20 (p. 93)

"SOCIAL MEDICINE" IN EAST AFRICA

In his recent presidential address to the Kenya Branch of the British Medical Association Dr. A. R. Paterson discussed what is described as the social function of the Association in East Africa—namely, to persuade both Government and people of the importance of a far greater measure of efficient medical service. The problems presented in connexion with health services in Kenya, he said, were not less difficult of solution than those in Great Britain, and to meet them, for 4,000,000 people, there were only about 150 doctors—one to 25,000 of the population, or, in many areas, one perhaps to 100,000. About a year ago in Kenya a Government committee on health, hospital services, and nutrition was appointed, and when it reported it was expected to recommend an extension of medical services with the provision of more medical staff. The question was how to obtain this staff by oversea recruitment, and for how long ahead and for what size of population the planning ought to take place.

Dr. Paterson mentioned that the Kikuyu, a tribe comprising one-fourth of the population of the colony, is increasing at the rate of not less than 2% per annum, that the physical condition of these people may be deteriorating, and that the agricultural congestion and pressure of population in Kikuyu lands are now so great that without some organization these lands may be on their way to becoming a desert during the next decade. Of the rest of the population there are no reliable census figures, but the Kavirondo peoples may well be increasing at the same rate. A "biological bomb" has exploded in this part of East Africa, and the capacity to organize or reorganize African society and raise its standards of living has to be measured against the tendency of native peoples to increase in numbers up to subsistence level at the poor standards which are the only ones they know.

The African Doctor

The coming on the scene of the African doctor made it necessary that he should be well trained, that he should be inspired with a fine tradition and an adequate conception of his vocation, and that there should be an effective organization or the distribution of such doctors and accompanying facilities. In South Africa a National Health Services Commission, appointed in 1942, has suggested a doctor-patient ratio rather higher than 1 to 2,500, and has stressed the importance of personal preventive health services based on the family as a unit, with periodical medical examinations and properly staffed health centres. To make provision on this scale in Kenya would require 1,500 doctors, most of them African. Makerere College is at present turning out only two or three African doctors a year for Kenya, but it is planning for extension, and the Colonial Development and Welfare Fund is expected to help; but local revenues will be required, both for the support of Makerere and for the provision of greatly increased primary and secondary education in local schools, without which there can never be enough entrants to Makerere.

The training of these new African doctors called for lecturers and medical practitioners from over-seas, the great majority of whom would be members of the B.M.A. Were they being prepared adequately and made familiar with the methods of practice of medicine appropriate to rural and urban Africa? Dr. Paterson thinks that few would answer that question in the affirmative. Here he quoted from the chapter on social medicine in the Goodenough report:

"There is growing support for the view," says the Goodenough report, "that a general medical practitioner should become the health adviser of his patients and their families and should participate to a greater extent in the conduct of the health services of the country. . . . The training which most students receive at the present time is not sufficiently directed to this end."

The practice of social medicine among Africans could clearly never be carried out by doctors working "on their own." The "social medicine doctor" would be concerned with families, a member of a team with district nurse, midwife, health visitor, health inspector, with provision for systematic records and liaison with social agencies, and with the support of hospitals well equipped and staffed.

A State Service Needed

Whatever might be the case elsewhere, in the great rural native areas of East Africa, in Dr. Paterson's view, only a State service would meet the situation. The key posts in such a service for many years to come must be filled by medical officers recruited from over-seas, and must be additional to the present establishment. These officers must be given the opportunity of becoming specialists in social medicine—specialists, so to speak, in general practice, but in general practice of a better and far more interesting kind than has been practicable hitherto.

At present the service in Kenya was so small as to preclude the specialization necessary to efficiency. In the promotion of a colonial health service of this kind Dr. Paterson foresaw a large part for the B.M.A.—first of all in placing the need for such a service before Government and people. Recently in Kenya there had been appointed to the Governor's Council a member responsible for advising the Governor on health matters and for the execution of his decisions. This meant recognition by the Government that the promotion of public health must always be an object of Government policy, and it furnished the Association in Kenya with a channel through which to transmit to the Government its representations with the certainty that they would receive informed consideration.

MEDICAL WAR RELIEF FUND

SEVENTY-SIXTH LIST

Individual Contributions

- £395 4s. 6d.—Legacy from the late Dr. G. H. Foott, Southampton.
 £100.—Mr. H. Dodd, London (2nd donation)
 £52 10s.—Mr. W. H. Hey, Stockport.
 £50.—Anonymous.
 £26 5s.—Drs. Grose and Stevenson, Edgware.
 £25.—Dr. A. Beauchamp, Birmingham (2nd donation); Dr. John T. Ingram, Leeds (4th donation); Dr. M. K. and Mrs. Robertson, Oxford (5th donation).
 £21.—Dr. C. R. Selwyn Jones, Chard (2nd donation).
 £20.—Mrs. S. M. V. Richardson, Cbellenham (3rd donation).
 £15 15s.—Anonymous.
 £10 10s.—Dr. Barbara Abercromby, Liverpool (2nd donation); Dr. Madeline Giles, Harrow (2nd donation); Mr. R. Jaques, Worthing (3rd donation); Mr. A. Martin-Leake, Ware (2nd donation); Dr. H. B. Pierce, Mountain Ash (2nd donation); Dr. W. H. Steele, Newton Abbot (8th donation); Dr. T. J. T. Wilmot, Louth (3rd donation).
 £10.—Dr. W. L. Blakemore, Staines (5th donation); Dr. A. E. Ironside, Ashted; Lieut.-Col. R. H. Lee, I.M.S.ret. (4th donation).
 £5 5s.—Dr. J. M. Alston, London; Dr. J. Walker Brash, London; Dr. T. J. Cronin, Birmingham (3rd donation); Dr. J. K. Donald, London; Dr. C. Gibson, Worthing (2nd donation); Sir William Hale-White, Oxford; Dr. W. E. Hayes, Potters Bar; Major W. Happer, I.M.S. (23th donation); Miss K. McArthur, Harrow (3rd donation); Dr. J. A. Moody, Ilford; Capt. H. B. Morris, R.A.M.C.; Dr. D. S. Poole, Teddington (2nd donation); Dr. John F. Seales, Mountain Ash; Dr. A. C. Shuttleworth, Chester; Dr. V. D. C. Wakeford, London (2nd donation); Dr. G. C. L. Woodroffe, Hampton (2nd donation).
 £5.—Major S. Bradshaw, R.A.M.C.; Dr. N. F. Coghill, London (4th donation); Dr. J. H. Crofton, Ware (3rd donation); Major F. R. Glover, R.A.M.C.; Surg. Lieut. N. S. Hepburn, R.N.; Drs. H. and E. Johnson, London; Dr. R. Shove, Cullompton (2nd donation).
 £3 3s.—Anonymous; Mr. F. C. Dwyer, Liverpool; Dr. D. Kinsella, Stonehouse; Dr. G. Neely, London.
 £2 2s.—Dr. W. T. Beswick, London (2nd donation); Lieut.-Col. N. Bickford (19th donation); Dr. C. W. Elson, Worthing; Dr. Julian T. E. Evans, West Worthing; Dr. T. B. Evans, Prestatyn (29th donation); Dr. J. I. Lyons, Heston; Dr. A. G. McArthur, London (4th donation).
 £2.—Capt. S. Citron, R.A.M.C.; Dr. H. Stalker, Edinburgh (2nd donation).
 £1 10s.—Dr. E. G. Wilson, Sheffield.
 £1 1s.—Mrs. R. J. Buxton, Wriarton; Dr. F. R. Corfe, Petersfield (2nd donation); Dr. R. Lynn, Bath; Miss C. M. Outley, Hove; Dr. R. E. M. Taunton, London (2nd donation).
 £1.—Dr. Anna P. Martin, Naapur.
 11s.—Dr. J. Slaggett, Delabole.
 £229 2s.—Practitioners in Birmingham Central B.M.A. Division—per Dr. F. E. Gould (amount already sent £393 3s.); Dr. D. Priestley Smith £21 (3rd donation); Dr. Mabel E. Prosser £3 3s. (2nd donation); Dr. H. Featherstone £2 2s.; Dr. J. Griffin £5 3s. (2nd donation); Dr. T. L. Hardy £10 10s. (3rd donation); Dr. J. L. Brown £2 2s. (3rd donation); Dr. G. J. Allan £1 1s.; Dr. A. M. Cunn £4 4s.; Anonymous £10s.; Dr. Frances Braid £5 5s. (2nd donation); Dr. J. P. Good £5 5s. (2nd donation); Dr. Jean L. Hallam £2 2s.; Dr. A. J. Davies £3 3s.; Dr. W. Summers £3 3s. (2nd donation); Dr. J. S. M. Connell £21; Dr. G. Webb £5 5s.; Dr. A. Brian Taylor £10 10s. (2nd donation); Dr. H. W. Donovan £15 (3rd donation); Dr. F. Selby Tait £2 2s.; Dr. J. Radner £2 (2nd donation).

£225 8s. 6d.—Practitioners in Derby Division—per Dr. E. C. Dawson (amount already sent £208 0s. 7d.): Drs. Denny, Highfield, and Isaac £15 15s. (2nd donation); Anonymous £10 10s.; Mr. C. H. Bamford £10 10s.; Dr. J. Adam £5 5s.; Drs. H. C. and M. C. Bell £5 5s. (2nd donation); Drs. Broster and Fletcher £5 5s. (2nd donation); Dr. T. D. Donegan £5 5s.; Mr. M. L. Edwards £5 5s.; Dr. A. R. Elsom £5 5s. (2nd donation); Dr. G. E. Kidman £5 5s. (2nd donation); Dr. F. G. Lischer £5 5s.; Dr. J. B. Mitton £5 5s. (2nd donation); Dr. E. U. H. Pentreath £5 5s.; Mr. J. R. Ratcliffe £5 5s. (2nd donation); Dr. Kathleen Riddle £5 5s. (2nd donation); Mr. W. G. Rose £5 5s. (2nd donation); Dr. C. Rudge £5 5s.; Dr. R. P. Bliss £5 5s. (2nd donation); Dr. W. E. Haigh £5 5s. (2nd donation); Dr. T. J. Kirkpatrick £5 5s. (3rd donation); Dr. T. Tully £5 5s.; Dr. A. Burns £3 3s. (2nd donation); Dr. E. C. Dawson £3 3s. (4th donation); Dr. W. Paterson Shand £3 3s.; Dr. J. D. Crerar £2 12s. 6d.; Dr. H. Barber £2 2s. (2nd donation); Dr. R. Blair £2 2s. (2nd donation); Dr. R. L. Brown £2 2s. (2nd donation); Dr. R. Gordon Cooke £2 2s. (2nd donation); Dr. E. Crawley £2 2s.; Dr. W. M. Dinwoodie £2 2s.; Dr. M. H. Elmitt £2 2s. (3rd donation); Mr. R. L. Flett £2 2s.; Dr. T. Futers £2 2s.; Dr. E. J. Goldman £2 2s.; Dr. J. R. Hollick £2 2s. (3rd donation); Dr. G. F. Keatinge £2 2s.; Mr. C. D. Lochrane £2 2s. (3rd donation); Dr. A. M. MacCormick £2 2s. (2nd donation); Dr. E. M. MacDonald £2 2s. (2nd donation); Dr. D. Macfarlane £2 2s. (2nd donation); Dr. J. C. Macfarlane £2 2s. (2nd donation); Dr. A. R. McKail £2 2s. (2nd donation); Dr. J. B. S. Morgan £2 2s.; Dr. T. B. Nicholas £2 2s.; Dr. C. Penny £2 2s.; Dr. H. C. Robertson £2 2s. (2nd donation); Dr. J. Murray Robertson £2 2s. (2nd donation); Dr. C. G. Shcrown £2 2s.; Dr. J. W. Smith £2 2s.; Dr. F. Starritt £2 2s.; Dr. G. W. R. Thomson £2 2s. (4th donation); Dr. L. O. Watt £2 2s. (2nd donation); Dr. H. F. Blood £2 3s. (3rd donation); Drs. Lindsey and Hodson £2 2s.; Dr. E. L. R. Norton £2 2s. (2nd donation); Dr. J. L. Anderson £1 1s. (2nd donation); Dr. J. W. Barber £1 1s.; Dr. C. W. J. Brasher £1 1s.; Dr. R. B. Dobson £1 1s.; Dr. G. S. Dow £1 1s.; Dr. Gordon Gillies £1 1s. (2nd donation); Dr. E. J. Goldsmith £1 1s.; Dr. E. H. B. Grey £1 1s. (2nd donation); Dr. J. M. M. Heap £1 1s.; Dr. G. W. Iliffe £1 1s. (2nd donation); Dr. Q. Madge £1 1s. (3rd donation); Dr. J. Palmer £1 1s.; Dr. A. M. Ramsay £1 1s. (2nd donation); Dr. W. R. Soutter £1 1s.; Dr. A. J. Wilson £1 1s.; Dr. V. J. Woodward £1 1s. (2nd donation); Dr. W. H. Williams £1 1s.; Dr. F. Houston 10s.

£213 5s.—Practitioners in Bournemouth B.M.A. Division—per Dr. N. Ross Smith (amount already sent £520 7s. 5d.): Dr. F. C. Bottomley £10 10s. (3rd donation); Dr. W. McNaughton £10 10s. (2nd donation); Mr. N. Ross Smith £10 10s. (3rd donation); Dr. E. C. Parker Williams £10 10s. (3rd donation); Mr. S. G. Luker £10 10s. (3rd donation); Dr. A. M. Barron £5 5s. (2nd donation); Dr. A. Leslie Blunt £5 5s.; Dr. C. P. Charles £5 5s. (3rd donation); Dr. C. Colmer Davies £5 5s. (2nd donation); Dr. David Hardie £5 5s. (2nd donation); Dr. F. Heasman £5 5s. (2nd donation); Dr. R. M. B. Owens £5 5s. (2nd donation); Dr. Newton Matthews £5 5s. (2nd donation); Dr. P. J. Montgomery £5 5s. (3rd donation); Mr. Campbell Shaw £5 5s. (3rd donation); Dr. G. S. Small £5 5s.; Dr. C. W. Branson £5 5s. (2nd donation); Dr. A. R. Paterson £5 5s. (2nd donation); Surg. Capt. A. T. Rivers £5 5s.; Dr. E. Croft Watts £5 5s. (2nd donation); Dr. S. Devine £3 3s. (3rd donation); Dr. J. Dixon Green £3 3s. (2nd donation); Dr. J. L. Reeve £3 3s. (3rd donation); Dr. R. Risk £3 3s. (2nd donation); Dr. J. Sharp £3 3s. (4th donation); Col. H. S. Anderson £2 2s. (2nd donation); Dr. F. Barker £2 2s. (2nd donation); Dr. G. Chesney £2 2s.; Dr. I. Duguid £2 2s. (2nd donation); Dr. R. Vaughan Facey £2 2s.; Dr. E. Johnson £2 2s.; Dr. A. S. Mackie £2 2s. (2nd donation); Dr. Doris Odium £2 2s. (3rd donation); Dr. D. W. R. Pratt £2 2s.; Dr. J. W. Redgate £2 2s.; Dr. B. Hall Reid £2 2s. (2nd donation); Dr. G. S. A. Scott £2 2s.; Major P. A. Stewart £2 2s. (2nd donation); Dr. F. D. Walker £2 2s.; Dr. G. H. S. Daniell £2 2s.; Col. P. MacKessack £2 2s. (4th donation); Dr. A. Mackenzie Ross £2 2s. (2nd donation); Dr. C. B. Mooring Aldridge £1 10s. (2nd donation); Dr. C. T. Hawkins £1 10s. (2nd donation); Dr. D. Basker £1 1s.; Dr. T. M. Bell £1 1s. (3rd donation); Dr. W. Moss Bristowe £1 1s.; Dr. M. Bentley £1 1s.; Dr. E. S. Bowes £1 1s. (3rd donation); Dr. K. B. Clarke £1 1s. (2nd donation); Dr. P. C. Cumber £1 1s. (2nd donation); Dr. A. L. Dobbryn £1 1s. (2nd donation); Dr. H. Granger £1 1s.; Dr. J. G. McKay Grant £1 1s. (2nd donation); Dr. S. W. Green £1 1s. (2nd donation); Dr. A. W. Hall £1 1s. (2nd donation); Dr. A. W. Howarth £1 1s.; Dr. J. R. Hunter £1 1s.; Dr. J. R. John £1 1s.; Dr. Doris G. Litherland £1 1s. (2nd donation); Dr. R. Macdonald £1 1s.; Dr. H. V. Mitchell £1 1s. (2nd donation); Dr. M. S. Mitchell £1 1s. (2nd donation); Dr. James Nicholson £1 1s. (2nd donation); Dr. C. E. R. Norman £1 1s.; Dr. B. Roditi £1 1s.; Dr. C. J. Royston £1 1s. (2nd donation); Dr. C. J. Sandford £1 1s. (2nd donation); Dr. R. A. Scott £1 1s.; Dr. J. Sharp £1 1s. (3rd donation); Dr. A. F. Shepherd £1 1s.; Dr. C. P. Woodstock £1 1s.

£171 2s.—Practitioners in Willesden B.M.A. Division—per Dr. W. Paterson (amount already sent £36 10s.): Dr. Mabel Brewster £10 10s.; Dr. H. Brostoff £10 10s.; Dr. G. F. Buchan £10 10s.; Dr. H. A. Faulkner £10 10s.; Dr. W. L. Gillbard £10 10s.; Dr. J. A. Gordon £10 10s.; Dr. V. James £10 10s.; Dr. C. de B. Thomson £8 8s.; Dr. M. A. M. Bigby £6 6s.; Dr. Grace Anderson £5 5s.; Dr. F. P. Bennett £5 5s.; Dr. W. Donoghue £5 5s.; Dr. L. Phillips £5 5s.; Dr. A. L. Rozelaar £5 5s.; Dr. P. D. Scott £5 5s.; Dr. H. M. Setna £5 5s.; Dr. K. C. S. Skene £5 5s.; Dr. S. Stockman £5 5s.; Dr. J. M. Surveyor £5 5s.; Dr. F. Hilda G. Thomson £5 5s.; Dr. Shila G. Ransom £5 5s.; Dr. F. S. Besser £4 4s.; Dr. P. L. Coleman £4 4s.; Dr. E. Jean McBryde £3 3s.; Dr. Patrick Walsh £3 3s. (2nd donation); Dr. T. Wilson £3 3s.; Dr. Joel Green £1 5s. (4th donation); Dr. C. L. Traylen £1 1s. (2nd donation).

£144 7s.—Practitioners in Coventry B.M.A. Division—per Dr. H. P. McNamara: Dr. W. F. Annand £10 10s.; Dr. E. C. Kender-

dine £10; Dr. W. H. Loman £10; Mr. S. A. Ballantyne £5 5s.; Mr. T. Berrill £5 5s.; Dr. Dorothy Campbell £5 5s.; Dr. G. Campbell £5 5s.; Dr. W. Elford £5 5s.; Dr. Isobel Fitzpatrick £5 5s. (2nd donation); Dr. R. Lavery £5 5s.; Mr. D. A. P. MacAlister £5 5s.; Dr. Mary MacAlister £5 5s.; Dr. H. P. McNamara £5 5s.; Mr. H. D. R. Rollinson £5 5s.; Dr. W. D. Coghill £5 5s.; Dr. Marie L. Duguid £5 5s.; Dr. H. C. McQuade £5 5s.; Dr. R. L. Moiser £5 5s.; Dr. L. H. Moiser £5 5s.; Dr. J. S. Shulman £5 5s.; Dr. T. A. P. Proctor £3 3s.; Dr. Margaret Steane £3 3s.; Dr. T. B. Kenderdine £3 3s.; Dr. Charlotte E. Clarke £2 12s. 6d.; Dr. J. Clarke £2 12s. 6d.; Dr. F. Abrahamson £2 2s.; Dr. J. Ballantine £2 2s.; Mr. E. J. Gallagher £2 2s.; Dr. K. E. Barlow £1 1s.; Dr. D. Davidson £1 1s.; Dr. J. F. Galpine £1 1s.; Dr. W. C. Laurence £1 1s.; Dr. A. J. Wilson £1 1s.

£138 8s.—Practitioners in Bradford B.M.A. Division—per Mr. Donald Watson (amount already sent £650 12s.): Drs. Beverland, Hanson, Crawford, and Macpherson £20 2s. (2nd donation); Mr. Peter McEwan £20 2s. (2nd donation); Mr. John Benson £10 10s.; Dr. G. H. Fitton £10 10s.; Dr. A. Hayes Smith £10 10s. (2nd donation); Mr. James Phillips £5 5s. (2nd donation); Dr. W. F. Rawson £5 5s. (2nd donation); Mr. W. Ward-Smith £5 5s. (2nd donation); Dr. Allen Glenn £5 5s. (2nd donation); Dr. A. L. Mitchell £4 4s. (2nd donation); Dr. R. T. Ballantyne £3 3s.; Dr. R. Chester £3 3s. (2nd donation); Dr. Henrietta Frost £3 3s. (2nd donation); Dr. L. Hurwich £3 3s. (2nd donation); Dr. S. Jung £3 3s.; Dr. J. Prentice £3 3s. (2nd donation); Dr. H. E. Compton £2 2s. (2nd donation); Dr. Violet Glover £2 2s. (2nd donation); Dr. R. J. Gourlay £2 2s.; Dr. T. B. Hearder £2 2s.; Dr. Norman Hughes £2 2s. (2nd donation); Dr. E. T. Hyland £2 2s.; Dr. W. J. McCracken £2 2s. (2nd donation); Dr. M. Schott £2 2s. (2nd donation); Dr. H. R. Sparrow £2 2s. (2nd donation); Dr. L. Hunter £1 1s. (2nd donation); Dr. H. Peiser £1 1s.; Dr. E. Wolfenstein £1 1s.; Dr. T. Savage £1 1s. (2nd donation); Dr. Catharine F. Camron 10s. (2nd donation).

£132 11s.—Practitioners in Nottingham B.M.A. Branch—per Dr. A. D. Frazier.

£120 13s. 6d.—Practitioners in Sheffield B.M.A. Division—per Dr. T. Lodge (amount already sent £295 3s. 7d.): Dr. M. L. McKinnon £5 5s.; Dr. K. Mackenzie £5 5s. (2nd donation); Dr. A. E. Naish £5 5s. (2nd donation); Dr. B. L. Droller £1 1s.; Dr. H. Brown £2 2s. (2nd donation); Dr. J. H. Wilbourn £5 5s. (2nd donation); Dr. G. E. Tisley £10 10s.; Dr. E. K. Abbott £2 2s.; Sir A. J. Hall £5 5s.; Dr. F. T. Thorpe £2 2s.; Dr. M. M. Owen £1 1s. 6d.; Dr. H. R. Vickers £5 5s.; Dr. D. C. Barron £4 4s. (3rd donation); Mr. J. B. F. Wilson £5 5s. (2nd donation); Dr. W. T. Buchan £5 5s.; Dr. A. Hart £3 3s.; Dr. H. M. Cohen £1 1s. (2nd donation); Dr. P. E. Sylvester £2 2s.; Dr. J. Jordan Coleman £2 2s. (2nd donation); Dr. H. Midgley Turner £2 2s. (2nd donation); Dr. W. Vincent £5 5s. (2nd donation); Dr. C. S. O'Flynn £3 3s. (2nd donation); Dr. Agnes S. Nutt £1 1s. (2nd donation); Dr. A. G. H. Mackintosh £2 2s.; Dr. R. D. Downie £5 5s.; Dr. J. G. Heathcote £1 1s.; Dr. M. R. Powell £5 5s.; Dr. Ethel W. Morris £2 2s. (2nd donation); Dr. W. F. O'Connell £5 5s.; Mr. L. B. Patrick £3 3s.; Dr. M. Rushbrooke £5 5s. (5th donation); Dr. J. Wier £1 1s.; Dr. J. L. A. Grant £5 5s.

£101 18s.—Practitioners in Lancaster B.M.A. Division—per Dr. W. George (amount already sent £396 9s.): Mr. E. Holmes £21 1s.; Dr. and Mrs. John Wilkie £21 1s. (5th donation); Dr. G. M. Kay £10 10s. (2nd donation); Dr. J. D. Silverston £10 10s. (3rd donation); Dr. L. Mather £10 10s. (3rd donation); Dr. C. J. Henderson £5 5s. (3rd donation); Drs. E. B. and T. L. Dowell £5 5s. (3rd donation); Dr. J. A. Tomb £5 5s. (3rd donation); Dr. P. S. Byrne £3 3s.; Dr. C. Alston Hughes £3 3s.; Dr. W. P. Stocks £3 3s.; Dr. T. Taylor £2 2s.; Dr. E. M. Goodall £1 1s.; Dr. W. F. Lyle £1 1s. (2nd donation).

£100.—Practitioners in Dumfries and Galloway B.M.A. Division—per Dr. J. G. McWhirter; Practitioners in Oxfordshire B.M.A. Division—per Dr. C. J. L. Wells.

£88 17s. 6d.—Practitioners in Newcastle-upon-Tyne B.M.A. Division—per Mr. Weldon Watts (amount already sent £475 0s. 6d.): Dr. D. Ramage £10 10s.; Mr. J. Gilmour £5 5s. (2nd donation); Dr. H. J. Nicholson £1 1s. (2nd donation); Mr. W. A. Hewitson £2 2s. (3rd donation); Dr. S. M. Garston £2 2s. (2nd donation); Dr. C. Neubauer 10s.; Mr. J. S. Arkle £10 10s. (3rd donation); Dr. Mary C. Livingstone £3 3s. (2nd donation); Mr. H. P. Bennett £5 5s. (2nd donation); Dr. S. Whately Davidson £10 10s. (3rd donation); Dr. G. Davison £3 3s. (3rd donation); Dr. J. A. Brand £2 2s. (2nd donation); Dr. M. F. Thomas £1 1s.; Dr. T. H. Bates £2 2s. (2nd donation); Dr. Enid L. Hughes £1 1s. 6d. (3rd donation); Dr. W. Stewart Smith £1 1s.; Mr. Norman Hodgson £10 10s. (2nd donation); Dr. E. D. Smith £2 2s. (2nd donation); Prof. F. J. Nattrass £2 2s.; Mr. Weldon Watts £5 5s. (2nd donation); Dr. J. E. Basham £2 2s. (2nd donation); Prof. R. P. Ranken Lyle £5 5s.

£88 7s.—Practitioners in Scunthorpe B.M.A. Division—per Dr. J. R. Baker (amount already sent £68 4s. 6d.).

£86 12s. 6d.—Practitioners in Bromley B.M.A. Division—per Dr. M. Prout.

£78 4s. 6d.—Practitioners in Lincoln B.M.A. Division—per Dr. C. A. Bagot Walters (amount already sent £536 10s.).

£72 13s.—Practitioners in Hampstead B.M.A. Division—per Mr. S. Boyd (amount already sent £43 15s.).

£59 14s.—Practitioners in the Croydon B.M.A. Division—per Dr. A. S. Forbes (amount already sent £209 17s. 6d.): Dr. T. Murphy £5 5s. (2nd donation); Dr. G. E. E. Bryane Nicholls £5 5s.; Dr. Olive G. Potter £5 5s.; Dr. Eileen M. Saxton £5 5s. (4th donation); Dr. C. Corben £5 5s. (2nd donation); Dr. E. R. Stone £5 5s.; Dr. A. S. Niven £3 3s.; Dr. F. G. Pailthorpe £3 3s.; Dr. A. Rose £3 3s. (2nd donation); Dr. D. G. A. Stewart £3 3s.; Dr. J. Appleyard £2 2s. (2nd donation); Dr. M. C. Breese £2 2s.; Dr. W. H. Hardy £2 2s. (3rd donation); Dr. H. Ross £2 2s.; Dr. C. F. Swinton £2 2s.

C. A. Posford £1 10s.; Dr. E. R. Edbrooke £1 1s.; Dr. T. S. cDevitt £1 1s.; Mrs. S. B. Jackson Smith £1 1s.; Dr. J. A. H. kes £1 1s.

£59 7s.—Practitioners in Blackburn B.M.A. Division—per Dr. Driscoll (amount already sent £76 9s.); Dr. J. S. Cooper £10 nd donation); Dr. J. K. Cumming £5 5s.; Dr. F. W. Taylor 5s.; Drs. A. and J. B. Leigh £4 4s. (2nd donation); Dr. N. M. reeves £3 3s.; Dr. J. McDonald £3 3s. (2nd donation); Dr. D. Driscoll £3 3s. (2nd donation); Dr. A. H. Gregson £2 2s.; Dr. Hawke-Genn £2 2s.; Dr. J. Jennings £2 2s.; Dr. J. Kyle 2s. (2nd donation); Dr. A. C. Newman £2 2s.; Mr. C. M. Pearce 2s. (2nd donation); Dr. R. Pendlebury £2 2s. (2nd donation); r. P. N. Rampal £2 2s. (2nd donation); Dr. J. Ross £2 2s.; Dr. James Scott £2 2s.; Dr. H. Southworth £2 2s.; Dr. R. C. U. arrington £2 2s. (2nd donation); Dr. T. S. Hall £2 2s.; Dr. C. utherland £2 2s.

£57 13s.—Practitioners in City of Aberdeen B.M.A. Division—per r. H. Fowle (amount already sent £149 15s.).

£56 5s.—Practitioners in Marylebone B.M.A. Division—per Mr. ric Steeler (amount already sent £391 17s.); Dr. J. B. Mackenzie 10; Sir Maurice Cassidy £5 5s. (3rd donation); Dr. J. D. Hindley- mith £5; Mr. F. L. W. Capps £5 5s.; Mr. Humphrey Neame £5; r. Geoffrey Evans £10 10s.; Mr. Frank W. Law £5; Dr. P. rescu £5 5s.; Dr. Amy Thoms £5 (2nd donation).

£81 19s.—Insurance Practitioners in London—per Dr. F. Gray, ondon Panel Committee (amount already sent £157 4s.); Dr. M. fClean £2 2s.; Dr. A. B. Wingate £1 1s. (2nd donation); Dr. anley Brass £2 2s. (2nd donation); Dr. Norah E. Trouton £5; r. F. Joyce £3 3s.; Drs. Kathleen H. Matthews and Elizabeth J. arper £2 2s.; Dr. F. H. Robbins £10 10s.; Dr. N. B. Farman 6 6s.; Dr. P. V. Dillon £5; Dr. D. Haydon Jones £3 3s.; Dr. W. J. udahy £2 2s. (2nd donation); Dr. O. E. Manasse £2 2s.; Dr. E. R. weaney £2 2s. (2nd donation); Dr. L. W. Batten £1 1s. (3rd dona- on); Dr. E. M. Herbert £1 1s.; Dr. J. G. Lahiff £1 1s.; Dr. M. elvin £1 1s.; Dr. M. Ripka £1 1s.; Dr. A. F. Whyte £2 2s.; Dr. . H. Porter £5; Dr. L. Shear £5 5s.; Dr. H. H. Sanguinetti £2 2s.; r. D. S. Stewart £10 10s.; Dr. H. K. Banda £5.

£51 10s.—Practitioners in Wakefield, Pontefract, and Castleford B.M.A. Division—per Dr. N. Stuart Twist (amount already sent £70 3s.); Dr. J. D. Bottomley £5 5s. (3rd donation); Dr. D. Downie 5 5s. (3rd donation); Dr. A. Hird £5 5s. (2nd donation); Dr. D. H. ussell £5 5s. (2nd donation); Dr. R. B. Radcliffe £5 (3rd dona- on); Dr. H. Scholefield £5 (3rd donation); Dr. N. S. Twist £5 4th donation); Drs. Walker and Heron £5; Dr. J. J. Reynolds 3 3s. (3rd donation); Dr. T. G. Clarke £2 2s. (2nd donation); r. H. L. N. £5 5s.

£47 17s. 6d.—Practitioners in Isle of Man B.M.A. Branch—per r. C. G. Pantin (amount already sent £189 4s.).

£42 19s. 8d.—Practitioners in Dumbartonshire B.M.A. Division amount already sent £74 1s. 7d.); Dr. G. Swanson £1; Dr. W. ibson £3 3s. (2nd donation); Dr. M. Purvis £3 3s.; Dr. Jessie W. gillvie £2 2s.; Dr. Wm. Anderson £1 1s.; Dr. John S. Clark £5; r. A. D. Downes £2 2s.; Dr. J. W. Cook £5; Insurance practi- oners £20 8s. 8d.

£42 15s.—Practitioners in Mid Essex B.M.A. Division—per Dr. . T. Whitley (amount already sent £117 14s. 6d.).

£38 16s.—Practitioners in Buckinghamshire B.M.A. Division—per r. R. W. McConnel (amount already sent £599 6s. 6d.).

£34 6s.—Practitioners in North Bedfordshire B.M.A. Division— per Dr. J. C. Boyde: Mr. G. J. Griffiths £2 2s.; Dr. D. H. Irish 2 2s.; Dr. W. A. Barnes £5 5s. (2nd donation); Dr. L. G. M. Pago £5; Miss M. Moore White £5; Dr. J. L. Maxwell £1 1s.; Dr. R. W. R. van Langenberg £1 1s.; Dr. Sarah Roberts £5 5s.; Dr. R. Stuart £2 10s.; J. C. B. £5.

£33 17s.—Practitioners in Stratford B.M.A. Division—per Dr. H. C. Boyde (amount already sent £99 4s.); Dr. A. V. S. Davies £5 5s.; Drs. Rosc. Bannor, and Smitber £10 10s.; Collection at Division meeting £18 2s.

£33 12s.—Practitioners in Bolton B.M.A. Division—per Dr. D. P. Simpson (amount already sent £75 3s.); Dr. D. McGhee £5 5s.; Dr. S. F. Berndt £5 5s.; Dr. J. Fletcher Smith £3 3s.; Drs. M. E. and E. P. Johnson £3 3s.; Dr. R. D. Mothersole £2 2s. (2nd dona- on); Dr. H. Leslie £2 2s.; Dr. G. D. McKenzie £2 2s. (2nd dona- on); Dr. H. P. Goldman £2 2s. (2nd donation); Dr. J. A. Smith £2 2s. (2nd donation); Dr. F. Vance £2 2s.; Dr. D. P. Simpson £2 2s.; Dr. A. L. Climcr £1 1s. (2nd donation); Dr. J. R. Monks £1 1s.

£27 1s.—Practitioners in Westmorland B.M.A. Division—per Dr. Elizabeth M. Kemp (amount already sent £39); Dr. G. H. Edge- combe £5 5s. (2nd donation); Dr. W. B. Cockill £5 (2nd donation); Drs. Craig and Holmes £4 4s.; Dr. O. B. Buckley £2 2s. (4th dona- on); Dr. A. Matchett £2 2s. (2nd donation); Dr. R. G. Mathews £2 2s. (2nd donation); Dr. J. H. Patterson £2 2s.; Dr. Frances Taylor £2 2s.; Dr. A. Wight £2 2s.

£26 5s.—Practitioners in Wigan B.M.A. Division—per Dr. G. A. Talwrn-Jones.

£23 2s.—Members of W. Suffolk Division not contributing through Panel Committee—per Dr. B. E. A. Batt.

£22 17s.—Members of Greenwich and Deptford B.M.A. Division —per Dr. W. Smith (amount already sent £32 18s.); Dr. T. D. Sayers £10 10s.; Dr. W. Smith £5 5s. (2nd donation); Dr. W. B. Silas £5 (2nd donation); Dr. J. Loftus £2 2s. (2nd donation).

£11 6s.—Practitioners in Plymouth B.M.A. Division—per Dr. Mabel Ramsay (amount already sent £415 15s. 6d.); Dr. Marjorie V. B. Hlopkins £2 2s.; Dr. J. Smalley £5 (2nd donation); Dr. John Walsh £2 2s.; Dr. D. O. Twining £2 2s.

£10 5s.—Practitioners in Tyneside B.M.A. Division—per Dr. D. Ross.

£9 9s.—Practitioners in East Herts B.M.A. Division—per Dr. J. S. Ross (amount already sent £371 13s. 1d.).

£8 3s.—Practitioners in Furness B.M.A. Division—per Dr. Lorton Wilson (amount already sent £74 19s. 6d.); Sir Matthew Fell £5 (2nd donation); Dr. L. Wilson £3 3s. (3rd donation).

£7 7s.—Practitioners in Stirling B.M.A. Branch—per Dr. W. L. Cuthbert (amount already sent £128); Dr. D. Younie £1 1s.; Dr. M. Harper £3 3s.; Dr. R. T. Campbell £3 3s.

£4 4s.—Practitioners in Camberwell B.M.A. Division—per Dr. A. S. Hatch: Drs. Hatch and Hunnard £2 2s. (2nd donation); Dr. T. Richardson £2 2s.

£3.—Practitioners in Leigh B.M.A. Division—per Dr. J. H. Young (amount already sent £82 13s.); Dr. H. Tickle (3rd donation).

£2 2s.—Practitioners in Tunbridge Wells B.M.A. Division—per Dr. A. M. Pollock (amount already sent £48 19s.); Dr. K. D. Marriner.

£1 1s.—Practitioners in Matabeleland B.M.A. Branch (amount already sent £73 12s. 3d.).

£25.—Honorary Medical Staff of the General Hospital, Stratford-on-Avon (amount already sent £124).

£500.—Those doctors who worked the Unaccompanied Evacuee Children's Fund in Cornwall.

£36.—Members of the Eastern Valley Medical Association, Garndiffaith, Mon.—per Dr. E. J. Williams.

Local Medical and Panel Committees

£500.—Durham (2nd donation); Lancashire (2nd donation).

£200.—Sheffield (2nd donation).

£150.—Bedfordshire (3rd donation); Somerset (4th donation).

£135 17s.—Hampshire (2nd donation).

£112 7s.—East Riding of Yorkshire (2nd donation).

£105.—Croydon (2nd donation).

£100.—Northumberland (2nd donation); Nottinghamshire (2nd donation); County of Salop (2nd donation).

£65 17s. 6d.—Worcester City (2nd donation).

£57 15s.—Gloucestershire (3rd donation).

£54 2s.—Newcastle-upon-Tyne (19th donation).

£51 18s. 1d.—Soke of Peterborough.

£50.—Derby; York (2nd donation).

£42 5s. 8d.—County of Ayr (21st donation).

£31 15s. 7d.—Barnsley (4th donation).

£21.—Huntingdonshire (3rd donation).

£20.—Banffshire.

£18 13s. 7d.—East Lothian (20th donation).

£15.—West Bromwich.

£2 2s.—East Ham (2nd donation).

£1 1s.—Cheshire.

	£	s.	d.
Total of above contributions..	7,101	13	7
Total received since issue of second appeal	16,573	13	10
Total since inauguration of Fund ..	75,317	3	3
Sums for-books for prisoners of war ..	216	14	6

Cheques, payable to the Medical War Relief Fund, should be sent to the Hon. Treasurer of the Fund, British Medical Association House, Tavistock Square, London, W.C.1.

Correspondence

Release from the R.A.F.

STR.—I must apologize for adding to the long list of letters on this subject, but one day it will dawn on those responsible for recruitment and distribution of Service medical officers that we cannot all be out of step. Others have related the facts with regard to unequal release of medical officers in the three Services. This is designed to show at least one reason why the R.A.F. is so sadly behind. During the last three months at this station, the average sick seen daily has been 1.33. I am now told I must proceed to another unit, where there are a quarter the number of potential patients. It is reasonable to anticipate that the average daily sick will "total" 0.33 or, to make it appear even worse, one airman reporting sick every third day. No longer can the claim be made that there must be an M.O. on a station where aircraft land, as in this area the number of stations without an M.O. will, in a matter of days, exceed those with one. What justification can there be for an M.O. on either of these stations mentioned? In both cases the R.A.M.C. officers are willing to deal with the microscopic amount of sickness, and they are comparatively near.

Is there no authority, no person, no committee who can do something about this chaotic state of affairs, and put a stop to this blatant misuse and waste of medical manpower? Cannot Mr. Bevan find just one more committee to investigate the waste of doctors in the Service at present? I admit it would cause grave repercussions in some circles. I have no

complaint at my "Post-war Pension" but I eagerly await just half a day's work. Like the athlete I should like to get into training and gradually increase the pace, so that I can fit myself for the full-time occupation, in civil life, when once again I can enjoy my work.—I am, etc.,

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Demobilized Doctors as Assistants

SIR,—I was interested in the correspondence about assistants, and also in arrangements for the settlement of returning Service doctors. A friend of mine applied for and got an assistant-ship last January, after leaving the Army. There was to be a trial period of six months. At the end of this period the principal announced that he could no longer afford an assistant. He made no suggestion that my friend was unsuitable. Now he had got an assistant for the worst period, and also a holiday for himself for three weeks without having to pay a locum. I would be glad if you would publish this letter as a warning to other Service doctors who might be caught the same way. I would also like to comment on the remark by Dr. Vaughan Jones that practices were available for returned Service men at reduced premiums. I have not found it so. If Dr. Vaughan Jones reads the advertisements in the *Journal* he will see for himself the colossal premiums asked for doctor's houses. I feel strongly that the returned Service doctor should get more consideration. I am sure that the medical profession as a whole would wish it so, but this cannot be done by misleading statements.—I am, etc.,

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what was given. It could be destroyed by heat, by acid (which was why it was not given by the mouth), and by oxidizing agents. It could not be used in combination with chlorides, as they neutralized its effect. It was itself destroyed by bacteria, which could be combated by keeping it protected from the air. Preparations used for local administration were kept covered and then changed once a week; creams or solutions ran the risk of deterioration; powders contained a sulphonamide and were kept in a refrigerator. Success with penicillin depended on access being obtained to the part to be treated. By giving it intramuscularly every part of the body could be reached via the circulatory system—e.g., a retained placenta or a blood clot. This might stop some of the infection, but it would not get into the placenta and the condition was liable to flare up. If penicillin was applied locally, as in impetigo, the root of the infection would not be reached, only the scab. The dose for systemic treatment, irrespective of how it was introduced, was 120,000 units in 24 hours. If given intramuscularly it should be divided into 8 doses of 15,000 units every 3 hours. For a breast abscess 60,000 units should be given twice a day. A pleural effusion should be aspirated and an injection of 240,000 units given every two days. A dose of 500 units per gramme would produce a much higher concentration on the surface if given locally than if given intramuscularly. The intramuscular method of administration came into force after D-day, when larger supplies of the drug were available; instillation, which had to be carried out in an operating theatre, was then almost forgotten. Insufflation might dry the wound, and if the skin surface was infected a crust would be formed and the infection kept below it. It was, however, extremely useful in a small surface wound, but should not be used for a sinus. In cases of pneumonia or osteomyelitis we had been using drugs which were antipyretic—sulphonamides—and the temperature was brought down, but the infection was not necessarily controlled. With penicillin the temperature came down slightly after a week; but it was better to watch the patient than to watch the temperature, because even though pyrexia remained the infection was improving.

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BIRTHS, MARRIAGES, AND DEATHS

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LOUGHLIN.—On May 27, 1946, suddenly, at his home, Becton Corner, Barton-on-Sea, Dermot Loughlin, D.Sc., M.B., B.S.Lond., late of Saxonhurst Woolston, aged 60.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. Christopher Hardwick at Nuffield House, Guy's Hospital, S.E.1.; Mr. P. H. Newman, F.R.C.S., at 66, Harley Street, W.1. (Langham 3808).

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LONDON SATURDAY JULY 20 1946

TOTAL WAR ON CANCER*

BY

G. F. STEBBING, M.B., B.S., F.R.C.S., F.F.R.

Hon. Secretary, Radium Commission

hat we have to make war on cancer is no new idea. indeed, the British Empire Cancer Campaign in its title makes use of a military term, for the first meanings of "campaign" in the Oxford English Dictionary are: A series of military operations in a definite theatre with one objective; organized course of action.

Up to the beginning of the war of 1914-18 the idea in most people's minds was that war was a business for the fighting forces of the opposing countries, and it was a rude shock for many of us to find that the line between the fighting forces and the civilians was not very clearly defined, and that before the conflict was ended a large number of civilians had had to play an important part in the effort for victory. The war that has recently ended has made it clear to everybody, in every nation, that hostilities are no longer the concern only of the military forces but that every man, woman, and child of each side is exposed to the dangers of the fighting and must play a full part in the complex activities necessary to enable victory to be achieved.

An Insidious Foe

When our Campaign was started it was realized that our foe, cancer, was an insidious and mysterious foe, and that if we were to overcome it we should have to organize a series of operations on a wide scale in a definite field and with the objectives of discovering the cause of and finding a cure for cancer. It was envisaged that the soldiers who would do the fighting were the scientists in the laboratories and the doctors in the consulting-rooms and operating theatres, and that to keep them at work under the best conditions they must be helped by an organization that would provide laboratories and hospitals with whatever funds were necessary to carry on the war. It was a campaign such as we were familiar with in the military sense in those days, and some notable victories were won. Some of the causes of cancer have been ascertained, and some methods of treatment of great value have been evolved: these represent battles that have been won; but the war goes on, and we are still a long way from victory.

The Registrar-General states that 600,000 people died in England and Wales during 1944, that 71,814 of these were certified as having died of cancer, and he tells us that cancer is the second commonest cause of death. There is a very important thing to note about this figure: since the Registrar-General began to analyse the causes of death the number of deaths attributed to cancer increased slowly but surely every year until 1944, and in that year, for the first time, the number was smaller than in the year before—smaller by 226. Many factors have to be taken into consideration, but there is reason to hope that this may mean the turning of the tide, and that a small beginning has been made in reducing the annual toll. But the beginning is very small, and if we cannot do better than that we shall remain a long way from victory.

It is often said that cancer is a disease of old people, and that the high total of deaths from it is less important for that

reason. But the Registrar-General's figures show that nearly one-half (29,000) of cancer deaths occur between the ages of 45 and 65—that is to say, at the time when parents have families in course of education and when business and professional responsibilities are at their greatest. It is often also urged that the struggle against cancer is less important than the struggle against infective and nutritional diseases, because these are a more hopeful field of activity and younger lives may be saved by efforts directed against their causes. To this the answer must be that the struggle against all of them must go on side by side, and, indeed, if we are properly organized each will help the other: of that I shall have something to say later.

What is the thesis that I would put before you? It is this: I believe that cancer can be conquered, but that we shall not conquer it until we replace the old type of military campaign by Total War—that is, war in which all modern methods of attack are used for all they are worth, and in which everyone in the nation joins in the effort to secure success. Now, I want to make it clear that, with our knowledge in its present state, I do not pretend that we can prevent all deaths from cancer, but I do claim that if all cases were recognized early, and treated promptly and efficiently, nearly half—that is to say, some 30,000 people in England and Wales—would be saved from death by this disease each year. I claim, too, that the discoveries that have been made during the last ten years give good grounds for hoping that the hard core of the other half will yield to further well-planned and intensive research.

Recognition of Early Symptoms

May I describe to you the total war that I envisage? Cancer starts in every case with a single cell or group of cells in the body that revolt, as it were, against the general system. Instead of quietly performing their functions as they should, these cells take on a rogue's growth that not only is of no use to the patient but ultimately destroys the function of the organ in which they occur, and they gradually extend beyond it to the neighbouring organs till they cause the patient's death. These rogue cells may start in almost any tissue of the body, so that the recognition and treatment of cancer must form a part of the work of many specialists, such as general surgeons, gynaecologists, laryngologists, and others. The disease at its beginning is a small patch localized to one part of the body, and if it is recognized in that state it can generally be surgically removed or be destroyed by irradiation, with an assurance that it will not come back. If not recognized in that early stage it becomes much more difficult to remove completely, and if any of it is left behind the disease will surely recur—and the treatment of recurrences is much less successful than treatment in the earlier stage of the disease.

There is another reason why it is important to recognize cancer early, and that is that after the disease has been present some time bits of the growth break away and are carried by the circulation to distant parts of the body, where they lodge, and such bits may cause secondary growths similar to the one which started the trouble. Such secondary growths are often

* A paper read at the annual meeting of the Notts Branch of the British Empire Cancer Campaign.

complaint at my "Post-war Pension" but I eagerly await just half a day's work. Like the athlete I should like to get into training and gradually increase the pace, so that I can fit myself for the full-time occupation, in civil life, when once again I can enjoy my work.—I am, etc.,

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An Insidious Foe

When our Campaign was started it was realized that our foe, cancer, was an insidious and mysterious foe, and that if we were to overcome it we should have to organize a series of operations on a wide scale in a definite field and with the objectives of discovering the cause of and finding a cure for cancer. It was envisaged that the soldiers who would do the fighting were the scientists in the laboratories and the doctors in the consulting-rooms and operating theatres, and that to keep them at work under the best conditions they must be helped by an organization that would provide laboratories and hospitals with whatever funds were necessary to carry on the war. It was a campaign such as we were familiar with in the military sense in those days, and some notable victories were won. Some of the causes of cancer have been ascertained, and some methods of treatment of great value have been evolved: these represent battles that have been won; but the war goes on, and we are still a long way from victory.

The Registrar-General states that 600,000 people died in England and Wales during 1944, that 71,814 of these were afflicted as having died of cancer, and he tells us that cancer is the second commonest cause of death. There is a very important thing to note about this figure: since the Registrar-General began to analyse the causes of death the number of deaths attributed to cancer increased slowly but surely every year until 1944, and in that year, for the first time, the number was smaller than in the year before—smaller by 226. Many factors have to be taken into consideration, but there is reason to hope that this may mean the turning of the tide, and that a small beginning has been made in reducing the annual toll. At the beginning is very small, and if we cannot do better than that we shall remain a long way from victory.

It is often said that cancer is a disease of old people, and that the high total of deaths from it is less important for that

reason. But the Registrar-General's figures show that nearly one-half (29,000) of cancer deaths occur between the ages of 45 and 65—that is to say, at the time when parents have families in course of education and when business and professional responsibilities are at their greatest. It is often also urged that the struggle against cancer is less important than the struggle against infective and nutritional diseases, because these are a more hopeful field of activity and younger lives may be saved by efforts directed against their causes. To this the answer must be that the struggle against all of them must go on side by side, and, indeed, if we are properly organized each will help the other: of that I shall have something to say later.

What is the thesis that I would put before you? It is this: I believe that cancer can be conquered, but that we shall not conquer it until we replace the old type of military campaign by Total War—that is, war in which all modern methods of attack are used for all they are worth, and in which everyone in the nation joins in the effort to secure success. Now, I want to make it clear that, with our knowledge in its present state, I do not pretend that we can prevent all deaths from cancer, but I do claim that if all cases were recognized early, and treated promptly and efficiently, nearly half—that is to say, some 30,000 people in England and Wales—would be saved from death by this disease each year. I claim, too, that the discoveries that have been made during the last ten years give good grounds for hoping that the hard core of the other half will yield to further well-planned and intensive research.

Recognition of Early Symptoms

May I describe to you the total war that I envisage? Cancer starts in every case with a single cell or group of cells in the body that revolt, as it were, against the general system. Instead of quietly performing their functions as they should, these cells take on a rogue's growth that not only is of no use to the patient but ultimately destroys the function of the organ in which they occur, and they gradually extend beyond it to the neighbouring organs till they cause the patient's death. These rogue cells may start in almost any tissue of the body, so that the recognition and treatment of cancer must form a part of the work of many specialists, such as general surgeons, gynaecologists, laryngologists, and others. The disease at its beginning is a small patch localized to one part of the body, and if it is recognized in that state it can generally be surgically removed or be destroyed by irradiation, with an assurance that it will not come back. If not recognized in that early stage it becomes much more difficult to remove completely, and if any of it is left behind the disease will surely recur—and the treatment of recurrences is much less successful than treatment in the earlier stage of the disease.

There is another reason why it is important to recognize cancer early, and that is that after the disease has been present some time bits of the growth break away and are carried by the circulation to distant parts of the body, where they lodge, and such bits may cause secondary growths similar to the one

* A paper read at the annual meeting of the Notts Branch of the British Empire Cancer Campaign.

numerous, and are liable to occur in places whence surgery cannot remove them, and where treatment by irradiation is difficult.

To obtain the best results with our present knowledge we have to recognize cancer in its earliest stages, and that is not easy. Often the earliest symptom is some interference with our normal functions, and such derangements are caused by many things besides cancer. In fact, disorders of function are much more commonly due to simple causes than to cancer, and it is for this reason that cancer is so often overlooked. In deeply seated cancers the early diagnosis can often be made only after an examination by a team of experts each of whom plays his or her part in a well-directed scheme.

Co-ordination of Effort

Total war cannot be waged by various individuals working on their own and holding little communication with each other. There must be a responsible person to co-ordinate the work of innumerable specialists and to direct their efforts towards the desired end.

Experience which has been gained during the last fifteen years or so has shown that an organization for the diagnosis and treatment of cancer is most likely to be efficient if it deals with a population of two to four million people. Such a number will provide enough cases of cancer in the different sites of the body to make expert those who have to handle them, and yet will not be too unwieldy to organize. The headquarters of such an organization must be in, or in close relation to, a general hospital which is staffed and equipped to deal with every kind of work, and be closely associated with a medical school and faculty of a university; for not only must research be carried on in every cancer organization but the stimulating atmosphere of the teaching school should be recognized as a valuable asset.

On the headquarters staff there must be specialists of every type, who, though not devoting their whole time to the treatment of cancer, should have a wide experience of it. For the early recognition of the disease there must be consultation clinics, in which surgical specialists, radiotherapists, radio-diagnosticians, pathologists, and biochemists all have their part to play; and to get the best results such specialists should have frequent consultations, for preference in the patient's presence. Treatment of the patient should be fully planned before it is begun, and be carried out by those members of the staff best able to do it. At the headquarters clinic, arrangements must be made for dealing with all difficult cases sent in from the periphery, and the person responsible for the co-ordination of the work must see that there is no delay at any stage. As soon as cancer is suspected in anyone anywhere in the region, examination and any necessary consultation must be arranged, and treatment started at once. A month or two of delay may cost a life.

The organization of hospital work these days is very complex, and even teaching hospitals cannot all have every one of the special departments needed for the treatment of cancer; but there must be effective and close co-operation between the headquarters and such units as neurosurgery, thoracic surgery, plastic surgery, orthopaedic surgery, etc. In the treatment of cancer, surgery and radiotherapy should play about an equal part; sometimes the one is the better, sometimes the other, but in many cases both are needed to get the best results. Surgery has a double part to play, for the diagnosis can often be made only by operation and the aid of the pathologist, whose department should be intimately associated with the organization.

In the headquarters unit there must be a fully equipped and staffed radiotherapeutic unit. Radiotherapy is still a young science, having been introduced less than half a century ago, and modern methods of radiotherapy in this country are less than twenty years old. Its practice requires specialists who devote the whole of their time to it and who have at their command enough apparatus to make sure that they can give to the patient the treatment that is best suited to him at the time he will benefit most. In practice this means that they must have at least four or five different sets of x-ray therapy apparatus for routine use, and two or three for experimental work. They must have a gramme or more of radium and either a radium beam or a supervoltage apparatus. They must also have the

assistance of two or more physicists specially trained in hospital work and provided with all the laboratories and workshops they need. There is a great expectation that the discoveries which became public when the atomic bomb was used will play a great part in the future of medicine, and particularly in the treatment of cancer. There is some danger that too much may be expected of the benefits to be derived either in industry or in medicine from recent discoveries in nuclear physics, but it is quite clear that without a great deal of research we shall not know how much use atomic physics may be in medicine, and that research will have to be done in a large measure by men who are actively engaged in the treatment of patients and who know the problems that have to be solved. The radiotherapists, the physicists, and the biochemists will have to be equipped to take advantage at once of any discoveries that are made.

The work of the cancer organization will not be confined to the headquarters unit. A few large hospitals in the region must be staffed and equipped to carry out treatment by surgery, and one or two of them to provide radiotherapy. It is important that the work should be done only in hospitals large enough to have specialists of all types and all the skilled staff and equipment which modern treatment needs.

I have said that surgeons dealing with cancer should not devote the whole of their time to its treatment. Such a limitation of their experience would not produce the best results. It is desirable, however, that surgeons (and in that term I include all surgical specialists such as laryngologists, gynaecologists, etc.) dealing with cancer should have the opportunity of becoming expert by handling large numbers of cases. To this end the cancer patients should be so distributed that each member of the staff will deal with one or two types of the disease only, instead of each of them trying to deal with all types.

Diagnostic Clinics

In addition to the hospitals where cancer is treated there must be a larger number at which patients can attend for preliminary investigation if their family doctors suspect the possibility of cancer. It is desirable that arrangements be made for doctors to attend such clinics with their patients. Such clinics should be attended by the specialists on the staff of the cancer organization who are actively engaged in the treatment of cancer. These diagnostic clinics may be used also for the purpose of following up treated patients so that they may be periodically examined. The cancer organization must not stop, however, at the hospitals that take part in its work. Our war will not be total unless the family doctor is a part of it and patients are aware of its existence and willing to play their part.

Although cancer is the second commonest cause of death it is not a common disease. That paradox arises from the fact that hitherto most patients who develop a cancer have (I think quite unnecessarily) died of it, whereas in most other diseases the majority of sufferers get well. So it comes about that a family doctor sees many cases of tonsillitis, pneumonia, etc., every year but not many cases of cancer. Dividing the number of cancer deaths evenly among the doctors in general practice means that each would see only about two cases a year. But the doctors in general practice have got to suspect cancer many times a year if they are not going to miss the early case, and we want a well-worn path from every doctor's surgery to the diagnostic clinic, whether it be at the headquarters hospital at one of the large treatment centres, or at a hospital providing only a preliminary investigation centre. If the family doctor is to be enabled to play his part in the total war he must be in constant communication with the organization, he must receive a report of all investigations and periodic reports of treatment and its results, and he must be encouraged to help in securing the regular follow-up and re-examination of patients at the proper times.

This constant and close association of the family doctor with the cancer organization is essential for the success of our total war, but it will serve another purpose, to which I have already made a brief allusion. I have said that if the growth is detected early the general practitioner has got to suspect cancer in many patients for every one that actually has it. He must have it in mind whenever he sees a patient complaining of

ordered function the cause of which is not revealed by the methods of investigation as he can apply. If such a case referred to the cancer organization for full examination and nearer is not found, a diagnosis of some other disease will be made, and our war on cancer will, in such cases, help on our fight against other less lethal but very troublesome diseases.

But the patient too has a duty. He must not put off reporting to his doctor any disturbance of function that lasts more than a few days. He must let him decide whether the disturbance is such that it requires further investigation, and if the doctor seems to make light of it at the first visit he must not be deterred from going to him again if the disturbance persists.

It is one of the characteristics of human nature that when we are afraid of a thing we tend to shy away from it, to put it off, although we know that sooner or later this will have to be done. This leads some people to postpone their visit to the doctor for fear of what he may tell them. To overcome this fear is the patient's part in the total war, just as it is the family doctor's part to use that well-worn path to the diagnostic clinic whenever a suspicious symptom presents itself.

An organization such as I have described does not run itself—it needs an elaborate mechanism. The person charged with the co-ordination of it should be a medical man with a lifelong experience of cancer. He must have a technical committee on which specialists and general practitioners should be represented, and he should see that there is frequent consultation and discussion between all those who are engaged in the diagnosis and treatment of cancer in the region. He must see that there are adequate bed accommodation and proper equipment for all kinds of treatment; he must see that the secretarial services are such that every clinician is given clerks to enable him to take adequate notes, and that doctors throughout the region are kept fully informed about their patients; he must see, too, that there is a statistical bureau under a trained statistician to analyse the work of the organization and the results obtained; he must be in touch with pathological, physical, and biological research and give the workers in the organization an opportunity of hearing of and discussing new discoveries; he must see that the existence and purpose of such an organization are known to all doctors and patients in his region; and he must study the methods best calculated to secure the objects of the organization—that is, the early recognition and prompt treatment of cancer.

Care of Patients in the Late Stages of Cancer

But when all that is done we have not finished. For many years to come there will be a number of patients who, because of their own neglect or the failure of our organization or the limitation of our knowledge, reach a stage in which they still have cancer and cannot be further benefited by surgery or radiation. We are cowards if we shut our eyes to the existence of these. Much can be done to lessen their sufferings, and the cancer organization should be charged with the duty of providing for their care and treatment, whether it be at their own homes, in nursing homes, or in hospital wards; they should be under constant review by the members of the organization staff by whom they were, or might have been, treated, so that comfort may be provided for the patient and education for the staff. And here I would like to stress the great importance of obtaining post-mortem examinations on all who die of cancer or suspected cancer. The pathological department has the duty of helping greatly in diagnosis by the microscopical examination of small pieces of tissue removed at operation. The accuracy of such diagnosis is greatly increased if the pathologists of the organization have the opportunity of making careful post-mortem examinations; and often the causes that have prevented successful treatment can then be found. During the late war our patients did not hesitate to expose their living bodies to danger when the drive for victory needed it. Should they not now allow their dead bodies to be used to help our total war on cancer?

Two years ago Prof. Dodds, at the Annual Meeting of the British Empire Cancer Campaign, reported the startling, and favourable, results that had been obtained in the treatment of one type of cancer by synthetic hormones. This is the first

example of the combat of a cancer by such means, but it is almost certain that it will be followed by other successes on the same lines, and many cases that are untreatable now will then become treatable.

Research

I must say a word or two about research. Every cancer organization, if it is to play its full part in the total war, must have a research department, which should have the advantage of working in close association with the scientific faculties of a university. Our ideas about the medical faculties of universities are rapidly enlarging as we realize that if our medical services are to be efficient the university must continue to educate the graduate after it has finished educating the undergraduate. To that end many hospitals not now intimately associated with the medical schools will have to take part in continuing the education of the newly qualified and providing refresher courses for the older graduates. The research department should be in very close touch with the medical staff of these hospitals, so that the line, which is at present undesirably broad, between laboratory research and clinical research should become less clearly defined. It is quite obvious that discoveries made in the laboratory have not served any useful purpose until they have become known to and been used by the doctors who are treating patients. It generally takes some years before discoveries such as penicillin, or the hormone used by Prof. Dodds, are widely and successfully employed in the treatment of patients who may benefit by them. It should be one of the functions of our organization that when such discoveries are made they should be readily available to all sufferers from cancer who might benefit by them.

Conclusion

Such an organization is what I mean by "total war on cancer." It sounds very elaborate and must be very expensive. It is; but remember that the object is to save much suffering and 70,000 lives a year. We shall not save them all for many years to come, but I believe half of them could be saved now, and the British Empire Cancer Campaign has a very honourable reputation for that kind of research which will in the long run, I believe, lead to ultimate complete victory.

The Cancer Act, 1939, had in view the provision of such organizations to cover the whole country, but it is to be regretted that the war has caused its operation to be repeatedly postponed. Here in the East Midlands you have an organization in process of being formed; and the Nottingham General Hospital, with the Sheffield Royal Infirmary, Leicester Royal Infirmary, and Derbyshire Royal Infirmary, are cast to play the leading parts under the auspices of Sheffield University.

Whatever shape the National Medical Service may take, it should make easier the co-ordination of medical work over the whole region of the East Midlands. But these activities of the State, however necessary they may be in our complicated life, make only a framework in which men and women work. The recent war has shown us the great importance of having, in addition to State direction, State control, and State enterprise, voluntary bodies such as the British Red Cross and the Order of St. John of Jerusalem, which devote their time and attention to filling in those gaps that always exist in bureaucratic schemes. State concerns lack so many of the virtues which voluntary bodies can possess. In the winning of our total war against cancer I pin my faith to that enthusiasm and voluntary effort of which your branch of the British Empire Cancer Campaign is a shining example.

After long delay caused by printing difficulties the Rothamsted Experimental Station has published a pamphlet recording the centenary celebrations on July 1, 1943. This opens with an account of the work and history of the departments by the director, Sir John Russell, F.R.S. Addresses were given by the chairman, the Earl of Radnor, and the then Minister of Agriculture, Mr. R. S. Hudson; and a letter was read from the Duke of Devonshire paying tribute to the work of Rothamsted. The list of those taking part in the commemoration includes the names of Sir Henry Dale, at that time President of the Royal Society, the late Prof. W. W. C. Topley, F.R.S., secretary of the Agricultural Research Council, and Prof. C. R. Harington, F.R.S., representing the Medical Research Council. The pamphlet also includes messages of congratulation from the Empire and associated countries and from foreign and home sources.

SOME OBSERVATIONS ON LIVER FUNCTION TESTS IN DISEASES NOT PRIMARILY HEPATIC

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The liver is dependent upon a pure and unrestricted blood supply for the normal performance of its many functions. It is therefore not surprising that a proportion of abnormal results with a variety of liver function tests should have been recorded in conditions such as pneumonia (Curphey and Solomon, 1938), heart failure (Bernstein *et al.*, 1942; Chávez *et al.*, 1943), hyperthyroidism (Haines *et al.*, 1939; Lichman, 1941; MacLagan and Rundle, 1940), rheumatoid arthritis (Rawls *et al.*, 1937), glandular fever (Kilham and Steigman, 1942; Davis *et al.*, 1945), after surgical operations (Boyce, 1941), and in therapeutic malaria (Fredericks and Hoffbauer, 1945; Kopp and Solomon, 1943).

Thus while the principal use of liver function tests is naturally in the investigation of gross liver disease, the interpretation of results is also sometimes dependent upon a knowledge of the reaction of the liver to disturbances of a more general nature. For example, the discovery of certain types of functional impairment in a patient with an enlarged liver would ordinarily suggest the probability of cirrhosis, but, if congestive heart failure were also present, then chronic passive congestion of the liver might well explain the findings. A further complication in the case of the flocculation tests is the uncertainty as to their mechanism. Recent work suggests that they depend principally upon changes in the serum gamma-globulin content (Kabat *et al.*, 1943; Moore *et al.*, 1945), and increases in this fraction are not confined to liver disease, but may occur in conditions such as rheumatic fever, aplastic anaemia, and peritonitis (Longworth *et al.*, 1939). Moreover, many circulating antibodies are known to occur principally in the gamma-globulin fraction (Enders, 1944).

The possibility of false positive reactions is therefore a real one, although this has not seriously interfered with the application of these tests to the study of liver disease in the case of cephalin-cholesterol (Hanger, 1939), the serum colloidal-gold (Gray, 1940; MacLagan, 1944a), and the thymol turbidity tests (MacLagan, 1944b). This type of interference appears, however, to be more common with the Takata-Ara reaction (Magath, 1940).

The above considerations suggested to us that it would be worth while to define more closely the nature and degree of the abnormalities likely to be encountered in certain conditions not primarily involving the liver, using the two flocculation tests—the serum colloidal-gold reaction and the thymol turbidity test—which we had found of particular value in the diagnosis of gross liver disease. Qualitative tests for urinary urobilin were also used as a confirmatory procedure.

Methods

The serum colloidal-gold test was performed as previously described (MacLagan, 1944a). Normal serum gives a negative result with this test—recorded as 0 in the tables below—and 5+ is the strongest positive. The thymol turbidity test (MacLagan, 1944b) is expressed in units, normal limits being 0 to 4. Urine urobilin tests were made by spectroscopic examination with a direct-vision hand spectroscope, using a 1-in. (2.5-cm.) layer, after converting urobilinogen to urobilin by the addition of a few drops of iodine 1% solution and acetic acid. Particular care was taken to obtain fresh afternoon specimens and to mix any deposit thoroughly with the main bulk before testing.

Material

The diseases chosen for the study were originally those which liver involvement had been reported by others (heart failure, glandular fever, rheumatoid arthritis), but accidental positive findings led to the inclusion of malaria and infective endocarditis. The material is shown in detail in Table I,

TABLE I.—Summary of 123 Cases Tested

Diagnosis	No. of Cases	% Gold-positive	% Thymol-positive
Malaria	35	94	80
Rheumatoid arthritis	34	76	38
Heart failure	28	39	36
Glandular fever	19	95	58
Subacute bacterial endocarditis	7	100	86

represents the admissions of the relevant types of illness to Ashford (formerly Staines) County Hospital during the two years. In addition to these, 42 further cases shown in Table II were used as controls to exclude fever and joint

TABLE II.—42 Control Cases

Diagnosis	No. of Cases	No. Gold-positive	No. Thymol-positive
Pulmonary tuberculosis	18	1	1
Acute articular rheumatism	8	0	0
Infective arthritis	6	3	0
Osteo-arthritis	10	0	0

changes as possible contributing factors. The results in the control cases were mainly negative, the only positive reaction being one patient with pulmonary tuberculosis (gold, 3; thymol, 7 units) and three with infective arthritis (all gold thymol-negative). It would appear, therefore, that the positive results recorded below are not directly related to pyrexia or joint involvement.

Results

The results will be discussed under five headings.

1. *Congestive Cardiac Failure.*—Twenty-eight consecutive cases of marked congestive failure with gross oedema and hepatic enlargement were examined. The ages of the patients were from 25 to 70 years, and the aetiology of the failure was rheumatic carditis, 10; arteriosclerotic hypertension, coronary thrombosis, 3; pulmonary disease, 4. The results of the investigation are shown in Table III. Analysis of the

TABLE III.—Congestive Cardiac Failure (28 Cases)

Thymol Units	Gold Test						Tot
	0	1+	2+	3+	4+	5+	
0-4	17	0	0	0	1	0	1
5-7	0	2	1	4	0	2	1
8-15	0	0	0	0	0	1	1
Totals	17	2	1	4	1	3	28

39% gold-positive; 36% thymol-positive.

results showed no significant correlation between positive findings and size of liver, length of history, or aetiology of failure. The only suggestive finding was in regard to prognosis as death occurred in all the 8 markedly positive cases within four months, compared with 4 deaths out of the 17 negative cases in the same period. In 15 cases the urine was tested for urobilin, which was present in 8. All with positive flocculation reactions had urobilinuria, and it was present in 5 of those with negative reactions. The presence of urobilinuria therefore appears to be a more sensitive test of liver function in this condition. Of the two flocculation tests used, the gold and thymol seemed equally sensitive, being positive in 39% and 36% cases respectively.

2. *Malaria.*—Thirty-five consecutive cases of relapsing benign tertian malaria in young soldiers were investigated. The diagnosis was confirmed in every case by the finding of *Plasmodium vivax* in the blood smear. The results are shown in Table IV. A very high proportion gave positive results, gold being rather more sensitive than the thymol (94% and 86% respectively). Urobilinuria was present in 20 out of the

cases in which the test was carried out, but may well have been due in part to accompanying haemolysis. The temporary nature of the disturbance in this condition was shown by the repetition of the tests in 7 cases, in which a return to normal or nearly normal results was found after three weeks' treatment.

TABLE IV.—*Malaria (35 Cases)*

Thymol Units	Gold Test						Totals
	0	1+	2+	3+	4+	5	
1-4 ..	2	2	0	3	0	0	7
5-7 ..	0	2	5	4	4	0	15
8-15 ..	0	0	1	2	7	0	13
Totals ..	2	4	6	9	11	0	35

94% gold-positive; 80% thymol-positive.

3. *Glandular Fever*.—Nineteen cases of this condition were investigated, and the diagnosis was based in every instance on the clinical picture, the presence of abnormal mononuclear cells in the circulating blood, and a positive Paul-Bunnell reaction in a dilution of at least 1 in 64. The results are shown in Table V, where they are arranged in order of descending

TABLE V.—*Glandular Fever (19 Cases)*

Paul-Bunnell Titre	Thymol Units	Gold Test	Total Leucocytes per c.mm.	Atypical Mononuclears per c.mm.
2,048	14	5+	22,000	8,200
1,024	16	5+	15,000	5,200
1,024	16	3+	9,400	4,300
512	13	5+	14,800	5,400
256	12	3+	11,000	4,000
256	6	2+	15,000	3,200
256	5	2+	9,400	3,800
128	16	3+	13,600	4,100
128	7	4+	14,000	4,200
128	3	1+	9,000	700
128	3	2+	15,000	3,000
128	2	0	5,000	400
64	2	1+	17,000	1,400
64	2	1+	12,000	370
64	1	1+	9,000	280
64	1	2+	8,400	560
64	1	1+	13,000	900
64	2	1+	4,000	400
64	1	1+	7,000	950

95% gold-positive; 58% thymol-positive.

Paul-Bunnell titres. The thymol and gold reactions were both markedly positive in all the cases with high Paul-Bunnell readings and with an atypical mononuclear count of over 4,000. Urobilinuria was present in only one case, which was also clinically jaundiced.

This patient showed a very interesting correlation between clinical course and biochemical tests. She was an A.T.S. girl, aged 25, who came into hospital jaundiced and was thought at first to be a case of infective hepatitis with splenomegaly. Very few cervical glands were palpable and none elsewhere. Her blood count showed 15,000 leucocytes with 3,200 abnormal mononuclears, and the Paul-Bunnell test was positive in a dilution of 1 in 256. The liver function tests showed a thymol of 6 units, a colloidal gold of 2+, and a serum alkaline phosphatase of 25, with 6 units (Watson) of urobilin in the urine—results typical of infective jaundice. Her jaundice improved, but a week later axillary and inguinal glands became palpable and tender, her jaundice deepened once more, and the character of the reactions changed. The thymol was now 5 units, colloidal gold 0, and phosphatase 46, and urobilin was absent from the urine—results typical of obstructive jaundice. Recovery ensued. The course of the illness, correlated with the biochemical findings, suggests that the mechanism of jaundice in this condition may vary.

Thus Davis *et al.* (1945) have recently described, in necropsy material from a typical case of glandular fever, liver changes indistinguishable from those of infective hepatitis, and one of us has suggested that jaundice could occur in this condition from obstruction to the common bile duct by glandular enlargement in the porta hepatis (Carter, 1942). In the present case the initial jaundice was probably infective in origin and the exacerbation obstructive.

Taking the group as a whole, it appears that the flocculation tests are closely correlated with the abnormal mononuclear count and the Paul-Bunnell test in glandular fever.

4. *Subacute Bacterial Endocarditis*.—Seven proved cases of this condition, with a typical clinical picture, previous valvular

damage, embolic phenomena, and positive blood culture, were investigated. In addition, 5 other cases were examined in which the condition was suspected because of fever and evidence of endocarditis, although a negative blood culture persisted without embolic phenomena. In these 5 cases the diagnosis was eventually abandoned. The results are shown in Table VI. The

TABLE VI.—*Subacute Bacterial Endocarditis (7 Cases)*

Gold test ..	7 Proved Cases							5 Suspected Cases Subsequently Disproved			
	Thymol units ..	5+	5+	5+	5+	4+	3+	3+	1+	0	0
5+	8	5	5	5	5	4	3	3	4	0	2

Of proved cases 100% were gold-positive and 86% thymol-positive.

almost uniformly positive results in the proved cases are striking in spite of their small number. Urobilinuria was present in only 2 out of these 7 cases. As a positive blood culture is not always easy to obtain quickly, the flocculation tests may have some diagnostic value in this condition and allow of treatment at the earliest opportunity. In the 5 negative suspected cases the tests were of considerable help, as illustrated by the following:

A man aged 30, with a rheumatic history, was admitted with irregular pyrexia, microcytic anaemia, tachycardia, and the signs of a mitral stenosis. He developed haematuria of a mild but persistent nature, a rising blood urea, and albuminuria without oedema. This condition subsided, and was followed by auricular fibrillation of paroxysmal type. The fever persisted and a cerebral embolism occurred. A confident diagnosis of bacterial endocarditis would have been clinically justified, but flocculation tests and blood culture remained negative. The patient slowly recovered with salicylates and iron, and was well eighteen months later except for his valvular defect, presumably having had a severe reactivation of his previous rheumatism. In one of the proved cases the patient appears to have recovered a year after his first treatment with penicillin, and there has been an interesting change in his flocculation reactions:

Mar. 13, 1945	Thymol, 6 ; Gold, 5+
April 31, 1945	Thymol, 5 ; Gold, 5+
June 30, 1945	Thymol, 3 ; Gold, 1+
Oct. 30, 1945	Thymol, 2 ; Gold, 0
Jan. 6, 1946	Thymol, 2 ; Gold, 0

A comparison between the gold and thymol tests in the group shows a considerable difference in degree of sensitivity in favour of the gold, although the thymol reaction was just positive in 6 out of the 7 cases with positive gold reactions.

5. *Rheumatoid Type of Polyarthritis*.—This series consisted of 34 patients (30 women) who showed an atrophic type of polyarthritis ranging from the classical rheumatoid arthritis to a mild, fleeting, periarticular, inflammatory reaction with minimal radiological changes. The results are shown in Table VII. In

TABLE VII.—*Rheumatoid Arthritis (34 Cases)*

Thymol Units	Gold Test						Totals
	0	1+	2+	3+	4+	5+	
0-4	8	5	2	4	1	1	21
5-7	0	2	2	1	3	0	8
8-15	0	0	0	0	1	4	5
Totals ..	8	7	4	5	5	5	34

76% gold-positive; 38% thymol-positive.

the whole group there was a marked difference between the gold test (76% positive) and the thymol test (38% positive). Urobilinuria was present in only 1 out of 19 cases tested. The series divides itself up into four classes:

(1) The very advanced long-standing typical rheumatoid arthritis with permanent deformity and gross generalized radiological changes. There were 4 of these, all with markedly positive colloidal gold reactions and very little change in the thymol turbidity test.

(2) The active classical rheumatoid arthritis, with involvement of wrists, fingers, knees, and feet, with spindling of fingers, atrophic radiological changes, and raised erythrocyte sedimentation rate. There were 16 in this group, with 1 man among them, and 4 of the cases showed Felty's syndrome with generalized superficial lymphatic glandular enlargement and splenomegaly; 11 of these had a markedly positive colloidal gold reaction, 3 were weakly positive, and 2 were negative.

(3) Ten cases with a history of fibrositic pains, occasional peripheral joint swellings, a minimal degree of finger-spindling, and some general osteoporosis around the affected joints, but no other joint changes. The sedimentation rate was raised in all, and a diagnosis of probable early rheumatoid arthritis was made. All these patients were between 20 and 30 years of age. Two showed a spondylitis with stiffness and pain, but no changes in radiological appearances of spinal or sacro-iliac joints. Two were associated with thyrotoxicosis. The colloidal-gold findings were: 1 markedly positive (3+), 1 positive (2+), and 8 weakly positive (1+).

(4) Four cases with atypical findings, usually fleeting joint pains and swellings, without spindling, with raised sedimentation rates, and radiological changes showing only a minimal bone rarefaction. All these had negative gold and thymol reactions.

In the whole group there was a rough though definite correlation between the gold test and the sedimentation rate, as shown, in the accompanying Chart. It will be seen from this

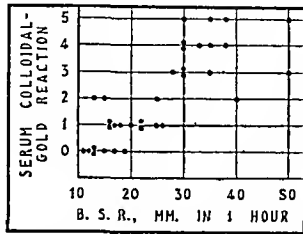


Chart showing the correlation between the serum colloidal-gold reaction and the sedimentation rate in 34 cases of rheumatoid arthritis

that all cases with 3+, 4+, or 5+ gold reaction had sedimentation rates over 25 mm. in 1 hour and that all cases with a negative gold reaction had rates below 20 mm.

Taking the rheumatoid group as a whole, it will be seen that the gold test was positive in 28 out of 30 cases in which the diagnosis was well established. The thymol test was much less sensitive, being positive in only 13 of these 30 cases. Urobilinuria was almost uniformly absent (18 out of 19 cases).

Discussion

The results as a whole may be considered under three findings.

1. *Heart Failure.*—In this group the positive results are readily explicable on the basis of chronic passive congestion of the liver, and probably are mainly a reflection of this process. With the gold and thymol tests the proportion showing abnormal findings was nearly identical and was similar to that found with other tests by Chávez *et al.* (1943). The presence of urobilinuria in all the positive reactors serves as confirmation of the presence of liver dysfunction in these cases.

2. *Rheumatoid Arthritis.*—The balance of probability here is that the high proportion of positive results is not specifically related to liver pathology, since there was no urobilinuria and the published evidence of liver damage in this disease does not suggest such a degree of dysfunction as would explain the findings. It is possible that an antibody associated with the serum gamma-globulin fraction may be responsible for the flocculating power of patients with rheumatoid arthritis. It is noteworthy that there was a wide discrepancy between the two tests in this group (gold, 76% positive; thymol, 38% positive).

3. *Malaria, Glandular Fever, Infective Endocarditis.*—These conditions form an intermediate group in which there is some supporting evidence of liver disease, but in which it is doubtful whether this explains all the findings. Thus urobilinuria was constantly present in malaria, but may have been partly due to haemolysis; it was mainly absent in glandular fever and inconstant in infective endocarditis. There is histological evidence of hepatitis in malaria and in glandular fever (Lichtman, 1942; Davis *et al.*, 1945), and the latter is known to cause jaundice in a small proportion of cases. However, this jaundice may sometimes be due to enlarged glands in the portal fissure, as suggested by one of us (Carter, 1942) and as illustrated in the case above. In these three conditions the correlation between the tests also occupies an intermediate position (gold, 95% positive; thymol, 74% positive), being less close than in diseases with known liver damage, such as infective hepatitis (MacLagan, 1944b). It seems a reasonable inference

that in these three diseases both liver dysfunction and antibody formation contribute to the results, no doubt in varying degree in different patients.

Conclusion

In conclusion it may be stated that, while these flocculation tests have proved of great value in the investigation of primary diseases of the liver, positive results do certainly occur in certain conditions not usually regarded as liver diseases. This applies particularly to the gold test, the thymol test being rather more specifically related to liver pathology. Diseases such as heart failure, glandular fever, malaria, infective endocarditis, and rheumatoid arthritis must therefore be considered as possible alternative diagnoses in patients with suspected primary liver damage who have positive flocculation tests. Viewed from another angle, we have had some diagnostic help from the tests, particularly the gold test, in rheumatoid arthritis, glandular fever, infective endocarditis, and malaria. Negative results are unusual in these conditions and positive ones of some confirmatory value. The tests may possibly have some prognostic significance in heart failure.

Summary

The serum colloidal-gold test and the thymol turbidity test have been performed in 35 cases of malaria, 34 of rheumatoid arthritis, 28 of congestive cardiac failure, 19 of glandular fever, and 7 of subacute bacterial endocarditis.

Some positive results occurred in each group, the proportion varying from 95% to 39% for the gold test, and from 80% to 36% for the thymol test. The two tests were equally sensitive in heart failure, but the gold test was more sensitive in other conditions, the difference being particularly great in rheumatoid arthritis.

In glandular fever there was a positive correlation between the gold test, the Paul-Bunnell test, and the abnormal mononuclear counts. In rheumatoid arthritis the gold test and the erythrocyte sedimentation rate were positively correlated.

The positive finding in heart failure probably resulted from chronic passive congestion of the liver. In the other conditions both liver damage and antibody formation may have contributed to the results.

The flocculation tests are not purely liver function tests, as they probably depend upon changes in the serum gamma-globulin fraction. They have proved of value as diagnostic aids both in primary liver diseases and in some of the above conditions, but the possibility of occasional interference between the two groups must be considered in interpreting the results.

We are much indebted to Dr. A. G. Signy for the haematological data and Paul-Bunnell tests. Part of the expenses of the work was defrayed by a grant to one of us (N. F. M.) from Westminster Hospital.

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The Scottish National Blood Transfusion Association states in its annual report that during the first three months of 1946 hospital demands for blood exceeded the amount given by volunteer donors. Requirements were met only by drawing on accumulated wartime reserves which it had not been necessary to expend during the war. As long as the war was on, an adequate number of volunteers was always ready to come forward to give blood. For peacetime conditions considerably more organized recruitment and propaganda will be necessary if the Association is to meet its commitments to the hospital services.

RHEUMATIC FEVER IN THE R.A.F.

RESULTS OF TREATMENT AT A CONVALESCENT CENTRE

BY

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A comparatively recent survey of the trends in the incidence of rheumatic fever Glover (1943) presented figures showing a remarkable decline in the disease since the beginning of the century, to the extent of inducing him to refer to it as an "obsolescent" disease. Nevertheless, in large communities of young adults such as are to be found under conditions of military service rheumatic fever still provides a problem of some magnitude. Before the late war the frequency of the disease among the boys and youths in the training establishments of the Royal Navy and in the apprentice schools of the Royal Air Force had been a matter of concern to the respective medical directorates. In the Air Force the boys enter the apprentice schools at the age of 15 to 16 years, to undergo an expensive course of training lasting three years. Applications to enter the schools have always exceeded the number of vacancies, and the boys are selected by a competitive examination. In consequence of rheumatic fever not only was there a steady and persistent loss of potential craftsmen upon whom a considerable amount of public money had been spent, but in many cases a promising career was ruined. While a certain wastage was to be expected, it was felt that if these cases could be given the necessarily protracted convalescence under Air Force auspices a high proportion might again become fit for service. Shortly after the outbreak of war it was therefore proposed to establish a convalescent centre for cases of rheumatic fever, and early in 1940 some twenty beds were set aside for this purpose in one of the Royal Air Force general hospitals. To ensure that only those cases which would benefit from such treatment were admitted, all patients had to be recommended for transfer by one of the Air Force consultants in medicine. A few acute cases were admitted direct from neighbouring units served by the hospital. It was soon found necessary to increase the number of beds at the centre, as, in addition to the apprentices, convalescent cases from among the regular Air Force personnel came to be included. Towards the close of 1940 it was decided to move the centre to another hospital, where it continued for a further nine months. Both because of a greater number of beds and because the demands upon the consultants in medicine did not permit of their making individual recommendations, patients suffering from various forms of chronic rheumatism were also treated.

The principal consideration in the treatment was an adequate period of rest followed by a graduated return to activity as the condition, gauged by the temperature, pulse rate, and the erythrocyte sedimentation rate, showed improvement. The sedentation rate was taken at weekly intervals, and when there was a doubt regarding the size and configuration of the heart this was checked radiologically. An electrocardiograph was not available for use in all R.A.F. hospitals in the early years of the war, and it was not possible to make serial tracings. As soon as the rate of progress permitted, occupational therapy was encouraged. No complications were encountered, and, despite occasional retrogression after infections of the upper respiratory tract, no true relapses occurred.

The system of medical records in the Air Force makes a follow-up of such patients a relatively easy matter. In 1945, four years after the centre had closed, in view of the interest concerning the ultimate progress of these cases and to make some assessment of the value of the centre, such a follow-up was initiated. Sixty-five airmen convalescent from acute rheumatic fever had been treated. The majority were in their teens, and the average period of detention in hospital was 149 days. Of the original number admitted it was considered advisable to invalid eight out of the Service, of whom four had developed mitral stenosis and four aortic incompetence. The remaining 57 were retained in the Service, but owing to errors in numbers or names it was found possible to trace only 48 of these. At the time of their return to duty 28 showed signs of minor cardiac involvement by soft apical or basal systolic murmurs.

The remainder appeared to be fully recovered. On returning to duty all were lowered in medical category, and were subject to three-monthly examination by a medical specialist until they were considered fit to return to a full category. When the medical documents were seen in 1945 it was found that out of 48 men 34 had been recategorized to Grade 1, and of these two had been accepted for air-crew duties, in which the physical standards are extremely high. Ten men had been retained in Grade 3, and four had been invalided out of the Service—two on account of mitral stenosis and two because of aortic incompetence. The after-history of these men disclosed little of interest, with one exception. Four patients developed symptoms of a psychoneurotic nature and were noted at later examinations to have a nervous tachycardia or effort syndrome. An incidence of from 6 to 8% showing such symptoms seems unduly high, and gives rise to some doubt regarding the wisdom of frequent examinations. A similar state of affairs was observed in some of another group of patients coming for three-monthly review of their chests because of the finding of opacities of doubtful significance on mass radiography. In suspected phthisis, and after diseases like rheumatic fever, it is a difficult matter to strike a nice balance between adequate observation and the liability of inducing a neurosis by too much attention to the chest or heart. In defence it may be argued that the seed flourishes only in fertile ground, that at a later date the psychoneurosis would have manifested itself in other ways for other reasons, and that the advantages of adequate after-care outweigh such possible complications. In this connexion it is of interest to refer to a study made on the cases of chronic "rheumatism" admitted to the centre in the later stages (Flind and Barber, 1945). It was found that a high percentage were suffering from one or another of the common neuroses and had shown a clear predisposition to neurosis from an early age. In an attempt to obtain a control group a psychiatric assessment was also made on some of the convalescent rheumatic fever patients. Unfortunately the decision to terminate the rheumatic centre, and a marked decrease in the number of these patients, made this group from a statistical point of view valueless, but in the 15 patients studied no evidence of a psychoneurosis was found. The only other point of interest is the small number who had a further attack of rheumatic fever. Only two were again treated in hospital on this account.

The majority of observers are agreed that rheumatic fever is closely related to infections of the upper respiratory tract, in particular by the haemolytic streptococcus. How this association plays its part in the onset of the attack of rheumatic fever is not clear, but, despite the strictures of Aschoff (1935) regarding an allergic factor, there is a distinct tendency to view at least the joint manifestations as being of this nature. To some extent this hypothesis is supported by the occasional appearance of joint involvement similar in most respects to that of rheumatic fever in poliomyelitis (Poynton, 1943) and in tuberculosis (Sheldon, 1946). On the other hand, the heart lesions would seem to be due to a direct infection of the valves by the haemolytic streptococcus; for Green (1939), Collis (1939), and Thomson and Innes (1940) reported success in culturing these organisms from the heart valves in about half their necropsies on cases of rheumatic fever dying in the acute phase. The importance of infections of the upper respiratory tract was stressed by Bradley (1934), who considers that the precursor pharyngitis is an essential part of the rheumatic state, though it may be concealed under the guise of the common cold. In a later communication Bradley (1938) remarks that the spread of infection is intensified by the simultaneous presence or previous occurrence of other catarrhal diseases. Similarly, Green (1942) states that the increase of acute rheumatic fever in winter is due to the prevalence of respiratory infections and not to any climatic influence by itself. He suggests an enhanced virulence of the infecting organism as a result of passage through a community. Recently Glover (1946) has again emphasized this. At the appropriate season the carrier rate of one particular strain of streptococcus rises and is followed by an epidemic of acute tonsillitis and a little later by cases of acute rheumatism in the ratio of about one to every ten of acute tonsillitis. The question of susceptibility of certain classes of the population, particularly in the lower-income groups, is also thought to be of importance. Green (1942), in observations on epidemics in the training establishments of the

Royal Navy, noted a higher incidence among boys coming from Tyneside, at that time designated a "distressed area." Poynton (1938), however, remarks that the apparently higher incidence among the poorer classes compared with the well-to-do may be a matter of relative numbers, and that the percentage incidence is probably the same. This is not a view generally held, and Keith (1941) mentions the economic status as one of the fundamental causes, while Glover (1943) ascribes the wartime decrease of acute rheumatism to abundant employment and the greatly increased provision of school milk and meals for the children. It should be possible to elucidate this important point, though it is not unreasonable to suggest that overcrowding, poor hygiene, and inadequate diet will at least predispose to upper respiratory infections and, in susceptible individuals, to subsequent rheumatic fever. Under Service conditions, however, the hygiene and diet are of a high order, even if overcrowding takes place at times. In peacetime overcrowding did not take place in the R.A.F. apprentice schools, where spacing in the barracks was carefully controlled. In these centres the important factors would appear to be a community of young adults undergoing military training, with its stress on hardihood in all kinds of climatic conditions, plus a constant addition of new arrivals susceptible to strains of the infecting organism, against which the older members have gained an immunity.

At the time of the inception of the rheumatic centre the full importance of the precursive upper respiratory infection was not realized and consequently no inquiry into this was made. When the medical documents were examined in 1945 a note was made of any containing an entry for tonsillitis or nasopharyngitis. In 14 of the 48 cases traced there was recorded an admission to either the sick quarters or the hospital for an upper respiratory infection within four weeks before the onset of the rheumatic symptoms. Of these, four were diagnosed as tonsillitis and ten as nasopharyngitis. The interval between the two illnesses varied from five to eighteen days. The only entries recorded in the medical history are admissions to hospital exceeding 48 hours in duration, specialist reports, and medical boards. It can therefore be safely assumed that a certain proportion of the remainder also had milder infections in nature, for which they may have reported sick but were ill enough to require admission to hospital.

The incidence of rheumatic fever in the Royal Air Force as a whole in 1940 was 2.1 per 1,000, whereas among the boy entrants and apprentices it was 10.4 per 1,000 for the same period. In one epidemic in a Naval training establishment the attack rate was 63 per 1,000 (Green, 1942). It is therefore of paramount importance that adequate methods of prevention should be instituted. In the armed Forces of the United States one suggested solution was the rejection of all recruits giving a past history of rheumatic fever (Master, 1943, 1944; Holbrook, 1944). This measure would hardly suffice, for among the 65 patients treated in the R.A.F. rheumatic centre only two gave a past history of rheumatic fever, and in one of these that attack had occurred in the Service. The apprentices, too, are of an age when primary attacks may be expected. Tonsillectomy is regarded as being of no value (Keith, 1941), and Bradley (1932) goes so far as to describe it as a lost cause in the prevention of rheumatic fever. A way of preventing the precursive respiratory infections seemed a more hopeful alternative, and the sulphonamides offered a possible means to this end. Accordingly, at camps of the United States Army and Navy large-scale observations were made on the value of the prophylactic use of the sulphonamide compounds in the prevention of such infections and on the effect of the prevention on the incidence of rheumatic fever. The results came fully up to expectations. In the Army Air Force there was a reduction of 50 to 70% in the incidence of respiratory and streptococcal infections after the prophylactic administration of from 0.5 to 2 g. of sulphadiazine daily to each man (Holbrook, 1944). It was found that a reduction in the attack rate of acute rheumatic fever ran parallel with the reduction in respiratory diseases. A similar finding was reported by Coburn (1944) after the use of sulphonamides in the United States Navy. A small percentage of the men showed an idiosyncrasy to sulphonamides in prophylactic doses, but as the incidence was 1 in 10,000 it was concluded that the advantages far outweighed any risk entailed. There was no evidence either of

the development of sulphadiazine-resistant strains of bacteria or of mass sensitivity to the drug on the part of the subjects of the experiment. These findings suggest a promising form of defence against rheumatic fever, and might with advantage be given a trial in some of the British training centres. From the results obtained with the rheumatic centre it may be considered that it justified its existence, and that in the event of further outbreaks of rheumatic fever it might be revived.

Summary

A centre for convalescent cases of rheumatic fever in the Royal Air Force, and the results of treatment at the centre, are described.

The relationship between the upper respiratory tract infections and rheumatic fever, with a method of prophylaxis tried in the armed Forces of the United States, is discussed.

I wish to acknowledge the constant interest shown in the centre by the Royal Air Force Consultants in Medicine, Air Vice-Marshal A. F. Rook and Air Vice-Marshal J. J. Conybeare, and the assistance in tracing the patients after their discharge from the centre given by the Air Officer in Charge of Royal Air Force Records.

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ERYTHROBLASTOSIS FOETALIS

BY

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Erythroblastosis foetalis is not an exceedingly rare disease, but it appears to be uncommon enough to make the following cases worth recording.

Case Report

Mrs. E., aged 33, was first seen in December, 1944, when she was 23 weeks pregnant. This was her sixth pregnancy, and she had no living child. Her obstetric history was as follows:

First Pregnancy, 1934.—Full term. Normal confinement and delivery. Child died from pneumonia when 9 months old.

Second Pregnancy, 1936.—Full term. Normal confinement and delivery. Mother told that the child was jaundiced at birth; it died nine days later.

Third Pregnancy, 1937.—Patient had eclampsia. Child stillborn.

Fourth Pregnancy, 1940.—Patient admitted to hospital three weeks before term with oedema of feet, which subsided within 24 hours of admission. She was told that she had no rise of blood pressure and that her urine was normal, but she was kept in hospital in view of her previous history. Foetal movement ceased two weeks later for no apparent reason, and she was delivered at term of a stillborn macerated foetus.

Fifth Pregnancy, 1943.—Aborted at three months.

The patient was a healthy well-nourished woman; her Wassermann reaction was negative. It was thought most probable that her second child had died of erythroblastosis, but her blood was not tested for the Rh factor owing to some difficulty in getting the test done at that time. The antenatal period was uneventful. It was decided to induce labour at 38 weeks, or earlier if any signs of toxæmia developed, and with this in view she was given stilboestrol dipropionate daily from 36 weeks onwards. The patient went into labour on the morning of the day on which she was to have come into hospital for induction; and had a rapid, almost precipitate delivery. When the membranes ruptured it was noticed that the liquor was of a dirty brown colour. The child was slightly premature in appearance, weighed 6 lb. 6 oz. (2.9 kg.), and was slightly jaundiced, but his general condition was quite good. Six hours after delivery the jaundice was considerably deeper; the child was very fretful and did not appear to be at all well. As his condition was

thought to be partly due to the rapid delivery, he was given an injection of vitamin K and small doses of potassium bromide with chloral. The next day the child was deeply jaundiced, but he was no longer fretful and seemed much better. For the next two days there was very little change and he took his feeds well. After that the jaundice gradually grew less and by the tenth day it had completely gone, but he was very pale and lethargic, and took his feeds with difficulty. Two days later he started to improve, and was discharged when three weeks old, doing very well. When last seen at 8 months of age he was a normal healthy well-developed child. While in hospital he was partly breast- and partly bottle-fed, breast milk being given when it was available, the mother herself having practically none; by the time he left hospital he was being artificially fed. Small doses of iron (mist. ferri et ammon. cit.) were started on the twelfth day and gradually increased, and as soon as it could be obtained the child was given a dried-milk food containing extra iron, as this was easiest for the mother.

Both parents and the child were tested for the Rh factor when he was 6 months old, and the report was as follows: Father: Blood group O Rh-positive; genotype R₁R₁. Mother: Blood group O Rh-negative; the serum contained an "incomplete antibody" as described by Race and Taylor. Child: Blood group O Rh-positive; genotype R₁R₁. A note was added by the pathologist that these findings confirmed the clinical diagnosis of erythroblastosis foetalis.

Discussion

Erythroblastosis foetalis is a hereditary disease of the newborn, characterized by anaemia, severe jaundice evident at birth or appearing shortly afterwards, and oedema, with enlargement of liver and spleen, leucocytosis, and erythroblastosis. It is primarily an acute haemolytic anaemia (Damshek *et al.*, 1943), the other pathological changes being subsequent to the haemolytic process. The disease, however, may vary in intensity, the mildest cases being those in which anaemia alone is present, and the most severe those in which there is generalized oedema. The condition is due to immunization of the mother with some factor present in the foetal blood, and this in about 90% of the cases is the Rh factor, the father and child being Rh-positive and the mother Rh-negative. The theory of immunization of the mother by foetal erythrocytes, with the production of antibodies which subsequently cause intra-uterine haemolysis of the foetal blood, was first suggested by Otteoburg in 1923, and in 1940 Landsteiner and Wiener first demonstrated the Rh agglutinin in the red cells of about 85% of the people tested. This figure has been confirmed by Cappell (1944) and Plaut, Barrow, and Abbott (1945). Levine, Katzin, and Burnham in 1940 found an atypical agglutinin in the serum of several patients who had given birth to infants suffering from erythroblastosis, and these antibodies corresponded in activity to the anti-Rh agglutinins produced by Landsteiner and Wiener in animals. The Rh factor, which depends upon a complex of antigens borne in the red cells, is inherited as a simple Mendelian dominant (Landsteiner and Wiener), and the theory of the mode of production is as follows.

The Rh-positive father transmits the Rh factor to the foetus. The Rh antigen of the foetus passes through the placenta into the mother's circulation. Her blood, which is Rh-negative, reacts to the antigen by building up antibodies against it—the anti-Rh agglutinins. These in their turn pass through the placenta into the foetal circulation and there agglutinate the Rh-positive cells. Haemolysis of the foetal blood and haemolytic changes ensue, followed by other pathological changes, the most important of these being damage of the liver parenchyma. In about 10% of the cases the immunizing agent is not the Rh factor, and in some of those cases the disease is thought to be due to immunization of a group O mother by the group A or B blood factor. Six such cases are reported by Polayes (1945). The disease does not usually develop with a first pregnancy, but as a rule shows itself in a second or in later pregnancies, the theory being that it may take more than one pregnancy to develop sufficient antibodies in the mother's blood to act on the foetal blood.

It has been shown that mothers of infants with erythroblastosis show a high incidence of abortions, miscarriages, stillbirths, and toxæmias (Levine *et al.*, 1941; Polayes, 1945). The main disease concerned in the differential diagnosis is congenital syphilis, in which the clinical findings may be almost identical. The other diseases that have to be excluded are antenatal infection, post-natal infection, congenital malformation of the bile ducts, haemorrhagic disease of the newborn, congenital heart disease, and icterus neonatorum. The previous history

(if any), the clinical findings, and the presence of anti-Rh agglutinins in the blood of a Rh-negative mother make the diagnosis as a rule fairly easy, but difficulties do arise. Occasional mild cases may be missed either through not being observed or through being wrongly diagnosed. Also, the finding of anti-Rh agglutinins in the blood of a Rh-negative mother, though almost pathognomonic of the disease, is not absolutely so, as cases have been observed in which the anti-Rh agglutinins were found in the blood of the mother but the child was normal. Again, the absence of anti-Rh agglutinins does not exclude the disease. As stated before, about 10% of the cases reported are not due to immunization of the mother by the Rh factor; and in other cases, though the mother may be Rh-negative, no anti-Rh agglutinins may be found. Davidsohn (1945) states that the best time to test for the anti-Rh agglutinins is not immediately after delivery but about ten days later. Race and Taylor (1944) have described a method by which an "incomplete antibody" can be found in some cases in which the mother is Rh-negative and erythroblastosis is suspected but in which no antibody can be detected by ordinary means. The anti-Rh agglutinins may be found in the blood of the mother up to two years after delivery. It is interesting to note that the disease does not necessarily become more severe with each succeeding pregnancy, but may vary in intensity; and Davidsohn (1945) points out that there is some evidence to show that no direct relation exists between the antibodies in the mothers' blood and the severity of the disease in the baby.

The only efficient treatment in severe cases is blood transfusion, and it has been found that transfusion with Rh-negative blood is more effective than transfusion with Rh-positive blood, possibly because the Rh-positive blood of the infant is undergoing destruction (Levine *et al.*, 1941).

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ACHROMOTRICHIA IN TROPICAL MALNUTRITION

BY

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Depigmentation of the skin is one of the most striking results of malnutrition as it is seen in young Africans. This phenomenon has fixed the attention of native as well as European (Williams, 1933; Gillan, 1934; Trolli, 1938; Trowell, 1941) observers, and many of the names under which the prevailing syndrome of malnutrition has been described—kwashiorkor, cheveux blancs, etc.—signify depigmentation of the skin or its appendages. From what we now know of the diet consumed by the patients and the response to treatment we can refer the depigmentation to deficiency of one or more members of the Vitamin B₂ complex. Carrying the analysis a little further, I have tried to show (Hughes, 1946) that kwashiorkor—the most widely prevalent syndrome of deficiency with depigmentation—is associated primarily with a deficiency of riboflavin. There are, however, certain cases of depigmentation in which achromotrichia is a most striking feature while the clinical signs of arbofavinosis are minimal or absent.

In a study of malnutrition in Lagos during the past four years I found the incidence of achromotrichia widespread, and the first impression was that it was constantly associated with depigmentation of the skin. Further investigation, however, revealed: (1) In acute recent cases of kwashiorkor

depigmentation of the skin may be intense while the hair still retains its colour. Alopecia of a "moth-eaten" type is constant. (ii) In chronic cases of kwashiorkor, achromotrichia and alopecia run parallel with depigmentation of the skin. (iii) Among the remaining cases, which constitute a large group, we identified eleven cases of what appears to be a separate syndrome in which achromotrichia is the most prominent feature. In these cases the moth-eaten alopecia of kwashiorkor was not seen, signs of ariboflavinosis were minimal or absent, and, furthermore, the mechanism of depigmentation appeared to be different from that which operates in kwashiorkor.

To appreciate the difference between kwashiorkor and the syndrome of nutritional achromotrichia, about to be described, it will be necessary to recount briefly the main epithelial changes of the former, with particular emphasis on the pigmentary changes which can be ascribed to ariboflavinosis.

Depigmentation in Kwashiorkor

The symptomatology and lesions of kwashiorkor have been described by the authors to whose work reference has been made above. The epithelial changes fall into two groups:

(a) *Those Associated with Ariboflavinosis as seen in the Adult.*—

(1) *Glossitis*.—The superficial epithelium is shed, revealing a pink or magenta tongue, without fissuring and without great enlargement of the papillae. (2) *Desquamation* about the lips, angles of the mouth, naso-labial sulci, eyes and ears, and external genitals. The rash consists of *hyperpigmented scales on a hypopigmented background*. Compared with the adult ariboflavinotic syndrome the exfoliation is more extensive. The rash extends from the oral lesions on to the face and neck and from the perineal lesions on to the thighs, buttocks, and abdomen and is more intensive; and fissures and erosions are common, especially about the mouth, flexures, and perineum.

(b) *Desquamation and Alopecia not seen in Adult Ariboflavinosis.*—(1) There is intense exfoliation on the dorsa of the hands and feet, and the rash may extend up to the shoulders and thighs respectively. (2) In recent acute cases the hair is loose and can be drawn out painlessly in large bunches. At this stage, however, it should be noted that the colour is still a normal dark brown and texture coarse. In chronic cases the hair comes up fine, straight, and sparse.

stologically, the changes everywhere are those of paratosis. In the skin there is a thinning out of the epidermis, and nucleated cells containing pigment can be seen in the stratum corneum, which is partly detached. Sections of the scalp reveal, in addition, large oval spaces lined with epithelium, indicating the sites from which the superficial row of hairs have been shed. It is reasonable to assume that the process of hyperkeratosis accounts for the alopecia and depigmentation, the continual loss of cells and pigment creating demands which the normal resources of the epithelium cannot supply.

Primary Nutritional Achromotrichia

In the syndrome about to be described the most striking finding is achromotrichia. The clinical picture abstracted from eleven cases might be set down as follows.

The patients were of either sex—seven females, four males—between the ages of 4 and 10 years. The environment and previous history were similar to those which obtain in kwashiorkor. There was a history of diarrhoea in nine cases, in one of which *E. histolytica* was isolated from the stools. Malaria parasites—all *P. falciparum*—were found in routine slides in nine cases, but, as treatment was given only when indicated by fever, it was shown that recovery could occur in spite of this infection. Similarly, hookworm and roundworm infections, although heavy in some instances, were shown not to be the deciding aetiological factors. No exact quantitative studies have yet been made on the diet consumed by this type of patient. Qualitatively, cassava is the staple, but small quantities of cereals—rice, maize, and wheat flour—are also taken. Many ingredients, including green leaves, peppers, and variable amounts of fermented foods, go into the "soup." Of the more important ingredients—meat and fish—probably less than 1½ oz. (14 g.) daily reaches any one child. Milk is scarce, and is rarely consumed outside the large towns.

The hair is lightly pigmented, the colour ranging from white or light yellow to grey. The eyelashes are more pigmented than the scalp hairs, and appear yellow to reddish brown.

On the scalp the individual hairs are straight or wavy—not curly as in the normal negro child. They are finer in texture than normal, but they are firmly embedded in the scalp and cannot be drawn out painlessly as in kwashiorkor. Hence in typical cases there is no alopecia.

The skin is generally hypopigmented; it showed some powdery desquamation in all cases, although this was only slight and localized in some. Infestation with ectoparasites—scabies and chiggers—is unusually intense. "Septic spots," scabs, and erosions are common, but they clear up as soon as the ectoparasites have been dealt with.

The affected children are unusually docile or even apathetic, and this may partly account for the high infestation with ectoparasites. The behaviour and appearance are so "feminine" that in male cases it is often difficult to believe the patient is a boy.

All cases showed anaemia. Oedema was noted in every case, but it was never gross as in kwashiorkor. Muscular wasting was slight or absent. Among other signs we observed an unusually heavy deposit of "tartar" on the teeth, with patchy gingivitis. The teeth were small, and in one case the tips of the lower incisors were worn off, resembling the appearances often seen after middle age. During convalescence the teeth came up with the attached ring of "tartar," and the gums receded, leaving a clear white space between "tartar" and gum. An important negative finding was the absence of any active lesion of the ariboflavinotic syndrome. In one case there was depigmentation at the angles of the mouth and tip of the prepuce.

Microscopically, the individual hairs were seen to be yellow or reddish, straight or wavy, and more cylindrical than normal. Hairs removed during convalescence showed these appearances at the free ends, while below they were black, stout, and strap-like. In typical cases we noted at all stages that the hairs broke off when we tried to remove them for examination. This is in contrast with kwashiorkor, in which the hairs with most of the bulb attached come out with a gentle pull. Sections of skin were not available for histological study. Clinically the absence of hyperpigmented scaling which characterizes kwashiorkor suggests that loss of pigment through exfoliation is not sufficient to account for the extensive depigmentation.

The natural course of the condition is unknown. Probably most of these patients drift into a state of chronic marasmus or die from sepsis or concurrent disease. When put on a diet containing liver, milk, and yeast changes occur rapidly. The hair darkens near the scalp and comes up strong, dark, and curly. The minimum time taken for the first change in colour to be observed was three weeks. The anaemia clears up, the oedema disappears, the child puts on weight and recovers its natural aggressiveness. On the hospital "full diet" for adults, one patient, aged 9 years, failed to put on weight or make any progress for four weeks.

We gave injections of 25 mg. of calcium pantothenate daily for two weeks to two cases, using the adult "full diet" as a basal ration. After three weeks the hair came up black near the scalp in both cases. A case on the same diet, with 100 mg. *p*-aminobenzoic acid thrice daily for two weeks, showed no change after a month. We know too little about the pantothenate content of local foods, and in these cases the controls were not strict enough to allow us to incriminate pantothenic acid definitely as the missing factor of the B_3 complex, but the results were suggestive.

The following case exemplifies the main features of the condition:

Illustrative Case

An African boy aged 4 years was admitted to the African Hospital, Lagos, on April 13, 1945, for general weakness, oedema, and cessation of growth. The parents, who lived in the country, placed the child in hospital and went away without giving a detailed history of the case.

On examination he showed generalized hypopigmentation, most pronounced about the scars of old scabietic lesions, which were still dead-white. The hair on the scalp was white, fine, wavy, and fairly luxuriant in growth. The individual hairs could not be extracted easily. The eyelashes were red. Scabies was generalized and intense. Six fully grown chiggers in addition to numerous smaller ones were removed from about the toes. There was pitting oedema

about the ankles and over the sacrum. The mucous membranes were pale, and a blood count on April 27 showed: R.B.C., 1.8 millions; Hb, 30%; W.B.C., 14,000 (polymorphs 39%, lymphocytes 3%, monocytes 2%, eosinophils 5%). The tongue, lips, and external itals were free from lesions. There was some "crazy-pavement" ing on the shins.

He was noticeably docile and feminine in appearance. Not only he not resent the extraction of occasional hairs for examination, even the giving of hypodermic injections provoked no resentment.

Treatment.—The patient was put on the basic children's diet, which contains 6 oz. (170 ml.) of milk daily. He was given daily injections of 40 mg. of calcium pantothenate for 12 days. The scabs were removed, and the scabies responded rapidly to benzyl zoate solution.

After three weeks there was a good deal of improvement in the general condition, although some oedema was still present. The rashes could be seen coming up dark near the scalp, and with a magnification of $\times 10$ quite a sharp line of demarcation could be made out in individual hairs. At this stage he was put on iron and cod liver oil, dewormed. Progress was rapid; his weight increased, and he became naughty and boyishly aggressive in about six weeks from admission. His weight on admission was 21 lb. (9.5 kg.), and on discharge (June 16), 23 lb. (12.7 kg.).

Discussion

The circumstances in which achromotrichia or grizzling hairs might be classified as follows:

1. In carnivora inhabiting the polar regions, where it occurs as a seasonal change. Genetic factors probably account for it here, although nutritional factors cannot be completely ruled out.

2. In middle and old age in man—*canities*. The process is common in negroes, although perhaps not so common as in white races. Sieve (1941) reported some improvement in cases treated with *p*-aminobenzoic acid, but his results have had no general confirmation.

3. Experimentally, grizzling and alopecia have been produced in various circumstances of malnutrition in animals, and particularly with deficiencies of the B₂ complex. Morgan and Simms (1940) produced grizzling in rats, which was cured by filtrate containing pantothenate. This was confirmed by Hanna *et al.* (1941), using pantothenic acid.

Ansbacher (1941) identified *p*-aminobenzoic acid as an anti-grey-hair factor in rats. Inositol deficiency, according to Woolley (1941), induces grizzling in mice. According to Hartin and Ansbacher (1941), inositol and *p*-aminobenzoic acid are complementary in the prevention of grizzling. Martin (1942) has reported grizzling in rats following a deficiency of folic acid. The grizzling which arises from pantothenate deficiency in rats is associated with other signs such as blood-tinged whiskers, "rusty spots," and, post mortem, adrenal haemorrhages. Signs of pantothenate deficiency in the pig include an extensive dermatitis, ulcerative colitis, and spastic paralysis.

Kerlan and Herwick (1943) have reported negative results with calcium pantothenate, in a dosage of 20 mg. orally per day for six months, in the greying (canities) of middle and old age in man. The grizzling in our cases has been observed only in children and young adults, and responds to dietetic treatment. We are satisfied that the deficiencies concerned in both types of achromotrichia can be traced to factors of the B₂ complex. Our efforts at a more detailed analysis of the aetiology have led us to the following conclusions:

(a) The parakeratosis of recent acute kwashiorkor, by giving rise to rapid and extensive exfoliation, leaves a depigmented skin at the site of exfoliation. The normal dark curly hairs fall out and the new crop is sparse and depigmented. The missing factor is riboflavin.

(b) In primary nutritional achromotrichia there is a deficiency of some factor of the B₂ complex in the diet. This factor controls the colour and texture of the hair and may have some influence on haemopoiesis and the development of the teeth. The missing factor may be pantothenic acid.

(c) There is a large group of mixed cases in which both riboflavin and pantothenate deficiencies operate. It is possible that in many cases of kwashiorkor, riboflavin deficiency, by causing anorexia and inanition, would lead to a secondary deficiency of the B₂ factor concerned with pigment formation.

Summary

Two types of achromotrichia have been encountered in malnutrition associated with deficiencies of the vitamin B₂ complex in Africans.

One, associated with alopecia, is seen in kwashiorkor. Parakeratosis appears to be responsible for this type.

The second type—primary nutritional achromotrichia—is believed to be due to a deficiency of a B₂ factor—possibly pantothenate—in the local diet.

I am indebted to the pathologist, African Hospital, Lagos, for the sections of skin in kwashiorkor and for the other pathological examinations; and also to the Medical Adviser, Colonial Office, for permission to publish this paper. Messrs. Glaxo Laboratories, Ltd., kindly provided free supplies of calcium pantothenate.

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THE CONUS MEDULLARIS SYNDROME IN SPINAL CONTUSION

BY

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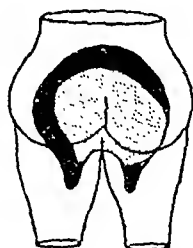
The conus medullaris syndrome is an uncommon variant of the clinical picture of spinal concussion or contusion. Its rarity has prompted us to give a brief description of two cases. The first case is recorded from memory; this patient was studied in Singapore by one of us (G. A. R.) in conjunction with Col. Julian Taylor, and his case sheets shared the fate of many others in the Malayan debacle. The second case was observed on Ramree Island.

Case Records

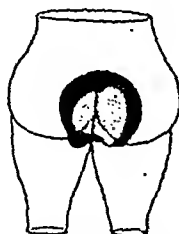
Case 1.—A young aircraftman was sleeping in his quarters on the night of Dec. 10, 1941, when a sudden explosion blew him through an asbestos partition on to the floor beyond. Though he was painfully aware of a bruise on his right hip he could move his legs, and asserted that he could have walked to the C.C.S., to which he was carried on a stretcher. With the aid of morphine he slept till the following morning, when he awoke to find himself unable to pass water and incontinent of faeces. He was first seen by G. A. R. on Dec. 19. There was complete anaesthesia to all forms of sensation on both sides of S₃, S₄, and S₅. An extension from the anaesthetic area of hypo-aesthesia for a few inches down the back of each thigh argued partial involvement of S₂. Power in the lower limbs was good, apart from some weakness of the flexor thrust in the right foot and weakness of the long flexors of the digits in both feet. There was no loss of vibration sense. The knee-jerks were present, the ankle-jerks absent. Lumbar puncture showed no increase of cells, protein, or pigment. Skiagrams of the whole spine revealed no fracture. Cystometry showed an atonic bladder. There was little improvement by the time he left Singapore on Feb. 10, 1942. The hypo-aesthetic area (S₂) had receded, but there was no change or dissociation in the main area of anaesthesia. The flexor thrust of the right foot was somewhat stronger. Some form of softening of the conus was postulated. Ignorance of the precise pathology involved made prognosis difficult, but it was considered poor in view of the minimal change in eight weeks.

Case 2.—No other case was reported in the Far Eastern theatre of war until May 29, 1945, when a young sepoy of the Indian Engineers fell from a tree, first on his feet and then on to his back. He was carried to his tent complaining of pain over the lower thoracic spine. He could flex his legs, but made no attempt

stand: His unit M.O. reported normal power and movement of the limbs, but had to catheterize him for retention of urine. Examination on May 29 showed a symmetrical area of anaesthesia involving S3, S4, and S5, with partial affection of S2, though maximal stimuli were felt over the latter area. There was no dissociated anaesthesia. Abdominal and cremasteric reflexes were present.



May 29, 1945.



July 22, 1945

Diagrams showing anaesthetic and hypo-aesthetic areas in Case 2. Stippled area=anaesthetic; black area=hypo-aesthetic.

Knee-jerks were present, ankle-jerks absent, and plantar responses flexor. Lumbar puncture revealed clear fluid under a pressure of 135 mm. C.S.F. There was no block or any increase in cells, protein, or pigment. Skiagrams showed no fracture of the spine. Cystometry was not carried out. On May 29 suprapubic cystotomy was performed. By June 4 the hypo-aesthetic area of S2 had largely disappeared, and there was no dissociation. On June 9 sensation began to return in the anaesthetic area, and the anal sphincter was functioning. On July 22 muscular tone was normal; no loss of power was detected. Knee-jerks were present, ankle-jerks absent, and plantar responses flexor. Bulbocavernosus and anal reflexes were negative. Erection was absent. Sensation: Cotton-wool touch well appreciated over all areas except immediately around the anus. Sensitivity to pinprick all over S2, S3, and S4, but well-defined hypo-aesthesia over this area. Loss of sensation over the immediate perianal region. Hot and cold sensation poorly appreciated over S2, S3, and S4, covering an area slightly more extensive than that hypo-aesthetic to pinprick. Protopathic heat appreciated over this area. There was blunting of pinprick sensation and poor appreciation of heat over the sacral areas of the scrotum and penis, with a clear-cut change to normal when the lumbar areas were reached. Urine had yet passed per vias naturales. Since war moves doctors d patients back, it was improbable at the time of writing that an could be followed much further, but it will be seen from agram that there has been considerable improvement over a of time comparable to that during which the first case was rved.

Discussion

It only remains to call attention to the fact that, as the anaesthesia resolves in Case 2, its dissociation, not apparent during the first few weeks of recovery, is reminiscent of the sensory loss seen in cases of syringomyelia. This suggests to us that the essential morbid anatomy consists of a haemorrhage into the grey matter of the conus medullaris.

Medical Memoranda

Perforated Duodenal Ulcer at the Age of 12

The following case is of interest in view of the age of the patient and the absence of any previous dyspeptic symptoms.

CASE HISTORY

The patient, a girl aged 12, was admitted to hospital on Nov. 15 complaining of severe generalized abdominal pain of two hours' duration accompanied by repeated vomiting and nausea. There were no urinary symptoms and the child had had a normal motion that morning.

On examination she was obviously suffering from a moderate degree of shock. The tongue was slightly coated and there was generalized tenderness, maximal just below and to the left of the umbilicus, with marked guarding in all quadrants. There was no abdominal hyperaesthesia, and on rectal examination she was tender on the left side, both anteriorly and posteriorly. The patient was treated for shock, and after four hours was considered fit for operation.

The abdomen was opened through a right paramedian incision and yellowish-brown fluid was found in the lower peritoneal cavity. Perforation of the anterior wall of duodenum 1/16 in. in diameter was discovered from which bile-stained fluid

was oozing. Induration around the perforation suggested the presence of a duodenal ulcer. The wound was sutured in two layers and closed with suprapubic drainage.

The child made an uninterrupted recovery, and was given six weeks' in-patient medical treatment, including dieting, antispasmodics, antacids, before discharge. No dyspeptic symptoms were complained of before or after the operation.

My thanks are due to Dr. R. R. M. Porter, senior honorary surgeon to the Southport Infirmary, who performed the operation, for permission to publish this case.

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Technique for Use in the Guillotine Operation

The guillotine operation in recent years has largely fallen into disfavour among E.N.T. surgeons for the very good reason that while it was possible to be certain of a full view unobscured by blood in attacking the first tonsil, the operator's success in dealing with the second was often rendered extremely difficult—not to say impossible—by haemorrhage filling the pharynx from the bed of the first tonsil. A technique which I have followed for some considerable period eliminates this difficulty.

It is, of course, a truism that each case must be examined to make certain that the tonsil is of the infantile pedunculate type and not of the adult type in which the lower pole blends insensibly with the lymphoid tissue on the lateral pharyngeal wall and the back of the tongue. In the latter case it is impossible to engage the guillotine, and the method should be dissection. In cases suitable for the guillotine operation, which in my opinion form the great majority of infantile cases, the following technique is adopted.

METHOD

The patient is premedicated with "seconal" (dosage appropriate for age and weight) and 1/100 gr. (0.65 mg.) of atropine by mouth one hour before operation. Premedication carried out in this way entirely eliminates psychological trauma, and there is, in fact, no need for the child to know that an operation has taken place, as a skilled anaesthetist can induce without the patient realizing what is happening. Induction is by ethyl chloride followed by open ether, anaesthesia being carried to the top of the first plane of the third stage.

A tonsil gag is inserted and a final view of the field taken by means of a right-angled spatula. The surgeon then has available two matched guillotines of suitable size. It is essential for the success of this technique that the guillotines used should be so blunt that there is no fear of their cutting through the tissues when they are closed; the tonsils are thus completely snared, and are removed by digital dissection with the first finger of the left hand pressing the lateral pharyngeal wall away from the tonsil, and not by tearing the tonsil off the lateral pharyngeal wall by traction with the guillotine. Having selected the size required, he then stands at the head of the table, the anaesthetist steadying the head while standing to the left, and at the same time controlling the gag. The operator engages the guillotine on the left tonsil, closes it, the handle then being handed to an assistant, who presses the guillotine as much to the left as is possible. The surgeon then takes the other guillotine, changes his position to the right-hand side of the patient, and proceeds to guillotine the right tonsil in the usual way, removing it completely. His assistant then hands to him the first guillotine, which is engaged on the left tonsil, and he then proceeds to complete its enucleation. By this time the patient should be coming round from the anaesthetic, and the adenoids are then removed.

In my experience this makes the operation extremely easy; there is no hurry or rush to attack the second tonsil, and it is surprising, but true, that there is plenty of room in even a very young child's mouth for two guillotines to be *in situ* together. The teaching of the operation to a house-surgeon is also much easier, as the surgeon himself has entire control of the situation during the operation, which is, of course, impossible by the usual technique, because if the learner has failed with the second tonsil the mouth is then a pool of blood, the patient is coming round from the anaesthetic, and it is practically impossible for the surgeon to correct the mistake made by the operator. I now carry out this technique exclusively. In my hands I find that the disadvantages of the guillotine operation are eliminated. One can by this method be as certain of removing both tonsils completely as one is when carrying out the dissection operation.

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Reviews

NEUROPATHOLOGY

Textbook of Neuropathology. By Arthur Weil, M.D. Second edition. (Pp. 356; 289 illustrations. 25s.) London: William Heinemann Medical Books.

It is ten years since Dr. Arthur Weil's text appeared, and partly because of its intrinsic merits, and partly also because it came at a time when such a book was badly needed, it became very popular. The second edition is very similar to the first, and it remains a fairly small textbook of neuropathology which deals with fundamentals. Dr. Weil has, however, recognized the rapid progress of experimental neuropathology in some of the additions he has made in this edition. The more welcome of these are short sections dealing with the vitamin deficiency diseases and the pathology of different forms of shock treatment of the psychoses. The text is unusually well illustrated, for there are nearly as many illustrations—mostly photographs—as there are pages, but we have become so used to excellent reproduction of photomicrographs that we feel that Dr. Weil could have been better served in this respect. Nuclear and cellular detail is often blurred, and some of the plates will not mean much to any but the expert who knows what to read into a picture.

An appendix of staining methods contains formulae for ten stains, one chosen for each tissue, but this is such an important part of practical neuropathology that the book's value would have been increased if more than eight pages had been devoted to it. The book ends with a short bibliography with subject headings which at least gives an entry to the literature.

In assessing its value to the specialized student the price of the book must be added to its other qualities.

GENERAL SURGERY

The 1945 Year Book of General Surgery. Edited by Everts A. Graham, M.D. (Pp. 736; illustrated. 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

The 1945 volume of the *Year Book of General Surgery* maintains the high standard of selection which we have noted in previous issues; the editorship remains in the competent hands of Everts Graham. As might be expected, the number of articles on purely military surgery is smaller than in recent years, though there are still references to such subjects as parachute and fatigue fractures, blast injuries, gunshot wounds of the chest, immersion foot, etc. A book of this character obviously does not lend itself to a critical review since it consists wholly of summaries of large numbers of articles. The "Quiz" which the publishers continue to print on the cover sheet as an inducement to the ignorant to buy is always intriguing. We will quote some of the questions. "For what anatomical structure does one use the Lantounis periosteocapsuloplasty for congenital dorsal subluxation?" "Give the synonym for meningo-rachidian venous system and name the other three venous systems." "What is the relationship roentgenographically between a hamartoma and a Ghon tubercle?" And so on. If one's knowledge does not extend to the answers to these questions it is, of course, necessary to acquire the book.

HOSPITAL LAW

Notes on Points of Law Affecting Voluntary Hospitals. Second Edition. By Sir William Baynes, Barrister-at-Law. (Pp. 185. 10s. 6d.) London: British Hospitals Association. 1946.

This valuable little book is now considerably larger and includes a number of model forms. It makes no claim to be a textbook of hospital law, but consists of a number of sections, arranged in alphabetical order, dealing with the law relating to most of the topics within the province of a hospital administrator. It is built on the answers given by Sir William Baynes during the last fifteen years to questions actually put by secretaries of voluntary hospitals about their legal problems. He surveys, of course, the important decision of the Court of Appeal in *Gold v. Essex C.C.* (1942) 2 KB 293, in which a county council was held liable for the negligence of a radio-grapher and the court indicated clearly that the principles on which they had come to their decision would apply also to nurses. Perhaps he ought to have hinted, in saying that a

hospital is not liable for the negligence of its medical staff in purely professional matters, that the *Gold* decision threw some doubt even on this immunity, which the case of *Hillyer v. St. Bartholomew's Hospital* (1909) 2 KB 820 had been assumed to secure absolutely. The variety of the questions which he covers is astonishing. The hospital secretary will find information on such diverse subjects as the ownership of x-ray films, the circumstances in which a hospital may establish pay-beds, road traffic cases, trusts, insurance, employees, blood transfusions, suicide, and taxation. The book, however, does not cover questions peculiar to municipal hospitals or mental hospitals.

ESSENTIAL HYPERTENSION

An Introduction to Essential Hypertension. By Richard F. Herndon. (Pp. 88; illustrated. £2.50 post paid, or 14s.) Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 1946.

This book by Dr. Richard F. Herndon contains more than its name implies. It comprises a very full survey of the whole topic, compressed into a remarkably small compass. But this does not make it in the least unreadable. It is, in fact, extremely interesting and well put together. The exposition is clear and complete. So much has been written on this subject lately, particularly in America, and so much important work has been done in the last ten or twelve years, that a full survey of these interesting and important advances is most valuable. As the references are given at the foot of the page, it is easy to turn to them as one reads. By using a variety of type, the important statements are made conspicuous. Hypertension is defined as existing when the pressures are consistently above 150/90. The aetiology and mechanism are clearly discussed, with a full exposition of the humoral factors, though the conclusion is that the real fundamental cause is as yet unknown. Looked upon from the physiological point of view, increased peripheral resistance provides the mechanism. The persistently raised pressure leads to pathological changes. That these changes in the kidney institute a vicious circle of progressive hypertension is hardly stressed enough.

The clinical aspects are divided into five stages; they are roughly similar to the grouping by retinal changes. In prognosis the importance of arteriolar changes and the presence of atherosclerosis and cardiac inefficiency are stressed, rather than the height of the blood pressure. Family history is hardly considered enough. The chapter on diagnosis discusses all types of hypertension; here the author is rather confused. The chapter on treatment comprises regime, diet, psychotherapy, drugs, and surgery; it is full of sound common sense and practical wisdom. There are a number of good illustrations.

This is an excellent little book, and well worth reading by anyone who wishes for up-to-date information on a subject which may well provide one of the next great advances in medical knowledge.

Notes on Books

A Food Plan for India is the title of a pamphlet issued under the auspices of the Royal Institute of International Affairs and published by the Oxford University Press at 3s. 6d. This anonymous study of the vital problem of India's food supply is introduced in a foreword by Prof. A. V. Hill. It was made by a private group of authorities, and derived directly from Prof. Hill's analysis of the situation after his five months' visit to India in 1943-4 at the invitation of the Government to advise on scientific matters, particularly in connexion with plans for future development. The pamphlet is the outcome of their investigations and discussions, in which they have drawn on the experience of many experts, both Indian and British, who have intimate knowledge of agricultural matters in India. Their plan outlines concrete proposals by which the extra 14 million annual tons of food can be obtained which, with a 50 million increase in population and with rising standards, will be required by 1953. Prof. Hill declares that, whether this is the best scheme or not, something essentially similar to it in form, scope, and boldness is the only way of meeting the food difficulty in the next ten years and of providing a foundation on which measures of longer range can be built. In this opinion he is supported by Sir Frank Engledow, professor of agriculture in the University of Cambridge.

MISS LOIS OAKES, with help from Prof. T. B. DAVIES, has produced a ninth edition of the little book *A New Dictionary for Nurses* which has had continuous popularity since its first appearance in 1932. E. and S. Livingstone, of 16, Teviot Place, Edinburgh, publish it at 4s., plus 3d. postage.

Preparations and Appliances

AN IMPROVED CLOSED CIRCUIT

Dr. E. F. GLEADOW, D.A., writes from Worcester:

"Pluto" came into being with the invasion of Europe, when delivery dates were a myth and the need for an additional closed circuit a reality, and during the very busy period that followed unflinching satisfactory service was given. No particular claim to merit can be made for this improvised closed circuit, but brief details of its construction may still be of interest to others, even though the time be past when anaesthetists were so often reduced to makeshift. That it came into being at all is due not so much to individual ingenuity as to the fortunate accumulation in the department of a number of spare parts, bits and pieces.

This collection was topped off by the chance arrival for the Boyle-Waters apparatus of a spare soda-lime canister without the essential flange, which naturally led to the immediate construction of the closed circuit itself; a couple of standard gas unions providing excellent connexions, readily detachable but unflinchingly gas tight.

Description of Apparatus

The Circuit.—The one-way valves have always been located in the E-piece carrying the mask and are of the rubber flap type used on the Alpha-Blease apparatus; the gases from the flowmeter are led direct to this point. The expiratory tubing terminates at the rebreathing bag on a standard Boyle mount plugged into the original "head" of the machine, which consisted of two more rebreathing bag-mounts soldered at right angles, the left vertical and the right horizontal. The arrangement of the latter is unchanged, but the apparent position of the former has been altered by the insertion of some copper tubing to facilitate the simultaneous control of the mount shut-offs by the addition of the large inverted U lever. In its original position the vertical mount had its bag aperture soldered to the free limb of the canister mount, and its lower leg connected by corrugated tubing to the absorber bottom,

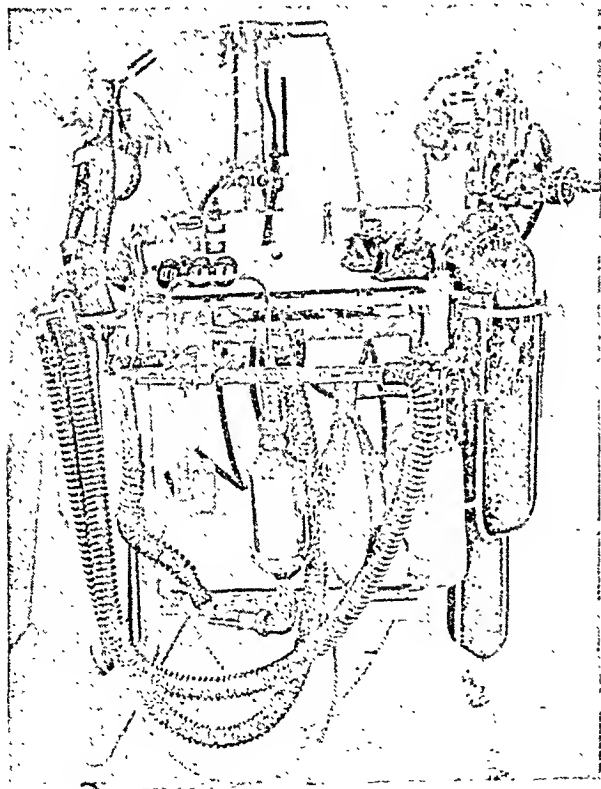


FIG. 1

while the upper carried the escape valve and facepiece mount whence the inspiratory tubing leads. In either arrangement when one mount is shut off the other is open, and there is complete control of the circuit. This canister cannot be removed without opening the absorber. This is a fault found on at least one more professional apparatus. In its original form most of the tubing was

not detachable, but gradually tubing-mounts, angle-pieces, adaptors have eliminated this inconvenience.

The Flowmeter.—In the absence of a suitable flowmeter it was found possible to use the standard dry Coxeter, but, the rates of flow being such that the bobbins no more than trembled on their seatings, it was felt that some modification was essential before the machine could be left to comparatively inexpert supervision. W.

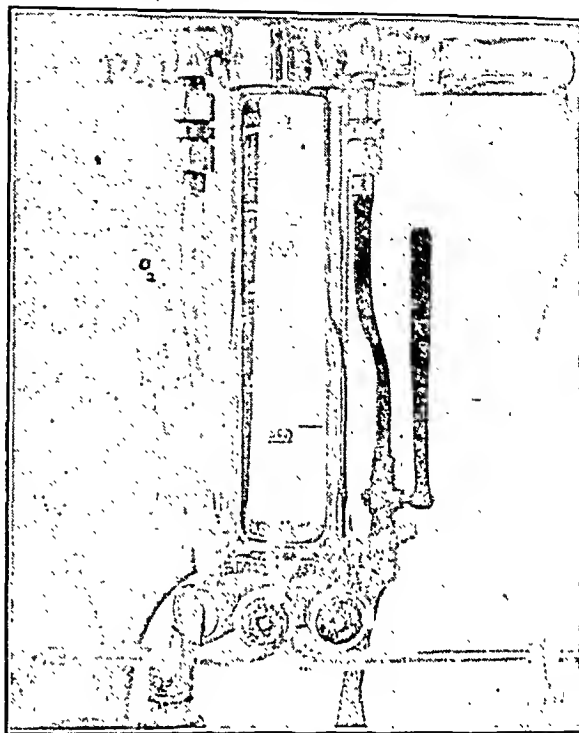


FIG. 2

depression was chosen as the best method, and was provided with the removal of all the original interior of the meter and the substitution of three plain glass tubes. To their tops the incoming gas was brought from the apertures in the flowmeter base by fine copper tubing, which can be seen as a dark shadow on the left of Fig. 2. A carburettor jet let into the top of each tube provided the necessary outflow, and was easily reamed out with a dental broach to give the optimum aperture. The outer casing was then filled with water to within an inch of the top.

Calibration was checked against three rotameters and carried out by collection under water against time; being recorded on the outside of the meter, it is necessary for the eye to be at the same level as the top of the depressed column to get an accurate reading, particularly since the convex glass and contained water form a magnifying lens for the tubes. The rates of flow obtainable are comparatively small, but have proved quite adequate where a bubble rate induction is employed. Induction with cyclopropane also would probably be easier with the substitution of a larger rebreathing bag. Stops have been fitted to the control knobs to prevent the passage of large volumes of gas through the depression tube. By-passes for oxygen and for nitrous oxide have been very simply arranged by tapping into the inlets as they pass through the base of the flowmeter and leading them in again at the head, the actual components used being four standard gas angle-pieces and two gas taps with some copper tubing. Provision for dismantling the flowmeter was made by the insertion of two double pipe unions designed for a motor-cycle petrol system.

The standard Boyle's ether bottle, or a Goldman drip, can of course be plugged in as required; and, owing to the use of standard rebreathing bag and tubing mounts, it may be placed either near the flowmeter or in the circuit. The original yoke for the cyclopropane cylinder was the carbon dioxide bracket off a Magill, but this has subsequently been replaced by a modern cyclopropane yoke of smaller dimensions.

It will be noted that, despite the limitation in flow, it was possible to obtain very simply a closed circuit adequate and satisfactory for the work in hand, and at a very small cost, thus overcoming the difficulties caused for us by technical delays both in the ordering and in the supply of standard apparatus. Great credit is due to the members of the works department for their co-operation in fixing up the machine—only the lack of equipment prevented their constructing a head with the conventional type of slide—and to the I should like to express my thanks.

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THE COMMITTEE STAGE

The National Health Service Bill has now passed the Committee Stage. The proceedings of the Committee have been fully reported each week under Parliamentary Notes, and in the current Supplement we summarize at length the main points of the prolonged discussions that have taken place. It was not expected that any fundamental alterations would be made, and expectations have not been disappointed. The Government was defeated in what Mr. Bevan called a Pyrrhic victory when subsection 4 of Clause 42 was by a majority vote deleted. This subsection allowed an appeal to the Minister against any direction of the Tribunal. An amendment to provide for an appeal to the High Court was, however, defeated. Although no major change in the Bill was to be expected, the value of the Committee Stage is that a Bill is subjected to the closest scrutiny, line by line, and clause by clause. Mr. Bevan did not close his mind to a number of points that arose and exemplified his intention to keep flexible the structure he is erecting to house the new National Health Service. But on many points he remained adamant. The buying and selling of practices, for example, he persists in regarding as "an intrinsic evil"—a moral judgment which seems strangely out of context. A controversial issue is best met by the argument and not by *ex cathedra* statements. It may be noted that the Committee Stage was dealt with "in Committee upstairs" not "in Committee of the whole House," the latter being the course reserved for the more important Bills. The Bill with the alterations and amendments made in Committee now passes to the "Report Stage," when there will be some further debate. After this, the Third Reading, and the Bill will pass to the Lords.

The status of the Central Health Services Council is to be secured by making any variation in its constitution subject to a negative Resolution of Parliament. This means that a regulation is placed before the House and can be annulled by a Prayer. Regulations needing an affirmative Resolution are stated in the Bill. Such regulations were instanced by the Minister as dealing with superannuation and finance: "They have to be approved by the House before they come into operation." He pointed out that an Order was an administrative act and did not come before the House as either a negative or an affirmative Resolution. As an instance of the kind of matter that will be dealt with by Order, the Minister referred to the making of a regional authority as being a question not of principle but of "convenience, sound organization and administration." While he admitted that Ministers were taking many more powers to issue Regulations and Orders than previously, he suggested that the House of Commons also had more protection than before through the mechanism of the Statutory Rules and Orders Standing Committee. He observed, incidentally,

that almost the whole of the National Health Insurance Act was operated through the issue of Regulations. Mr. Bevan wants to see the Central Council not as a specialist body but as one "limited to giving general advice." The Central Council would have representatives on each of the Standing Committees, and these would be set up after consultation with it. The Committees were not named in the Bill, because he thought it best that they should be set up from time to time according to need. On the publication of the annual report of the Central Council he agreed to the insertion of the words "after consultation with the Central Council" in the sentence in subsection 4 of Clause 2 referring to the Minister's power to withhold the report or any part of the report "if the Minister is satisfied that it would be contrary to the public interest." He promised to make it clear, if it were necessary to do so, that a Standing Committee will have power of initiation. But the powers of initiation of the Central Council seem to be restricted. Referring to the subject on which the Central Council might advise, Mr. Bevan said: "Where it might be limited, and I think properly limited, is in connexion with Industrial Health Services." If the Central Health Services Council is to be an effective body composed of men of experience and with a sense of responsibility, such limitation would seem to have little logic in it.

Perhaps the most important aspect of the future hospital services is the number of regions into which the country is to be divided. This is closely linked with the desirability of bringing the regional organization into close contact with a university. Mr. Bevan intends at an early moment to appoint the Regional Boards and to ask them to prepare draft plans. This will be done by Order. But he has promised to "see if it is possible to frame some words by which the constitution of the regional areas can be dealt with, not by affirmative, but by negative Resolution." Mr. Willink had pressed that the constitution of the region should be dealt with by affirmative Resolution. The appointed day on which the Act will come into operation is April 1, 1948, but the Minister has the power to bring parts of the scheme into operation on different appointed days. It will, therefore, be possible to notify voluntary hospitals about their position under the Act before 1948: the Regional Boards will make their plans as soon as possible after the Act has been passed. The Minister intends that the Hospital Management Committee shall have power to hold endowments. He also promised to see if it was possible for Hospital Management Committees to receive gifts: "People normally do not give gifts to a Board; they give gifts to a hospital." When the functions of Boards and Management Committees come to be defined he intends there should be "considerable devolution of responsibility" to the latter. In answer to a question on private practice for specialists, Mr. Bevan said: "This is a field in which the utmost flexibility will have to prevail." So long as he played even a small part in the public service a specialist would be considered to be in it. But Mr. Bevan also stated that he wanted a specialist "to spend as much time in the hospital precincts as possible." As to the recognition of general practitioners as specialists, he observed that he would first seek the opinion on this of the Central Advisory Medical Committee, and, secondly, that he

consult the profession as to what body ought to advise on the definition of a specialist for the purposes of the National Health Service. Discussing "general practitioner hospitals," he observed that they should be available for the chronically ill person who could not be treated at home but could be looked after by a general practitioner in the case where specialist treatment was not required. But these hospitals would not be available to general practitioners who remained outside the service.

The long debate on Health Centres showed that there is still some confusion of thought about the exact place of these in the new health scheme, and also that Mr. Bevan is aware of the need for experiment as an important factor in their development: "It is obvious that we shall have some experimentation," he observed, but not with "the initial idea." A Health Centre serving too huge a population might be too far from some patients' homes, yet a fairly large unit was necessary if they were to be able to afford diagnostic apparatus in the Centres. While it must be a duty for local health authorities to provide Health Centres, the extent to which this could be imposed depended upon the extent to which facilities could be provided. It would be some time before the Health Centres were available. His view was that until they could build Health Centres "of a new and agreeable character" they would have to adapt old buildings. The Health Centre Service would evolve from year to year as experience dictated. Mr. Bevan considered that for the Regional Board to provide Health Centres would be administratively impossible. He struck a slightly unreal note when he said: "If we can get a stream of healthy people attending a Health Centre, it becomes a Health Centre; but if we merely have morbid people going to a Health Centre, it becomes a Morbid Centre." It does not seem to have occurred to the Minister that healthy people would not want to spend their time waiting to a building equipped with diagnostic apparatus. In fact, whatever fine words may be used, Health Centres will be multiple surgeries, at which, it is true, the sick, once healed, may well receive health instruction. He added the much needed assurance that "there will be complete privacy for any confidences they [the people] may repose in their doctor. . . . I agree that the medical history should go from one professional hand to another and that it should not be available for secular scrutiny." And another welcome intention was expressed when he said: "The Minister will not accept the odium of giving directives about any particular form of therapy." This statement was made in a discussion on Clause 12 relating to the functions of Boards and Management Committees, and may be presumed to extend to the general practitioner as well as to the specialist.

Mr. Bevan said that the method and amount of remuneration of the general practitioner should be dealt with by Regulation. He was firmly convinced that there should be "an element of basic salary in the doctors' remuneration." He admitted that he found it difficult to reconcile the free choice of doctors with the abolition of partnership between patient and doctor. He thought that he expressed any definite opinion he would prefer consultation with representatives of the profession

should reach a more advanced stage, and observed that in some circumstances it would be necessary to weight the basic salary in order to get sufficient doctors into the under-doctored areas. He had an entirely open mind on the desirability of "declining" (i.e., tapering) the capitation rate. He was prepared to look at this question again as it was not a matter of fundamental principle. On the question of assistance, he thought this a desirable way of introducing a doctor to general practice, but general practitioners could not have an unrestricted right to engage any number of assistants they liked as this would interfere with the proper distribution of doctors. Assistants would not be on the list of the Local Executive Council, but the provision of assistants to principals would be taken into account by the Executive Council and the Medical Practices Committee in deciding whether an area was sufficiently doctored. In the event of a vacancy, the Executive Council would notify the Local Medical Committee; the latter would then be able to suggest the name of a suitable doctor, and this recommendation would "have very great weight." If the Executive Council agreed, it would recommend the filling of the vacancy to the Medical Practices Committee. "In fact," Mr. Bevan said, "the individual doctor will be selected by the Local Executive and not by the Medical Practices Committee." On the question of partnership, Mr. Bevan stated: "Where a partner has not got a panel, if he is in partnership with doctors who have got a panel, I am advised that nothing in this Clause [35] inhibits that partner from selling his practice." If he thought that the language of the Clause might have the effect of dissolving partnerships, he would try to seek protection against it, but he was advised that the Clause had no such effect.

Until the Bill has become an Act it will not be possible to ascertain the fully considered views of the medical profession on the Government's main proposals for a National Health Service. We shall not attempt now to forecast what the reaction of the majority of doctors will be to the principal features of the Act, on the assumption that the Act will be the present Bill amended and altered in accordance with promises made in Committee. In the meanwhile, we may note that in Mr. Bevan's view a considerable time will elapse before the whole of the scheme is in operation. In his own words: "We are short of some of the requisites with which to man it—we are short of sufficient doctors, sufficient specialists in particular, sufficient dentists, and with regard to a very vital provision in the Bill, sufficient Health Centres."

WORLD HEALTH ORGANIZATION

A new international health organization is being shaped under the broad dome of the United Nations. It is passing through much the same stages as the original health organization of the former League. To those who recall the Cannes Conference, Article 23 of the League Covenant, the Assembly resolution of 1920, and the appearance of the International Health Organization as one of the three technical bodies of the League (the others being concerned with economics and finance and with communications and transit), the parallel is almost startling, and, as the League disappointed the high expectations formed of

it is somewhat ominous. Yet the Health Organization has been one of the few great successes in the international field during the last quarter of a century, and on its dissolution its inheritor pays it a tribute in words and an even more flattering tribute in copying its constitution and procedure.

At San Francisco a year ago the United Nations subscribed to a declaration calling for an international conference to establish a Health Organization. One of the articles of the San Francisco charter reads that the United Nations shall promote solutions of international health and related problems. A small preparatory committee of experts was set up in the early part of this year by the Economic and Social Council of the United Nations, and, with Dr. G. B. Chisholm, of the National Health and Welfare Ministry in Canada, as rapporteur, drew up a report which was sent to a drafting committee of delegates from 14 nations (including the United Kingdom, the United States, and Soviet Russia), under the chairmanship of Dr. Ramaswami Mudaliar, whose presidency of the recent Economic and Social Council meeting in New York has revealed him as one of the outstanding personalities on the international stage. The report proposes a world health organization as a specialized agency through which the States will co-operate for the protection and promotion of health in every country. Its aim will be to achieve the highest possible standard of physical and mental health for all peoples, to prevent the occurrence of disease and control its spread, to stimulate the development of improved health services, and to weld together for executive action the scientific and professional groups which contribute to health advancement. In emergencies it will render aid at the request of Governments. Its various functions are set out in the draft report in lettered paragraphs which almost exhaust the alphabet. They include the establishment and maintenance of an epidemiological and statistical service, the development of information services concerning health and medical care, the promotion of conventions and agreements with regard to international health, the setting up of standards for pharmaceutical, biological, and related products, and for diagnostic procedures so far as this is desirable. Other suggestions made to the Economic and Social Council when the report came under review were the undertaking of relief measures in war-scarred territories such as Greece, and particularly measures for the protection of children and the control of malaria and tuberculosis.

It is proposed that the membership of the organization should be open to all States. One question to be settled is whether trust territories, protectorates, and colonies, not eligible for separate membership of the United Nations but having their own health administrations, will be allowed to take separate action concerning parts of the work of the organization, such as international sanitary conventions. The work will be done through a world health conference to be held at least once a year, at which broad policy will be determined, activities reviewed, sanitary and quarantine regulations laid down, the international nomenclature of diseases and causes of death adjusted, and, if necessary, standards established for such things as the purity and potency of drugs. The executive of this

conference will be a body of from twelve to eighteen persons designated by the member States and will meet at least twice a year. There will be a director-general and the usual secretariat and commissions and committees. It is proposed that the staff should be under the same statutory regulations and have the same salary scales as the staff of the United Nations, and they will be expected to observe the same international loyalty and to have the same freedom from national influences. A matter undecided is whether the organization should be housed at the headquarters of the United Nations or should have an independent location. Some think that the latter would be preferable as signifying dissociation from political influences, and also as enabling the organization to be in close proximity with other specialized agencies, such as the Office International d'Hygiène Publique in Paris, the League of Red Cross Societies, and perhaps U.N.R.R.A., supposing its activities continue.

International movements are necessarily slow. They cannot proceed by the hammer rule of the majority but only by gradual adjustment and compromise. Resolutions, which seem to consist mostly of preamble, filter through a succession of assemblies and committees of diminishing size until they reach a drafting subcommittee, and then a report appears and makes the reverse journey. Even when a convention has been fashioned it has to await the ratification of Governments. But, as Dr. Johnson said of women's preaching, the surprising thing is to find it done at all. Moreover, during this circumlocutory procedure a certain amount of education is always going on; people are becoming accustomed to the idea of international co-operation in new fields, and gradually a capital of goodwill is accumulated. It is not without significance that after each of the two world wars those concerned with establishing the machinery of peace should have regarded health as one of the necessary conditions of such establishment. As one member of the Economic and Social Council put it, "The moral credit of the Health Organization's work should benefit the United Nations."

LOCAL COOLING

Recent work on the effects of local cooling has thrown light upon two contrasting problems: (1) the nature, prevention, and treatment of frostbite, and (2) the virtues of local refrigeration as a therapeutic measure. The Holme lectures¹ by the late Sir Thomas Lewis dealt with the reaction of the skin and subcutaneous tissues to cold and the damage resulting therefrom. Lewis emphasized that there are two distinct types of cold injury to the skin—namely, by direct action and by freezing. Although both processes have often been confused within the term "frostbite," Lewis would restrict that term to the latter type of injury. The three clinical conditions of chilblain, erythrocyanosis, and trench foot were looked upon by Lewis as different manifestations of the same process—namely, prolonged action of cold. Histologically there is much in common, the lesions being those of subacute or chronic inflammation. With regard to the treatment of frostbite, Lewis emphasized that there is no fundamental difference between the lesions due to freezing and those due to heat, and that the rational treatment of the lesions of frostbite

¹ *British Medical Journal*, 1941, 2, 795, 837, 869.

and of a scald have much in common. If the patient is seen at a time when the tissues are frozen then thawing must be done slowly to avoid undue swelling and pain. Friction is dangerous, as it may injure the friable tissues.

Later studies by R. Greene² have shown that cold produces a transudation of fluid into the surrounding tissues. The red cells left behind may silt up the blood vessels and occlude the circulation, but at all events true thrombosis does not occur primarily. This observation has been supported by the fluorescein studies of K. Lange, L. J. Boyd, and L. Loewe,³ who found that the aggregation of red cells within the vessels could be washed away by saline perfusions. Not until 72 hours after local freezing does actual thrombosis occur, to be followed by gangrene. Furthermore, there was some suggestive evidence that the intravenous use of heparin shortly after local freezing prevented the onset of gangrene. The authors are undertaking experiments to determine the simplest means of heparinization and the longest interval between exposure to cold and the onset of effective therapy. The usual treatment of frost-bitten limbs to-day takes the form of continuous local refrigeration. R. Greene,⁴ with the co-operation of Mr. R. J. Simpson, has devised a "therapeutic refrigerator" wherein CO₂ snow is packed upon a tray below which the patient's limb reposes. Earlier D. R. Webster, F. M. Woolhouse, and J. L. Johnston⁵ had advocated the use of dry refrigeration in the treatment of cases of immersion foot.

This practice of deliberate local cooling ties up with a good deal of recent work upon the beneficent effects of refrigeration. According to N. E. Freeman⁶ gangrene results from a discrepancy between the demands of the tissues and the supply of blood to meet these nutritional needs. F. M. Allen⁷⁻¹⁰ has shown that an animal's limb will tolerate a cutting off of its circulation for 15 hours at room temperature, but for 54 hours at zero. Small loops of bowel can be exposed to refrigeration for 16 hours and recover. Reducing the temperature of a ligated limb increases the local metabolism and the danger of both gangrene and shock. Local injections of strychnine can be tolerated in much greater amounts if the surrounding temperature is low. B. Brooks and G. W. Duncan¹¹ showed that warmth applied to an infected wound hastens necrotic and inflammatory processes, while cold reduces them. These experimental observations have important bearings upon the problem of the treatment of gangrenous extremities. "That damaged patients and damaged limbs have always been warmed is not in itself a sufficient proof of its efficacy." The experiences of "refrigeration anaesthesia" for amputations upon patients who are poor surgical risks^{12, 13} are encouraging and may be adduced as evidence in the controversy of "cold versus heat" in the correct treatment of ischaemic limbs.

It would however be unwise to accept finality at this stage. It is doubtful whether the case for cold therapy has been proved up to the hilt. The German and Russian clinical experiences during the war are not yet available to all. H. Binhold's paper in 1942¹⁴ entitled "Should Frostbite be Rewarmed Slowly or Rapidly?" has probably not yet received a sufficiently wide or critical audience. If cold environments are to be maintained the question arises as to how long this should be kept up, and what later

reactions, if any, are to be expected. Are necrotic or infective processes merely inhibited, to return with added virulence when room temperature is eventually attained. Brooks and Duncan's work suggested that after local cooling has been discontinued the morbid processes advance . . . "at the expected rate or greater," and the final necrotic area proved to be larger in cases treated earlier with cold applications.

A study of high altitude frostbite by L. Davis, J. Scarff, N. Rogers, and M. Dickinson¹⁵ deserves close reading. The writers compared a series of patients treated with continued cooling for 24 to 48 hours, with cases treated by exposing the damaged parts to room temperature. They concluded that the results obtained were equal to or better than those obtained by continued cooling though there might have been more blistering in those exposed to room temperature, there were less pain and eventually less tissue-loss. Blocking of the sympathetic trunk and of the stellate ganglion failed to augment the circulation in damaged extremities where the capillary walls had been injured or where thrombosis had occurred at the arteriolar-capillary junctions.

PLEURAL SHOCK OR CEREBRAL AIR EMBOLISM

Pleural shock is one of those conditions which have been handed down uncritically from book to book. Most people have heard of it and some believe in its existence, but few can quote an instance from their own experience. The first account of the condition appears to be that of Roger who in 1864 described it as an eclamptic fit with cardiac respiratory embarrassment, tonic and clonic muscular contractions, loss of consciousness, and sometimes death. Most subsequent accounts give a similar description. Andosca and Foley¹⁶ point out that this syndrome agrees in all particulars with that seen in cases of cerebral air embolism. There is plenty of clinical and experimental evidence to show that air embolism arises as a complication of pleural puncture, and these authors conclude that so-called pleural shock is due to air embolism and not to a pleural reflex. They quote a number of examples to support this conclusion, and also an instance of novocain poisoning in a sensitive subject giving rise to a similar symptom complex. This is a further argument against the use of local analgesia for straightforward pneumothorax refills, a subject which has recently provoked much discussion in the correspondence columns of the *Journal*.

Fortunately, cerebral air embolism is uncommon. Andosca and Foley record 12 cases, of which only one proved fatal, in a series of over 90,000 pleural punctures. It has been shown experimentally that a very large volume of air has to be introduced into a systemic vein to produce a fatal result—a sad blow to some writers of detective fiction—but a very small amount of air injected into a pulmonary vessel causes immediate death. There is no doubt that careful handling of the exploring, or refilling, needle, so that the lung is not punctured, will help to prevent this complication. When an air embolism occurs, little can be done to limit its effect, but if the patient survives the first few minutes he will probably recover completely. Lowering the head has been advocated, but the experimental work of Van Allen, Hridna and Clark¹⁷ suggests that this may cause the air to enter the coronary vessels instead of the cerebral, with equally fatal results. These authors advise the administration of oxygen under pressure, but it will rarely be possible to do this in time to save life.

² *J. Path. and Bact.*, 1943, 55, 259.

³ *Science*, 1945, 102, 151.

⁴ *Lancet*, 1942, 2, 695.

⁵ *J. Bone Jt. Surg.*, 1942, 24, 785.

⁶ *Arch. Surg.*, 1940, 40, 326.

⁷ *Surgery*, 1938, 3, 893.

⁸ *Surg. Gynec. Obstet.*, 1938, 67, 746.

⁹ *Ibid.*, 1939, 68, 1047.

¹⁰ *Amer. J. Surg.*, 1939, 45, 459.

¹¹ *Ann. Surg.*, 1941, 114, 1069.

¹² *British Medical Journal*, 1942, 1, 727.

¹³ *Ibid.*, 1943, 1, 573.

¹⁴ *Deut. Militärärztl.*, 1942, 7, 491.

¹⁵ *Surg. Gynec. Obstet.*, 1943, 77, 561.

¹⁶ *Union méd.*, Paris, 1864, 23, 69.

¹⁷ *Amer. Rev. Tuberc.*, 1945, 52, 221.

¹⁸ *Arch. Surg.*, 1929, 19, 567.

CLINICAL PATHOLOGY IN THE HOSPITAL SURVEYS

BY

S. C. DYKE, M.D., F.R.C.P.

The recognition given to clinical pathology as an essential part of the national hospital service is a striking feature of the survey of the hospital service of England and Wales lately made for the Ministry of Health. The reports so far published are unanimous in regarding an efficient service in clinical pathology as essential for the proper practice of medicine, no matter where carried out; further, they agree in taking it for granted this service must be organized in close integration with the hospital service and its practice carried out in laboratories attached to hospitals. The surveyors of all areas in this respect speak with one voice, but individually they have concentrated their attention upon varying aspects of the subject.

Hospital Pathology; Pathology and General Practice; Pathologist as Consultant

Speaking in particular of the hospital service, the surveyors of the West Midlands area lay it down that "the pathological service must be efficient if the work of any clinical department of a hospital is to be of adequate standard. . . . All general hospitals should be provided with a pathological department within the buildings which would do the day-to-day routine investigations."

Other area surveyors have laid particular stress upon the need felt by the general practitioner for facilities for pathological service. The surveyors for the Sheffield and East Midlands area state: "In conversation with general practitioners we have heard repeatedly of certain facilities that they feel should be available to them through the out-patient service of the hospitals. Most general practitioners would like to have the right to send specimens, or patients from whom the specimens could be collected, to the hospital for pathological investigations. . . . On balance we believe that there is good reason to permit certain work of this kind." The same view is even more forcibly expressed by the surveyors for South Wales and Monmouthshire: "It is also desirable that patients referred by practitioners to consultative centres for such specialist opinions as the pathologist and the radiologist can give should have access to them without the barrier commonly interposed of having first of all to see a physician, surgeon, or other specialist."

They proceed: "But such consultations should take place at a common centre where the consultant, whether he be physician, surgeon, pathologist, radiologist, or other specialist, can avail himself of the service of any colleague whose service he may value." The surveyors for London and the surrounding area also lay stress upon the importance of consultation between practitioner and pathologist: "One of the criticisms most frequently made was of the arrangements—or lack of arrangements—for pathological services. . . . There was little opportunity for the personal consultation between the pathologist and the practitioner which is an essential feature of clinical pathology." The role of the pathologist as consultant is also emphasized in the survey of the Yorkshire area: "It is desirable that . . . there should be a closer contact and consultation between the practitioner and pathologist. . . . In general the pathologist should be considered as a consultant differing in no way from a consulting physician or surgeon."

Grading of Laboratories

All the surveys agree that clinical pathological laboratories must be attached to hospitals and that they must differ in size and importance according to the amount and the degree of specialization of the work undertaken in them; smaller laboratories should depend upon those larger and more fully equipped and staffed. Thus the West Midlands survey suggests that "in larger hospitals . . . it is necessary to make provision for special investigations. Hospitals which have these larger laboratories would be able to do work for those less fully equipped."

The North-western surveyors, having discussed the grouping of hospitals, indicate that "the hospital districts recommended in this report are suitable for laboratory districts, each to have a laboratory in whatever hospital is most suitable. . . . Other

hospitals would have a subsidiary laboratory or 'side room,' according to their beds."

The Sheffield and East Midlands survey expresses the same view: "Laboratory workers even more than many other specialists should be associated with major centres. There should be a medical pathologist working in all but the smallest hospital centres and several in the largest hospital centres. There should be an Institute of Pathology in each large centre, with a team of pathologists and biochemists responsible for the ordinary clinical pathology work. . . . The clinical pathology work in the smaller centres will be done by a medical pathologist of junior standing, who should be attached to the Institute of Pathology of the appropriate larger centre and who should be supervised and periodically visited by the head of the Institute."

Three grades of hospital laboratories are envisaged in the survey of the Bucks, Berks, and Oxfordshire area:

1. Regional. This should be the central laboratory of the region, capable of dealing with any examinations in hospital pathology, with staff sufficient to act in a consultative capacity to other laboratories in the region. If possible it should be at the university centre.
2. Divisional laboratories capable of dealing with all examinations apart from those of a specialist nature.
3. Smaller laboratories situated in smaller hospitals, capable of dealing with simple hospital pathological investigations only and looking to the divisional laboratories for considerable help both in the wards and in the laboratory.

Role of the Medical Schools

The Sheffield and East Midlands survey draws particular attention to the mutual benefit to be derived from close association between the pathological departments of the divisional hospitals and that of the medical school of the region: "It is most important that the medical teaching schools should be closely associated with all this pathological work. . . . In this way the academic pathologist is constantly in touch with the clinical pathologist's problems, and the clinical pathologist is in contact with the research work proceeding in the university department."

One particular aspect of this mutual benefit receives attention in the Yorkshire survey, which points out that much valuable post-mortem material, now lost to the university departments, would, under such an arrangement, become available to them: "There is a great waste of material available for pathological investigation and research. This is particularly noticeable in the performance of post-mortem examinations, and is the more deplorable in that post-mortem examinations and the checking and correlation of clinical symptoms and diagnosis with the post-mortem findings are the foundation of clinical and scientific knowledge."

Administrative Organization; Public Health Pathology

It is implicit in the recommendations of all the surveys that the regional laboratory service should be closely integrated with the Department of Pathology of the regional university, but it is not implied that the divisional laboratories of the region should come under the control or direction of this department. The North-western survey recommends that the divisional laboratories of the hospital districts of any given region "should all be under the control of a chief pathologist of the district, who would be a member of the laboratory staff of the administrative area" and would be designated Director of Laboratory Services and exercise some degree of supervision over the service of the whole area. . . . The main laboratory of each district would be definitely associated with the university."

All the surveys, by implication if not by direct expression, agree in regarding clinical pathology as constituting a sphere of work apart from, though by no means independent of, public health pathology. The Sheffield and East Midlands survey is specific: "The public health bacteriology for the area is not to be regarded as a subordinate part of the hospital pathology service, and it will probably be organized on parallel but independent lines working in touch with the preventive medicine departments of the authorities of the area. Nevertheless, it is important that there should be close contact between the two groups, and it is desirable that, where possible, they should work in the same building so as to preserve the closest possible liaison."

The New Approach to Medicine

The large amount of attention devoted by the surveyors for England and Wales to the service in clinical pathology, and the unquestioned acceptance of the view that the practice of clinical medicine either in or outside of hospital is impossible without adequate laboratory assistance, are an expression of the revolution in the approach to medicine which has been gathering strength in this country for the past quarter of a century. Of particular significance is the general agreement that satisfactory results cannot be attained by mere isolated examination and report on specimens, but only by direct consultation between practitioner and pathologist.

Scotland—a Contrast

In contrast to the importance attached to clinical pathology by the surveyors for England and Wales is the paucity of reference to this service in the Scottish surveys. These number five: in two no reference is made to pathology; in the remaining three the surveyors make no reference to the desirability of bringing practitioner and pathologist into consultation, but content themselves with commending the development of a pathological service involving only the transmission of specimens for examination and report to certain designated centres. This striking contrast seems to indicate some fundamental difference between the approach to medicine in England and Wales as opposed to Scotland.

RELIEF OF FAMINE

A medical conference on famine relief was called by the Health Division of UNRRA at its European Regional Office on May 25. Those present included: Dr. C. N. Leach, Prof. H. P. Himsworth, Dr. M. Pyke, Dr. Janet Vaughan, Dr. Harriette Chick, Miss Margaret Hume, Dr. J. F. Loutit, Dr. I. A. Anderson, Dr. D. A. Smith; for UNRRA: Dr. N. M. Goodman (Director of Health, European Regional Office), Dr. J. Cottrell, Dr. A. P. Meikicjohn, Dr. H. S. Collins, Dr. B. H. Smith, Miss Jean Ritchie. The following is a summary of the principal recommendations.

Treatment of Starving Patients

The treatment of starving patients requires an adequate supply of spray-dried skimmed-milk powder, dried eggs, pre-cooked cereals, glucose (preferably fortified with vitamins), fats, fruit juices, and flavouring agents. Apart from the lack of calories, shortage of protein is likely to be the most serious consideration, and therefore every effort should be made to increase supplies of protein-rich products, such as prepared yeast, soya, dried liver powder, protein hydrolysate for oral use, and dried slaughter-house plasma. Such products would be a very useful supplement to the diet of the starving and, in an emergency, could be used in partial substitution for dried milk and eggs. In order to hasten recovery, to prevent relapses, and to avoid overcrowding the hospitals, starving patients should be treated with a diet sufficient to supply at least 3,000 calories daily. Hospitals dealing with severe cases of starvation should have supplies of dried plasma available for intravenous therapy, in normal or double concentration as indicated.

It is not thought likely that there will be any serious incidence of florid vitamin deficiency diseases (this statement is not intended to apply to maize-eating communities). The conference considered that supplies of vitamins should be for oral use only and in amounts suitable for prophylaxis rather than for treatment. The greater part of vitamin requirements would best be met by the provision of natural, rather than synthetic, sources of vitamins—e.g., yeast extract, liver extract, fish-liver oils, and fruit juices. Tables, giving the amounts of special supplies needed to treat 100 starving patients, were prepared and agreed.

If the supply of milk for children should fail, rickets and vitamin A deficiency would become serious problems. Stocks of cod-liver oil should be on hand against such an eventuality. Because the administration of a single large dose of vitamin D has great therapeutic advantages in the prevention of rickets, adequate supplies of concentrated vitamin D in oil would be useful. Sulphonamides would be needed for the treatment of

diarrhoea and the intercurrent infections, which are particularly liable to attack starving people. Penicillin would also be needed.

Present Supplies

Supplies of milk in post-war Europe have been sufficient to provide for the essential needs of young children; but there have been very little milk for adults and the older children. This combined with the high phytic acid content of the long-extraction bread grains at present in use throughout Europe, makes the diets of adults and older children particularly deficient in available calcium. It is therefore recommended that calcium carbonate should be added to the bread. The general diet is also deficient in available iron, and in many parts of Europe anaemia is apparently prevalent. It is therefore recommended that efforts should be made to provide additional iron, in medicinal doses, especially for pregnant women and women employed in factories. Facilities for communal feeding in factories, schools, and elsewhere should be utilized to the utmost even if the factories and schools are closed.

Rationing systems in Europe have succeeded in providing fairly adequate rations for young children; but older children who should be growing rapidly, have often subsisted for long periods on diets providing insufficient calories for their needs. For this reason, older children and adolescents may require special consideration in the event of famine. It is obviously desirable to make the utmost effort to maintain adequate food supplies for children of all ages, but, if a fall in the calorific value of the official ration to very low levels becomes inevitable, priority over children may have to be given to the workers in essential community services, in order to prevent a complete breakdown of civilized life. In the same way, it may become contrary to the public interest to give extra food to hopeless invalids and chronic mental patients. In order to lessen the effect of shortage of calories, every effort should be made to ensure sufficient heating in living and working quarters during the winter. In urban areas, evacuation of non-essential population, children and non-working adults, to rural areas and even to other countries, should be promoted and encouraged.

Famine in a European city might be expected to affect first those living alone, the elderly, the occupants of institutions and those without regular employment. It would be important to provide "flying squads" to search out such cases. Provision should also be made for special and regular medical inspection of orphanages, convents, old people's homes, mental hospitals and gaols. Thereafter, ambulant cases of hunger oedema would begin to appear in increasing numbers, and would require supervision and special treatment at clinics. A considerable increase in out-patient clinic facilities would be needed, including "ambulatoria" attached to soup kitchens and other places where people congregate. Large numbers of hospital cases need not be expected at the outset, although later it might become necessary to provide extra hospital space. Doctors, nurses, health visitors and others would be needed to staff "flying squads," "ambulatoria," and inspecting teams for institutions. Consideration would have to be given to the best way of recruiting and equipping this emergency staff from the local population. UNRRA, military, and voluntary relief organizations.

BRITISH-SWISS MEDICAL CONFERENCE

Arrangements for the British-Swiss Medical Conference, which is to be held in Basle from Sept. 16-21, are proceeding, and the following have accepted the invitation to speak: *British speakers:* Sir Hugh Cairns, Neurosurgery; Dr. E. A. Carmichael, Man in Relation to His Environment (Heat and Cold); Prof. E. C. Dodds, Synthetic Oestrogens in Relation to Cancer; Dr. N. Hamilton Fairley, Tropical Diseases, with Special Reference to the Prevention of Malaria and Typhus; Prof. A. C. Frazer, Normal and Defective Fat Absorption in Man; Dr. Donald Hunter, Industrial Medicine; Dr. R. A. McCance, Nutritional Problems; Dr. John McMichael, Circulatory Problems; Mr. J. J. Mason-Brown, Arterial Surgery; Dr. J. S. Mitchell, Experimental Radiology; Dr. R. R. Race, The Rhesus Factor; Dr. F. S. Young, Experimental Diabetes. *Swiss speakers:* Prof. Dr. Ed. Grasset, Primitive Tuberculosis, Primary Infection and "Premunition"; Prof. Dr. Luzius Rüchli, Acoustic Trauma, its Origin and Prevention; Prof. Dr. Rolf Meier, Specificity and Differentiation of Sympathicotropic Drug Action; Dr. J. E. Wolf, Combined Climatic and Surgical Treatment of the

ngs; Prof. Dr. Hermann Mooser, Twenty Years of Research in phus; Prof. Dr. Alfred Fleisch, Nutrition in Switzerland during War; Prof. Dr. Alfredo Vannotti, Adaptation of the Tissue spiration to Effort and Altitude; Prof. Dr. H. Krayenbühl, immediate and Ultimate Results of Carotid Ligation in Intracranial Aneurysms; Prof. Dr. Fritz Verzar, Muscular Efficiency; of H. Rossier, Cardiac Localizations of Thrombo-angiitis plerans. A cordial invitation is extended by the Swiss Academy

Medical Sciences to all members of the medical profession in is country who wish to attend as paying participants in the conference and to the wives or other members of the families of such participants. No trouble is to be spared in ensuring the comfort id pleasure of guests, whether medical or non-medical members of e party.

CANADIAN DOMINION DAY HONOURS

he names of the following members of the medical profession ere included in a Canadian Dominion Day Honours List ublished in a *Supplement to the London Gazette* on July 1.

C.B.E. (Civil Division)

ROBERT DAVIES DEFRIES, O.B.E., Director of Connaught Laboratories, Toronto.

ANDREW HUNTER, Chairman, Standing Committee on Nutrition, Department of National Defence, Toronto.

CHARLES VEZINA, Professor of Clinical Surgery in the Laval University, Faculty of Medicine, Quebec.

O.B.E. (Civil Division)

THEODORE DEY BAIN, Director of Medical Services, Department of Veteran Affairs, Ottawa.

JAMES LYALL COCK, Halifax, Nova Scotia.

JAMES CRAIGIE, Toronto.

THEODORE GEORGE HARWOOD DRAKE, University of Toronto.

ARMAND FRAPPIER, University of Montreal.

ALFRED KIMBALL HAYWOOD, Vancouver.

GEORGE LYALL HODGINS, Vancouver.

WILLIAM JOHN KNOX, Kelowna, British Columbia.

JOHN SINCLAIR McEACHERN, Calgary, Alberta.

FRANK HASTINGS HAMILTON MEWBURN, Clinical Professor of Orthopaedic Surgery in the University of Alberta.

ISRAEL MORDECAI RABINOVITCH, Director of Metabolism, Montreal General Hospital.

NOEL RAVENCHIL RAWSON, Chesterfield Inlet, North-West Territories.

AUSTIN BIRRELL SCHINBEIN, Vancouver.

WALLACE BALFOUR SEATON, Ottawa.

M.B.E. (Civil Division)

GEORGE HAROLD ETTINGER, Associate Professor of Physiology in the Queen's University, Kingston, Ontario.

Reports of Societies

PERTUSSIS PROPHYLAXIS AND CONTROL

At a meeting of the Fever Group of the Society of Medical Officers of Health on June 14, with the president, Dr. M. MITMAN, in the chair, the discussion was opened by Dr. H. J. PARISH.

Dr. Parish said that whooping-cough, the most serious of the acute specific infections of childhood, caused at least 2,000 to 3,000 deaths annually in England and Wales, of which 90% were in the age group under five years. Dissatisfaction with the results of specific prophylaxis was indicated by the variety of vaccines and scales of dosage employed by different investigators; research was hampered by the lack of a good laboratory test. Vaccines were prepared to-day from virulent phase 1 organisms either on Bordet-Gengou blood-agar or on modified Hornbrook liquid medium (casein hydrolysate, starch, etc.). The suspensions could be precipitated with alum and washed in saline or buffer solution. Clinical evidence of the efficacy of vaccines was conflicting and often uncritical. McFarlan, Topley, and Fisher (*Journal*, 1945, 2, 205), in a carefully planned investigation at Oxford, using a British vaccine, found no significant difference between inoculated and control children. A similar trial using an American vaccine had not been completed; the results so far were inconclusive, or perhaps slightly in favour of the vaccinated group. His colleague, Mr. H. Proom, in work not yet published, had obtained low-grade pro-

tection with vaccines, made with or without alum precipitation, in mice injected with a living culture intraperitoneally. Antibacterial serum was also relatively ineffective, but antitoxic horse or rabbit serum protected mice against intraperitoneal infection. This supported the view that the death of the control mice was due to a toxin, which could be prepared from frozen and thawed, dried and ground bacilli (Evans and Maitland, *J. Path. Bact.*, 1937, 45, 715). On the other hand, the existence of some antibacterial immunity mechanism following phase 1 vaccination was suggested by a marked reduction in the number of organisms found after various intervals in the blood of mice infected by the intraperitoneal route. Unwashed phase 4 vaccines had a negligible effect. The part played by toxin in human infection was uncertain, but there was some evidence that it assisted the organisms to invade the tissues. So far no antitoxin had been demonstrated in convalescent sera, and in this respect the work of Strean (*Canad. med. Ass. J.*, 1940, 42, 525) was still unconfirmed.

When virulent *H. pertussis* was injected into mice intranasally, a pneumonia was set up; the bacteria multiplied in the lung for about 14 days and then gradually died out. The value of vaccine against this intranasal infection could be demonstrated by some increase in the survival rate of the vaccinated group of animals and by a reduction in the bacterial counts of the lung. Antibacterial and antitoxic sera also controlled the lung infection, bacterial counts being often nil. A highly potent antibacterial and antitoxic serum (horse), concentrated by Harms, was on clinical trial; the results to date in three hospitals had been disappointing. This should not have been the case if the generally accepted views on specific prophylaxis and therapy were correct.

Extensive experiments by Proom and others on mice, and the collateral clinical evidence, did not indicate that any form of specific immunization was likely to be very effective against whooping-cough. In mice the protection obtained was erratic; in man also it was variable and, at the best, of low grade, the published results being reminiscent of those observed in mice. Research on the unsolved problem of the effective control of pertussis was not made simpler by the lack of uniformity of the cases and the recognized difficulties of both clinical and bacteriological diagnoses. In no other infection were clinical trials of a preparation more time-consuming.

Need for Large-scale Investigations

Dr. W. GUNN suggested that in the past too much had been made of the administrative difficulties likely to be encountered in whooping-cough prophylaxis. He did not think it essential that the antigen must have proved its worth before large-scale immunization was undertaken. In a disease such as whooping-cough, in which infectivity was known to be very variable, and for which no reliable test denoting immunity was available, only large-scale investigation could furnish the final answer. If parents were asked if they would like to have whooping-cough antigen combined with diphtheria A.P.T. in the same injection, few would refuse. Not only were reactions no greater than after each antigen given singly, but far from interfering with each other, each might enhance the immunizing properties of the other (Lapin, J. H., *Amer. J. Dis. Child.*, 1942, 63, 225).

The only practical points of major importance were that injections should be begun at 5 to 6 months, or even earlier, instead of the more usual time of 9 to 12 months for diphtheria prophylaxis; two or three (depending on the degree of reaction to the first) injections at an interval of four weeks were given into the deltoid or vastus externus. A single injection of the combined antigen was desirable on starting school. He himself used combined A.P.T. and alum-treated whooping-cough vaccine without untoward effect, but as the inoculated group were all nursery children who shortly afterwards were transferred outside London, follow-up inquiries were difficult. For this reason standardized records, which accompanied the children, as did ration books and identity cards, were essential for a proper statistical investigation. Special examinations, such as slide agglutination and complement fixation tests, should be made at intervals on random samples of the immunized as well as of controls, as latent immunization might be a disturbing factor unduly flattering the results unless allowed for in the final assessment.

The urgent need for active immunization should not obscure the need for other measures of control. Isolation by itself could effect little, as the damage was usually done by the time the diagnosis was made, although white blood cell counts and nasopharyngeal swabs often permitted diagnosis before the onset of the whoop, but human or rabbit hyperimmunized serum might prevent or attenuate an attack in known contacts, or help in treatment in early or severe cases. Active immunization might be begun at the same time, as in diphtheria control, as shown by Downie and his associates (*Journal*, 1941, 2, 717), if the risk of the disease in a particular patient or group of patients was a grave one. In the very young the potential risk was always grave.

Dosage and Spacing

Dr. J. UNGAR said there were a number of factors responsible for the lack of confidence in this country in the value of active immunization against pertussis. Attention was now concentrated on an alum-precipitated vaccine which produced good antigenic activity in animals. Preliminary clinical trials showed that the vaccine properly administered was innocuous. An important factor in getting a proper response from pertussis immunization was the dose. The total dose recommended in clinical tests in the U.S.A., which proved successful, was in the case of Sauer's vaccine about 100,000 millions, or 30,000 to 40,000 millions for alum-precipitated vaccine. The proper spacing of the doses had a bearing on the result of immunization and the interval recommended was three to four weeks.

Another factor which allowed of a more optimistic approach was the evidence now available of the reliability of animal tests to determine (a) the virulence of the strain used to safeguard the full antigenic value of the vaccine, and (b) effectiveness of the antigenic action of different products. Some workers used mice extensively, employing either the intranasal, intratracheal, or intracerebral route for testing the effect of live cultures, and the intraperitoneal route for testing toxicity. The rabbit was a more reliable test animal, on which both components of vaccines—antibacterial and antitoxic—could be evaluated. Combined tests on mice and rabbits would help to differentiate between effective and less effective vaccines. More evidence was needed to show the part played by pertussis toxin in the pathology of experimental pertussis in animals and the usefulness of including the toxic fraction in existing vaccines. The pertussis toxin differed in some respects from usual exotoxins, and clinical proof was still needed of the value of antitoxic serum. Laboratory evidence indicated that the toxic fraction in the bacilli had a specific effect in animals which was counteracted by antitoxin.

It was now recognized that the optimal time to immunize was in the first half-year of life, preferably at the age of five to seven months, and it took about three months for the immunity to be well established, depending on the type of vaccine used and the intervals between the doses. Serum treatment (convalescent, hyperimmune, or animal) had proved its value in prophylaxis of contacts in the first six to seven days of the incubation period. In the treatment of severe cases of whooping-cough, reports were mostly unfavourable. The value of large-scale immunization was estimated by comparing the communicability rate in the immunized and the control groups and the respective fatality rates. As statistics showed that higher death rates and fatality rates occurred in more densely populated districts, test trials in the larger boroughs would help to elucidate the merits of immunization against whooping-cough. It was encouraging to read the favourable report of the Council of Pharmacy and Chemistry of the American Medical Association and the results of the pertussis immunization programme of the Boston Health Department, which indicated that prophylactic treatment conferred immunity on some children and partial immunity on others, such as might occur following whooping-cough. The incidence of pertussis was lowered after immunization with adequate doses. The attack rate was lowered in the immunized, and the disease ran a milder course.

The Ministry of Health has issued a circular on the disposal of surplus equipment held by local authorities for the Ministry's emergency services. This asks for reports on action already taken, and gives further instructions about disposal of residues.

Correspondence

Belgian Surgeons' Acknowledgment

SIR,—In May of this year the Association of Surgeons Great Britain and Ireland invited to their annual meeting a number of French and Belgian surgeons. In the name of Belgian surgeons I wish to tell our British friends and colleagues how much we have appreciated the opportunity to see work, and how touched we all were by their friendly warm welcome.

The meeting we attended at the invitation of the president, Sir Max Page, was a brilliant success from the scientific point of view. In meetings, demonstrations, and operations official and private entertainments, we made fresh contacts which we hope will be the beginning of a more intimate association and closer collaboration between our country surgeons.

The British Council, which misses no opportunity to help, had arranged to extend our visit to other centres, and on the kindness of Prof. Harry Platt of Manchester, Sir Hugh Cairns at Oxford, and Prof. J. R. Learmonth of Edinburgh we saw in these centres beautiful work of the same high quality as we had seen elsewhere.

Such stimulating visits are of the greatest possible interest for the future, and we wish formally to express our admiration and thanks, not only to our colleagues and friends, but also to the university authorities, the Royal Colleges of Surgeons in England and Scotland, and the British Council. We hope shall meet again often on both sides of the English Channel.—I am, etc.,

FRITZ ALBERT,
Professor of Experimental Surgery
University of Liège.

Population Statistics in Palestine

SIR,—I must congratulate you on the prominence you have given to Sir John Megaw's letter (June 29, p. 994) on the population of India and hope that its weighty arguments will be properly considered. As population statistics are often ignored in the following recital of events in which I played an active part at the end of the 1914-18 war may help your readers to realize how important is the information they can give.

As part of my work as medical officer in the Palestine Military Administration (O.E.T.A.) I had to introduce anti-malarial measures in my district—about a third of the country—which were later extended to the whole area. As a result of this work we were not only able to reduce almost to vanishing point the death rate from malaria but also, for the first time, to get reliable statistics of the birth rate. This proved that in some parts of the country the birth rate was no less than four times the death rate. This phenomenal condition of affairs then prevailing is by now generally recognized by demographers. What is not so generally recognized is the political implication of the phenomenon.

Largely on my initiative a memorandum was prepared for the incoming civilian administration giving definite facts and figures which showed: (1) The extraordinarily rapid natural increase of the Arab population which would certainly tax, and probably overtax, the resources of the country, and lead to scarcity and unrest. (2) That the Arabs themselves were naturally unaware of this increase and that if the immigration of Jews were allowed they would also naturally jump to the conclusion that the famine conditions were due to this extraneous increase in the population. (3) That agrarian riots were likely to follow and that these would be directed against the Jews, and the violent anti-Zionist passions would be aroused which could perhaps never afterwards be assuaged; and therefore (4) That in the interests of Jewish immigration it would be wisest to check immigration until Palestine had recovered its power to absorb more people.

I have very good reason to believe that this memorandum was actually presented to the civilian government but that the orders from London were that immigration was to go on. It did, and within two years riots occurred in Jaffa as predicted and immigration had to stop—but only when that bitterness of feeling had been generated which has poisoned Palestine and

d politics ever since. A better appraisal of the importance of population statistics which I and a few others had so fully prepared, together with an indication of their bearing on the political situation, might have changed the whole course of international relations in the Near East. I hope and pray that our politicians to-day will not display the same indifference to statistics as they did in Palestine twenty-six years ago. I am, etc.,

W. N. LEAK.

The "Intractable" Vesico-vaginal Fistula

SIR,—With reference to Prof. Chassar Moir's letter (May 18, 1944), I should like to support him in his denunciation of ureteric transplantation of the ureter as common practice for cure of urinary fistula. A point on which one has to disagree with him is his impression that fistulae can invariably be cured by vaginal operation. One disagrees in spite of his impressive triumph in curing 30 consecutive fistulae by the vaginal route. His success, however, shows what can be done. His further statement that Mahfouz Pasha¹ cured 95 of his last 100 cases is incorrectly referred to Mahfouz's, 1938 article. It is possible that Mahfouz may have made a personal statement to this effect when he gave his lecture at the British Postgraduate School; and, if this high cure rate is substantiated, Mahfouz's triumph must be unparalleled if the nature of his material is taken into account.

I have done nearly 100 operations for vesico-vaginal fistula in the Bantu, and I have at no time had more than six consecutive successful operations. Two complications which militate against success are extensive loss of vaginal tissue and loss of the urethra. Inaccessibility of the fistula can be a serious problem, but this can usually be overcome by patience. All urinary fistulae occur in the Bantu, who have usually had no trained attendant during parturition, and in the difficult case there is extensive loss of vaginal tissue that grafting is required to cover the outer aspect of the bladder suture. I have never failed to close the hole in the bladder adequately, but difficulty in bringing the vaginal edges together has led to failure repeatedly. I believe that we shall succeed now with skin grafts, and the nylon suture—even for the bladder—and local penicillin will make a 90% cure rate possible. For the average Bantu, good nursing is more important than good surgery, and in European hospitals in this country are still so overcrowded that intensive nursing care remains beyond our reach.

At the Johannesburg Non-European Hospital we have resorted to ureteric transplantation in some cases of fistula. Vaginal operation has always been attempted first, and in the cases regarded as frankly inoperable the degree of pelvic inflammation present has usually been found to preclude transplantation. Our impression is that the vast majority of cases of which colonic transplantation of the ureter is possible could without difficulty be cured by the vaginal route. In this respect, therefore, one is in agreement with Chassar Moir. But urinary fistula in the Bantu can be a formidable condition. As parturients, these women are primitive and independent, and in the conviction that death is the alternative to spontaneous delivery they persevere in labour in a manner which is unknown amongst Europeans. Fistula arises not because of some small error, as in the European, but because of a second stage which sometimes persists for days. Very severe trauma results, and this is accompanied by the pelvic inflammation which we have found present in attempting to perform ureteric transplantation.

In 1938 Mahfouz reported that Egyptian midwifery had improved and that severe labour trauma was diminishing. Even during the eight years that I have been observing these cases a change has become apparent. Bantu women living in or near towns avail themselves of midwifery services, and cases of incontinence come in mainly from the outlying country. Before the war I seldom saw a fistula case in possession of a cervix, but cases with cervix and a vagina of reasonable mobility are now frequently seen.

This indicates that the average type of urinary fistula occurring in a particular region must be assessed before operability and cure rates are analysed. Counsellor² in America does not think that these cases offer a serious problem, but analysis will show that the series in Rochester contain a high proportion of post-operative fistulae, which indeed should present difficulty

to no surgeon; Moir has had phenomenal success, but in Britain where obstetrics has reached its highest peak; Mahfouz³ cured 86.5% in Egypt in 1929, but he eliminated from his series certain cases and counted colpoceleis under his cures. In South Africa we hope to have 90% of cures in Bantu post-partum fistulae before long. I have until now considered Sims's achievement of 74% cures in 312 cases as the most outstanding in this field of surgery; but if Mahfouz cured 95 cases out of 100 he has gained the summit, for no man will cure more than this percentage of any large series of patients presenting themselves with urinary fistulae.—I am, etc.,

O. S. HEYNS.

Dept. of Obstetrics and Gynaecology, Johannesburg.

REFERENCES

- 1 Mahfouz, N. (1938). *J. Obstet. Gynaec.*, 45, 405.
- 2 (1929). *Ibid.*, 36, 581.
- 3 Counsellor, V. S. (1942). *Surg. Gynec. Obstet.*, 74, 738.

SIR,—Prof. Chassar Moir must be congratulated on his sequence of 30 cures. However, his criticism of Dr. Mackay's views (April 27, p. 650) cannot be allowed to pass unchallenged. I refer in particular to the following: "I deplore the pessimistic impression conveyed in Dr. Mackay's report regarding the curability of vesico-vaginal fistulae, and the implication that transplantation of the ureters is an operation frequently required." And, "In view of this satisfactory experience with the vaginal operation I disagree with the pessimism so often expressed."

It is obvious to those "in the know" that Prof. Chassar Moir and Dr. Mackay are discussing different clinical pictures, and anyone with experience in the Bantu native reserves will easily assess the different aspects of the problem. Over a period of ten years I have seen at least eight cases in which the only solution was uretero-colic anastomosis. This is not surprising when one realizes that "second stages" lasting three, four, and five days are not unknown.

I entirely agree with Prof. Chassar Moir that many surgeons take the easy way out and that uretero-colic anastomosis is carried out too often. It must be emphasized that transplantation of the ureters must be regarded as a sign of surgical failure as far as the fistula is concerned, and must only be used as a last resource. Three attempts to cure the fistula *without any improvement* is the earliest indication which should be accepted. With these criteria I have found it necessary to do eight transplantations over a period of six years. In the native reserves I would regard a cure rate of 75% as bordering on the miraculous, particularly in districts where the witch-doctor practises his crude primitive obstetrics.

While congratulating Prof. Chassar Moir on his excellent and very encouraging work, I must express sympathy with Dr. Mackay's alleged pessimistic outlook. This, however, must not prevent us from looking ahead, and doing all we can to improve our techniques and conditions of work, and aiming at the present apparent impossibility of 30 consecutive cures.—I am, etc.,

Non-European Hospital, Johannesburg.

P. KEEN.

Rh Factors

SIR,—Dr. Wiener's paper (June 29, 1946) will doubtless provoke comment from the experts. I only venture to write as one of the many who, though not serologists, wish to understand this theoretically fascinating and practically important chapter in human genetics, and who thereafter may wish to teach it to others. The difficulty does not lie in understanding the genetic behaviour of a system of eight or more multiple alleles, morphs, but in the fact that each gene, according to Dr. Wiener, or each compound gene, according to Prof. Fisher, determines not a single reaction but a complex and overlapping pattern of reactions. This is bewildering to those who have not become familiar with them in the course of laboratory work. I must admit that I found the story very heavy going until one day Dr. Race was kind enough to explain to me the new CDE scheme that Prof. Fisher had just devised. Illumination came almost in a flash. All the pieces of the puzzle fell neatly into place. Each gene is named according to the reactions it determines with the various antisera, which in turn are named according to the elementary antigens with which they react, anti-C, anti-e, etc., for in this matter Prof. Cappell's modification seems a desirable simplification of Prof. Fisher's Greek

letters. I have since had the opportunity of explaining the genetics of Rh, I think successfully, to medical classes as well as to individuals, and have no doubt at all of the excellence for teaching purposes of the CDE nomenclature. But when the rationale of Rh has been thoroughly grasped, facility in handling the genetic combinations makes a further step desirable—a single name for each gene complex. For these Dr. Wiener's original symbols for the antigens seem admirable, and, of course, when mastered serve as a key to the literature. It is simply a matter of knowing that, for example, R_0 is an abbreviation for the compound gene cDe, or r for the gene cde. The red cells of an individual possessing these two genes will react with anti-D, anti-c, anti-e, and also, when it is discovered, with anti-d, but will not react with anti-C or anti-E. There are not many combinations to learn and one finds that they are soon memorized.

I feel that I cannot let this opportunity pass without paying some tribute as an onlooker to the brilliance of the serological researches both in the United States and in this country. I have had the privilege of being in touch with the Galton Serum Unit since its inception and also the privilege of enjoying a most stimulating visit to Dr. Wiener's laboratories in New York. But first-hand knowledge is not required in order to appreciate the quality of the work; the published papers of the past five years speak for themselves. It would not be easy to find many instances in biological research where progress has been so rapid, where so few mistakes have been made, where there has been so little to retract, where resources have been used so fruitfully. There may be differences of opinion about nomenclature and about theory, but the concordance of the basic observations has been striking. Sometimes an advance has been due to Dr. Wiener, Dr. Levine and their co-workers in the United States, sometimes to the late Dr. Taylor, Dr. Race, Prof. Fisher and their co-workers in Great Britain; but in either event there have come almost invariably immediate confirmation and further advance from the other side of the Atlantic. Visits to this country by the American workers would be very welcome to British geneticists.—I am, etc.,

S.W.10.

J. A. FRASER ROBERTS.

The Thomas Splint

—The article by Prof. T. P. McMurray (June 8, p. 872) "Thomas and his Splint" is of great interest, but the reasons for the spectacular reduction in the mortality of fractured femur cases in the third year of the 1914-18 war are not very clearly brought out. It was not entirely the use of the Thomas splint as a method of treatment in hospitals which caused the drop in the death rate. Other splints may not have produced such good end-results, but three out of five patients treated in them did not, in consequence, die. Surely it was mainly its use as a first-aid measure on the actual battlefield which resulted in the saving of so many lives. The deaths, which were mainly due to shock, nearly always occurred on the way to, or in, C.C.S.s, and during the battle of Arras in 1917, when the Thomas splint as a first-aid appliance was in universal use, the death rates in the group of C.C.S.s behind Arras dropped from about 75% to about 20%. Indeed, the fractured femur patients arrived in better condition than those with fractured arms, and this was not surprising.

To anyone who has applied a long Liston splint in a trench, and, at a later date, applied a Thomas splint in similar circumstances, the brilliance of the idea of using the Thomas splint as a first-aid measure will need no emphasizing. Who first had this idea, or whether it was a composite proposal, I do not know, but Gray and Max Page had certainly much to do with it, and by their enthusiasm stimulated others. By April, 1917, it is safe to say, there was not a stretcher-bearer in the 3rd Army who was not an adept at applying a Thomas splint. One other factor which played an important part, and must be given due credit, in the saving of the lives of severely wounded men, was the realization that, in general, chilling meant shock, and warmth and hot sweet tea meant the prevention of shock. And so we had the folding of blankets to make three do the work of four, the hot bricks in the sandbags at the R.A.P.s, and improvised hot-air chambers at each stop "down the line."—I am, etc.,

W. STRELLEY MARTIN,
Lieut.-Col. R.A.M.C.

Control Commission for Germany.

The Catheter and the Prostate

SIR,—Mr. Wilson Hey (June 29, p. 997) raises many points which should not be allowed to pass unchallenged. He states that "there are no more misleading statistics in medicine than those in connexion with prostatectomy." In this he is quite right, and it would seem that his statistics are as misleading as any, since he operates only on the wealthier sections of the community. It is certain that his statistics would show a very different complexion had he to deal with the average type of case entering a municipal hospital (a former workhouse), dumping ground for all the crocks from other hospitals and the surrounding district.

In the prostatic clinic in the Newcastle General Hospital, transurethral resection by the cold punch is the operation of choice, the reason being that in the poorest risk this operation offers the best chance of success. It is safer than even simple suprapubic cystotomy and has the advantage that the bladder is drained by the natural and safest channel—viz., the urethra. Moreover, the operation is as near ambulatory as possible, since the patient is out of bed the day after operation and is not in any way restricted because of an abdominal wound.

I note with interest that Mr. Wilson Hey's faith in his aseptic technique does not preclude routine "preparatory chemotherapy." Perhaps his faith is like that of Col. Bramble's padre who refused to pray for rain because the barometer was too high. Moreover, he is surely not serious when he suggests that a surgeon of the experience and distinction of Mr. Winsbury White does not do his prostatectomies aseptically.

When Mr. Wilson Hey suggests that the catheter should never be used in acute urinary retention he is on very dangerous ground. It must be the experience of every general practitioner that many such cases catheterized even once recover completely and end their days without any further trouble. It is dangerous teaching that all cases of retention should be submitted to prostatectomy. It is doubly dangerous teaching when one remembers that the patient is operated upon without even being examined and consequently without the formality of an accurate diagnosis before the bladder is opened. This is surely putting the clock back thirty years with a vengeance.

Mr. Wilson Hey's figures do not in any way represent mortality rates to be expected in the community as a whole. He does not deal with the grossly neglected poor. In the year 1945 in the Newcastle General Hospital the operative mortality was 13%, but no case was ever refused operation if there was even the faintest chance of recovery. Cystotomy was never done for drainage alone. Since January 1, 1946, 164 resections have been performed, with 8 deaths, giving a mortality of 4.87%. The oldest patient was 95 years; the average age at operation 72 years; the average age of fatal cases 72.6 years. There has been no material change in technique.

No, Sir; transurethral prostatectomy has come to stay, and will in time largely replace any other form of prostatectomy yet produced. It is associated with less physical and psychological trauma than any other form of operation.—I am, etc.,

Newcastle upon Tyne.

W. E. M. WARDILL.

True Mediterranean Fever in England

SIR,—It may be of general interest to note a true case of Malta fever infection by *Br. melitensis* in this country.

The patient, a female aged 40, complained of having had a series of "chills" with slight rises of temperature for about fourteen days before seeking advice. On examination it was found that she had a mild pyrexia of 99° F. (37.2° C.), a slow pulse rate—66 a very furred tongue, and was constipated. She had a short irritating cough, and her chest showed rales at both bases, more marked on the left. She was put to bed, and on further examination nil else was found.

Her temperature then started to rise in steps, being one to two degrees higher at 8 p.m. than at 8 a.m. At the same time she suffered from intense headache, her cough became somewhat more marked, and her respirations were up to 18 per minute. Her pulse remained at 70. The highest temperature recorded was 103.8° F. (39.9° C.). After four days the temperature came down to 98.4° F. (36.9° C.) morning and night; she felt better, but had to have enemata to relieve a very severe constipation. On the eighth day her temperature started to rise again.

She now complained of fullness in the epigastrium, fainting if she got out of bed, and again severe headache. She then produced two

rigors, with increasing pyrexia, again up to 103° F. (39.4° C.). By this time my suspicions were aroused as I could find no clinical signs to account for such a marked rise in temperature. She looked typhoidal and was slumped in her bed with malar flush and a foul tongue. At this time I found she was tender to palpation in the left hypochondrium, and very tender when trying to find the spleen. A blood count showed a slight anaemia with white cells down to 4,700—polymorphs 88%, lymphocytes only 6%, monocytes 2%, eosinophils 3%, and basophils 1%. Urine: a slight trace of albumin; no pathogens.

The blood culture was negative. As I knew that the patient kept goats and milked them herself and drank the milk, I asked for a Widal for agglutination against *Br. melitensis* as well as the *Br. abortus* strain. The reaction to *Br. melitensis* was positive in only the low dilution of 1 in 25; reaction to *Br. abortus* was negative.

In view of the persistence of symptoms I made the provisional diagnosis of Malta fever and arranged with the M.O.H. for the goats to be tested. One goat had aborted six months ago and had been mated again. It did not produce kids, but did produce milk. This goat has now been found to be strongly positive to agglutination with *Br. melitensis*. The other goats in the small herd remain to be tested.

I believe this to be the second recorded case of infection in goats in this country. In view of the fact that, during the war, goat-keeping has increased by leaps and bounds for milk production, I consider that all goats used for milking should be tested once a year, and the owners registered.—I am, etc.,

Christchurch.

E. F. HUNT.

Placement of the Disabled

SIR,—May I correct one point in your excellent leader of May 25 (p. 803)? The Act states that anyone who is physically or mentally handicapped is "to be put on the Register"—irrespective of whether he is doing suitable work or not. I understand that of the half a million people already registered the vast majority were actually in satisfactory employment at the time of registration.—I am, etc.,

Bedford.

E. N. GRAHAM.

Shock Treatment of Bronchial Asthma

SIR,—Dr. E. Brauer's 1939 article on the above subject has travelled afar among medical friends and colleagues, yet has, though now tattered and torn, luckily always come home. It was a pleasure to see his return to print (June 1, p. 849) on the subject.

Administration of the contents of the ampoules is simplicity itself, and, in the small number of cases available here, not the least untoward action has been observed. For twenty-four hours the patient feels as if he or she has had a bad attack of influenza—nothing more. Out of 15 cases only one failed to show improvement. The rest have been, less or more, encouragingly benefited. The three earliest cases may perhaps be quoted, with a minimum of detail.

A miner aged 50, typically asthmatic for twenty years, had been off work for five years. Following the publication of Dr. Brauer's article, the patient was given a dose of "pyrifer" in September, 1939, another in November, and in late January, 1940, he asked for another dose "to clear me up for work." Following this he worked continuously for two and a half years till he died of pneumonia.

A youth aged 20, very keen to join the R.A.F. in 1939, despite the fact that he had been subject to asthma for eight years. Naturally he was "turned down in his medical" because of his chest condition. Two doses of shock treatment cleared him up astonishingly, and he asked for a third one, just before volunteering again, ten months after his first board. He was passed Grade I and was quite free from any breathing difficulty during his time in the Air Force. (This may of course be put down by the sceptical to Service conditions.) One slight attack came on while on long leave following a fractured femur, but he had another dose and has been quite free since.

A lady school teacher aged 25, asthmatic from 12 years of age. Two doses in 1939, and required no more till staying with friends in 1943. Her then medical attendant told her that "neither I nor any other medical man can do you much good." Her brother motored down for a further dose. Had she been at home she would have received the third strength, but, as the M.O. was very doubting, a repeat of No. 2, and Dr. Brauer's article containing full instructions, were sent. Reaction was, in this case, somewhat delayed but no further treatment has since been called for.

A woman aged 55 (patient of a colleague who asked me to give "pyrifer"), troubled with asthma "all her life," showed no improvement whatsoever following two doses of No. 1 and one dose of No. 2. She reacted all right but nothing more.

Such, Sir, are reports on four cases treated in this practice by the "shock treatment for bronchial asthma." In another 11 cases the results have been more than encouraging, yet, with such a meagre number to go on, one felt diffident about rushing into print. But, as Dr. Brauer has returned to the subject, it is to be hoped that he will now give to the profession a summary of the results obtained in his so much fuller experience. The subject would appear to be one which calls for widespread investigation and trial. So far as this practice is concerned, both patients and G.P. desire to express to Dr. Brauer their thanks for bringing to their notice a method of treatment which has yielded most acceptable results.—I am, etc.,

Kirkcubbin, Dumfriesshire.

BOWMAN EDGAR.

National Research into Tuberculosis

SIR,—I agree with the various writers on the need for such research. I agree with Dr. J. St. P. Cowell (June 22, p. 964) that the matter concerns every medical man, but I do not think the profession should be so greatly blamed. There is a greater need for public interest in the means of prevention and treatment. The practical aspect comes to the erection of an Institute for Tuberculosis Research. Why wait for the Government? Why should the profession itself not create the Institute, and appeal also to the public? Let it be the medical profession's institute for tuberculosis research. Without further ado I am willing to receive a simple statement of support to the proposal and a willingness to subscribe towards the project some sum (nothing more at present). If the proposal and amount that would be subscribed is evidence of substantial support within a month I could then advise all the supporters and find out when they could meet to decide all necessary steps.—I am, etc.,

Blyth, Northumberland.

A. G. NEWELL,
Medical Officer of Health.

Migrainous Headaches

SIR,—I have read with considerable interest Dr. Wilfred Harris's paper on migrainous headaches (May 18, p. 754) and Mr. Cecil Tivy's letter (June 22, p. 964). I agree wholeheartedly that frequently migraine is not given either the sympathy or treatment it deserves. Patients are, in general, classified by their practitioner as incurable—and so informed!

In a large number of cases this is not true; many can be relieved by a combination of endocrine therapy, desensitization with prostigmin, or the ingestion of urea in varying doses. Such therapy, to be successful, must be applied with knowledge and persistence; but it is far less drastic than interfering with the Gasserian ganglion and, one feels, should be tried in all cases of true migraine before irrevocable methods are undertaken. This treatment has the advantage of doing no possible harm; while gratifyingly often the patients, to their surprise and intense relief, if not completely cured, are at least enabled to look forward to a tolerable future.—I am, etc.,

London, W.1

NEVIL LEYTON.

Effect of Sweets on Teeth

SIR,—My attention has been drawn to the letter from Miss Dorothy M. Richardson (June 29, p. 1010) criticizing my study of the effects of boiled sweets and chocolate biscuits on dental caries activity, cited by Dr. H. E. Magee in his Milroy Lectures. As stated in my original paper (*Lancet*, 1946, 1, 646), both sweets and chocolate biscuits were given to counteract this type of criticism. The composition of the latter was as follows:

Biscuit.—Wheat flour 48.8%; total sugar 24% (reducing sugar 3.25%); fibre 7%; fat 17.2%; water 3%. The "reducing sugar" consisted of glucose, laevulose and maltose.

Chocolate.—Sucrose 43.5%; fat 32%; cocoa solids 24.5%.

I can assure Miss Richardson that the biscuits, at least, were certainly not "non-adhesive." Both chocolate and biscuit portions remained in the tooth fissures and interdental spaces for a considerable time.

In addition, the children were given their usual sweet ration, in which chocolate cream and fudge were included, while their general diet contained more than 50% of carbohydrate in the form of sugar, jam, bread, potatoes, oatmeal and breakfast cereal.

Finally, I would refer Miss Richardson to the *British Medical Bulletin* (1944, 2, 225) for a brief account of some of the fundamental reasons for questioning the validity of the carbohydrate-fermentation theory of dental caries.—I am, etc.,

London, S.E.5.

J. D. KING.

Book Reviewing

SIR,—Is it not time the *B.M.J.*—and indeed other medical journals in this country—conformed to the practice of their contemporaries in other literary fields in publishing the names of book reviewers? I presume that you endeavour always to enlist the services of an expert on the subject-matter under review. But how are your readers to know this? The position at present is that magisterial and pompous comments are sometimes made by reviewers who may or may not be experts (so far as we know), and who are able to indulge their preferences and prejudices, if not indeed a little personal malice, under the cloak of anonymity. I am not suggesting that indifferent work should be condoned; any more than that writing for the sake of writing should be encouraged. But let us have the reviewer's name. We can then judge *how* "expert" he is; we can, if necessary, challenge his criticism, and we can give ourselves the mental exercise of assessing the relative merits of author and reviewer!

It is not easy, I know, to write a balanced review. It is perhaps a help to be thoroughly familiar with the author's training, his intellectual ability, and his clinical day-to-day work. This is unfortunately not always possible. One is so apt to allow judgment to be influenced by such factors as personal prejudices for this or that method of treatment, or this or that method of presentation of a subject. But I think it is important to try to be objective, to be helpful both to the author and to the public, and to avoid harshness. In the past year or so I have felt that some orthopaedic critiques have been scarcely fair either to potential readers or to the author—few shared with me by many distinguished orthopaedic surgeons. I will mention one example. A book on *Injuries of the Knee-Joint* has recently been written by Mr. I. S. Smillie, founded on a war-time experience of some 5,000 patients with complaints directly related to the knee-joint. In a modestly worded preface Mr. Smillie explains the background of his book and the difficulties under which it was written. He is careful to make no extravagant claims—and this admirable principle is followed throughout the book. Having had the privilege of seeing much of Mr. Smillie's work during the war, and accounting it *on results* (in terms of fitness for return to military service) as easily among the very best accident surgery in Britain, I read his book with a real knowledge of the man and his work. Though I do not agree with all his opinions, I find the book most stimulating and informative; I made haste to present copies to some visiting foreign colleagues; and I consider that another valuable monograph has been added to my orthopaedic library. There are, of course, faults in the book, but is there any book in which to someone's way of thinking there are no faults?

A review of this monograph was published in your edition of June 1. It reads like a Victorian headmaster's address to his pupil, or a would-be dictator to his underlings. It is patronizing, pompous, and in my view quite unjustifiably censorious. Amongst other alleged vices, Mr. Smillie is taken to task for lack of proper statistical analysis. The reviewer, a few sentences later, refers to one of Smillie's operations as "a procedure of dubious value," but he (the reviewer) quotes no statistics of his own to support his pontifical dubiety. We are assured towards the end that two of our colleagues are neither anatomists nor physiologists. Is this true even if it is relevant?

I find it hard to believe that a book review which concentrates only on the faults, or in the opinion of the reviewer the faults, is helpful to anyone. An anonymous public arraignment of this type must be discouraging to any author of any age who has worked hard and thought much, and who has produced a book which many of us value. Fortunately Mr. Smillie has

the ability and the resilience not to be unduly perturbed. But how much better it would have been if your reviewer had been more restrained—and he probably would have been if he had had to append his name. A personal letter of friendly criticism to the author would, I am sure, have been welcomed as a help in improving the book for its next edition.

Another point—unless the names are appended how do we know that the *B.M.J.* is not selecting reviewers who, in the words of Prof. Robert Platt (*Manchester Guardian*, June 1), when referring to the gentlemen recommended by the British Medical Association for the recent elections to the General Medical Council, "are best qualified to represent the views of those who have already retired from practice"?—I am, etc.,

Manchester.

H. OSMOND CLARKE.

Rectal Cancer in Sisters

SIR,—We should like to reply to Prof. M. Greenwood's letter (June 22, p. 965), in which he criticizes our own of May 25 (p. 814).

Prof. Greenwood takes us to task for commenting on the statistical conclusions that Dr. R. E. Rewell attempted to draw from one quoted case, and this he does on the grounds that Dr. Rewell's hypothesis was reasonable. Nowhere in our letter did we criticize this hypothesis, and our remarks were directed solely towards drawing attention to the danger of misusing statistical methods (and, more especially in this case, statistical jargon), as evidenced in the last paragraph of Dr. Rewell's communication. Prof. Greenwood himself has been moved to write: "Medical papers now frequently contain statistical analyses, and sometimes these analyses are correct, but the writers violate quite as often as before the fundamental principles of statistical or of general logical reasoning." (*Lancet*, June 11, 1932). Dr. Rewell had indicated that from the evidence he adduced a probability could be assessed for his hypothesis, and the impression was certainly given that this probability exceeded one half. In fact, no such probability could be calculated from the data, and it seemed reasonable to point out, especially in a journal catering for non-mathematical readers, that the statistical support claimed by Dr. Rewell was, to say the least, somewhat flimsy, and not such as to warrant any confident conclusion.

In fact, as Prof. Greenwood implies, the *a posteriori* probability would only warrant entertaining the hypothesis if the *a priori* probability were appreciable—a point which few readers can be expected to have grasped. It would therefore appear to be of value to consider the *a priori* probability in the actual cases quoted by Dr. Rewell. It may be recalled that the original article concerned two sisters—one had multiple telangiectases, the other multiple polyposis, and both died young of carcinoma of the colon. There is no recognized connexion between multiple telangiectases and carcinoma of the colon, or between multiple telangiectases and multiple polyposis, and the article contains no recorded cases showing a connexion. Yet in spite of this, and without any argument from general pathological principles, the author states: "Carcinoma of the rectum in siblings of this age is so rare that one must conclude that there is some connexion between the three conditions." (Italics our own.) This has nothing of the tentative nature of the statements that Prof. Greenwood attributed to Dr. Rewell.

We do not believe that Dr. Rewell forbore to comment on our letter because he was reminded of Bacon's essay, "Of Seeming Wise," but we are constrained to ask who it is who "seems too wise." Prof. Greenwood has answered that question better than we could do: "... it would be silly to ... proclaim that his [the doctor's] intimate knowledge of the facts puts him above the reach of those vagaries of chance which 'mere' statisticians emphasize." (*Journal*, Jan. 26, p. 119).—We are, etc.,

London, N.W.8.

P. J. HILTON.
S. M. HILTON.

The Hypochondriac's Treatment

SIR,—Dr. E. D. Granger (July 6, p. 27), who so mildly rebukes Dr. Summerskill for her reported remarks, is in my opinion perfectly correct. I would perhaps have been a little harder. A so-called malingerer whom I recently had as a patient died

a few months later from prostatic carcinoma. He had been thus labelled because of his whining complaints and the vagueness of his symptoms. His complaints were chiefly of flitting and sometimes severe pains in the bones, especially in his spine in the lower lumbar and sacral regions. I managed to elicit a fact which the specialists in the hospital had overlooked or had not noticed—i.e., a definite frequency of micturition, especially during the night, and as he was a man of 60 I began to suspect the prostate was diseased. Although he had been x-rayed in hospital it had been a little early to pick up the tell-tale deposits in the spine and pelvic girdle, but an x ray taken by myself and only a month after leaving the hospital revealed the true nature of his "hypochondria," for he died from the disease less than two months later, relieved from his very acute suffering only by large doses and continuous administration of morphine.

In my ten or eleven years of experience of general practice I have come to respect the feelings of patients the more and I have learnt not to dismiss their condition as "just another case of neurosis" without a very thorough search into the whole case-history and a still more thorough examination of the patient. In any event, under the stress of modern life the nervous system of the individual is subjected to strain his forbears had rarely to bear, and the fact that some of us become hypochondriacs is not surprising, and indeed they are people much to be pitied and people who should be most carefully handled. The handling of them is a skilled job requiring much patience. It is not surprising that many doctors simply shirk the job.

Dr. Summerskill's remarks bear not a little trace of the doctrines of Nazism, for it is not a very long jump from the trend she desires in the treatment of the hypochondriac to the purification of the race by the forced segregation of misfits and their quiet removal from the world as carried out only too efficiently under the Hitler regime. Perhaps she does not see the dangerous road along which her socialistic beliefs are driving her.

How much we doctors prize our present freedom of thought and action in the carrying out of our duties! How much we are likely to kick under the dictation of a more and more autocratic system of government we may learn when it is too late and long past worrying about. There is no use pretending, for we are in a trap from which there is no escape, and that trap is largely of our own making, because if from the inception of the so-called negotiations preparatory to the introduction of a State scheme of medical practice we had stuck to our guns and had nothing to do with a system of medical practice which the majority of us are going to detest, we could have fought against its introduction the better. But we compromised and accepted in part, and when the softening-up process was in an advanced stage under the Coalition Government it was the easier for Mr. Bevan and his satellites to press further and more drastically and even to drop the pretence of negotiation. One has only to read the weekly reports of the Committee stage of the Bill to realize how far-reaching will be the effect on the lives of all doctors of its passing into law.—I am, etc.,

Strathpeffer.

KENNETH I. E. MACLEOD.

Health Service Bill

SIR,—Mr. G. H. Urquhart (July 6, p. 26) states an admirable case. I have just attended a local meeting of the Labour Party, sponsoring a "medical brains trust." Factual ignorance, overweening self-assurance, desire for domination, and disease-consciousness were well marked; class-consciousness was present in the trust. Salesmanship was good, the particular line for the day being group practice in health centres with doctors working in shifts and maintaining a high standard of efficiency under mutual supervision!

The immediate corrective to adopt, for those of us who believe the above symptom complex to be of bad import, is quite clear. Broadcast the objects and powers of the B.M.A. (see Constitution). The Association was formed "to promote the medical and allied sciences, and to maintain the honour and interests of the medical profession." In emphasizing the words in italics the major part of the *British Medical Journal*, the six quarterly journals, and some thirty publications, entirely non-medico-political, should not be forgotten, nor should

the Association work on fractures, physical education, first-aid training, and hospital planning, etc. These things and the B.M.A. policy on the present Health Service Bill should be kept daily before the public eye through the public relations committees, the Press, and the political parties now in opposition. If we all lend a hand and keep it up we shall win the battle for independence.—I am, etc.,

Birkenhead.

R. W. L. PEARSON.

Powers and Procedure of G.M.C.

SIR,—It is with much interest that the profession will read of the suggested reforms of the powers and procedure of the General Medical Council which have been drawn up by the three defence bodies (July 6, p. 21). It is not before time, and I am sure without exception that the profession will welcome a "trial" before a body which will carry out its judicial work in accordance with the observance of the rules of procedure, etc., as administered in the other courts of law. While these suggested reforms as put forward are indeed excellent, there are in my opinion one or two matters which have been overlooked.

In the first place there ought to be allowed to a doctor legal representation at all proceedings where the doctor's professional conduct is under review. At the present time, when a medical man who has had his name erased from the *Register* applies for reinstatement, the procedure is at present that he makes his application for such in writing. This is considered by a committee without either hearing him or allowing him to be represented by an advocate, and in due course their decision is communicated to him, or they may call upon him to appear, but I understand that as it is at present the doctor cannot appear by an advocate. It is well known that the presentation of any case sounds entirely different if the defendant appears either in person or, better still, if he appears with counsel.

Next I would advocate that the rules of evidence be strictly adhered to. All hearsay and other evidence not received in our other courts be excluded. I would suggest the time in which a notice of appeal can be lodged be extended to fourteen days instead of seven as at present suggested. The right of appeal should not be confined to one on a point of law alone but should be allowed on similar grounds as allowed in the other courts. Further, I would suggest that the legal assessor be a barrister who also has a medical degree, of whom there are several practising law. Or, alternatively, a chairman with the dual qualification be appointed who would be able to control the proceedings. This chairman need not be a permanent appointment, and would merely act as legal assessor and refuse or admit evidence according to law, etc., etc. He would not be a member *ex officio* of the council.

All documents for or against the doctor charged should be proved, and "notice to produce" but not "to admit" should be permitted. The tribunal to decide if the document is a privileged one. If a charge is found not proved costs against the complainant should be awarded, and such costs should be recoverable as in civil law. Besides erasure and censure, as at present permitted, the tribunal should have power to impose a fine if they were of the opinion that such would meet the case. At the present time a lesser tribunal—a panel committee—has power to fine a medical man for "over-prescribing."

I, fortunately, have never been before the General Medical Council, but while practising medicine I always felt that if ever such should be my fate I would writhe at the thought of being "tried" by a body of laymen who sat as a judicial tribunal and whose procedure was different from that of a court of law.—I am, etc.,

Temple, E.C.4.

C. J. DE VERE-SHORTT, M.D.,
Barrister-at-Law.

SIR,—It is possible to swing the pendulum to the other extreme and claim, as some have done, that if the Hennessy case had been tried in the first instance before a judge and jury all would infallibly have gone well for Dr. Hennessy. Mr. Justice Humphreys in a very recent book entitled *Summing Up* (extracts published in the *Sunday Graphic*) has given instances of miscarriages of justice, indicating that these errors are most likely to occur when perjury is committed by a woman alleging sexual offences or the distribution of obscene libels.

In the Swan v. Gooding trials, Miss Swan completely took in three juries and at least two judges (Mr. Justice Bailhache and Mr. Justice Avory). Mrs. Gooding was sent to prison, and for this miscarriage of justice the Treasury paid £250 in compensation to Mrs. Gooding when the two convictions were quashed on July 26, 1921. I quote from Mr. Justice Humphreys' article in the *Sunday Graphic* (March 17, 1946).

"In the restricted circle in which she lived and moved, Edith Swan was a real public danger. Are we then to understand that such a woman can by ingenious perjury bring about a serious miscarriage of justice as and when she pleases? Are innocent people in real danger of being wrongly convicted through no fault or omission on their part, but according to the whim of a mentally unbalanced female? I think not, though I should be sorry to prophesy that such a case will not occur again, as in truth it has happened before."

It has occurred again in the Boyanton v. Hennessy case before the G.M.C. It occurred in the past in 1912, and again in 1913, when Mrs. Johnson of Redhill was twice convicted and sent to prison for sending letters of a threatening and obscene nature to a Mr. and Mrs. Woodman, Mrs. Woodman being in fact the source of the libels and a ready perjurer. Here again the Treasury awarded Mrs. Johnson £500 compensation when Mrs. Woodman was eventually convicted of perjury and other offences in February, 1915, and sentenced by Mr. Justice Horridge to eighteen months' imprisonment. (*Sunday Graphic*, May 5, 1946.)

Why did the G.M.C. go astray in the Hennessy case? It is not enough to say that the doctor should have provided additional evidence in order to save himself. Mr. Justice Humphreys' comments on the Gooding case are worth quoting as they are applicable here:

"The case of Mrs. Gooding, always more or less in my mind for twenty-five years, has hardened into a principle which I found rather vaguely expressed in the books I read as a pupil—namely, that it is too dangerous to accept as satisfactory evidence upon which to convict in any sexual case the statement of the woman concerned unless there is other evidence tending in the same direction. Further, that this rule should never be relaxed merely because the prosecutrix in the witness-box behaves like an angel and looks like a madonna."

This is the first lesson to be relearned from the Hennessy

It should, I think, be inscribed on a plaque somewhere in reserved for trials, where the jurors and judges can their memories. The second lesson is that no compensation has been paid to Dr. Hennessy for the miscarriage of justice he suffered at the hands of the G.M.C. May one add another invocation to the well-known *Doctor's Litany*,

"From forgetful judges, glibbie juries, and hasty G.M.C.s,
Save, O Lord, us poor M.D.s."

—I am, etc.,

Slough.

N. C. HYPER.

Re-education of Germany

SIR,—Some of your readers may have read with the same sense of indignation as myself the statement recently published in the *Times* that a German physician in the British Zone has just been sent to prison for a year "for failing to stand when the British National Anthem was played at the conclusion of a concert." I do not know this doctor. I do not know whether he was a Nazi, or whether he was a credit to his profession, but it seems to me that a sentence of this kind ought not to go without some expression of protest from the British medical press. I do not mean by this that the fact that the accused was a doctor entitles him to special privilege, but rather that because of it this lunatic sentence may bring home to us a little more cogently the sort of thing which is being done in our name. Medical men have had a good deal to say about the re-education of Germany: if this is how the responsible authorities consider that re-education can or should be conducted, perhaps it is time that they were more intelligently advised. Faced with a problem of public health, they have acted on the whole competently and creditably. If the goodwill accumulated by those means is to be dissipated at the psychological level by actions as stupid and as reminiscent of Hitler himself as this one, perhaps we have a duty to criticize at least as forcibly as anyone else.—I am, etc.,

LeaJen, S.E.23.

ALEX. COMFORT.

Obituary

T. IZOD BENNETT, M.D., F.R.C.P.

The sudden death of Dr. T. Izod Bennett, which took place at his home in Hill Street, Mayfair, on July 10, on the eve of his fifty-ninth birthday, removes a figure of much originality and distinction from British medicine. He might well have looked forward to several more years of achievement. His work, especially at the Middlesex Hospital and the Royal National Orthopaedic Hospital, the two principal institutions he served as physician, was highly regarded by his colleagues; he was a recognized authority on disorders of the alimentary tract and on metabolism in health and disease; as a teacher he was unusually gifted; and he was the author of many books and papers which bore the impress of a careful and logical mind.

Thomas Izod Bennett was born in July, 1887, at Christchurch, New Zealand, and was educated there, coming to London for his medical training, which he took at Guy's Hospital. He qualified in 1912 and graduated M.B., B.S.Lond. in 1914. After holding various house appointments at Guy's, he joined the R.A.M.C. at the outbreak of war in 1914, and served on the Western Front for two years as medical officer to the 8th Battalion of the North Staffordshire Regiment. Later he was physician to No. 54 Casualty Clearing Station, holding the rank of major. After the armistice he returned to Guy's as medical assistant and demonstrator in physiology, a post which permitted him to resume the researches in internal medicine which had been interrupted by his war service. In 1920 he took the M.D. of the University of London and in the same year became M.R.C.P. He was elected to the staff of the Middlesex Hospital as physician with charge of out-patients and as tutor to the medical school. He was now well established in private consulting practice. In 1921-3 he held a Beit memorial fellowship for medical research. In 1928 he was Goulstonian lecturer to the Royal College of Physicians, of which he had meanwhile become Fellow. His subject was "Some Problems of Nephritis," and the lectures were subsequently printed in book form. He was dean of the Middlesex Hospital medical school from 1929 until 1934.

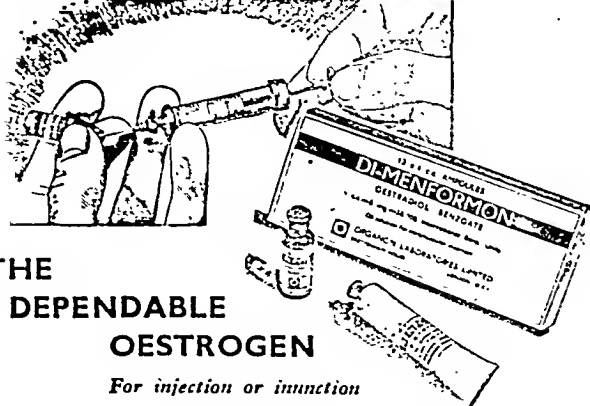
Other posts which Izod Bennett held were those of senior physician to the Stoke Mandeville Hospital, consulting physician to the Cane Hill Mental Hospital (L.C.C.), St. Columba's Hospital, London, the Faversham Hospital, and St. Luke's Hostel for the Clergy. He served as examiner in medicine for the University of London, and later, from 1940 to 1944, for the Royal College of Physicians. He was a prominent member of the Association of Physicians and a frequent contributor to its proceedings. For over a quarter of a century he belonged to the Medical Society of London and the Royal Society of Medicine, and he was President of the Section of Medicine of the latter body during the session just closed. One of the characteristics of Izod Bennett, observed alike in his writings, in medical discussions, and in the lecture theatre, was the carefulness and precision of his language. He was impatient with anything slovenly in the presentation of facts or ideas; he would not tolerate it in his students or in himself, and his contributions, even the slightest of them—even a few remarks on the spur of the moment—were models of logical thinking and expression. He was the author of numerous books and papers dealing mostly with alimentary and renal physiology and pathology. His first considerable literary work, on the stomach and upper alimentary tract, appeared in 1925; a small book by him on the treatment of



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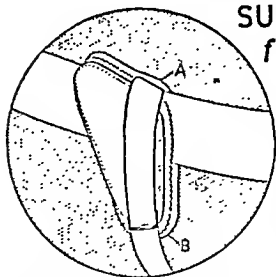
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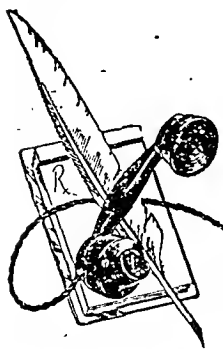
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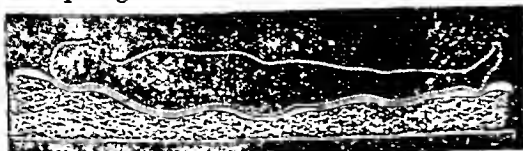
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diabetes appeared in 1931, and he was a frequent contributor to the medical journals.

Izod Bennett was known to his friends as a man of most kindly disposition who curbed natural irascibility under a calm manner. Thorough and methodical in going into a case, he never forgot that the patient was a person in need of help and sympathy. Colleagues who came under his professional care will recall his thoughtful study of symptoms in relation to their background and his unobtrusive acts of good nature. He spoke French fluently and knew Spanish, and often put himself out to entertain medical visitors from the Continent. His indoor recreation was a rubber at bridge before dinner, and the fellow-members with whom he regularly played in the card-room of his club noticed with much concern that his health was failing in recent weeks.

Dr. DOROTHY MANN ADAMS, who served with distinction in the R.A.F. Medical Service during the war, died very suddenly on June 27. She was born on Dec. 13, 1903, studied medicine at Oxford and at King's College Hospital, London, taking the English Conjoint diplomas in 1929 and the B.M., Ch.B. degrees a year later, after holding the post of house-surgeon at the Royal Victoria Hospital, Folkestone. Dr. Dorothy Adams had been medical inspector at Cheltenham Ladies' College before joining the R.A.F. with the relative rank of flying officer early in 1940. She was gazetted war substantive flight-lieutenant in April, 1941, and temporary squadron leader in July, 1943, and was mentioned in dispatches.

The death of Dr. EDWARD BAINES took place at his house in Whitby, Yorkshire, on June 28, at the age of 80. He was the elder son of J. W. Baines, of Leeds, and was born in that city in 1866. From the Leeds Grammar School he went up to Caius College, Cambridge, and took the M.B., B.Ch. of that University in 1892. After graduation he was for a year H.S. at the General Infirmary, Leeds, and for another year H.P. at the Sunderland Infirmary. He first practised at Bowness, Windermere, but after a severe illness a few years later took up public health work and received the D.P.H. Cantab. in 1902. Later he returned to general practice, settling in Whitby in 1906, where he was for many years a member of the medical staff of the Whitby and District War Memorial Hospital and its predecessor. In 1936 he had another severe illness and was thereafter obliged to limit his activities. However, when his son, Dr. E. F. Baines, who had joined him in practice, left Whitby for war service in 1939, Dr. Baines resumed full work, but broke down once more in November, 1940: he had also been serving on the Scarborough Civilian Medical Board. He married in 1900 Miss Adeline Fyfe, who died in 1944; there was one son and one daughter as issue of his marriage. Dr. Baines was a member of the B.M.A. from 1893; but never sought office in the local division. He was a regular supporter for many years of the Royal Medical Foundation of Epsom College.

Dr. THOMAS STRETHILL WRIGHT, who had practised at Okehampton, Devon, and held public appointments there, died on July 1 in retirement. He was born at Hartford, Cheshire, on Dec. 5, 1879, son of S. H. Wright, M.D., F.R.C.P., and was educated at Monmouth School and Brasenose College, Oxford, where he gained classical honours and graduated M.A. in 1906. He then entered St. Thomas's Hospital and obtained the M.B., B.Ch. degrees at Oxford in 1909. He held a temporary commission as captain, R.A.M.C., during the 1914-18 war and at the end of it proceeded M.D. Dr. Wright joined the B.M.A. in 1910 and published notes on trench fever in this *Journal* in 1916. After giving up active work he lived at Prestbury in Gloucestershire.

We regret to announce the death at Beaulieu, Inverness-shire, on July 4 of Dr. RODERICK MACKAY, who was elected chairman of the Inverness Division of the British Medical Association in 1938. Dr. Mackay was born on Jan. 23, 1900, and studied medicine at the University of Aberdeen, graduating M.B., Ch.B., in 1924, and M.D. with Commendation in 1928, after serving as house surgeon and house physician at the Royal Northern Infirmary, Inverness. While in general practice at Beaulieu he was medical officer to the Kiltarlity and Array parishes and a member of the Inverness and Ross County Panel Committees. He joined the R.A.M.C. with a temporary commission in January, 1940, and was captured by the enemy on July 10 of that year. His name was brought to notice in recognition of distinguished services and he was repatriated at the end of 1943.

Dr. A. DOUGLAS CROFTS, of Windsor, who died on July 7 after a short illness, studied at Guy's Hospital and, after taking the L.D.S. in 1903, completed the medical curriculum and qualified as M.R.C.S., L.R.C.P. He then held a succession of house appointments at Guy's and was clinical assistant at the East London Hospital for Children and at the Evelina Hospital for Sick Children. During the 1914-18 war he served with a temporary commission in the R.A.M.C. Dr. Crofts held a number of important posts in the Windsor area; he was a member of the Eton College Medical Board, M.O.H. and school medical officer for the borough of Windsor, honorary anaesthetist to the King Edward VII Hospital, and medical referee to the Ministry of Pensions; he was also medical officer to St. George's School, Windsor, and to a number of infant clinics. He joined the B.M.A. in 1912, and had been vice-president of the Windsor and District Medical Society.

We regret to announce that Dr. FRANCIS WILLIAM SCHOFIELD, J.P., died at his home in Bramwell Lane, Stockport, on July 7. He was born at Mossley 65 years ago and studied at the Manchester Medical School, taking the M.B., Ch.B. Vict. in 1902, and a few years later the M.B., B.S. Lond. After qualification he worked as house-surgeon at the Bradford Royal Infirmary, ophthalmic house-surgeon at the Sheffield Royal Hospital, and assistant medical officer at the City Hospital, Sheffield. He had practised at Stockport for nearly 40 years, and at the time of his death was senior honorary surgeon to the Stockport Infirmary, having joined the staff in 1925. During the war of 1914-18 he served with the R.A.M.C. in France and Egypt. Dr. Schofield joined the B.M.A. in 1910, was assistant secretary of the Stockport Division for five years, and chairman for two periods of five years; he was also chairman of the local Medical War Committee and of the recruiting board, and a member of the Panel Committee, and since 1937 had been a magistrate on the Stockport Borough Bench.

His many friends and patients will learn with regret of the passing of Dr. ILJA MARGOLIN, of Hall Green, Birmingham, at the age of 54. Born in Russia, he was interned in Germany during the first world war, and in his early days was a surgeon. Subsequently he established himself as a consulting physician in Berlin, until the advent of Hitler made him a refugee. He qualified in this country and set up as a practitioner in Birmingham. A. W. and S. L. write: His great knowledge, impressive appearance and personality drew many patients from all parts. His house was always a haven of rest for the victims of Nazi persecution. In 1942, in spite of his age, he joined the Forces and was invalided out in 1944. Thereafter he suffered much, but endured with truly marvellous courage. His philosophy was proof against his death, which he forecast almost to the day. In happier times he would undoubtedly have attained high rank in the profession.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on June 27 the following medical degrees were conferred:

D.M.—C. Hollins, C. A. Hinds-Howell.
B.M., B.Ch.—J. R. Nassim (in absence).

UNIVERSITY OF BIRMINGHAM

At a Congregation on July 5 the following medical degrees were conferred:

M.D. (*ex-officio*).—S. Zuckerman, C.B., D.Sc., F.R.S.
M.D.—A. E. Chaplin, C. R. St. Johnston, Yvonne J. Williams.
M.B., Ch.B.—P. G. Bevan (distinction in medicine), *Jeannie E. Roulston, E. J. Allaway, Barbara M. Ansell (distinction in surgery), J. R. Baker, W. I. H. Bourne, J. Butler, P. Y. Carlyle, Pamela J. Chappell, Fay P. S. Cull, E. J. Li. Davies, S. P. Dawson, Rosemary Dearden, W. B. L. Downing, Jean M. MacN. Dunn, Margaret J. Dutton, Jeanette G. Eveson, Barbara M. Finch, Frances A. Fourcres, D. M. Garratt, Joan E. Garside, N. L. Gilburn, F. R. Goodwin, P. H. T. Hall, Nora K. S. Howkins, P. J. L. Hunter, G. A. Jeffery, Jose V. Keats, H. M. Kent, D. E. T. Laird, J. Lapper, Sylvia E. Leather, D. McL. Maxwell, Rosemary G. Milton, J. Moss, G. C. Richards, P. Rigby, J. M. D. Roberts, T. B. Stirling, J. E. Tremlett, G. M. Turner, Evelyn D. Watkins, F. E. Webb, K. M. Williams, J. T. H. Wise, C. Wood, Mary P. Woodhouse, †Constance M. A. Bachtin, †D. P. Fitzgerald, †G. A. Readett.

* With second-class honours. † In absentia.

The following scholarships, medals, and prizes have been awarded in the Faculty of Medicine.

Queen's Scholarship (third year) and Peter Thompson Prize in Anatomy (third year), J. A. Ireland. Queen's Scholarship (fifth year), W. H. McIlveen. Queen's Scholarship (final year), D. H. Barnbrook. Ingleby Scholarships, D. H. Barnbrook and J. C. Haworth. Arthur Foxwell Memorial Medal and Russell Memorial Prize, J. C. Haworth. Sampson Gamgee Memorial Medal and Priestley Smith Prize in Ophthalmology, J. K. Baird. Leith Newman Prizes in Pathology (fourth year): Medical, J. M. Bishop and G. T. S. Willets; Dental, J. A. C. Smith.

John Barritt Melson Memorial Gold Medal (third year), D. F. Cole. *Industrial Nursing Prize*, Charlotte M. R. Webster. *Alexander Youngson Prize*, P. Goodwin and Dyllys A. Owen (divided). *Lawrence Barnard Carlton Scholarship*, E. A. Marsland. *John Humphreys Memorial Prize*, D. S. Shovelton.

UNIVERSITY OF DURHAM

Luccock Medical Research Fellowships have been established by King's College, Newcastle-upon-Tyne, as a result of the bequest of the late Mr. J. W. Luccock, who left his money "to enable research to be made and carried on as to the component parts of the blood of human beings with the view and in the hope that such research investigation and inquiry will be of benefit to the human race and increase the knowledge of the medical and surgical profession as to all matters relating to the blood which may result in the alleviation of human suffering and probably the prolongation of life." Fellows are required to pursue full-time research in the University of Durham in an approved subject in the field of medicine (including dental surgery). Senior fellowships are of the minimum annual value of £600, and junior fellowships £300; supplementary grants in aid of the expenses of the research may be sanctioned by the Council. Regulations governing the award of these fellowships may be had from the Registrar of King's College, Newcastle.

UNIVERSITY OF GLASGOW

At a Ceremony of Graduation held on July 10 the following medical degrees were conferred:

M.D.—J. Reid (with honours), *Margaret D. Giles, D. M. Armstrong, J. Macrae.

M.B., Ch.B.—*G. C. Provan, *J. F. Patterson, *Elizabeth M. Dallow, *J. Guthrie, *D. W. Menzies, *J. B. Ritchie, *R. W. L. Heddle, *Susanne Rosenfeld, *W. D. H. Conacher, *H. Stern, G. Adam, L. R. C. Agnew, C. M. Ball, G. N. Beck, W. G. A. Begg, H. Benson, Ruth K. Bowden, Agnes C. L. Bowie, W. Brodie, R. C. Brown, I. A. Buchanan, J. Burgoyne, Janet G. McE. Burnett, J. H. Cameron, F. W. Campbell, G. S. Carrick, J. Carswell, L. Casey, Nulece Cassells, H. Clark, Ruth A. Cohen, D. F. Coulter, Mary G. Coyle, A. J. Crowe, Helen M. Cunningham, Agnes C. Davidson, A. Deuchars, W. W. Douglas, T. Dungavel, A. M. Ferrie, G. H. Field, R. B. Forbes, R. R. H. Ford, W. S. Foulds, K. H. Fraser, W. Garrett, J. B. Gibson, J. McC. Gilmour, Agnes M. Gordon, Elsie R. Gordon, Catriona M. Gourlay, E. G. Green, K. Greig, Anne McL. Haddow, S. Happel, I. Harper, Isabella P. Harvie, R. W. Henderson, R. B. Hendry, M. MacR. Herbert, P. A. Hood, J. R. S. Hutchison, R. McG. Inglis, J. G. Kennedy, J. S. P. Kerr, Ruth A. Keymer, Margaret G. Kirkwood, W. Lees, E. C. Levine, J. Levy, Janet J. Logan, T. Logan, C. P. Lowther, A. McClelland, Sarah C. McEwan, A. J. Maciver, S. McKechnie, W. J. M. Mackenzie, N. A. MacKillop, J. McG. McKinnon, J. Mackintosh, D. A. McLaren, G. K. McLellan, J. F. McMin, Anna S. MacTavish, A. S. MacVicar, J. S. Marshall, R. Martin, Dorothy J. Miller, J. R. Milne, Mary A. Mullen, I. B. Munro, J. McE. Neilson, A. Poli, J. A. E. Primrose, H. Revill, H. A. N. Richmond, J. L. Robertson, J. S. Scott, W. J. C. Scott, W. Seright, Margaret R. S. Smellie, Margaret A. E. Smith, Mary D. Smith, Marjory B. Snodgrass, J. T. T. Stark, Elizabeth T. Steel, I. F. Stewart, R. G. Stewart, J. Stoll, N. Watson, Anne B. Watt, J. White, Edith J. Whitelaw, L. Whyte, T. Wilson, B. A. Woodger, J. T. Young, T. G. S. Young.

The following prizes and medals were awarded:

Brunton Memorial Prize and Stockman Medal: G. C. Provan. *West of Scotland R.A.M.C. Memorial Prize and John W. Weir Prize*: Elizabeth M. Dallow. *McCawen Medal in Surgery*: R. W. L. Heddle.

* With commendation.

UNIVERSITY OF DUBLIN

The following medical degrees were conferred on July 3:

M.D.—C. W. Bradfield, D. P. Burkitt, R. H. Simon, R. T. Towson. M.B., B.Ch., B.A.O.—A. B. Boyle, R. P. Brown, T. T. Chapman, C. R. Crawford, D. F. Doherty, R. G. Emerson, P. B. B. Gatenby, Hilary Gruson, Jean F. W. Henry, J. Higginson, N. Jaswon, Ethel O. Johnston, Joan H. Kelly, W. R. Lamb, J. R. Lowe, J. B. H. Lusk, H. F. McElligott, F. H. Moore, F. P. Myles, O. M. O'Malley, R. D. H. Parker, R. M. Pritchard, I. Sevvitt, O. M. P. Tobias, Mona C. Warren, R. J. S. Weir, K. H. McK. Young.

QUEEN'S UNIVERSITY, BELFAST

The following candidates have been approved at the examinations indicated:

M.D.—J. H. Scott (with gold medal), *G. F. Adams, *W. H. Hood, *J. A. Smiley, T. J. M. Barber, T. H. D. Millar, J. M. Beare, A. M. Blackstock, A. A. H. Gailey, G. Gregg, R. A. Pypcr, R. H. F. Smith, E. C. Torrie.

M.B., B.Ch., B.A.O.—S. T. Armstrong, P. K. Boylan, E. J. H. Byrne, A. C. Darrab, C. De Lary, Christina M. Dornan, Irene M. Emerson, Mary F. Gregg, H. Hegon, T. D. Hurriott, A. L. Hyman, W. T. Joseph, Dorothea B. Keith, D. Kernohan, B. U. Killen, H. M. McClatchey, Dorothy McDowell, S. P. McGibbon, Doris A. McKinley, P. G. MacLarnon, B. Murray, J. Patterson, Vivien R. G. Poots, J. Rawe, J. E. Reid, W. B. Rodgers, K. Sax, W. J. W. Speedy, Vera A. Sullivan, C. A. K. Tully, Alice M. Williams, G. Wolfenden.

* With high commendation. † With commendation.

The Department of Health for Scotland announces that ex-Service men and women with first-class qualifications as nursing orderlies will have the chance of becoming State registered nurses after an intensive course of one year. Training for State registration normally takes three years. The General Nursing Council for Scotland, however, has agreed to allow ex-Service men and women to sit the examinations, after this intensive course, if they have had two years' experience of nursing in a Service hospital under State registered nurses, and have, while in the Services, qualified as nursing orderly Class I or nursing member Class I (Army); leading sick berth attendant (Navy); leading aircraftsman or aircraftswoman in the trade of nursing orderly (Air Force).

Medical Notes in Parliament

Free Choice

Mr. JOHN MCKAY on June 28 asked the Minister of Health to give an assurance that under the National Health Service Bill patients would have a free choice of doctors and not be restricted to the doctors covering the district in which the patients lived and who had made a contract of service under the National Health Service Act.

Mr. BEVAN said he could give this assurance. It was intended to give patients the widest possible choice among practitioners taking part in the new Health Services, but the details of the way in which this could be arranged must be a matter for regulations.

Medical Service for Coalminers

Mr. WILLIAM FOSTER, on July 2, invited Mr. Shinwell to make a statement of the progress made in the establishment of a medical service scheme at collieries in the mining industry.

The question was answered by Mr. GAITSKELL. He said arrangements for the erection of five experimental types of medical treatment centres were completed. It was hoped that all would be built and in operation by the end of the year. The construction of permanent centres, following experience with the experimental types, would take much longer. Meanwhile suitable first aid or other accommodation was being adapted at selected collieries for use as centres. The immediate aim was to have about fifty adapted centres in operation as soon as possible. Further progress would be made as labour and materials became available to make the necessary adaptations and the supply of nurses for this work increased.

New Rates of Pay for Medical Services

Mr. LAWSON announced on July 5 revised rates of pay for officers of the medical, dental, and veterinary services of the Armed Forces, and further made a statement on retired pay. Mr. Lawson said that as regards medical and dental officers the Government had decided that, from July 1, 1946, there would be a common scale of pay and time promotion in each of these two branches in all three Services. Officers would be appointed in the rank of acting surgeon lieutenant R.N., lieutenant, or flying officer, and promotion would be by time to surgeon lieutenant R.N., captain, or flight lieutenant after one year, and to surgeon lieutenant-commander, major, or squadron-leader after eight years. Thereafter promotion would be by election. Rates of pay would be as follows:

Approx. Age	Service	Rank	Pay (Daily)
25	On appointment ..	Acting Surgeon Lieutenant R.N., Lieutenant, or Flying Officer	s. d. 22 0
26	After 1 year's service	Surgeon Lieutenant R.N., Captain, or Flight Lieutenant	28 0
28	" 3 years "	"	31 0
30	" 5 " "	"	34 0
32	" 7 " "	"	37 0
33	" 8 " "	Surgeon Lieutenant-Commander, Major, or Squadron-Leader	43 0
35	" 10 " "	"	46 0
37	" 12 " "	"	49 0
39	" 14 " "	"	52 0
		Surgeon Commander, Lieutenant-Colonel, or Wing-Commander (on appointment)	58 0
		" after 2 years ..	61 0
		" " 4 " "	64 0
		" " 6 " "	67 0
		" " 8 " "	70 0
		Surgeon Captain R.N., Colonel, or Group-Captain (on appointment)	75 0
		" after 2 years ..	78 0
		" " 4 " "	81 0
		" " 6 " "	84 0
		Surgeon Captain R.N. (after 8 years as such), Brigadier, or Air-Commodore	87 0
		Surgeon Rear Admiral, Major-General, or Air Vice Marshal	110 0
		Surgeon Vice-Admiral, Lieutenant-General, or Air Marshal	135 0

Mr. Lawson also furnished a table giving the daily rates of pay for dental and for veterinary officers. He added that it was intended to continue the arrangement under which a medical or dental officer commissioned after holding an approved whole-time appointment in a recognized civilian hospital might be granted an ante-date of seniority. In future, however, there would be a common rule for all three Services and the ante-date, which would count towards the service qualifying for

increments of pay and for promotion to the rank of Major or equivalent in the other Services, would take effect on completion of 12 months' service. The arrangements for the encouragement and reward of specialization were still under consideration.

Turning to Service retired pay and gratuities, Mr. Lawson reported that the new general scheme of service retired pay and gratuities for Regular officers, details of which were given in Appendix III of the White Paper, Command 6750, would also apply to permanent Regular medical, dental, and veterinary officers who were serving on the active list on December 19, 1945, or who were commissioned after that date. There would be some adjustment on the lines of existing arrangements for Naval medical officers who retired with less than 25 years' service after having received the special gratuity of £1,000 which was payable under the old code. Medical, dental, and veterinary officers now serving with permanent Regular commissions would, like other officers, remain eligible, if to their advantage, for awards under the regulations now superseded, instead of the new terms. (See paragraph 67 of Cmd 6750.) Officers who retired with retired pay before December 19, 1945, and who served during the war, would be allowed reassessment of their retired pay in respect of their war service under the terms of the scheme announced in the House on April 15 by Mr. Lawson.

Birth Rate and Population Inquiry

Mr. CHRISTOPHER HOLLIS, on July 8, opened a discussion on the birth rate. He said Britain would have something like a stable population for some time but would, about the 1970's, be in danger of the beginning of a rapidly declining population. Some means should be discovered to prevent this decline. The number of children born depended on the extent to which people were able to have faith in the purpose of life. He pointed out that there had not been the decline in maternal mortality that there had been in every other mortality. One reason for this was the gradual raising of the age at which marriage took place and at which the first child was born. To decrease maternal mortality marriages should take place at an earlier age. That was an economic problem.

Mr. PAGET said the birth rate might have to be corrected by a policy of immigration.

Replying for the Ministry of Health, Mr. KEY said a commission was inquiring into the question of population. Last year they took a family census from which the Government might be able to discover whether the size of families was declining and if childlessness was increasing. There was at the moment a considerable increase in the birth rate and figures seemed to indicate that the size of the family was increasing, but until the Government had a full report from the commission it would not be in a position to analyse the problem nor to know its real causes and its extent. He could not indicate when the commission would finish taking evidence, nor when it was likely to produce its report.

Penicillin Supplies

Mr. WILMOT said on July 8 that supplies of penicillin were steadily increasing, but it would not be possible for some time accurately to estimate the demand. He would consider discontinuing control measures immediately it became apparent that supplies were adequate to meet an uncontrolled demand. At present control was made more effective by taking proceedings against the person who, without approved prescription or authority, tried to buy penicillin, as well as against the supplier.

Oversea Service of Specialist M.O.s

Mr. BOWDEN reported on July 9 that specialist medical officers recently called to the Army were being sent home for six to eight weeks to await posting abroad. Mr. LAWSON explained that drafts of specialist medical officers were normally despatched at monthly intervals, the date of each draft being adjusted to ensure that all the officers comprising it received fourteen days' embarkation leave after their primary training. Occasionally the despatch of officers was delayed because of shipping difficulties or late notice of alterations in overseas requirements. Such cases were exceptional and did not materially affect the position of officers now over-seas who awaited release. In certain theatres and for certain special subjects the release of these officers had been retarded, but this was primarily due to the difficulty of obtaining replacements from the civilian profession.

Bread Rationing Scheme

Mr. STRACHEY announced on July 10 that all hospital nurses qualify for the ration of 11 oz. of bread a day and that hospitals would obtain this allowance for those nurses who were resident. Young manual workers between the ages of 11 and 18 would

be rationed both as adolescents and as manual workers and would receive 18 oz. a day, or 14 in the case of girls. He added that this was right, as their psychological and physiological needs for food were especially large. Mr. Strachey estimated the classes of consumers under the bread rationing scheme to be: children under 1, 800,000; children 1-5, 3,000,000; children 5-11, 3,400,000; adolescents 11-18, 5,300,000; normal adults, 22,000,000; expectant mothers, 600,000; manual workers (women), 3,000,000; manual workers (men), 9,000,000.

Notes in Brief

British Guiana maintains seven public hospitals containing in all over 2,000 beds; and Mr. George Hall is satisfied that these arrangements meet the needs of the community. Substantial reconstruction is desirable, and the Government of British Guiana is considering what improvements are possible within the limits set by its financial resources.

Mr. Strachey is anxious that everything possible shall be done to encourage the development of products which can be used to replace soap. Over a thousand firms have already been licensed to produce or market soap substitutes.

Medical News

A meeting of the Middlesex County Medical Society will be held at North Middlesex County Hospital, Silver Street, Edmonton, N., to-day (Saturday, July 20), at 3 p.m.

A Japanese Prison Camp Art Show has been arranged at the Alpine Club, 74, South Audley Street, London, W. It is open daily until July 27, 10 a.m. to 6 p.m. except Sunday. There is an exhibition of drawings and paintings in Chinese mediums by Dr. R. Kenneth McAll, internment camp medical officer 1942-5.

The 150th anniversary of the opening of the Royal Sea-Bathing Hospital, Margate, will be commemorated on the afternoon of July 23 at the hospital, Canterbury Road, Margate. The president, the Earl of Athlone, and H.R.H. Princess Alice, Countess of Athlone, will attend the ceremony.

In connexion with the Davidson Clinic, Edinburgh, a summer school will be held from July 31 to August 6. The main theme will be "Family Relationship." The opening address will be given by Dr. Scott Williamson of the Pioneer Health Centre, Peckham. A series of addresses will be given by Dr. E. A. Bennet of the West End Hospital for Nervous Diseases, London, and discussion groups will be led by members of the Davidson Clinic staff. Further information can be obtained from the secretary, 26, Chalmers Street, Edinburgh.

On July 4 the American Ambassador, Mr. Averell Harriman, unveiled a tablet in the Middlesex Hospital to commemorate a gift of £25,000 to the hospital from the surplus funds of the American Ambulance in Great Britain.

The following members of the medical profession were called to the Bar on July 3: J. Tarsh, M.B., Ch.B., and Squadron Leader F. E. Fletcher, M.B., Ch.B. (Lincoln's Inn); R. C. Burton, M.B., Ch.B. (Middle Temple); and S. C. Gawne, M.D. (Gray's Inn).

Sir Stewart Duke-Elder, ophthalmic surgeon to St. George's Hospital, has been elected an honorary Fellow of the American Medical Association.

The Ministry of Health announces that consequent on the decision to place penicillin on sale through the normal trade channels, the free supply to local authorities of penicillin, including penicillin in oil-wax suspension, for the treatment of venereal diseases will be discontinued; and it will now be necessary for local authorities to place orders for future supplies at trade rates with manufacturers authorized to supply in accordance with the formulae of the *British Pharmacopoeia*.

From June 20 the statutory controls regulating the distribution of nurses (male and female) and midwives ceased to operate. It is no longer necessary for employing authorities to consult the Ministry of Labour and National Service before engaging staff for nursing or midwifery or obtaining recruits to train in these professions. Similarly nurses and midwives or persons seeking to train as such are free to take up appointments or training otherwise than through the nursing appointments offices. In addition, State registered nurses and fully trained midwives will not in future be required on becoming qualified to give a year's special service. In consequence of these changes in the situation, the co-operation of employing authorities in notifying the termination of employment of nurses and midwives is no longer necessary. Restrictions on the engagement of male radiographers and physiotherapists in the age group 18-30 inclusive also come to an end. The removal of these controls does not mean that all persons in the classes specified above are necessarily free to leave their present employment.

After consultation with hospital, nursing, and other interests in Scotland, the Nuffield Provincial Hospitals Trust has undertaken to accept financial responsibility for the establishment in Scotland of a nursing recruitment service similar to that which has operated in England for the past six years under the auspices of King Edward's Hospital Fund for London and the Nuffield Trust. The service will operate by means of nursing recruitment centres in charge of qualified and experienced staff. Lord Nuffield's trustees have appointed a Scottish Nursing Recruitment Committee responsible for the direction of the work, and the members include Sir Robert Nimmo (chairman), Dr. A. Greig Anderson (vice-chairman); Dr. W. L. Burgess; and Prof. Thomas Ferguson.

MACKENZIE INDUSTRIAL HEALTH LECTURE

Dr. Donald Hunter, F.R.C.P., will deliver the Mackenzie Industrial Health Lecture at B.M.A. House on Wednesday, July 24, at 5.45 p.m. The title of the lecture is "Academic Aspects of Industrial Medicine," and admission is by ticket only. The lecture will be confined to persons, lay and medical, who are professionally interested in industrial medicine. Tickets of admission can be obtained from the Secretary, B.M.A. House, Tavistock Square, W.C.1, and early application is requested as the number is limited.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a large fall in the notifications of measles 339, while an increased prevalence was recorded for scarlet fever 122, whooping-cough 47, diphtheria 39, and dysentery 30.

Notable decreases in measles were London 111; Lancashire 47, Cheshire 42. The decline in scarlet fever was fairly general throughout the northern section of the country, but in the southern section a slight rise occurred.

The only large variation in the local trends of whooping-cough was an increase in Essex of 52. The largest fluctuations in diphtheria were an increase of 21 in Lancashire and a fall of 14 in Yorkshire West Riding. Notifications of dysentery were largest in Lancashire 49, London 15, and Warwickshire 10.

In *Scotland* there were decreases in the incidence of diphtheria 24, measles 53, and whooping-cough 25. The largest local fall in diphtheria was Glasgow 14.

In *Eire* the notifications of infectious diseases varied only slightly from the level of the preceding week. Although diarrhoea and enteritis fell by 3 for the whole country, a rise of 10 was recorded in Dublin C.B.

In *Northern Ireland* the only feature of note in the returns was an outbreak of measles involving 16 cases in Ballycastle R.D.

Infectious Diseases During the Second Quarter

Notifications generally during the June quarter of this year have been below the average of recent years.

Notifications in Second Quarter

	1942	1943	1944	1945	1946
Scarlet fever	14,592	23,785	21,692	17,139	13,958
Whooping-cough	18,291	27,297	30,347	13,907	25,559
Diphtheria	8,911	8,355	6,973	5,971	4,662
Measles	73,962	127,131	32,344	165,388	42,166
Cerebrospinal fever	1,859	916	873	723	756
Dysentery	1,726	1,683	2,835	5,325	2,259
Paratyphoid and typhoid	207	183	136	119	112

Diphtheria notifications have fallen steadily and are now only slightly over half the total of five years ago. The 4,662 cases in the second quarter of this year give the lowest number recorded in any quarter. The totals for scarlet fever and enteric (typhoid and paratyphoid) are the lowest for the second quarter in recent years.

War Losses

War losses amounted to 400,000 persons for the United Kingdom according to the *League of Nations Monthly Bulletin of Statistics*, No. 5. This figure included: military losses of 245,000 killed and 53,000 missing; 30,200 merchant seamen killed and 5,260 missing. Nearly 60,600 civilians were killed in the United Kingdom, of whom 7,700 were children under 16.

Week Ending July 6

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 997, whooping-cough 2,247, diphtheria 290, measles 4,524, acute pneumonia 478, cerebrospinal fever 37, dysentery 87, paratyphoid 10, typhoid 13.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	39	5	25	1	2	52	6	33	4	1
Deaths	—	2	1	—	—	—	2	—	—	—
Diphtheria	313	29	75	29	10	421	29	82	66	10
Deaths	2	1	1	—	—	2	—	—	—	—
Dysentery	123	15	33	7	—	292	33	58	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	3	1	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	32	7	5	—	—	44	5	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	47	—	—	—	—	55	—
Deaths	42	6	9	9	2	43	8	5	6	—
Measles*	4,177	866	487	32	25	6,004	249	161	40	—
Deaths	1	1	1	—	—	3	—	—	—	—
Ophthalmia neonatorum	70	7	22	—	—	64	7	12	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	9	15	(B)	—	—	7	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	440	24	4	—	2	424	19	9	3	2
Deaths (from influenza)*	5	—	—	—	—	1	—	—	1	—
Pneumonia, primary	—	26	164	21	7	—	12	202	10	13
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	8	1	1	2	—	8	1	2	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	4	15	—	—	—	5	11	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	125	8	15	1	—	133	11	18	2	—
Deaths	—	1	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,063	100	159	23	24	1,255	62	186	25	20
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	—	6	—	2	4	5	—	2	6	—
Deaths	—	—	—	—	—	—	—	1	—	—
Typhus fever	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,073	157	64	38	18	1,194	60	46	24	19
Deaths	7	1	1	1	1	1	—	1	1	—
Deaths (0-1 year)	385	48	47	37	16	284	38	38	16	20
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,136	626	574	183	103	3,777	550	539	173	107
Annual death rate (per 1,000 persons living)	—	—	12.6	11.7	—	—	—	12.2	11.2	—
Live births	8,777	1390	1004	468	280	6,653	803	887	408	280
Annual rate per 1,000 persons living	—	—	20.2	30.0	—	—	—	17.7	26.3	—
Stillbirths	276	37	46	—	—	185	18	22	—	—
Rate per 1,000 total births (including stillborn)	—	—	44	—	—	—	—	24	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Contact Dermatitis in Apiarists

Q.—*An apiarist changed the crates in the hives, and that evening his penis became itchy and swollen. Two days later the penis was lightly erythematous with bullous oedema at the tip. The only other lesions were slight swelling of both upper eyelids and minute itchy macules on the front of both wrists and elbows. The oedema subsided and the macules faded, with subsequent fine desquamation, after appropriate treatment. Two identical attacks occurred in May and September last year, and between these attacks he had actually handled bees on several occasions without mishap. What is the explanation of this?*

A.—The description given is almost certainly that of a contact dermatitis. The parts which have been in contact with the excitant become very itching or burning and develop an erythematous, papulo-vesicular, vesicular, or pustular rash, depending on the degree of reaction. This is followed by the formation of crusts or scales. The eruption may be accompanied by swelling of the face, particularly the eyelids. The part of the penis affected would be in agreement with this hypothesis, the excitant being conveyed by the hands. Many apiarists when handling crates cover them with a cloth rinsed in lysol—a common cause of contact dermatitis. If this is not the case with your apiarist other excitants must be looked for and patch tests may be necessary to trace the cause (*Clinical Allergy*, L. Tuft). The treatment is complete avoidance of the cause.

Gastric Aspiration

Q.—*What are the indications for gastric aspiration? How is it performed?*

A.—Intermittent gastric aspiration is an invaluable adjuvant to treatment in pyloric stenosis. With it some cases will settle down completely, and all patients should have the gastric contents aspirated daily and the stomach washed out with normal saline solution for at least a week prior to operation. It should also be employed before Rammstedt's operation for congenital pyloric stenosis in infants as well as in certain types of poisoning. A large stomach-tube, about 1 cm. in diameter, should be used. It should be connected to a funnel by means of a glass connexion and a piece of rubber tubing. The funnel is filled with normal saline solution, and before this has run through the funnel is inverted so that the gastric contents will be siphoned off. This manœuvre should be repeated until the washings are returned clear.

Continuous gastric aspiration is of great value in high intestinal obstruction, after operations on the gastro-intestinal tract, and in all post-operative conditions characterized by vomiting. For this purpose a Ryle's tube is most convenient as it can be passed through the nose and retained in position for several days. Continuous suction is provided by means of an inverted Winchester bottle, which is hung above the patient's head from some convenient stand or bracket by the bedside. It is fitted with a rubber bung through which pass two pieces of glass tubing, one reaching to the bottom and the other going just through the bung. The bottle is filled with water and the Ryle's tube is connected to the longer of the two glass tubes; the shorter tube leads by a piece of rubber tubing to a bucket on the floor. The rate at which the water runs out and at which the gastric contents are aspirated is regulated by means of a

screw-clip on the rubber tubing. The quantity of gastric contents removed must be measured, for the patient should not be allowed to become dehydrated; rectal or intravenous saline infusions may be necessary to combat this.

Yeast and Baldness

Q.—*A newspaper reports that in America yeast grows hair on the scalp of even old men. Is that so?*

A.—The newspaper report must have grossly distorted the facts. Greying of the fur occurs in rats kept on artificial diets lacking pantothenic acid and para-aminobenzoic acid, both of which are members of the vitamin B complex and occur in yeast. There is no evidence, however, that either of these substances can cure greyness in human beings. They have both been submitted to clinical trial in America, and the results have been entirely negative. No harmful effects are produced by taking yeast over a long period, although in some people it may cause intestinal flatulence and diarrhoea. It can be taken in the form of yeast tablets, dried yeast powder, or in the form of fresh yeast. There are no reports on the application of yeast to the scalp.

Diphtheria Immunization

Q.—*A.P.T. often causes a reaction in older children. Should one use T.A.F. when doing refresher immunization against diphtheria?*

A.—The refresher or boosting dose of diphtheria prophylactic should, if the child has received a primary immunizing course at one year of age, be given at the time of school entry. While reactions have occurred at this age they are not as a rule serious and do not preclude the use of A.P.T., the best immunizing reagent, for stimulating a waning immunity in young children. If, however, a primary course has been given at, say, four to five years, and it is desired to give a boosting dose five years later, A.P.T. may cause a severe reaction, and it is in this age group that the use of T.A.F. is particularly recommended. Alternatively, the children may be Schick-tested before the proposed boosting dose, and only those showing straight positive reactions should be given a further dose of either A.P.T. or T.A.F. It does not matter whether A.P.T. or T.A.F. has been used for the primary course, and only a small dose of prophylactic (0.2 ml. A.P.T. or 0.5 ml. T.A.F.) is needed as a booster dose to produce the necessary response.

Toxicity of Ketene

Q.—*Can you give me any information about the toxicity of ketene, CH₃CO? What concentration is considered dangerous, and what are its effects?*

A.—Ketene is a colourless gas with a peculiar penetrating smell resembling chlorine and acetic anhydride. It readily polymerizes on standing, and on strong heating decomposes into ethylene and carbon monoxide. Its spontaneous condensation is accompanied by considerable evolution of heat; there may be a fire hazard involved in the handling of it. The literature indicates that ketene is poisonous and irritant, though its precise action on the human body has not been described. It seems to attack mucous membranes, and Staudinger and Klever say that it "produces, even by inhaling small amounts, severe headache." The safest way to handle ketene would be by processing in an enclosed system, so that no one is exposed to its irritant properties.

Travel Sickness

Q.—*What is the best treatment for travel sickness—during the journey and on arrival? Is there any special treatment for air-sickness?*

A.—Experiments done with commando troops during the war showed that the only drug which significantly affected the incidence of sea-sickness was hyoscine; 1/100 gr. (0.65 mg.) may be taken orally before going aboard and repeated if necessary during the journey. There is no need to give any treatment on arrival at the destination, when recovery takes place rapidly. This treatment, which may be used for sea-sickness, air-sickness, or car-sickness, is not invariably successful, but it appears to be the best at present available. It must be borne in mind that in a high proportion of cases the sickness is psycho-

logical in origin. Such cases respond to almost any treatment prescribed with sufficient confidence. Many proprietary remedies owe their apparent efficacy to this fact.

Cause of Psoriasis

Q.—Is the causative agent of psoriasis carried in the blood stream? What is the latest treatment for it?

A.—There is no known single causative agent for psoriasis. It is probably different in different individuals and for different attacks, and it may upon occasion be carried in the blood stream—e.g., the toxins from a streptococcal throat may provoke an attack of psoriasis. Treatment is clearly an individual problem for every case, or indeed for every attack of psoriasis. As to the general lines of treatment, the reader should consult a textbook on dermatology or recent papers, e.g., *Encyclopaedia of Medical Practice* (Butterworth).

Dermatitis due to Nail Varnish

Q.—A mother, aged 59, and her daughter, aged 26, both complain of brittle and splitting finger-nails and an intensely irritating rash on the face. This is usually on the chin and round the mouth, is much drier than the surrounding skin, and peels readily. The nails split into two layers, the top layer becoming torn off in a ragged fashion. Both women are housewives and have their hands often immersed in water, and they use nail varnish. Can you suggest an explanation?

A.—Two possible explanations are worth consideration. These patients may be suffering from a dermatitis due to nail varnish. This may lead to deterioration of the nails and, without causing dermatitis of the finger ends, may give rise to a very puzzling irritable dermatitis of the face due to the finger-nails touching the face. The patients should be patch-tested for sensitiveness to the varnish by applying a little to the upper arm and observing whether it produces any rash in this site. Treatment would be by abandoning nail varnish.

Another possible cause is general constitutional and nervous debility giving rise to dystrophy of nails and an eczematous eruption of seborrhoeic type on the face. This would call for general medical investigation, especially of the nutritional, endocrine, and nervous side of the problem, and would need treatment along appropriate lines. (See *Journal*, 1941, 2, 855.)

INCOME TAX

Expenses Incurred while not actually in Practice

"RELEASED," while on service abroad, sold his practice as from January 1, 1946, to his locum tenent. He returned to this country on April 12, 1946, and is acquiring a house and a practice elsewhere as from August 16. He has recently had his car overhauled at a cost of £130. Can he obtain income tax relief on this, either (a) by deducting that amount as an expense or (b) by adding it to the written down value of his car?

** As the "wear and tear occurred while the car was used in the practice" it seems equitable that an income tax allowance should be made for the expense, but we are not aware of any provisions of the Income Tax Acts under which such an expense can be deducted if it was incurred when the source of income was not then existing. Additions to written down value are restricted to expenditure on improvements, or additions, and a claim under alternative (b) is likely to be refused—but it is the better chance of the two. It follows that further expenses—e.g., on books, instruments, etc., had better be deferred until after August 16.

Payment of Tax under a Misapprehension

J. L. joined the Forces in August, 1942, and his employers agreed to make up his pay to the civilian level. His pay rose above that level, and he notified his employers accordingly; but for a considerable time they continued to make payments to his account and to deduct tax therefrom. The question of refunding to the employers is now being dealt with; J. L. has refunded the net amounts paid to him and asks whether the amount representing the tax should not be refunded by the Inland Revenue—who have declined to do so.

** The tax having been deducted and handed over to the collector, it is J. L. who suffered the tax and is entitled to reclaim it. It is true that the payments from which tax was deducted have proved not to be J. L.'s income at all, but that does not seem to alter the fact that it was J. L. who was regarded as in receipt of the income, and he must be held to have suffered the tax, and therefore to be entitled to any refund that may be due on the facts as they are now established.

LETTERS, NOTES, ETC.

Medical Educational Films

Dr. R. C. MACKETH, Chairman of the Medical Committee of the Scientific Film Association, writes: Prof. Niels Dungal's survey (June 15, p. 923) is most useful. He has evidently been in close contact with U.S.A. than this country, but much work has been done here to meet the difficulties he notes. The Royal Society of Medicine financed a joint work by the R.S.M. and the S.F.A., and 800 medical films have been viewed. Catalogues will be published (one is now at the printers) giving the information collected. The S.F.A. agree strongly with Prof. Dungal that it is desirable to be able to obtain an "adequate judgement whether a likely-looking film is really suitable for the purpose desired." Such judgements are provided by the S.F.A. Appraisal Scheme. The S.F.A. Medical Committee are shortly publishing a catalogue of films on anaesthetics which will include content, appraisal, and distributors of each film. As regards "The Need for Organization" the following items will be of interest. 1. Suggestions have been collected from deans of medical schools as to subjects on which they would welcome medical teaching films. These suggestions are available to would-be sponsors of films. A scheme for voluntary co-ordination of production of medical films is in operation and was noted in the *Journal* of May 18 (p. 779). 2. We have been able to promote the printing and circulation of copies of a number of medical films and, pending the setting up of an active central medical film library, we have accepted copies of films. The international exchange of educational films is likely to be taken up actively by Unesco in the not very distant future. 3. In conjunction with the Royal Society of Medicine a very successful meeting was held in February, 1946, to discuss "The Place of the Film in Medical Education." The papers and discussion are being printed as a pamphlet.

Ministrations of the Clergy on Patients in Hospital

In the spring of 1945 a body of laymen, with the expert assistance of two doctors, a clergyman, and a nurse, sent out a questionnaire to all medical superintendents of hospitals in Denmark and to the clergymen and nurses attached to these hospitals. The object of this poll was to ascertain the attitude of Danish medical superintendents of hospitals to the spiritual welfare of their patients. Altogether 118 superintendents answered the numerous questions set them, and after the omission of eight answers not found appropriate, there remained 110 which are discussed very fully by Dr. Karl Söndergaard in the journal of the Danish Medical Association, *Ugeskrift for Læger*, for June 13, 1945. A classification of the ages of the medical superintendents failed to show any age difference in their attitude to this problem, presumably because, as Dr. Söndergaard suggests, a man's theological outlook has usually crystallized out for good by the age of 30. But the poll showed that the doctors in charge of patients suffering from chronic diseases were as a class much more interested in the spiritual welfare of their patients than the doctors in charge of hospitals with a rapid circulation of patients. While many medical superintendents gave the clergy attached to their hospitals every facility for getting into touch with their patients, imparting details concerning their health to help the clergy in their appreciation of the situation, other medical superintendents declared that they did not co-operate at all with the clergy, of whom one wrote that they have "neither the right to receive information nor the qualifications to understand morbid conditions." But while some invoked professional secrecy as a reason for passive obstruction, others found they could speak freely with a hospital clergyman who is also bound by professional secrecy and "has just as much right to have access to case records as an ordinary probationer nurse." Dr. Söndergaard finds that the medical superintendents of hospitals were as a class, and with the exception of medical psychiatrists, less familiar with modern psychiatry than the clergy. As was to be expected, the clergy attached to hospitals in the charge of medical superintendents "who cared for none of these things" often found their work disheartening. The most perplexing question, and one which several Danish superintendents declared they did not understand was: "In what do you see the difference between, or the similarity of, psychotherapy and Christian spiritual care?" To which one of the superintendents replied that the difference lay in the object sought, psychotherapy aiming at healing a morbid mental process, Christian spiritual care aiming at helping the patient in his religious life and acting in certain cases as effective psychotherapy.

Treatment of Sterility in Women

Dr. J. B. PRIMMER (Dunfermline) writes: We might do worse than return to some of the older methods. In my early days, before National Health Insurance had been thought of except in Germany, with more time available I used to treat sterility in the patient's home by means of dilatation of the cervix with Hegar's dilators, a method referred to by Dr. D. Currie (June 29, p. 997). The results were good in cases of from two to four years' sterility. If vaginismus was the cause, the wearing of a glass dilator with supports proved effective, though my experience of this was limited.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 20 1946

NATIONAL HEALTH SERVICE BILL

ANALYSIS OF RESULTS OF COMMITTEE STAGE OF PROCEEDINGS

The Committee Stage of the National Health Service Bill was completed on July 3. Below is an analysis of the results of the proceedings, which lasted twenty days. Under each Clause in the Bill, proposed new Clauses, and the various schedules, extracts are given from the Official Report. These are shown under three headings: "Change" means that an amendment was agreed to; "Promise" indicates a Government promise; and "Intention" a Government intention. In each case the section and subsection of the Clause are recorded, and the final reference is to the column number in Hansard. It is expected that the Report Stage of the Bill will be taken on July 22 and 23 and the Final Reading on July 25.

Central Administration

Making of Regulations (Clause 1)

Intention.—Mr. BEVAN: "Any regulation dealing with general health service matters will obviously be agreed with the Minister beforehand, but he would not put every regulation before such body; otherwise it would be hopelessly overburdened." (Col. 17.)

[His example of a regulation which he would not put before a highly specialized medical body" was one relating to superannuation.]

Members of Council in Relation to Advisory Committees (Clause 2 (1))

Promise.—If, on further examination of Clause 2 (3), it is shown that the wording prevents the Council from advising the Minister on the advice given to it by one of the standing advisory committees, the Minister will alter the wording on the Report stage. (Col. 31.)

Mr. BEVAN: "We were very anxious that the Central Council should have the opportunity of reviewing for the Minister the advice of a standing advisory committee in the light of its effect on the general medical services. That is the reason we secure in this Subsection that the advice of the standing advisory committee goes simultaneously to the Minister and to the Central Council. . . . We do not want a Central Council that is a specialist body. . . . We want to have the Central Council not limited in any inappropriate way, but limited to giving general advice."

Variation of Constitution (Clause 2 (2))

Promise.—The Minister will introduce an amendment on the Report stage to make any alteration of the constitution of the Central Council subject to a negative Resolution of the House, not a positive Resolution. . . . If it were made subject to a Prayer, all the protection necessary would be given. (Col. 38.)

Mr. BEVAN: "If the body were so reorganized as to disturb the balance which already existed, the defenders of the existing balance would almost certainly put down, or inspire, a Prayer against the Regulation. I hope I shall not be pressed to go beyond that, because this is a matter which is not of such weight as to warrant a positive Resolution."

Standing Advisory Committees (Clause 2 (3))

Intention.—On the question of naming them in the Bill Mr. BEVAN said: "I thought the best possible thing to do would be to set up such standing advisory committees as the Central Council itself advised the Minister were necessary, and add to them from time to time, or take away from them as the exigencies of practical realities dictate." (Col. 42.)

Standing Advisory Committees (Clause 2 (3))

Intention.—Mr. BEVAN: "The Central Council itself will always have representatives on each of the standing committees, and, of course, the standing committees are set up after consultation with the Council. There is no danger of any divergent lines of activities. I can also give the assurance that although in urgent circumstances it may be necessary for the Minister to act on the advice of a standing committee, nevertheless, that report will be made known to the Central Council and, in fact, will form part of the Central Council's annual report. I think there is no difficulty at all about this." (Col. 48.)

Publication of Report (Clause 2 (4))

Change.—Words "after consultation with the Central Council" inserted in connexion with suppression of any part of the report as contrary to the public interest.

Mr. BEVAN: "It would seem to me an astonishing abuse of Ministerial power if the Minister proposed to suppress a portion of a report of a body of this sort without first of all telling the body about it. I think that would be perfectly reasonable and would be the normal practice, but if assurances are necessary I am perfectly prepared to accept the Amendment." (Col. 58.)

Powers of Standing Advisory Committees (Clause 2 (3))

Promise.—Mr. BEVAN: "I will look at it, and if it is necessary to do so we will make it quite clear that the standing committee will have power of initiation." (Col. 60.)

Integration of Services—Industrial Health Service (Clause 1 (2))

Intention.—On the question of the limitation of the sphere of advice that the Central Council might give, Mr. BEVAN said: "Where it might be limited, and I think properly limited, is in connexion with industrial health services. The Central Council might feel there ought to be an industrial health service. We all think there ought to be an industrial health service included in the wider scheme, and such a scheme will be, I hope, very shortly included in the scheme. The only reason why it is not there now is because it was administratively indigestible to take all those services into the present scheme. . . . We ought to see what sort of pattern emerges from this before embracing an industrial health service." (Col. 61.)

Sphere of Central Council (Clause 1 (2))

Promise.—On the objection that the Bill as drafted confined the advice of the Central Council to services that were already provided and not on services that were not, but should be, provided, Mr. BEVAN said: "If there is limitation we will remove it, though I doubt very much whether there is." (Col. 62.)

Hospital and Specialist Services*Ambulance Services (Clause 3 (1) (b))*

Intention.—Mr. KEY: "Services required at or for the purposes of hospitals include the provision of transport of all kinds, including the necessary ambulance transport for the hospitals concerned." (Col. 95.)

Definition of Specialist (Clause 3 (1) (c))

Intention.—Mr. KEY: "In the Bill there is no definition of 'specialist.' Since there is no definition, it will be left to the regulations which will be made under Clause 62 for the purpose for deciding the qualifications of the people who are to serve in that capacity. . . . The absence of a definition of 'specialist' gives us, when we come to the regulations, the necessary power of including in that service those people whose services will be essential at any particular time in the carrying out of this scheme." (Col. 98.)

Regional Boards (Clause 3 (1) (c))

Intention.—In reply to a request for an assurance that regional machinery would be set up, Mr. BEVAN said: "I am most happy to do so. The first thing I propose to do, immediately Parliament gives me authority, is to have the Regional Boards appointed. The second thing I propose to do is to ask them at once to prepare draft plans." (Col. 120.)

Appliances (Clause 3 (2))

Change.—The word "medical" has been deleted before "appliances" in two places in order to remove any limitation. (Col. 122.)

Expenses of Patients (Clause 3 (3))

Change.—The words "or to be incurred" have been inserted to ensure that in cases where it is necessary expenses may be paid before they are incurred. (Col. 123.)

Definition of Specialist (Clause 3 (1) (c))

Intention.—In connexion with the possible recognition of general practitioners as specialists Mr. BEVAN said: "I am proposing to ask the appropriate body—I would have to ask the Central Advisory Medical Committee first, because the Central Council will not be established for some time, and I may have to get this thing done rather hurriedly—and I will consult the profession as to what body they consider ought to advise me, on the definition of a specialist for the purposes of this scheme." (Col. 133.)

Access of General Practitioners to Hospitals (Clause 5 (2))

Promise.—Mr. BEVAN: "I am prepared to make a concession in the case of general-practitioner hospitals. There are instances all over the country where a person who is chronically ill goes into hospital because he or she cannot get treatment at home. It may be that they suffer from something which does not require specialist treatment but treatment by a general practitioner. I want to make it clear that the general practitioner should give that kind of treatment in a general-practitioner hospital. I propose to consider whether it is necessary to put down an Amendment to make that clear."

This statement referred to the private patients of general practitioners, and the Minister was then asked whether "the general practitioner was covered who was outside the service altogether, if there are such people." He replied: "Now the hon. Member is not pushing the door open, but is pushing the house down. If he is asking that a general practitioner who is entirely outside the public service is to have available the hospitals of the public service, he is asking for more than the specialist gets. . . . All I say is that if a doctor or a specialist cares to stay outside the service it will be a little hard for us to provide facilities. There must be some reason about this. I do not want to have a principle inserted in my scheme whereby general practitioners and specialists can sabotage the service by remaining outside. . . . I have said that I was prepared to consider putting down an Amendment to make it quite clear that the general practitioner in a general-practitioner hospital should charge for private patients and attend private

patients there, but I warn hon. Members that if they push this too far in another direction I shall have to resist with the utmost vigour." (Cols. 174-5.)

Future of Specialist Services (Clause 5 (2))

Intention.—Mr. BEVAN: "I want the specialist to spend as much time in the hospital precincts as possible. Indeed, I am hoping that, by enabling him to use the hospital facilities more and more, we shall slowly assimilate him into the hospital services, and that his desire to pursue private economic adventure outside will be lessened by it." (Col. 176.)

Specialists' Private Fees (Clause 5 (2))

Intention.—Referring to the specialist who would send his patient to a private nursing home in order to obtain higher fees Mr. BEVAN said: "The sooner that kind of specialist gets out of the hospital the better for the hospital service. That is a case of commercial-mindedness which would poison him and his associates. There must be a reasonable limit somewhere, and I think that the ceilings will probably be fixed fairly high, as they are now in many of these hospitals, and very good incomes—if I may change the phrase—would be obtained under them." (Cols. 190-1.)

Independent Specialist Opinions (Clause 5 (2))

Intention.—Mr. BEVAN reiterated that he could do nothing that would provide an inducement to practitioners to stay outside the scheme, and said that there should be no difficulty in obtaining independent second opinions. "Doctors will not be employees of the State." (Col. 195.)

Asked whether specialists could keep a substantial part of their time for private practice, Mr. BEVAN said: "This is a field in which the utmost flexibility will have to prevail. As long as a specialist is in the public service, as long as he is attached, no matter in how small a degree, he is conceived to be in the public service. In other words, there will be no question that he must spend 50% of his time in the hospitals and 50% elsewhere; it might be much smaller than that. As long as he is within the public service he will be covered." (Col. 197.)

Transfer of Hospitals to the Minister (Clause 6 (1))

Change.—Words "or attaching to" inserted to make clear that rights attaching to hospitals and the premises of hospitals are transferred with the premises themselves. (Col. 209.)

Change.—The following has been inserted: "rights and liabilities to which any such governing body or trustees were entitled or subject immediately before the appointed day, being rights and liabilities acquired or incurred solely for the purposes of managing any such premises or property as aforesaid or otherwise carrying on the business of the hospital or any part thereof, but not including any endowment within the meaning of the next following section or any rights or liabilities transferred under that section."

The purpose of the amendment is to make clear that the Minister will take over the contractual rights, etc., in connexion with the running of the hospital as well as the liabilities. (Col. 223.)

This does not apply to endowments. (Col. 225.)

Definition of Hospital in Certain Cases (Clause 6 (1))

Intention.—On the question of certain institutions, which may or may not be hospitals, Mr. BEVAN said: "The term 'hospital' of course, is defined, but the question what kind of institutions are taken over will depend very largely upon the recommendation of the Regional Boards and the ultimate hospital plan, and it would be difficult for me at this stage to say what the answer will be. However, it is not intended to take over institutions which are not specifically hospitals or ancillary to hospitals." (Col. 230.)

Use of Hospital Property (Clause 6 (4))

Intention.—Objecting to an amendment restricting the use of property to the purpose for which it was used immediately before the appointed day, Mr. KEY said: "We must be given

edom for reorganization and adaptability on the understanding, and the complete undertaking, too, that, as far as practicable, the purposes for which the foundation was made originally shall be observed in the scheme that is to be developed." (Col. 248.)

Transfer of Rights and Liabilities of Hospitals to the Minister (Clause 6 (6))

Change.—The following words have been inserted: "or to rights and liabilities arising under any enactment, scheme, or contract providing for the payment of superannuation benefits, except superannuation benefits payable in respect of officers employed for the purposes of a voluntary hospital who have ceased to be so employed before the appointed day, but this subsection shall be without prejudice to the provisions of Part I of the Act, relating to the transfer and compensation of officers and the superannuation of officers."

The purpose is to exclude from the transfer of rights and liabilities the rights and liabilities relating to superannuation in order that they may be considered with Clauses 63 and 72. But where a voluntary hospital has a liability for the payment of superannuation to somebody who has actually retired, the ability for that is transferred to the Minister. (Col. 252.)

Date of Operation of Scheme (Clause 6)

Intention.—Referring to the notification to voluntary hospitals about their position under the Act Mr. BEVAN said: "As soon as the Bill is passed we will, as I said the other day, establish the Regional Boards in order that the plans may be made as soon as possible, and, as they are being made, the hospitals will learn what their position is to be. Therefore it will not be 1948 before they will have an idea; it will be quite a substantial time before that, as the schemes themselves are being formulated. . . . The Bill gives the Minister power to bring parts of the scheme into operation at different appointed days, so that all the scheme will not be suspended until one appointed day in 1948. Some portions of the scheme will be coming into operation in the meantime. That itself will assist in limiting the period of apprehension." (Col. 262.)

Endowments of Voluntary Hospitals (Clause 7)

Intention.—In refusing an amendment transferring the hospital endowments to the management committee Mr. BEVAN said: "The management committee in the future, in rural areas, may spread over quite a distance in order to accomplish a 1,000-bed unit, so that in that circumstance it will be as remote an entity as the Regional Board. I cannot see that we are doing something sacrilegious in taking the money into a national pool and re-allocating it fairly, and that something much more humanitarian, more imaginative, and more sympathetic would be done by giving it to a management committee that does not exist at all at the moment."

He explained that "fairly" meant "in accordance with the number of beds and the requirements of the area." (Col. 272.)

Endowments of Voluntary Hospitals (Clause 7(2))

Change.—Words "such purposes relating to hospital services or to the functions of the Board under this part of this Act with respect to research as the Board think fit" inserted to make clear for what purposes the endowments left to teaching hospitals can be used. (Col. 281.)

Intention.—Mr. KEY: "The Regional Boards and management committees are to submit annual estimates, and, within the global sum approved in those annual estimates, they will have a great deal of freedom of expenditure. We hope that they will get the benefit, and we will see that they do get the benefit, of bulk purchase where necessary, but that does not mean that we shall take away their responsibility for making necessary purchases in order to do justice to their patients. (Col. 289.)

"... Moreover, the general maintenance of the hospitals and buildings is not to fall upon the Endowments Fund but upon the general Exchequer, as part and parcel of the business of the control boards. (Col. 290.)

"... When we take over the local authority hospitals we take over their rights and liabilities, which will be met out of national funds, and certainly are not to be a debt on endowments or brought into consideration on the distribution of

endowments. . . . As the Bill stands, this power of holding endowments lies only with the Regional Boards. However, it is an intention that that power shall be extended to the hospital management committees, and between now and the Report Stage we shall take the necessary steps to see that the power is vested in the hospital management committees." (Col. 294.)

Use of Endowments Fund (Clause 7)

Change.—The Minister introduced small amendments in Clauses 5 (5) and 5 (6) and added a new sub-clause 5 (7) to enable him to meet out of the Endowments Fund the liabilities transferred to him under the new sub-clause. "The rights and liabilities in the endowments are to be transferred in the same way as the endowments themselves. They are to be transferred, in the case of teaching hospitals, to the governors, and in other cases to the Minister. The rights and liabilities envisaged here are such things as contracts for the repair and maintenance of endowment property, the supply of goods in connexion with such property, liabilities that might arise out of the holding of securities, and things of that sort." (Cols. 297 and 300.)

Promise.—When members objected to the use of the phrase "managing any endowment," Mr. KEY said: "I am advised that it is all right, but I will certainly have another look at it. In the management of an endowment, if there is a fund there will be certain rights and liabilities that will arise out of the control of that fund." The amendments were agreed to. (Col. 300.)

Definition of Endowments (Clause 7 (8))

Change.—The definition added by the Government's amendment "covers all real property, such as house property, farm lands held as an investment, furniture, equipment, and other movable property that is used in connexion with such property. It covers, also, securities and other personal property held as investments, cash, bank credits, cheques, and so on; and, finally, it ensures, under a common type of covenant, annual payments for the benefit of the hospital concerned. As to ready cash, the effect is that on the appointed day, if the hospital shows a credit balance, then that balance has to be treated as an endowment, and is not to be transferred to the Minister in the ordinary way. As to debts owed to a hospital, which are likely to be small—for instance, payments may be due from paying patients—these will come under Clause 1, and will fall to be collected by the boards of governors or by the Regional Hospitals Boards. That may not be logical or tidy, but it is the best course to take from the point of view of administration." (Cols. 301-2.)

The Minister will consider any omission in the list that may be brought to his notice, and he will ascertain the real meaning of "equitable interest." (Col. 302.)

Trust Funds of Local Authority Hospitals (Clause 7 (9))

Change.—A clause has been added to make similar provision for local authorities, "because we have found that in some cases there are trust funds even in connexion with local authority hospitals. Therefore we think that in those cases such property should go to the board of governors or to the Regional Hospital Boards, as the case may be." (Col. 302.)

Property of Medical Schools Excepted from Transfer (Clause 8)

Change.—Additions made specifying the Welsh National School of Medicine, schools of a university other than the University of London, and institutions for the postgraduate teaching of medicine or dentistry. (Cols. 315-17.)

Intention.—Mr. KEY: "As far as the property held solely for medical or dental schools is concerned, that, of course, is dealt with by this Clause, but as far as property partly for school and partly for hospital purposes is concerned, that will be apportioned by regulations under Clause 6 (5). If difficulties arise, such as have been mentioned by my hon. Friends, they must be dealt with when the regulations come to be made." (Col. 318.)

Kinds of Hospital Property to be Transferred (Clauses 9 and 73 (2))

Change.—Addition made to cover (a) premises on which work of adaptation has begun; (b) new premises in course of

erection; (c) sites of old premises damaged and not restored; (d) premises not in use owing to war damage or undergoing extensive repairs. (Col. 323.)

Modification of Regional Areas (Clause II (1).)

Intention.—Mr. KEY objected to an amendment suggesting that the constitution of Regional Boards and definition of areas should be by regulation and not by order, as proposed in the Bill. He said during the discussion: "The view which I take of this problem is that the delimitation of these regional areas is a matter of the administrative function of the Minister, and that he should decide on the basis of information made available as a result of the hospital survey. He should do it after the necessary consultation with statutory and other bodies, as well as after consultation with individuals whose knowledge would be of assistance. But this is part and parcel of the Minister's administrative machine. It is to be his function to adapt it to the changing needs in the light of experience. So far as I am concerned—my right hon. Friend's mind may be a little different from mine on this matter—I cannot say that it is going to be possible to treat this matter in any other way than as an administrative function of the Minister. . . ."

"In working out this great hospital scheme, we shall have to have the power of modification and adaptation of the regional areas to the problems which arise, and there must be the facility for changing the areas and modifying them if experience shows that that would lead to an improvement so far as the administration of the service is concerned. It is quite definitely our opinion that that power must lie with the Minister from time to time to carry out what experience shows ought to be done."

Promise.—"I can say definitely that I know I am interpreting the Minister's mind correctly when I say that he regards this as an administrative function to be decided by him administratively, and that he should have the opportunity of adapting and modifying regional areas as experience shows to him to be necessary. The Bill places on the Minister the duty and responsibility of providing his hospital service and, since that is placed on him, he has to have the necessary power to settle these areas, and make modifications in them. He has said in this Committee that he will only do that after consultation with the appropriate bodies, local authorities, medical practitioners, and hospital authorities. Although they will all be brought into consultation, the determination of the matter must lie with the Minister. I cannot accept that there should be two orders, the area settled by one and the body constituted in the area titled by another. What I am prepared to agree is that we can make some modifications in the working of this Clause to ensure that the areas shall be specified in the order constituting the original Board." (Cols. 354-5, 359-60.)

Consultation on Modification of Regional Areas (Clause II (1))

Promise.—In rejecting an amendment requiring the Minister to consult local authorities and other organizations concerned Mr. KEY said: "I have a great deal of sympathy with what my hon. Friend said. My difficulty about an Amendment of this sort is that, as soon as it is said that there must be consultations with one particular interest, there will be a demand for including all sorts of other interests as well. To the extent that some are included, one excludes people with whom it may be necessary to consult. We fully agree that there should be these consultations, and, although I cannot accept the Amendment, I will see that the point that has been raised by my hon. Friend with regard to these consultations is met. I desire that there shall be a reference to the matter of consultations in the Bill, but I cannot undertake that they shall be limited merely to local authorities, or that it shall be specified what particular interests are to be consulted. What I wish is that before the areas are dealt with there shall be consultations with the people concerned." (Cols. 385-6.)

Hospital and Specialist Services on National Basis (Clause 12 (1))

Change.—Words inserted to make it clear that the Minister is not required to carry out his duties, in providing the hospital and specialist services, exclusively through the Regional Hospital Boards, but may determine to provide those services direct.

Intention.—Mr. KEY said: "There may be quite a number of new services to be developed which will need a national area for their development. For example, an existing service of that kind which I have in mind is the blood transfusion service, which was developed under central control during the war. It is intended to continue to organize that service upon that basis. We feel that it is necessary to have that wider scope for the purpose of ensuring careful supervision of technical methods in collecting and storing blood. This is for exceptional cases. I want to make it quite plain that the Minister can go outside the Regional Hospital Boards for the purpose of organizing specialist services." (Col. 402.)

Functions of Boards and Management Committees (Clause 12)

Intention.—Mr. BEVAN: "When we come to frame the schemes, the schemes will not be agreed to unless there is very considerable devolution of responsibility to the management committees. That is where we propose to secure it. The management committees may vary from place to place enormously." (Col. 420.)

Control of Epidemics (Clause 12)

Intention.—On rejecting an amendment for the appointment of the Medical Officer of Health as epidemic officer under the control of the Regional Hospitals Board, Mr. BEVAN assured the Member that "the liaison which will normally exist between every medical officer of health and the hospital services will provide all the unification necessary to deal with epidemics." (Col. 434.)

Regions (Clause 12)

Promise.—Sir H. WEBBE: "Is the Minister prepared to give the assurance that the London County Council area shall be a region?"

Mr. BEVAN: "No, I think the hon. Member should postpone his mischief-making until later." (Col. 435.)

Mr. BEVAN promised that if it was found that the drafting meant that regions would be only geographical areas it would be altered. (Col. 435.)

Staff Committees (Clause 12)

Intention.—Mr. BEVAN: "It is intended to have staff committees of all the health workers in hospitals. I hope, therefore, we shall not regard medical workers as different from any other workers." (Col. 436.)

Medical Officers of Health (Clause 12)

Intention.—Mr. BEVAN: "I can give no assurance that medical officers of health will be put in any special relationship with the health service. Medical officers of health will naturally carry on their responsibilities as at present, except in so far as they are modified by the provisions of this Bill, when it becomes an Act." (Col. 441.)

Freedom of Treatment (Clause 12)

Intention.—Mr. BEVAN: "The Minister will not accept the odium of giving directives about any particular form of therapy. That is a matter for the professional man, using the apparatus put at his disposal by the State, quite free and without any interference, directions, instructions, or prohibitions." (Col. 442.)

Hospital Management Committees (Clause 13)

Promise.—On the suggestion that if hospital management committees are empowered to receive gifts and legacies they will need legal status Mr. BEVAN said: "I will certainly look into that matter; but I am not proposing, apart from the very substantial concession already hinted at about the right of bequests, to give to the management committees anything further which may result in their becoming independent bodies. I believe that would cause a mutilation of the scheme, and a distortion that would give rise to anarchy." (Col. 443.)

Disciplinary Machinery for Specialists (Clause 14)

Promise.—In reply to an amendment to provide disciplinary machinery for dealing with complaints made against practitioners employed by Regional Boards, Mr. BEVAN said that he doubted whether there was any need for a tribunal for

specialists, because they were under a different kind of contract than general practitioners. "I think that when we draw up the regulations governing the conditions of service, reference will have to be made to protective machinery of this sort, and I think that will be the appropriate time to consider it. We want to have the kind of machinery which would meet the wishes of the persons concerned. It would be a different kind of machinery for different kinds of associations." (Col. 445.)

Advisory Appointments Committees (Clause 14)

Promise.—Mr. BEVAN promised to look into the meaning of section (2) (h), as it was objected that the appointment of a new committee every time a vacancy occurred would be cumbersome and unworkable. (Cols. 445-6.)

Research into Causation of Disease (Clause 16)

Change.—Mr. BEVAN: "I understand that a reasonable interpretation of the language of the Bill allows causation to be included, as well as prevention, but in order to make it doubly clear I am prepared to accept the Amendment." The word "causation" was accordingly inserted. (Col. 447.)

Blood Transfusion and Other Services (Clause 18)

Intention.—On the question of charges for blood supplies Mr. BEVAN said: "It is not proposed to make charges for those things which are already defined and exist to-day. It is not proposed, for example, to make a charge for blood to local authorities. The advances in medical science are such that new instances are being discovered, and we cannot expose ourselves to having to include everything which may be discovered, because then the whole scheme might break down. This provision is really protective." (Col. 448.)

Health Services provided by Local Health Authorities

Joint Authorities (Clause 19)

Change.—A drafting amendment has been made "to secure that local authorities can be formed into joint authorities for the purpose of carrying out health functions other than those which are mentioned in this Bill; such, for instance, as those connected with the Lunacy and Mental Treatment Acts and the Mental Deficiency Acts." When it was objected that the amendments made the clause too wide for a National Health Service Bill Mr. BEVAN said: "It would be too wide. It is only for the purposes of the Lunacy and Mental Treatment Acts and this Measure. If the provision goes beyond that we will certainly have a look at it." (Cols. 455-6.)

School Medical Services (Clause 19)

Intention.—During the discussion of an amendment concerning the application of Clause 19 to the London County Council a question of the medical inspection of school-children in the London area arose. Mr. KEY said: "Our scheme brings maternity and child welfare care in with that [school medical service], because it gives it to the same authority, and, therefore, will lead to a more efficient service. This scheme divorces maternity and child welfare service from the midwifery service, which is to be a service maintained and provided by the London County Council. Again, so far as the health centres are concerned, this scheme will divorce the centres that are provided for medical and dental care, and so on, from the provision of the necessary centres for the borough councils with their maternity and child welfare work. . . . It brings about the necessary machinery for co-ordination and co-operation between the services that are here being provided, and gives the necessary linking up of the interested bodies and parties to ensure that we get a really adequate service." (Col. 474.)

Later he said: "We are certain that, however much it may be necessary for local government boundaries to be dealt with and local government functions re-allocated, we cannot make the provision of this health service wait upon that reorganization of local government. We must provide our service and then find time and opportunity for that reorganization." (Cols. 476-7.)

Again: "It is being carried out in London as it is being carried out for everybody else; that is, the child welfare functions go with the educational functions and the medical inspection of school-children. The real point about this scheme

is that it applies to London exactly the same principle as it applies to every county council in the country." (Col. 485.)

L.C.C. Scheme (Clause 19)

Intention.—Mr. BEVAN: "What I intended to convey was that the London County Council would arrange a scheme by which there would be area committees in London on which the Metropolitan boroughs would be represented for the purpose of carrying out certain functions. But they would not delegate powers; they would have agreed responsibilities. It would not be possible under the Clause, or under the Bill anywhere, for a local authority, for a county or county borough, to delegate its powers, or any of its powers, to any of the smaller authorities. I believe that if we opened that door an avalanche would flow through it." (Col. 487.)

Joint Boards (Clause 19)

Promise.—Mr. BEVAN: "There will be consultations with the local authorities before the joint boards are set up. There are some health authorities in the country that are very poor, and it may be necessary to have some joint undertaking before they will be able to discharge their functions properly under the Bill. Certainly, of course, there will be consultations with them before a joint board is established." (Col. 490.)

Appointed Day (Clause 19)

Promise.—Mr. BEVAN promised to look into the interpretation of the Clause as it affects the position on the appointed day of the functions of health authorities other than the L.C.C. and county councils. (Col. 491.)

Consultation on Local Schemes (Clause 20)

Promise.—On an amendment to require that local health authorities' proposals shall be submitted not only to voluntary organizations and the Executive Council but also to the minor local government authorities within the area Mr. BEVAN said: "Some of the voluntary organizations will be consulted over the personnel of many of these services. That is why we are doing it; but these authorities would not be. I do not want to put unnecessary language into the Bill. What is the use of notifying if no consultations take place after notification? However, I do not want to resist the hon. Gentleman and I will look at it and, if it proves to be practical, certainly I will do it." (Col. 498.)

Area of Regional Hospital Board (Clause 20)

Promise.—Mr. BEVAN said it was not the intention of subsection 2 (b) that a local health committee should be wholly comprised in each regional board. He would look into the wording. (Cols. 490-500.)

Health Centres (Clause 21) (see also p. 23)

Intention.—The following extracts are from Mr. Bevan's reply to a long general discussion on health centres. (Cols. 522-32.)

Need for: "There is a great deal of controversy about health centres. As I understand it, there is no controversy about the necessity for establishing them." (Col. 522.)

Experiment: "It is obvious that we shall have to have some experimentation. Nevertheless there is no experimenting with the initial idea; there is only experiment as to how it is to be carried out—for instance, with regard to building. Opinions have been taken as to units of population. If there is a health centre serving a too large unit of population, it may be too far from some patients' homes. Nevertheless it must serve a fairly large unit of population if we are to be able to afford to have diagnostic apparatus in the health centres. We cannot have expensive medical apparatus in every street, although, after listening to some of the enthusiasts of the medical profession, one would imagine that before long the whole country would be nothing but one large health centre and doctors' houses. We are looking forward to a healthy population. What we are striving to do is to create a health service which will make people healthy, and not keep them sick. Unless we are careful we may create a nation of hypochondriacs.

"That is why it seems to me so necessary to give a great deal more attention than has been given to the preventive side of medicine. At every large health centre there should be

opportunities for doctors to talk to children, to talk to mothers, and to talk to separate sections of the population about their particular problems. If we can get a stream of healthy people attending the health centre it becomes a health centre; but if we merely have morbid cases going to the health centre it becomes a morbid centre. So the more diverse the services that can be rendered by the centre, the better the atmosphere of the centre will be. One of the chief drawbacks of the out-patients departments of hospitals is that they are most depressing affairs. Everybody in them is sick; everybody has something wrong; there are there all sorts and shapes and sizes of people sitting on squalid hard benches for hours, waiting for tired doctors to attend them. It is an appalling atmosphere. Indeed, some of the out-patients departments of hospitals that I have seen are reminiscent of descriptions by Charles Dickens.

"It seems, therefore, that we have to insist on health centres being adopted generally, but what we have not been able to make up our minds about is whether we are to have health centres providing a considerable variety of services, or rudimentary consulting centres nearer to people's homes where five or six or more general practitioners attend with comparatively rudimentary apparatus, from which centres the doctors can send their patients for more extensive examination, if necessary, to the health centres." (Cols. 523-4.)

Rural Areas: "We shall not be able to provide, in the rural areas, a very large number of fully fitted health centres. That does not mean there will be no health centres in the rural areas or that the rural areas ought to be denied them. It merely means that country people may have to go rather long distances in order to attend the more ambitious health centres; and yet that doctors will be able to see them in small centres where the apparatus is more rudimentary."

LORD WILLOUGHBY DE ERESBY: "Would not one way out of the difficulty be to encourage doctors to develop their own surgeries?"

MR. BEVAN: "We do not want them to do that. We want them to get away from their surgeries and mix with each other rather more."

LORD WILLOUGHBY DE ERESBY: "The right hon. Gentleman said there had to be smaller consulting centres in the smaller rural areas. I should have thought that the easiest way would have been to develop what are already there, the doctors' surgeries."

MR. BEVAN: "We should be very ready, indeed, to encourage larger groups. We want more partnerships of that sort, but the question is whether doctors should see their patients in their own surgeries, or whether the local authorities should establish centres." (Cols. 524-5.)

Child Guidance Clinics: "The more healthy the health centres become, and the less they become merely sick centres, the more that kind of service can be developed." (Col. 525.)

Duties of Local Authorities: "I was asked whether or not it would be a desirable thing to allow local authorities in the meantime to experiment themselves. If we are to have a health service, we must have a national service, and we could not permit backward local authorities to deny the citizens in their areas the health facilities available elsewhere. Therefore it must be a duty; but, of course, the extent to which we can impose the duty and insist on its being carried out depends on the extent to which we can provide facilities." (Col. 525.)

Date: "There are places where health centres can be established quite quickly. I do not suggest that this can all come into operation on the appointed day, or that one might wake up one morning and find magnificently appointed, impressive health centres in all parts of the country. This will have to be a growing service, developing from year to year, and adapted from year to year as our experiences dictate." (Col. 525.)

Promise.—Specialist Services: The Minister would not approve schemes unless they provided accommodation for specialist services. "I am advised that this Clause and the other Clauses, taken together, provide the Minister with all the authority he needs. If they do not, we will amend the Bill, so as to make it so on the face of the Bill, because that is our intention." (Col. 526.)

Intention.—Dental Clinics: "Dental clinics will be at the health centre, because we do not want dental clinics to be separated from the rest of the health services." (Col. 526.)

Opticians and Ophthalmologists: "If facilities were available and if there were enough ophthalmologists, it would be desirable that anybody who felt he or she had something wrong with his or her eyes should see the ophthalmic surgeon first. I should have thought that would have been generally agreed." (Col. 527.)

Responsible Authority: "There was a point made about the provision of health centres being made by the Regional Board and not by the local health authority. I could not agree with that. The Regional Boards are much too wide. It would be administratively impossible. It was suggested that the Regional Boards should provide the health centres and that the local authorities should use them. That would be silly, because the local health authority provides the health centres and the Regional Board and the general medical practitioner use them. I should have thought it was far better for the local authorities to have these functions. We are taking away from them their hospital functions. It seems to be a very wise provision." (Col. 528.)

Professional Secrecy: "I agree there are large numbers of people who want to be assured that there will be complete privacy for any confidences they may repose in their doctor. There is no intention of mutilating that tradition. . . . I agree that the medical history should go from one professional hand to another, and that it should not be available for secular scrutiny. . . . It would be very undesirable if the impression got abroad that the confidence one reposes in one's doctor was entered into a book by someone else and that other people had access to that information. I hardly think that would arise, but I am glad to give assurances that we shall do our best to prevent that happening." (Cols. 528-9.)

Child Guidance Clinics: "There is a great shortage of trained psychiatrists. I agree that they can be trained, but there are large numbers of people who have learned the nomenclature of psychoanalysis and are masquerading as psychiatrists. While I said that I agree that it is necessary for skilled guidance to be given at the health centre, let us see that it is skilled guidance. That is desirable. Subsequently the medical service of the schools will be assimilated into the national health service, and, as that is done, that branch of the national health service can be expanded." (Col. 529.)

Tuberculosis Clinics: "Tuberculosis clinics would not necessarily be at the health centre. They would be in some cases, but not in every case. In many cases they would be at hospitals." (Col. 532.)

Ambulance Services (Clause 27)

Change.—Words inserted to make it clear that the duty of the local authority to provide ambulance or other similar transport applies only when the need exists for that transport. (Col. 559.)

Change.—Words omitted to make it clear that the duty to provide the necessary ambulance and transport lies with the authority in whose area the need originated. (Col. 559.)

MR. BEVAN: "I imagine it would be the duty of the local health authority in the area concerned to have no regard to the origin of the citizen, but merely to his need, and to provide him with the necessary facilities. It would, indeed, be a breach of trust if it did not do so. Of course, it must be remembered that the hospitals themselves will find it necessary to have a rudimentary ambulance service, because there will be movement between hospital and hospital." (Col. 560.)

Domestic Help (Clause 29)

Change.—Wording altered to remove limitation of domestic help to cases where the children are under 5 years of age. (Col. 578.)

Date of Operation of Act (Clause 30)

Intention.—**MR. BEVAN:** "The Committee will appreciate that the administrative work that will remain to be done after Parliament has passed this Bill will be enormous, and that quite a considerable period of time will elapse before the whole of the scheme is in operation. Even after that the full service will depend upon its being properly manned, and, as everyone here knows, we are short of some of the requisites with which to man it—we are short of sufficient doctors, sufficient specialists in particular, sufficient dentists, and, with regard to a very

hospital boards, but may determine to provide those services direct.

mentally for dealing with complaints made against practitioners employed by Regional Boards, Mr. BEVAN said that he doubted whether there was any need for a tribunal

vital provision in the Bill, sufficient health centres. It will take some time before health centres are available, and there has been some doubt as to whether we ought not to postpone the provision of health centres until we are able to house them in new buildings. Some say it would be a very bad thing to start in inauspicious conditions by housing health centres in old buildings. I incline to the view that until we are able to build health centres of a new and agreeable character we shall have to adapt old buildings; otherwise it may be a long time before they can operate.

"It is intended that the Bill should come into operation on April 1, 1948. I do not think it would be possible for us to introduce it before that. It must be synchronized as far as possible with the National Insurance provisions, because we want to be able to provide the services under this Bill when persons have paid their contributions and are entitled to receive them. Meanwhile it will come into operation in different stages. As I have said before, I hope to appoint Regional Boards quite quickly, and the local authorities become authorities under the Bill as soon as it is passed. I would like to be more precise as to the different dates and stages at which the scheme comes into operation, but, if I tried to be so at this moment, I am certain that the dates I gave would have to be adjusted in the light of subsequent experience. I will look at the point raised by the right hon. Gentleman and make quite certain that the elasticity is not interfered with by the language of Clause 30." (Cols. 581-2.)

General Medical, Dental, and Other Services

Executive Councils (Clause 31)

Promise.—The Minister was asked for an undertaking that he would set up the full type of Council in the first instance, and only after experience has shown that some variation is necessary, and after consultation with those who have had the experience, will he introduce the variation.

Mr. BEVAN replied: "I will have a look at it and see whether it is possible to do what has been suggested. We are a bit frightened. It may be that in certain circumstances the interests which are to be represented upon the local Executive Council may be more than adequately or inadequately represented. We have no concrete case in mind, but there is a possibility of that arising, and it would be necessary in order to secure proper representation in some area, for some parts of it to be more weighted than other parts. That is the sort of condition we had in mind. Take a very rural area, for example, in which the representation of certain interests will not be sufficiently provided for under the balanced constitution of the Executive Councils in other parts of the country." (Cols. 586-7.)

Local Medical Committee (Clause 32)

Change.—The term "Local Medical Committee" has been substituted for "Medical Practitioner Committee" in view of similarity of names and initials of Medical Practices Committee and Medical Practitioner Committee. (Col. 588.)

The Minister undertook to consider a similar alteration in the title of the Dental Practitioner Committee. (Col. 589.)

Choice of Doctor (Clause 33)

Promise.—Mr. BEVAN said the language of the Clause did not prohibit an individual who had been rejected by one general practitioner being accepted by another. The regulations would make it clear. (Col. 590.)

Method and Amount of Remuneration (Clause 33)

Intention.—Mr. BEVAN: "I must at once resist any attempt to try to get me to put the method or amount of remuneration of the general practitioner in the Bill. I think that is much better done by regulation. Indeed, I believe the doctors would prefer it to be done in that way. It would be a most extraordinary situation if, every time variation in circumstances took place, a Bill was necessary to modify the remuneration and method of remuneration of the doctors." (Col. 594.)

Method of Remuneration (Clause 33)

Intention.—Mr. BEVAN: "I am firmly convinced that it is necessary to have an element of basic salary in the doctors' remuneration. . . . Some element of hedonism is necessary,

with some element of punishment and of reward. That is the reason I have come down on the side of capitation as part of the remuneration. Furthermore, I found it very difficult to reconcile the free choice of doctor with the complete abolition of capitation. It is very difficult to do it. If one has full salary, then one has to allocate patients among the doctors and doctors among the patients. That would result in an unhealthy relationship between patient and doctor. Therefore, we found it necessary to have capitation. When we draw up the regulations, I think we shall have to have a ceiling to the capitation, and it may be necessary to introduce a number of other modifications. These will have to be subjects for negotiation with the representatives of the profession. I am certain that hon. Members would regard it as particularly arbitrary for a Minister in a Committee to lay down *obiter dicta* as to what the salaries should be without first of all giving the representatives of the profession, or the workers concerned, an opportunity of stating their views.

"I am in consultation with representatives of the profession at this moment on these matters. I prefer that these consultations should reach a more advanced stage before I myself express any definite opinion. . . . There will be circumstances where it will be necessary to weight the basic salary to get sufficient doctors into the under-doctored areas." (Cols. 595-6.)

Variation of Capitation Fee (Clause 33)

Promise.—Mr. BEVAN: "I have an entirely open mind as to the desirability of declining the capitation rate, and I am prepared to look at it again. That is not a matter of fundamental principle; it will have to be re-examined in the light of discussions with the profession." (Col. 618.)

Position of Assistants (Clause 33)

Intention.—In reply to an amendment designed to elicit from the Minister a statement on the position of assistants in general practice Mr. BEVAN said: "I think it is a most desirable way of introducing a doctor to general medical practice. But, at the same time, we cannot give general practitioners an unrestricted right to take on as many assistants as they like, because that would interfere with the proper distribution of doctors. It is intended that there should be no restriction on the rights of general practitioners to have assistants in areas where the Executive Council agree that assistants can be employed because the area is not over-doctored. . . . Assistants would not be on the list, but they would be registered doctors. The provision of assistants to principals would be one of the factors to be taken into account by the Executive Council and the Medical Practices Committee in deciding whether an area was sufficiently doctored, over-doctored, or under-doctored. . . . It would not be reasonable if a doctor took on an assistant, who remained with him for some time, for the assistant to go on the list for that particular area. Otherwise he would be using his association with his principal in order to establish his own practice. That would be undesirable. How far restriction should apply is a matter we shall have to discuss in detail with the profession. I have already had preliminary discussions about it. They are seized with the difficulty. It is a question of deciding what area of restriction should be imposed." (Cols. 619-20.)

Distribution of Practitioners (Clause 34)

Intention.—Mr. BEVAN: "Even if it were not necessary for the proper distribution of the general-practitioner service to abolish the sale and purchase of practices, I should still do it, because it is an intrinsic evil. . . . It means the bartering of the patients themselves." (Cols. 631-2.)

"The machinery [under Clause 34] will be of invaluable assistance to the young doctor. . . . He will receive information from a central pool as to what areas he can go to at once. He will know the areas where he will not be acceptable in the public service. He will know the Executive Councils which have the authority to appoint more doctors, and he will, therefore, know at once where he can go, and he will know it within a day. He will not have to 'fumble around' and advertise or ask his friends. He will know at once. Therefore, it seems to me that the machinery which we are establishing will work out to the great advantage of the doctors themselves.

"What then happens? In practice, this is what will occur. The local medical committee will make suggestions to the local Executive Council as to a particular doctor. It may happen that they want to take on a partner; and, if you are going to have group practices in the health centres, the doctors themselves ought to have some chance of determining their new colleagues. So what happens is this: There is a vacancy. The Executive Council notify the local doctors' committee that there is a vacancy. They may say, 'We think So-and-so will be all right, and we will make that recommendation to the Executive.' The Executive may or may not accept that recommendation, but, as I have said, half the representation on the local Executive will be professional. Therefore the point of view of the local doctors' committee will have very great weight with the tribunal, and they will, therefore, recommend to the Medical Practices Committee the persons to be appointed. In fact, the individual doctor will be selected by the local Executive, and not by the Medical Practices Committee. It is necessary for the central committee to confirm the appointment, because that removes the actual confirmation from the local area, where sometimes the influences are not altogether of the right kind.

"So we get three things which we are anxious to keep. We get the doctors themselves influencing the appointment of their new colleagues; we get the local Executive, which is going to have the supervision of the medical service in that area, appointing; and we get the central committee confirming the appointment, and, in confirming the appointment, being able to satisfy themselves that all the considerations leading to the appointment are proper ones. I should have thought that this arrangement was highly desirable. It satisfies every principle of democratic practice and wholesome administration. In course of time, as the general practitioner service is redistributed over the country, this machinery will begin to work more and more smoothly and with less and less interference, and it may be that some of it will pass almost into desuetude." (Cols. 633-4.)

"I hope that individual selection by individual doctors will progressively disappear, and that collectively the profession will make the recommendation, and not an individual doctor." (Col. 640.)

Procedure for Appointment (Clause 34 (3))

Intention.—Explaining the procedure for appointment by the Medical Practices Committee Mr. BEVAN said: "In order that the Medical Practices Committee may have the right of intervening when improper action has taken place they must have the right of appointment. . . . A number of persons make application for a particular position, and recommendations are made to the Medical Practices Committee, which makes the appointment, which is, in fact, a selection . . . from the applicants."

The Executive Council has performed all the functions of the Medical Practices Committee, but in order that the Medical Practices Committee may have the power of selection they must have the right to refuse an appointment. The language of the Clause does not carry out what I am saying, we will look at it and see that it does, but what we really intend to do is to act as sensible persons." (Col. 657.)

Change.—The following addition was made at the end of the Subsection: "Before selecting any persons under this subsection the Medical Practices Committee shall consult the Executive Council concerned, and that Council shall, if a Local Medical Committee has been formed for the area of the Council and recognized under the last but one foregoing section, consult that Committee before expressing their views on the persons to be selected." (Col. 658.)

Appeals against Decisions of Medical Practices Committee (Clause 34 (7))

Promise.—Objection was made by a Member that the subsection might deprive the public of services which are urgently required. "When the Medical Practices Committee has already selected somebody, the people selected will not be able to start practice and get on with the job, in which their services may be very much needed, if an appeal has been made, but must wait until it has been heard, and a decision given before they may go into practice."

Mr. BEVAN replied: "I should have thought . . . there was no real danger. If there was any danger I would deal with it." (Col. 658-9.)

Family Associations with Practice (Clause 34)

Intention.—On an amendment suggesting that the Medical Practices Committee and Executive Councils should take into consideration the tradition of family association with an area and the views of existing partners Mr. BEVAN said: "This is the sort of thing that the local medical committee would take into account when making its recommendation to the Executive Council. I do not think we should give a special statutory value to family relationships. Indeed, as one of my hon. Friends pointed out yesterday, it is very often desirable that there should not be too much inbreeding in some local areas, and that we should get more infiltration from outside. Therefore I would not like to put into the Bill an insistence that some special consideration should be given in such cases. But the hon. Member himself said—and I agree with him—that there is a tradition, and that tradition would inevitably have its influence on the selection. I do not want to have to give directions to local Executive Councils about this, because it seems that it is just the sort of thing which they ought to be free to do, and the less centralizing there is about it the better. The Minister ought not to tell the local Executive Councils what grounds they should consider in making an appointment, because that would give undue weight in favour of some against others. I am sure the hon. Member realizes that the point will be taken into account." (Col. 660.)

Partnerships (Clause 35)

Promise.—The first of a series of amendments put forward with a view to "making this Clause, which is an enormous and unparalleled revision of the criminal law, fair and certain and not obscure and unfair," sought to preserve the position of partnerships in which one or more of the partners did not accept service under the National Health Service. Mr. BEVAN said: "Where a partner has not got a panel, if he is in partnership with doctors who have got a panel, I am advised that nothing in this Clause inhibits that partner from selling his practice. The right hon. and learned Gentleman said that a partnership is a corporate affair, residing, not severally in the individual partners, but as a whole. I am advised that it is not this case here; that we are here dealing with individual doctors, and it is only the individual doctors with whom we are concerned. If a doctor is not in the public service, if he has not got a panel, nothing in this Bill prevents him from selling his practice if he can find a buyer. . . . If I thought the effect of this language would be to bring about a general dissolution of partnerships, we would try to seek protection against that."

I am advised the Clause has no such effect." The mover of the amendment then read a Counsel's opinion. The mover of the subsection is amended the only way I can see by which this difficulty could be overcome would be by dissolution of the partnership before the appointed day. Mr. BEVAN then replied: "I can assure the right hon. and learned Gentleman that if the language of the Clause would have that effect, then the Clause must be amended. I will certainly have a look at it." (Col. 670-2.)

Penalties (Clause 35 (2))

Promise.—In order that courts of summary jurisdiction might not be given extensive powers on matters of great importance an amendment was submitted to the effect that courts of summary jurisdiction should have no more power than to inflict a fine not exceeding £100. Mr. BEVAN replied: "It seems to me that where the higher penalties are involved there is a good case for the case being tried by a court with a jury, and I think there is considerable substance in that contention. The right hon. and learned Gentleman might lead me to move an Amendment at some subsequent stage. I do not wish the penalties to be too light. . . . These cases will occur on the part of doctors who have either entirely misrepresented to the Medical Practices Committee what they have done, or have neglected to protect themselves by getting a certificate from the Medical Practices Committee, or persons obviously with felonious intent." (Col. 673.)

"I am disposed to say at present that all cases which are not merely cases involving a small fine go before a jury." (Col. 674.)

Time Limit for Proceedings (Clause 35 (3))

Promise.—In reply to an amendment providing that proceedings should not in any event be brought more than two years after the date of the commission of the alleged offence Mr. BEVAN said: "Obviously, as a consequence of a promise given previously [see preceding note], this subsection is entirely altered. This applies to cases brought before courts of summary jurisdiction, and if they are not to come before those courts I really think we ought to get on with the next business." The amendment was accordingly withdrawn. (Col. 677.)

Assistants and Prohibition of Sale of Practices (Clause 35 (5c))

Change.—The words "having regard to the circumstances at the time when the remuneration was fixed" were inserted to extend to the employment of assistants the same safeguard as applies in the case of partnerships. (Col. 701.)

Offences Relating to Remuneration of Assistants (Clause 35 (6))

Promise.—The mover of an amendment to substitute "if" for "unless" complained that it was unfair to place the onus of proof on the accused person. Mr. BEVAN replied: "This Clause was very difficult to draft, because we are seeking to find a whole series of offences to protect the whole scheme. I will certainly have a look at the Clause to see if any of the fears expressed at the last meeting of the Committee are justified, and whether we can remove any cause for apprehension before the Report stage. I think I should be justified in resisting this Amendment, but I will certainly have a look at it. How is a prosecution to know what was in contemplation? Surely, in that case it is reasonable to put the onus of proof on the accused person, because there is a considerable subjective element in the whole matter." (Col. 703.)

Sale of Instruments and Equipment (Clause 35 (7))

Promise.—The mover of an amendment complained that "if any retired doctor sells his own instruments or equipment to the succeeding doctor, in contemplation of the succeeding doctor coming into his practice, he commits an offence, however fair the price may be."

Mr. BEVAN replied: "I am advised that the fears of the right hon. and learned Gentleman are quite groundless, but if they have any substance I will re-examine the whole matter, and make an alteration, if necessary. . . . I understand that the Amendment would not do what the right hon. and learned Member suggests, but I will certainly see whether any alteration is necessary." (Col. 708-9.)

Certification of Transactions (Clause 35)

Change.—Mr. BEVAN moved an addition to the Clause to provide for the certification of transactions by the Medical Practices Committee. He said it was "a strong protective provision which we wish to insert into the Bill in order to remove some of the fears which doctors legitimately have, and of which I make no complaint. Without some protection of this sort the Clause is rather frightening. I believe that with this it ought to be possible for the Clause to work without penal consequences of any gravity. I am sure that the doctors' professional organizations will call the attention of their members to this provision. The Medical Practices Committee will issue a certificate, and that certificate will be a defence in itself." (Col. 709-10.)

Promise.—During the discussion amendments to the amendment were proposed, and Mr. BEVAN promised to look into certain points:

(i) "There ought to be some way of conveying to the applicant for a certificate to which part of the contract exception has been taken. I will look at that part of it, but I cannot accept the imposition of a time limit. I agree that these cases should be expedited." (Col. 713.)

(ii) "It seems to me it would be perfectly proper for the Medical Practices Committee to take the new disclosed fact into account for the purpose of invalidating the certificate. We might do something on those lines" (Col. 719.)

(iii) "I will examine that"—i.e., the suggestion that Subsection (11) in the Minister's amendment was unnecessary, because it created the offence, and put a person on trial when he ought not to be put on trial at all. (Col. 720.)

(iv) "We want to avoid ambiguity and to make legislation the vehicle of our intentions. Therefore we shall examine the whole thing with a view to seeing whether what has transpired in the Committee discloses a weakness in the language of the Clause, making it necessary for us to amend it. I accept what the right hon. and learned Gentleman has said, that unless we can make our intention more specific the existing partnerships may be very seriously affected, and they may not know what to do. Therefore, before the Report stage we shall examine the language of the Clause, particularly with a view to its relationship to partnerships." (Col. 722.)

(v) Mr. Bevan also promised to look into the meaning of the word "transaction" in his amendment. (Col. 722.)

The amendment was then agreed to.

Compensation (Clause 36)

Change.—An amendment was made to make clear that the sum of £66 million related to practitioners in Scotland as well as England and Wales. (Col. 724-6.)

Intention.—Mr. KEY outlined at this stage the three steps which had to be taken: "First of all, there is the question of the total compensation to be paid. That is put down at a figure of £66 million, on the supposition that the number of medical practitioners joining the service will be 17,900. If, however, that is not realized and the number is smaller than that, no alteration will be made in the sum total of £66 million, unless the number joining falls below 17,900*. If it falls below that number, then the total of £66 million will be reduced by 1/17,900th for every practitioner below the figure of 17,900*. Therefore, that will give the total figure of £66 million if the number is realized, or a smaller figure if it is not. That is the first step that has to be taken to get the figure for Great Britain.

"The second step to be taken is that of deciding the apportionment of that sum between the services in England and Wales and in Scotland. That will be decided upon the question of the relative losses of the people involved in these two sections. Then the third step, so far as we are concerned here, is taking the portion that comes to England and Wales and deciding upon its proper distribution. That proper distribution will be according to regulations, which will be made after consultation with the profession. What is required to make quite certain and to clarify this Clause is that the sum to be decided in the first place is that to be decided for Great Britain as a whole." (Col. 724-5.) [* This is a misprint in both cases for 17,700.]

Number of Principals (Clause 36 (2))

Change.—The definite figures, "seventeen thousand nine hundred," and "one-seventeen-thousand-nine-hundredth part of sixty-six million pounds," have been substituted for "the prescribed number" and "a prescribed amount." (Col. 726-7.)

Date of Payment of Compensation (Clause 36 (3))

Promise.—Mr. BEVAN rejected an amendment proposing that compensation should be paid in all cases forthwith or as soon as practicable after the appointed day, and, on being pressed to state his intentions with regard to cases of hardship, he said: "It is very difficult for me to go further at the moment. I consider it to be desirable that such matters as this should be discussed with representatives of a profession, and that is what I propose to do. I think it would be unwise to consider a number of hypothetical cases now. This is a matter of practical administration. No one desires to withhold money from people and cause great hardship to them. I do not think that very much money will be involved. It is pure guesswork as to how much of the £66 million will be paid out earlier than the normal dates. The amount will be determined by the Regulations." (Col. 731.)

In reply to a question whether a practitioner, having withdrawn from practice on health grounds and received compensation, and having recovered after a year's rest or treatment, could apply for a post in an under-doctored area, Mr. BEVAN said: "I should have thought so, but I would like to consider the matter further before giving a specific reply." (Col. 732.)

*Practitioners Dying or Retiring before Appointed Day
(Clause 37)*

Promise.—Asked about the sale of the goodwill of practices of doctors who die just before the Act comes into force, Mr. BEVAN said: "I have it in mind at the present time to insert a date, which I think would cover the points raised by hon. Members, on the Report stage. . . . There is an argument for putting in a date from the point of view of some of the hardship cases now arising. The actual date is not yet fixed, but I propose to put it in on the Report stage." (Cols. 734-5.)

Pharmaceutical Services (Clause 39)

Intention.—Mr. BEVAN: "Arrangements will be made in the rural areas for doctors to provide medicines; otherwise the whole thing would break down." (Col. 738.)

Dental Services (Clause 40)

Intention.—Mr. BEVAN: "A committee will be established in consultation with the profession, on the lines of the Spens Committee, for the purpose of advising on methods and scales of remuneration for dentists. I think it would be as well if we awaited the recommendations of that committee before pronouncing judgment. Obviously it will be necessary to have some form of attracting dentists to go into unremunerative areas. Whether that should take the form of higher scales, or a subsidy, as in the Highlands and Islands Scheme, is a matter for further consideration." (Col. 739.)

Promise.—He also promised to discuss with representatives of the dental profession the question of the approval of estimates before treatment was undertaken. (Col. 740.)

Distribution of Dentists (Clause 40)

Intention.—Mr. BEVAN: "It will be possible for dentists to appear in the lists of more than one Executive Council. Therefore they could take patients from other areas." (Col. 742.)

Employment of Dental Mechanics (Clause 40)

Promise.—Mr. BEVAN: "We shall have to consider that in the general inquiries as to how we are to give such supplementary assistance to the dentist as will spread the dentists over a larger number of the population and enable them to give more treatment. I agree . . . that it would be desirable that, when regulations are drawn, they should not make it necessary to get estimates for emergency operations and things of that sort." (Col. 744.)

Sight-testing Opticians (Clause 41)

Intention.—Mr. BEVAN: "I think that all hon. Members agree that the ideal system would be that anyone sent to a doctor, unless they have something wrong with their eyes, should first pass through the sieve of what I call the eye specialist, because he is the person who is capable of looking at the condition of the eyes and of determining not only whether there is something wrong with them but whether there is some other morbid condition of the body. . . . The eye specialist . . . will not waste his time doing refraction work. . . . It would be quite absurd not to make use of the services of a qualified optician; in fact we propose to make use of his services to the utmost extent, and the apprehensions that exist among them at the present time are based upon a misunderstanding of our intentions. . . . We want to encourage good people to come into the profession. . . . What we desire is to regularize arrangements by which the properly qualified eye-testing optician is identifiable. With a view to that, the representatives of the eye specialists and the eye-testing opticians are to meet at my invitation next week for the purpose of discussing. I hope in terms of cordial co-operation, what shall be the relative status of both sections. We shall then be able to employ this in the Bill, which is drawn widely so as to give us powers to do so as time goes on.

"It is perfectly true that we shall have refractionists in the large health centres, and I envisage the system as being one that is extremely fluid, where we shall have the eye specialist, as such, centred on the hospitals, but moving quite freely between the health centres and the hospitals without any difficulty at all." (Cols. 754-5.)

*Supplementary Provisions**Tribunal (Clause 42)*

Intention.—In a long speech resisting an amendment to provide a right of appeal to the High Court Mr. BEVAN pointed out that: "We are not discussing here whether a man has been guilty of unprofessional conduct. What we are discussing here is whether a person who had contracted to carry out certain duties carries them out satisfactorily to reasonable people. . . . It seemed to me that the existing procedure was not enough, that the Minister ought to put between himself and the local Executive Council another body." (Col. 770.)

After describing the procedure through the local Executive Council, the Tribunal, and the Minister, he said: "The possibility of injustice being committed against a person after these three steps of investigation, I will say, is negligible." (Col. 771.)

"We cannot admit that the courts should interpret whether the doctor has, in fact, been a good servant to the people." (Col. 774.)

"I am satisfied that the doctors themselves would be far worse off, because, if an offence were committed in one area, I am providing that it would only be necessary to move the doctor from that particular list. He could go elsewhere, whereas if he went to the courts the case would be publicized throughout the country." (Col. 774.)

The effect of the voting was that Subsection (4) providing for an appeal to the Minister was omitted, but the amendment to insert words to provide for an appeal to the High Court was defeated. Saying that the mover of the amendment had succeeded in persuading the Committee that there should be no appeal at all, Mr. BEVAN stated:

Promise.—"On the technical aspect of the matter there is no reason why we should not get the Clause as it is, and then subsequently I can consider what other steps should be taken at a later stage of the Bill to remedy the unfortunate consequence of the Pyrrhic victory of this morning." (Col. 791.)

Disqualification in Scotland (Clause 42)

Change.—An amendment was made "to bring about reciprocity with Scotland in the matter of disqualification of practitioners."

"Where practitioners are disqualified from inclusion in the list in Scotland—not in one or two places—they can be disqualified from the list in England, but if they are disqualified in only one or two places in Scotland they will not be disqualified from the list in England. It has to be total disqualification." (Col. 791.)

Publication of Decisions of Tribunal (Clause 42 (6))

Change.—An addition was made to provide in regulations for the publication "of the imposition and removal of any disqualification imposed by virtue of the last foregoing subsection." (Col. 792.)

Evidence on Oath (Clause 42)

Promise.—Mr. BEVAN said it was proposed to make provision by regulation for evidence to be taken on oath. (Col. 793.)

Legal Representation (Clause 42)

Promise.—Mr. BEVAN: "I do not want to put the legal representation in the Bill at the moment, because that might appear to preclude other forms of representation that plaintiffs might desire. It does not always follow that a plaintiff wants to be represented by a lawyer. It is his right to choose. He may wish to have a friend. So I propose by regulation to provide that evidence shall be taken on oath, and that persons shall be represented by a legal representative. . . . I will look at it. If it is absolutely essential, certainly we will put it in, but my present advice is that this can be better done by regulation." (Cols. 793-4.)

Range of Penalties (Clause 42)

Promise.—Mr. BEVAN: "It is proposed by regulation to enable other forms of discipline to be imposed in addition to that of being removed from the list, because, obviously, there must

or minor offences for which smaller penalties would be appropriate, and provision will be made for the Executive Council and the Tribunals to impose them." (Col. 793.)

Powers of Minister where Services are Inadequate (Clause 43)

Intention.—In reply to an amendment requiring the Minister to consult the appropriate committee or Executive Council, Mr. BEVAN said the provision was unnecessary. "Obviously, where the service has broken down the Executive Council would consult the representatives of the services affected before making any proposals. It would be extraordinary if they acted *in vacuo*, but at the same time we do not want to tie the Executive Council always to formal discussions, because it may be necessary to take urgent action in a particular instance." He also referred to Clause 32 (2). (Col. 795.)

Emergency Ophthalmic Services (Clause 46)

Intention.—Mr. BEVAN: "It is not intended that the emergency ophthalmic services shall be based on health centres, because they are a temporary expedient. Subsequently long-term ophthalmic services will be based on the special services. Whether eye-testing opticians can be provided at the health centres will be a matter for experience to decide." (Col. 809.)

Health Centres (Clause 46) (see also p. 17)

Intention.—**Character:** Mr. BEVAN: "I hope there will be considerable diversity, and that from that we shall be able to pick the features of the most successful places and embody them in general practice. If there is to be this diversity I would be foolish now to give any precise indication of what I think the health centres would be like. I said some time ago that it would be necessary, in some instances, to have constellations of health centres, with minor ones servicing a central one with much wider polyclinical facilities." (Col. 812.)

Remuneration of Doctors: Mr. BEVAN: "Doctors are allowed quite substantial expenses on account of having to provide facilities at their houses, and that expresses itself in the standard of remuneration. If we are to provide them with those facilities at health centres, and leave their remuneration untouched, it is a substantial accretion to their remuneration. If we propose to do that, then that must have a bearing on the standard of remuneration. Unless we are careful we can be stamped in all kinds of directions." (Col. 812.)

Rent: Mr. BEVAN: "Doctors will not be expected to pay an economic rent for the health centre. That itself provides an attraction to go there. I should have thought that before very long, if we can provide good health centres, with proper facilities, the doctor's wife would have had something to say about it. . . . The Executive Council will not be paying an economic rent for the health centre, because we are making it a duty on the health authority to provide the health centre. There will be an apportionment between them for the facilities they are given. The local authority will be enjoying advantages from the health centre, such as maternity and child welfare and other services." [Promise:] When it was objected that this was not so according to the drafting Mr. BEVAN promised to look at it again. (Cols. 812-13.)

Residence of Doctors in Area: Mr. BEVAN: "It will be difficult to prescribe areas, but we must not lose sight of the fact that the provision of health centres will not exempt general practitioners from domiciliary services. Therefore it would be reasonable to expect them to be within reasonable reach of the area they serve. I think it would be most unfortunate if the impression went out that all doctors had to do was to serve a number of hours at a health centre, and then go home and forget all about their obligations. Domiciliary services are at least as important as the health centre. The doctor would have to be within access of his patients." (Col. 813.)

Personal Responsibility: Mr. BEVAN: "The doctors at the health centre will be able to make arrangements for emergency calls. But the doctors themselves have emphasized, and I agree with them, that continuity of treatment by the same doctor for the same patient is a very necessary condition; and we are not handing the patients over to a team of doctors at the health centre. That personal contact must be maintained. But we are embarking on this in an ambitious and experimental mood, and we shall have to feel our way for a considerable

time in the organization of the service. I regard the health centres as a very important part of the service indeed." (Col. 814.)

Decision of Disputes (Clause 47)

Promise.—Mr. BEVAN undertook to look into the desirability of making an amendment to provide that, in disputes between an individual and the Executive Council or between the Executive Council and the local health authority, an opportunity may be given for a hearing by a person appointed for the purpose by the Minister. (Col. 816.)

Refresher Courses (Clause 48)

Intention.—On the question of providing for refresher courses for optical, as well as medical and dental, practitioners, Mr. BEVAN said: "I think that the Amendment is unnecessary. As I understand it there is nothing inhibiting in the Bill which prevents appropriate arrangements being made for all health workers to be properly trained, and proper training means re-training and being kept up to date. It is not necessary to state this in the Bill. The Amendment would have the effect of making provision for refresher courses for eye-testing opticians in the temporary services, and I do not think that can be the intention. It is our purpose to go ahead with the permanent service as quickly as possible." (Col. 819.)

Mental Health Services

Certification of Institutions (Clause 49 (1))

Change.—The words "as private patients" have been omitted "because, in special instances, it may be required that the Minister shall arrange for the treatment in a certified institution of a patient who would normally be treated in a hospital vested in the Minister. Such a patient would not, and could not, be regarded as a private patient, and therefore we desire to omit these words." (Col. 827.)

Disqualification of Commissioners (Clause 49 (2))

Change.—Application of Section 24 of the Mental Deficiency Act to Commissioners as well as the Secretary and Inspectors.

Designation of Mental Hospitals (Clause 50)

Change.—The words "is or forms part of a hospital" have been inserted to enable "the Minister, as a temporary measure, to include in the designation of a mental hospital a small Poor Law institution in which only mental patients are accommodated, or the separate wards of such a Poor Law institution that are so used, and the result will be that, temporarily, the patients accommodated in such places will come under the care of the medical and nursing staff of the neighbouring mental hospital, and the hospital management committee responsible for their maintenance will be that of the mental hospital. The Poor Law authorities will, therefore, cease to have any statutory responsibilities or duties towards these people, but, temporarily, they will have to be accommodated there until there is adequate accommodation for them in a proper mental hospital." (Col. 828.)

Workhouse Mental Patients (Clause 50 (4))

Change.—An omission has been made to remove "the words which unnecessarily restrict the transfer of a mental patient from a workhouse to a mental hospital or institution for defectives in the particular regional area." Mr. KEY gave an assurance that the administrative freedom thus given would not be abused. (Col. 829.)

General

Appointed Day (Clause 53)

Intention.—The appointed day for the purposes of the Bill is to be April 1, 1948. (Col. 832.)

Grants to Local Health Authorities (Clause 53)

Promise.—Mr. KEY: "It is hoped to get the amending Bill with regard to the block grant system into operation by the time this Bill becomes operative from its appointed day. If that happens this Subsection will not be operative, but we want

it included, and we must have it in case of accidents—if, for instance, we do not get the necessary legislation bringing about the changes in the block grant. It is only for that purpose that we must retain it in the Bill." Mr. Key promised to see what could be done to lighten the burden on local authorities. (Col. 832.)

Payments to Regional Hospital Boards, etc. (Clause 54)

Intention.—Mr. KEY: "Our ideas on the way in which this service will be financed are these. First, that the hospital management committee itself will provide to the Regional Board for its area an estimate of its expected expenditure during the coming twelve months. . . . From the information which the Regional Board obtains from each of the hospital management committees for its area the Regional Board will know what sum of money is wanted for the carrying out of the service in its area. It will be able to negotiate with the hospital management committees. . . ."

"That will have to be submitted to the Minister and must be the subject of analysis, and it will be subject to approval by the Minister, because he must give careful consideration to that expenditure. He must decide whether or not, with the knowledge that the Department will have of the general hospital services of the country, a particular region is carrying out its functions in the way in which it should, and meeting the necessary expense for it. He must decide whether, on the contrary, in view of the expenses for the service as a whole, any particular region, for the time being, is exceeding what should be done at that particular time, if the service as a whole is to be adequately financed. But that expenditure having been approved, the Regional Board will have allocated to it its annual amount of money for the carrying out of the services; and the Regional Board will allocate to the hospital management committees their proportion of the regional sum for the purposes of running the institutions for which they are responsible.

"It is our desire that the Regional Boards and hospital management committees, so far as the expenditure of that money is concerned, shall have a considerable amount of latitude within the limits of the sum that has been approved." (Cols. 837-8.)

"If a management committee has a grievance, there is access to the Minister, because both are agents under the scheme." (Col. 840.)

Default Powers of Minister (Clause 57)

Change.—An amendment was accepted to provide that "except in the case of a local authority, the members of the defaulting body should be deemed forthwith to vacate their position, and the Minister shall appoint new people to carry the functions. While that is being done, some person shall be appointed for the carrying out of the functions in the interim." (Col. 849.)

Promise.—Mr. BEVAN promised to look into the wording of the later part of the amendment. (Col. 854.)

Acquisition of Land (Clause 58)

Change.—Amendments were made to make applicable to authorities under the Bill the powers of compulsory acquisition of land contained in the Acquisition of Land Act, 1946. (Col. 855.)

Research (Clause 58)

Intention.—Asked to give an assurance that "he has no desire for that complete monopolistic set-up with regard to the institutional treatment of those who are ill," Mr. BEVAN said: "I agree that in the field of medicine all kinds of experimental work go on. All kinds of modern forms of therapy are now being carried out by doctors whose predecessors cursed them heartily a generation or so ago. I would have thought, therefore, that it would be obvious that no Minister of Health with a health service worth defending would try to prevent the growth of institutional forms of treatment and other forms of therapy which might establish themselves, and I believe that anybody can go on experimenting without the fear that the Minister of Health will pounce summarily upon his buildings and apparatus. In fact, I can give that assurance, if the right hon. and learned Gentleman requires it. I think he agrees that the powers are necessary, but they will be exercised very rarely indeed." (Cols. 856-7.)

Gifts to Hospitals (Clause 59)

Promise.—On an amendment to include hospital management committees among the bodies which may accept gifts Mr. BEVAN said: "It seems to me, however, that it ought to be possible for the hospital management committee to take gifts, for if hospital management committees cannot take gifts it is unlikely the gifts will go to the Regional Board. It is too far away. People normally do not give gifts to a board; they give gifts to a hospital. Therefore, if we are to have gifts at all, they must go to the management committees. But I do hope that the committees are not going to start begging. I think that would be wholly undesirable—I mean, begging in the old way. It would be wholly undesirable in a State hospital service. I agree with the principle of the Amendment, and I hope that it will commend itself to my hon. Friends on reflection. But as we are going to make some Amendments to the scheme, on the lines suggested earlier, perhaps the right hon. and learned Gentleman will withdraw the actual Amendment, on the understanding that on the Report stage we shall include this, along with other alterations." (Col. 861.)

Termination of E.M.S. (Clause 59)

Promise.—Asked whether he had powers to ensure the financial stability of hospitals during the transitional period when the E.M.S. came to an end, Mr. BEVAN said: "Speaking without examining the matter properly, it appears that, at the moment, I have not got the powers. Powers to provide money under the Emergency Medical Service are restricted to certain purposes. However, I will have a look at the matter further, because I agree that a depletion of a hospital's finances may have a very serious effect upon it, and I will certainly see what interim action can be taken." (Col. 865.)

Power of Trustees (Clause 60)

Promise.—Mr. BEVAN promised "to find appropriate language" to include hospital management committees in the Clause. (Col. 867.)

Machinery for Deciding Remuneration (Clause 62)

Intention.—Replying to an amendment to exclude employees of local health authorities, Mr. BEVAN said: "We propose to use the existing machinery, which is quite adequate for the purpose, and where machinery does not exist among some sections it is proposed to call it into being." (Col. 874.)

Compensation or Alternative Employment (Clause 64)

Intention.—With reference to the exclusion of contributory scheme workers, Mr. BEVAN said that it would be impossible to pay compensation to persons indirectly affected by the scheme. "What the Minister of National Insurance and I will do, however, is to give a firm guarantee that we will do our utmost to absorb these people in a new service." (Col. 877.)

Eligibility for Compensation (Clause 64 (e))

Change.—The following has been inserted as a definition of the class of officers who will be eligible for compensation:

"subject to any prescribed exceptions or conditions, by the Minister or such local health authority or other local authority as may be prescribed, to persons who immediately before the appointed day—

(i) devoted the whole of their time to employment by the governing body of a voluntary hospital, a local authority, an insurance committee, or any such other body as may be prescribed, or to any combination of such employments;

(ii) were employed for at least part of their time for the purposes of any hospital transferred to the Minister by virtue of this Act or for the purposes of functions which cease, or are transferred from the employing authority or body, in consequence of this Act,

and who suffer loss of employment or loss or diminution of emoluments which is attributable to the passing of this Act." (Col. 885.)

Machinery for Arbitration (Clause 64)

Change.—Regulations will provide for the determination of questions arising under the regulations concerning compensation, "in order that it may be possible to provide machinery for arbitration." (Col. 887.)

Compensation for Hospital Officers (Clause 64)

Change.—Words have been inserted to deal with the case of officers employed by hospitals in areas of more than one region. This applies particularly in the case of the London County Council, where hospitals may cover more than one regional ward area." (Col. 888.)

Transfer of Functions (Clause 65)

Change.—Words have been inserted "to empower the Minister to make Regulations for the transfer of the property and liabilities of the Dental Benefit Council and the Ophthalmic Benefit Approved Committee." (Col. 888.)

Inquiries (Clause 66)

Promise.—Mr. BEVAN accepted the principle of an amendment to provide that the costs of an inquiry should not have to be borne by the local authorities. He promised to "insert more appropriate words at a later stage." (Col. 889.)

Charges for Services (Clause 68)

Change.—An amendment has been made "to enable local authorities to collect the necessary moneys in connexion with charges for certain services they have rendered. They have asked for this in this form. The Amendment enables regulations to be made for the recovery by local authorities as well as by regional boards for charges of appliances, medical accommodation, and so forth." (Col. 890.)

Exemption of Judges and Justices of the Peace from Disqualification (Clause 68)

Promise.—Mr. BEVAN said "he would try to find out for himself" why the paragraph is in the Bill. (Col. 891.)

Regulations and Orders (Clause 69)

Intention.—Invited to give an indication of his views in the matter of regulations and orders, Mr. BEVAN said: "It is true that Ministers are taking many more powers to issue Regulations and Orders than existed before. If hon. Members will go back to the National Health Insurance Act they will find that almost the whole of the Act was by Regulation and that there was very little in it all. It was entirely transformed by the issue of Regulations. I would point out that there is a Statutory Rules and Orders Standing Committee which examines the Regulations issued by Government Departments, and that therefore the House of Commons has more protection than before. With due modesty, I would point out that I was the inventor of that procedure. The attention of the House is directed to those matters where some question of principle is involved. . . . There are, of course, a number of Orders which do not come before the House in that way. The question arises as to what subjects are appropriate for that kind of instrument. I should have thought that the making of the regional authority was one of those. It is an executive act as to what particular area a region should cover. It is not a question of principle, but a question of convenience, sound organization, and administration. I should have thought that that was a subject which could have been done by Order." (Col. 892.)

"In order that the minds of hon. Members may be refreshed, those matters requiring affirmative Resolutions are also classified as regulations, but where the regulation needs to have an affirmative Resolution by the House before it becomes operative, that is stated in the text of the Bill. Where it is merely a regulation without any qualification, it means that it can be annulled by a Prayer—a negative Resolution of the House. Where it is an Order, it is an administrative act, and does not come before the House in either of those ways. There are some regulations which, in my view, ought to be done by affirmative Resolution. Those are where superannuation is affected, for example, and finance is involved. They have to be approved by the House before they come into operation. . . .

Where I have thought that those matters are of importance I have suggested, and put in the Bill, that Parliament should be asked; but adaptations of the scheme, modifications urgently required in the interests of the people concerned, in some instances might not be able to be done because of the congested character of the Parliamentary agenda, and we would find considerable difficulty. It can be said with considerable point that if they are urgent the Government must give time, but there will always be competition for urgency." (Cols. 895–6.)

"I am inclined, unless I receive very strong arguments to the contrary in particular cases, to stick to the plan as laid out in the Bill. I am not disposed to resist in every instance. Where there is a case that can be shown, it seems to me we might give way. At the moment, however, I cannot see where such a case can be made. Hon. Members should bear in mind that, while they insist that affirmative Resolutions are necessary, they are throwing into what will be an extremely complicated administrative job an added complexity and difficulty which would increase considerably the work of those concerned with the administration of the scheme. Therefore I hope that hon. Members will not press me too far." (Col. 897.)

Constitution of Regional Areas (Clause 69)

Promise.—Mr. BEVAN: "I will . . . see if it is possible to frame some words by which the constitution of the regional areas can be dealt with, not by affirmative but by negative Resolution. (Col. 906.) . . . I will do my very utmost to see that there is a form of words by which the regional areas themselves can be discussed in the House, if the House wishes to do so." (Col. 908.)

Central Health Services Council (Clause 69)

Change.—Words have been inserted "to make subject to a negative Resolution of Parliament any order of the Minister varying the constitution of the Central Health Services Council. It was felt that, as the words in the Bill stand, the Central Health Services Council would not have enough status unless any variation of its constitution could be challenged by Parliament." (Col. 911.)

Superannuation Benefits (Clause 72)

Change.—Provision is added for the transfer of liabilities, including the payment of superannuation allowances, of authorities which have been dissolved. (Cols. 912–13.)

Definition of Hospital (Clause 73)

Change.—The words "the reception and treatment of patients" have been substituted for "providing treatment," to make clear that "the hospital is a residential building for the reception of people for convalescent and rehabilitation treatment." (Col. 915.)

Definition of Illness (Clause 73)

Change.—Disability requiring dental treatment has been included in the definition of illness. (Cols. 915–16.)

Definition of Superannuation Benefits (Clause 73)

Change.—A definition has been inserted. (Col. 917.)

Definition of Specialist (Clause 73)

Intention.—During a discussion on the definition of illness Mr. BEVAN made the following statement: "I explained, when this matter was formerly under consideration, that I would take the advice of the profession as to what the definition of 'specialist' would be. At the moment I do not know what it is, and my ignorance is shared by the profession itself. The profession itself has not a definition of 'specialist' which is sufficiently precise to enable me to put it into the Bill. Furthermore, there will be, in some instances, general medical practitioners who, although they are only classified as 'general medical practitioners,' have shown, by special aptitude and experience, that they can be relied upon to give a particular form of treatment as well as a specialist who has academic qualifications in the subject. In some circumstances, therefore, we want to try to leave it to the advisory bodies themselves, operating through me and the Regional Boards, to define those particular general practitioners *ad hoc* as specialists for the

purposes of the administration. That is made all the more necessary by virtue of the fact that there is an inadequate supply of specialists with objective specialist qualifications. I think the right hon. Gentleman can take it from me that in this matter I shall move with the greatest possible caution in order to get the advice we need." (Cols. 919-20.)

New Clauses

Provision of Special Schools (New Clause)

Change.—A new Clause has been added to enable Regional Hospital Boards or Boards of Governors of teaching hospitals to arrange with a local education authority or voluntary organization for the use of hospital premises as a special school and for the maintenance of children where necessary. (Cols. 920-1.)

Stamp Duty (New Clause)

Change.—A Clause has been added to exempt from stamp duty documents given by or to Executive Councils. (Col. 923.)

Supply of Goods by Local Health Authorities (New Clause)

Change.—A Clause has been added to facilitate schemes for central purchase and distribution of stores and supplies. (Cols. 923-4.)

Industrial Health Service (New Clause)

Intention.—An amendment, which was withdrawn, required the Minister, within five years after the appointed day, to prepare a scheme for an Industrial Health Service. During the discussion Mr. BEVAN said: "It is perfectly true that there will have to be an Industrial Health Bill later on, but I think that hon. Members will find that, when this scheme has been in operation some time, the industrial health scheme will fall into line with infinitely more luminosity than appears at the moment. If we had put an industrial health service into this Bill we should soon find ourselves in frightful difficulties, and would soon need to have an amending Bill, because at the moment the relationship between industrial health and general health is not sufficiently clear; but it will occur, in course of time, that the health service under this Bill will assimilate, by its own administrative momentum, quite a considerable amount of what is described as industrial health services." (Col. 926.)

Patent Medicines (New Clause)

Intention.—A new Clause, which was withdrawn after discussion, sought provision for the appointment of an expert committee to prepare and maintain a list of medicines which are not recommended for prescribing by medical practitioners for use by the public, the purpose being "to remedy a situation whereby the new service is in competition with an uncontrolled health service." (Cols. 944-6.)

Mr. BEVAN said: "I sympathize with the purpose that lies behind this new Clause, but I want to tell hon. Members that this is much too wide a subject to tuck in at the end of a Committee stage. It has all kinds of repercussions; it is the kind of legislation which has to be very carefully considered before it is drawn up, and I would like hon. Members opposite to realize that the doctors themselves would say that the Clause, as at present drafted, is an interference with their right to prescribe. . . . I would say that whereas, in my opinion, the time has arrived, and indeed is long past, when the public of this country should be entitled to be protected against the ramp that is at present going on, nevertheless it is a subject with such wide repercussions that it must be dealt with in entirely separate legislation and not, as I have already said, introduced at the end of the Committee stage in a Bill of this sort." (Col. 949.)

Asked whether he regarded the problem as "something with which he hopes to make progress before long," Mr. BEVAN replied: "A legislative matter is not something for one Minister to deal with. All I can say is that I regard it as a matter of some urgency." (Col. 950.)

Grants to National Bodies (New Clause)

Intention.—In rejecting a new Clause to provide for grants to national bodies concerned with the improvement of the physical and mental health of the people, Mr. BEVAN replied he sympathized with a good deal of what had been said, but "I am advised that the words are unnecessary and that under the

Health Act, 1919, and, indeed, under Clause 1 of this Bill, I have already wider powers than would be conferred upon me by the proposed new Clause." (Col. 951.)

Schedules

Central Administrative Machinery (First Schedule)

Intention.—On an amendment to include the Chairman of the Dental Board in the Central Council Mr. BEVAN said: "I earnestly hope that in this Committee to-day there will be no auctioning of seats on this Council. . . . Doctors have exerted considerable force, but I think that the doctor is in rather a different position because he has an over-all responsibility for the health services, considered in their sum. A doctor covers other health services like radiology, pharmacy, and others that I could mention. Considering the doctor in the abstract, he is the person who, in himself, sums up all the various health services and, therefore, he has a different relationship to the health service as a whole.

"When we come to consider the practical work of this Central Council Advisory Committee we have got to think of it working more through subcommittees than working as a whole. It is a technical advisory body, and not an administrative body. When we come to the statutory advisory committees we have the really important people who are collecting the information, sifting it, analysing it, giving their experience and passing it on to the Central Council for them to consider it in its relationship to the health services as a whole, in order that they may be able to advise the Minister upon the wider repercussions of whatever report the committees make.

"I therefore submit that these people should be lay members. We want to bring into the Central Council the fresh air of lay approach. Otherwise we get far too much technical inbreeding. I think most of the doctors themselves would agree with that. The same reasoning will apply to the other boards throughout the service. It is necessary for us to have very strong lay representation in order that we may get an effective service." (Cols. 955-6.)

Hospital and Local Government Representatives (First Schedule)

Change.—The words "not being medical practitioners" have been inserted. (Col. 958.)

Expenses of Members of Central Council and Standing Committees (First Schedule)

Change.—Provision has been included for payments in respect of loss of remunerative time. Mr. BEVAN said: "It will be extremely difficult for many people of poor means to serve on some of these Regional Boards and some of the other institutions established under this Bill unless they are able to receive payment for loss of remunerative time. It would have been possible to have put in rather more precise language than this, except that there is no authority at present for the payment for loss of remunerative time to persons on local authorities in Britain. There is some provision for some local authorities in Scotland. I am setting up a committee of inquiry to advise me as to what and how local authorities should be authorized to make payment for loss of remunerative time and/or subsistence allowances, and the circumstances in which it should be done. I want to take power here in order to marry the two schemes, because we do not want two different conditions and standards of payment existing in the country as a whole. I think this is a provision with which the Committee will agree. It would be most unfortunate if a very large body of experienced people were prevented from participating in the administration of these important services merely on account of the fact that they were financially unable to do so." (Col. 959.)

Regional Hospital Board (Third Schedule)

Intention.—During discussion Mr. BEVAN said: "After the Boards have been set up and we have had experience, we must have modification. We shall certainly have to modify administratively." (Col. 972.)

Lay Representation on Regional Boards (Third Schedule)

Intention.—During discussion Mr. BEVAN said: "The hospitals' administration and the economy of the hospital system are not necessarily jobs which doctors could do best. On the

trary, doctors do not always reach the highest level of collective sagacity. Individually they are the most charming and lucid persons, but, because of their immersion in their profession, their collectivity is not the sum of their individual intelligence by any means. Therefore I could not agree more with the proposal that lay representation must be encouraged on these Regional Hospital Boards, although that also must depend on the richness of the material available in the particular area." (Cols. 972-3.)

Consultation with Hospital Bodies (Third Schedule)

Change.—An amendment has been made to ensure that there shall be "consultation, not with some sort of general body as at present provided in the Schedule, but for the consultation of the management committee of a particular voluntary hospital with a committee which had before been responsible for running the voluntary hospital, or, where there is a group of voluntary hospitals coming under a management committee, that there shall be consultation with individual hospital committees for the hospitals concerned in that group and not with some general body representing voluntary hospitals for the whole of the region." (Cols. 974-5.)

Co-option (Third Schedule)

Intention.—In rejecting an amendment providing for the co-option of persons to hospital management committees Mr. BEVAN said: "I do not think the principle [of co-option] is one we should encourage. The management committee are responsible to the Regional Board, and the Regional Board are responsible to Parliament, through the Minister. We do not want to have persons who in some sense are responsible to nobody. I would have thought that with the provision that subcommittees would be appointed for special work we have covered the practical necessities of the case." (Col. 976.)

Consultation with Boards of Governors (Third Schedule)

Intention.—On an amendment, which was withdrawn, requiring the Minister to consult with the Board of Governors in filling vacancies on the Board Mr. BEVAN said: "All I desire is that such consultation shall not be insisted upon. In practice, of course, there would be consultation." (Col. 990.)

Board of Teaching Hospital with More than One Hospital (Third Schedule)

Intention.—An amendment sought to provide that the committee for such a unit would be composed partly of members of the Board and partly of members of the medical staff. Mr. BEVAN replied: "Circumstances vary so much, but there may be circumstances in which an infectious diseases hospital is closely associated with the general hospital, and it may be desirable to have a separate house committee, or it may not. I think this is one of the things we should leave to be decided in the circumstances concerned. It is desirable that there should be a house committee where the building is substantial; but, where it is unsubstantial, obviously it is not necessary. I think a sort of empirical test is required here." (Col. 992.)

Admission of Press to Regional Board Meetings (Third Schedule)

Promise.—In rejecting an amendment specifically dealing with this matter, Mr. Bevan gave an assurance that the object would be achieved by the regulations he would make under Part IV (d) of the Schedule. (Col. 996.)

Functions of Health Committees (Fourth Schedule)

Change.—An amendment has been made "to enable the local authority to give to its health committee certain other functions than those which it has in connexion with child welfare, midwifery, lunacy, and mental deficiency—functions which it has under other Acts as well. We desire that it shall have the power to transfer all these functions to its health committee if it so desires." (Col. 998.)

Inspection of Minutes of Health Committees (Fourth Schedule)

Change.—An amendment has been made to apply "to the proceedings of the health committee a practice prevalent with the proceedings of education committees." (Col. 1002)

Constitution of Health Committees (Fourth Schedule)

Change.—An amendment has been made "to make the majority of its health committee consist not merely of public representatives of its own body but of public representatives of other local authorities within its area, and it will give the sum total of public representation to the combined bodies." (Cols. 1002-3.)

Deputies on Tribunal (Seventh Schedule)

Change.—An amendment has been made in paragraph 5 to correct a mistake. "The Schedule, as it is now drafted, suggests that the Minister may appoint the deputy chairman, whereas he would be appointed by the Lord Chancellor. It also implies that all the members are professional, whereas one will be lay." (Col. 1008.)

Persons of Unsound Mind and Mental Defectives (Ninth Schedule)

Change.—Mr. BEVAN explained the reason for the numerous amendments to this Schedule. "The extension of the existing lunacy machinery is an extremely complicated affair. We are not, as I said on the Second Reading, altering the lunacy code. All we are doing is decanting mental institutions and care into the whole service. That means extracting them from a whole series of enactments and services. It is one of the most complicated pieces of legislation we have had for many years. It was discovered that there were a number of loose ends, that there were some enactments, or parts of enactments, which had been overlooked, and this series of Amendments is necessary to put the matter right. I am glad that they were discovered during the Committee stage, otherwise we should have had to provide for them on the Report stage." (Col. 1009.)

Consequential Amendments and Repeals (Tenth Schedule)

Change.—Numerous amendments were made in this Schedule. (Cols. 1013-16.)

ANNUAL REPRESENTATIVE MEETING, 1946

ADDITIONAL RESOLUTIONS BY DIVISIONS AND BRANCHES NATIONAL HEALTH SERVICE

Motion by BELFAST: That this meeting is of opinion that hospital services should be planned on natural hospital areas centred on universities, and Regional Committees should be set up for the purpose of co-ordination, control remaining in the hands of the local people.

Motion by BELFAST: That this meeting is of opinion that Council should take steps to inform as large a section of the public and the profession as possible that the proposed National Health Service is neither an insurance scheme nor a free health service, but would be paid for by involuntary contribution or other form of taxation.

Motion by BELFAST: That in the opinion of this meeting (1) The personal doctor-patient relationship be preserved and the National Service founded on the family doctor ideal.

(2) That the boards of management of the voluntary hospitals shall be enabled and encouraged to preserve their independence as autonomous bodies within a co-ordinated Health Service.

(3) That the National Health Insurance Scheme should provide hospitalization grants assignable by the insured patients to the hospital or nursing of choice.

Motion by BELFAST: That the term "National Health Insurance" be deleted in the correspondence when referring to the present proposed scheme and that the term "National Health Service" be substituted.

Motion by ISLE OF WIGHT: 1. (a) That this meeting, being of the opinion that the National Health Service Bill is about to become law, desires that immediate representations be made to the Minister of Health on the conditions of service (within the terms of reference of the Bill as known) which would be acceptable to the profession; (b) that the matter is of such urgency as to demand priority of action over all other business.

2. (a) that the ruling principle in the working of the scheme be the interest of the patient and not that of the administration; (b) that the doctor be free to decide the treatment to be afforded to the patient, without interference or direction; (c) that the remuneration of the general practitioner should be directly related to the number

of patients on his list, special areas being dealt with in agreement with the profession. (A scheme is suggested in which remuneration would be determined by the number of patients, but that increases should be made based on number of years of service); (d) that units of mileage be reckoned in patient values at the rate of (say) 10 units of mileage (or difficulty of access) to 1 patient, in addition to the payment for the cost of the journeys; (e) that all income be free of professional expenses—e.g., cars, instruments, emergency drugs, telephones, rent, heating, lighting, upkeep of surgeries and waiting-rooms.

3. That the allowances for cars be computed by (a) a flat rate to cover depreciation, upkeep, insurance, road licence, driving licence, etc., running expenses to patients within 2 miles, and (b) a mileage basis to be calculated on a distance basis.

4. That leave be at the rate of 42 days per annum with locum tenens supplied by the Ministry.

5. That a retiring age (say 65 years) be set.

6. That an adequate pension be provided at the retiring age.

Motion by LEICESTERSHIRE AND RUTLAND: That this meeting recommends to the Council the desirability of circulating a referendum to each consultant and general practitioner when the time is deemed opportune. This referendum should seek to ascertain whether the individual is willing to accept or not to accept service under the terms of the new Health Service. In addition it should point out that should the individual's reply be to decline service then such refusal should not be effective unless at least 75% of the replies were against accepting service. This figure of 75% should apply to the area of each individual Branch, and also to the total number of Divisions or Branches of the Association.

Motion by TYNESIDE: That in the opinion of this meeting, the local medical committee referred to in clause 32(a) of the Bill should be elected and constituted on similar lines to the present panel committees—that is, one practitioner, one vote; nominations for all appointments to be approved by this committee.

Motion by GREENWICH AND DEPTFORD: That with reference to para. 117 of the Council's Report this meeting regrets that no reference is made to an alternative scheme for the treatment of patients in the event of the National Health Service Bill proving unacceptable to the B.M.A. and further suggests that a list of practitioners be compiled who would undertake to refuse service provided a sufficient number of practitioners give a similar undertaking.

HOSPITALS

"General Practitioner" Hospitals

Motion by BELFAST: That this meeting urges on Council the importance of the preservation and the development of the small general hospital, staffed by general practitioners, and recommends Council to press for the development of such hospitals within the National Scheme, it being clearly understood that it is essential at the same time to maintain the closest possible co-operation between general practitioners and those in consultant and specialist practices.

Chronic Sick

Motion by BELFAST: That with reference to para. 21 of the Council's Report, this meeting wholeheartedly supports Council in its recommendations for the care of the chronic sick and elderly, the infirm and incurable, and emphasizes the need for the periodic review of the diagnosis of cases in the light of advancing scientific knowledge.

GENERAL PRACTICE

Fees for Life Insurance Examinations

Amendment by BRIGHTON: That "one guinea" be substituted for "10s. 6d." in the last line but one.

NATIONAL HEALTH INSURANCE

Remuneration of Insurance Practitioners

Motion by LANARKSHIRE: That failing an immediate and adequate upward revision of the N.H.I. capitation rate—made retrospective to Jan. 1, 1946—the Insurance Acts Committee be advised to consider taking steps to terminate the present agreement with the Minister.

Motion by NEWCASTLE-UPON-TYNE: That in view of the fact that the Government has in the past shelved repeated requests for a higher capitation fee on the grounds that the Spens Committee was investigating the problem, and in view of the increasing cost of living, the Government should be told that it is now a matter of extreme urgency.

Regional Medical Service

Amendment by BRIGHTON: That this meeting is not satisfied with the attitude of the Minister and instructs Council to pursue the matter further.

Amendment by GREENWICH AND DEPTFORD: That this meeting views with concern the attitude adopted by the Minister of Health with regard to the reference of patients to specialists as being a definite interference with the relationship between doctor and patient, and demands that the Council take a firm stand against the Ministry over what they consider an encroachment of individual freedom.

SPECIAL PRACTICE

Consultants and Specialists and a National Health Service

Amendment by WORCESTER AND BROMSGROVE: That the following words be added to subsection iv: "but in the case of ambulant or movable patients there should be complete freedom of choice of consultant."

Access to Ancillary Departments of Hospitals

Amendment by GREENWICH AND DEPTFORD: That this meeting does not consider the "open door" policy is a wise or safe one in that the increasing flood of work it would bring to the ancillary departments would tend to lead to a situation where opinions would be given by technicians.

Post-mortem Facilities

Amendment by EAST YORKSHIRE: That this meeting does not agree that the decision as to who is a competent medical practitioner to perform post mortems should rest with the coroner.

PUBLIC HEALTH

Doctors employed Part-time by Local Authorities

Amendment by BRIGHTON: That this meeting expresses dissatisfaction at the result of the Council's deliberations, as the scale of salaries is not high enough to be in keeping with the present times, for whole time or part time.

Amendment by EAST YORKSHIRE: That this meeting regrets the continued demonstration of the chaotic position of scales of remuneration for practitioners on an item of service basis as exemplified in the Report of Council, 1945-6.

National Maternity Service

Amendment by GREENWICH AND DEPTFORD: That this meeting is of the opinion that for the recognition of the purpose of the future health service any general practitioner who desires to undertake obstetrics shall undertake to remain efficient in midwifery.

ORGANIZATION

Regional Organization

Motion by NEWCASTLE-UPON-TYNE: That in the opinion of this meeting the headquarters of the North-Eastern Regional Secretary should be in Newcastle-upon-Tyne.

OTHER MOTIONS OF DIVISIONS AND BRANCHES

Refresher Courses

Motion by BELFAST: That this meeting is of opinion that refresher courses should be made available for general practitioners at recognized teaching hospitals, and they should be facilitated and encouraged to attend them.

Rationing

Motion by BELFAST: That this meeting protests against any proposal to make rationing a permanent feature of post-war British policy and will protest against any form of discriminative rationing for political party purposes.

Medical Education

Motion by EAST YORKSHIRE: That this meeting suggests to the appropriate authorities that, in order to expedite the qualification of medical practitioners, the method adopted during the late war of shortening holidays and inserting an extra term in the academic year be continued.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Mr. Richard Battle, F.R.C.S., at Gorslands, Horsell Common, Woking, Surrey, and at 148, Harley Street, W.1 (Wolbeck 1207); Dr. N. S. Plummer, F.R.C.P., at 49, Harley Street, W.1; Mr. F. J. Rutter, F.R.C.S.Ed., at 3, Barnfield Crescent, Exeter; Mr. Reginald S. Strang, F.R.C.S., at 3, Westbourne Road, Edgbaston, Birmingham, 13; Dr. C. C. Ungley, F.R.C.P., at 13, Portland Terrace, Newcastle-upon-Tyne, 2.

Correspondence

Recognition of Honorary Workers

SIR,—The next few years promise to be the most momentous in the history of the medical services of this country. Many GPs, general practitioners and specialists alike, have worked hard on behalf of their colleagues in the past few years in a completely voluntary capacity either in their local Divisions or in the B.M.A. or on the central committees, often putting themselves out of pocket by their efforts. Many more have served their brethren just as industriously in the years to come without thought of reward. Is it not time we recognized the good work they are doing on our behalf by conferring some honour upon them? I am given to understand that resolutions of thanks passed in committee are the present method of acknowledging their work.

I wish to propose that the title of "Fellow of the British Medical Association" be conferred on those of our colleagues who have given continuous and exacting voluntary service on behalf of their colleagues over a number of years, or to any member whose work gives some outstanding contribution to the work of the Association. I suggest that the Divisions, Branches, and central committees be examined for those men worthy of the honour and that their names and deeds be submitted to the Council for consideration. Other methods of honouring such worthy members, for instance the granting of membership or the presentation of medallions, may appeal more to other members.

If some such scheme receives the support of the Association certain benefits should be available to those so honoured—such as the provision of an annual dinner, invitations to the Representative Meetings, and *ex-officio* membership of certain or all committees in their Branch or Division. Let us recognize those who selflessly work on our behalf yet so frequently receive little support in their labours,—I am, etc.,

London Hospital, E.1.

W. R. WELPLY.

Permanent Appointments

SIR,—In the *Supplement* of March 23, "Military Psychiatrist" suggests that the establishment of permanent appointments should be deferred for a longer period. Your reply states that the Council of the B.M.A. has reduced the period from four months to two. This reduction has been resented by medical officers in the Pacific, most of whom, like myself, do not receive the *Journal* for three months after the date of publication—i.e., one month after the closing date for applications. Decisions such as this and the protracted demobilization of specialists are fast creating an outlook of distrust which resembles that seen in men serving in Burma in the early days of the war. The period for appointments should be re-extended to four months to let doctors in these parts feel that they are at least able to apply.

Unlike your correspondent Ian G. Wickes (in the same issue) I am not in a plane flying home for demobilization and must therefore sign myself,

"MEDICAL SPECIALIST."

Release of Specialists

SIR,—I have noticed, with some distaste, letters recently published in the *Supplement* from specialist medical officers complaining of tardy demobilization, being in age and service groups around 40. From the age groups of these officers one suspects that they were comparatively late in joining the Forces, possibly in many cases acquiring specialist qualifications at the time when many others were experiencing the rigours or weariness of war.

Medical specialist officers have at least the advantage of doing congenial work in their own branch of medicine—a privilege often denied to the general duty medical officer. There are, I am sure, large numbers of ex-Service medical officers, like myself, who were general practitioners, and who did six years of general duties, and are now attempting to rehabilitate themselves, at some inconvenience and economic loss. I have no doubt that they also look upon the somewhat whining complaints I have mentioned with equal distaste.—I am, etc.,

"EX-NAVAL M.O."

Protection of Practices

SIR,—The survey of the working of protection of practices schemes (Appendix to Supplementary Report of Council, *Supplement*, June 22, p. 182) leaves several grave omissions, which I am sure many of the serving members will agree. The one factor which militated against the successful working of the plan was the good will and honour lacking in the remaining profession. I fail to understand how proud we are to feel with the return of £36 per year (average figure) for our private patients. How are we to feel proud of anything up to a 61% loss in our insured persons? The difference between insured and private returns shows that had not lists been closed we would have been left with nothing. Praise is due to local medical war committees and is merited—they tried hard with a disinterested profession.—I am, etc.,

Romford.

G. A. K. STEEN.

Domestic Help for Doctors' Wives

SIR,—The feeling letter of Dr. M. L. Farmer (*Supplement*, July 6, p. 3) gives but another instance of the Ministry's woeful ignorance and wilful neglect over any matter concerning the G.P.—not forgetting his poor wretch of a wife. But what is writing to the *B.M.J.* going to achieve? Even as I write, every suggested amendment to the National Health Bill is negatived or withdrawn peremptorily. Who, then, can make the Ministry recognize the debt it owes to the G.P.'s wife, and, having secured recognition, who is to produce "a scheme" and who is to implement it to relieve our wives, and how and when? If the Ministry can filch our practices, our bodies, and our houses, it is not likely to stop short at our wives. And meantime? Does the Ministry care if our door-bells go unanswered? Does it care one jot if a telephone operator wearily informs an urgent caller, "Surrey, no replay"? And who cares if our wives are in a queue? There may be some Ministries unaware of the existence of queues whether of doctors' or dockers' wives, as was shown by statements recently in the House when bread-rationing was being discussed (for want of a better word).

But poor Dr. and Mrs. Farmer, together with many other doctors and their wives, must prepare themselves for worse to come: when they reach the advanced "lonely sixties," when their expenditure of much love, labour, and money on their children is a thing of the past, when perhaps their grandchildren are ill but denied visits from their grandparents because of domestic, professional, or other State-sent burdens, when their own health and strength decline necessitating frequent days or weeks in bed, when hard winters abound, when earning capacity is proportional to physical weakness and exhaustion, when whole years go by without a possible break or holiday, when they know they will be forbidden to sell practice or house and so hope for a well-earned retirement and rest from it all—when all these things come, as they have come to some of us, then, and not till then, may the Dictatorship shape a brave new world for others than youth. Wild plans will sprout to attract doctors to become G.P.s, and that will be a much more difficult problem than attracting recruits to the profession.

Those of us who married nearly forty years ago in the wicked Victorian era had love-nests for homes; even as beginners we could afford a maid; as years went by and the family grew we could have maids (in the plural), gardeners, and perhaps chauffeurs, and certainly casual labour enough. Wives lived a civilized life enjoying housewifery and motherhood to the full. The modern so-called labour-saving house is a snare and saves labour only for the builder. The doctor's house, as such, was never conceived. Did we in those days dream even for one moment that we should see our wives as drudges and ourselves as serfs? The pity of it all is that we can afford domestic help; but are we to condone the policy and wage-demand of the labour exchanges, who have not the slightest idea of the requirements of a professional house, in employing prostitutes, thieves, drunkards, and lesbians?

No, Sir. My *nunc dimittis* is soon to be sung and perhaps it will be as thankful as that of the pious Simeon, though for a very different reason; I think I shall be glad, when the time comes, to be out of a world so thoroughly marred by mankind and his machinations.—I am, etc.,

Orpington.

B. RICHARDSON BILLINGS.

H.M. Forces Appointments

ROYAL AIR FORCE

Air Cdre. (Temp. Air Vice-Mshl.) A. F. Rook, C.B., O.B.E., K.H.P., to be Air Vice-Mshl.

To be Fl. Lieuts. (Permanent): D. C. Bodenham, H. L. Jenkins, and J. Park.

To be Fl. Lieuts.: E. H. Lamb, J. K. F. Mason, and S. Paul.

ROYAL AIR FORCE VOLUNTEER RESERVE

Fl. Lieut. T. Hepburn has relinquished his commission on account of medical unfitness for Air Force service, retaining the rank of Squad. Ldr.

R. V. Payne to be Squad. Ldr. (Emergency).

Fl. Lieut. G. Ashforth has resigned his commission, retaining the rank of Squad. Ldr.

Fl. Lieut. A. R. V. Moynagh has relinquished his commission on account of medical unfitness for Air Force service, retaining his rank.

To be Fl. Lieuts. (Emergency): E. M. Edwards, D. G. Howell, A. K. Monro, J. A. Pugh, J. A. Taylor, G. Watkinson, and M. A. Floyer.

To be Flying Officers (Emergency): N. D. Ashe, G. F. Bacon, G. L. Bickler, J. G. Coxon, W. J. A. Dobson, L. G. Duff, J. Fraser, W. E. Hassan, J. F. Hudson, P. K. S. Joynson, C. H. Kinder, W. R. Lee, K. E. McIver, I. Mackenzie, R. W. P. Mellish, D. O'Keefe, A. S. Osier, I. M. Perkins, P. Seltzer, J. G. Shirreffs, H. Shooman, D. F. Street, W. C. Taylor, C. C. Vidot, R. V. Walley, L. R. Whittaker, R. A. Wilkinson, D. G. Wilson, W. E. J. Wilson, N. F. W. Brueton, J. Barr, J. S. Caldwell, K. D. Cochran, N. N. Davies, E. F. Ducat, R. F. Ewing, K. J. R. Ford, J. D. Galletly, G. E. Griffiths, F. Latham, P. S. London, P. R. Montgomery, J. Y. Moore, G. W. Morrison, J. A. B. Mounsey, W. D. Nicoll, R. C. McGregor, C. B. McKerrrow, J. McMillan, A. C. F. Ogilvie, J. O. Robinson, P. F. Scott, P. H. S. Silver, D. L. C. Thomas, M. Tobias, J. C. L. Wade, R. W. Wilkinson, C. D. Wilson-Sharp, and D. Wimbome.

INDIAN MEDICAL SERVICE

Capt. A. C. S. Mann has retired.

Association Notices

Sir Charles Hastings Clinical Prize

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition. The following are the regulations governing the award:

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money award of the value of fifty guineas.

2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made. It is to be noted that candidates in their entries should confine their attention to their own observations in practice rather than to comments on previously published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, their interpretations, and their conclusions.

4. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946. The prize will be awarded at the Annual General Meeting of the Association to be held in 1947.

5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work. A prizewinner in any year is not eligible for a second award of the prize.

6. If any question arises in reference to the eligibility of the candidate or the admissibility of his or her essay the decision of the Council on any such point shall be final.

7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8. The writer of the essay to whom the prize is awarded may, on the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal*, or for presentation to the appropriate Section of the Annual Meeting of the Association.

9. Inquiries relative to the prize should be addressed to the Secretary.

GROUP OF ANAESTHETISTS

Notice is hereby given of the formation by the Council of a Group of Anaesthetists, which shall be composed of all those members of the Association who are engaged predominantly in the practice of anaesthetics. Members of the Association who claim to conform to this definition, including those serving with H.M. Forces, are requested to complete and return the appended form to the Secretary, B.M.A. House, Tavistock Square, W.C.1. The first general meeting of the Group will be held at a date to be subsequently announced in the *Supplement*.

June 22, 1946.

CHARLES HILL,
Secretary.

BRITISH MEDICAL ASSOCIATION

GROUP OF ANAESTHETISTS

FORM OF APPLICATION FOR MEMBERSHIP

To the Secretary,
British Medical Association,
B.M.A. House, Tavistock Square,
London, W.C.1.

I wish to apply for membership of the Group of Anaesthetists. I am a member of the Association and am engaged predominantly in the practice of anaesthetics.

Signed.....

Address.....

Date.....

DIARY OF SOCIETIES AND LECTURES

MACKENZIE INDUSTRIAL HEALTH LECTURE.—At B.M.A. House, Tavistock Square, W.C., Wed., 5.45 p.m. Dr. Donald Hunter: Academic Aspects of Industrial Medicine. (Amended date.)

APPOINTMENTS

ROYAL LIVERPOOL UNITED HOSPITAL. Honorary Appointments.—At Royal Southern Hospital Branch: Radiologist, R. E. Roberts, M.D., F.R.C.P., F.F.R.; Assistant Physicians, G. Sanderson, M.D., R. R. Hughes, M.D.; Assistant Surgeons, R. W. Doyle, F.R.C.S., M. J. Bennett-Jones, Ch.M., F.R.C.S. At Liverpool Royal Infirmary Branch: Assistant Physicians, E. T. Baker-Bates, M.D., W. S. Sutton, M.B., M.R.C.P.; Assistant Surgeons, M. Silverstone, Ch.M., F.R.C.S., A. C. Brewer, F.R.C.S.; Assistant Orthopaedic Surgeon, R. Roal, F.R.C.S.; Assistant Gynaecological and Obstetrical Surgeon, Prof. T. N. A. Jeffcoat, M.D., Liverpool, F.R.C.S.Ed., F.R.C.O.G. At David Lewis Northern Hospital Branch: Assistant Physicians, C. A. Clarke, M.D., M.R.C.P., A. Thetwall Jones, M.D., M.R.C.P.; Assistant Surgeons, G. Stafford Mayer, F.R.C.S., W. R. Hunter, M.S., F.R.C.S.; Assistant Orthopaedic Surgeon, G. E. Thomas, M.Ch.Orth., F.R.C.S.Ed. At Liverpool Stanley Hospital Branch: Assistant Physician, R. M. Evans, M.B., B.Chir.; Assistant Surgeon, F. I. Evans, F.R.C.S.; Assistant Orthopaedic Surgeon, P. B. Moroney, M.Ch.Orth., F.R.C.S.; Assistant Gynaecological and Obstetrical Surgeon, Mary H. Maycur, M.D., F.R.C.S. At Department of Plastic Surgery: Assistant Surgeon in Charge, R. P. Osborne, F.R.C.S.

WOLVERHAMPTON: ROYAL HOSPITAL.—The following appointments to the honorary medical staff are announced: Physician: J. V. S. A. Davies, B.M., M.R.C.P. Paediatrician: H. W. Evertley Jones, M.B., M.R.C.P. Dermatologist: D. E. Oakley, M.B., B.Chir. Surgeons: R. L. Benison, F.R.C.S., and W. R. S. Hutchinson, F.R.C.S. Assistant Orthopaedic Surgeon and Fracture Officer: N. Heath, F.R.C.S.Ed. Anaesthetists: D. Masters Brown, M.B., Ch.B., G. W. Campbell, L.R.C.P.&S.Ed., and J. F. Rickards, M.B., Ch.B.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BELL.—On July 10, 1946, at 190, High Road, Loughton, Essex, to Susan (née Neill), wife of Dr. I. Montecath Bell, a daughter.

HARDIE.—On July 13, 1946, at Malvern, to Laurie, wife of A. W. Hardie, M.B., D.A., a daughter.

POWELL.—On July 3, 1946, at Clarence House, Rhyl, to Joan (née McAuliffe), wife of Dr. C. E. Powell—Richard, a brother for Christopher and Fiona.

MARRIAGE

STEVENS—RAWLINGS.—On July 2, 1946, at Caxton Hall, Licul. Col. A. V. Stevens, O.B.E., M.C., R.A.M.C., to Hilda Suzanne Rawlings.

DEATHS

BUCK.—On June 17, 1946, at "Havelock House," 9, Havelock Road, Lucknow, Eldred Theodore Buck, L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.&S.Glas., aged 46.

MACKAY.—On July 4, 1946, at Glenora, Beaulieu, Roderick Mackay, M.C., M.D., beloved husband of Rita Nairne.

RUSHION.—On July 3, 1946, Susan Jane, aged 9 days, infant daughter of Joyce (née Newman) and Dr. E. P. K. Rushion, Colonial Medical Service.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 27 1946

A STUDY OF THE ONSET AND CYCLIC DEVELOPMENT OF THE SPRUE SYNDROME*

BY

K. D. KEELE, M.D.

Lieut.-Col., R.A.M.C.; Officer in Charge, Sprue Research Team, G.H.Q. (India)

The importance of sprue in India during 1943-5 is reflected in the fact that of 8,846 medical cases evacuated during that period 1,073 had sprue. The unusual opportunity of observing large numbers of cases early in the disease has provided the clinical material for this paper, which describes the development of the syndrome in two series of patients. The first 600 cases described previously† were studied under limiting circumstances. Few laboratory facilities were available. They will be referred to as A600. The second series of 80 cases have had fuller clinical and laboratory investigation. They will be referred to as B80.

Symptomatology: The Sprue Cycle

The symptoms of sprue are legion. A study of the early symptomatology revealed in 85% of cases the grouping of symptoms into two phases shown in Fig. 1, which is the chart

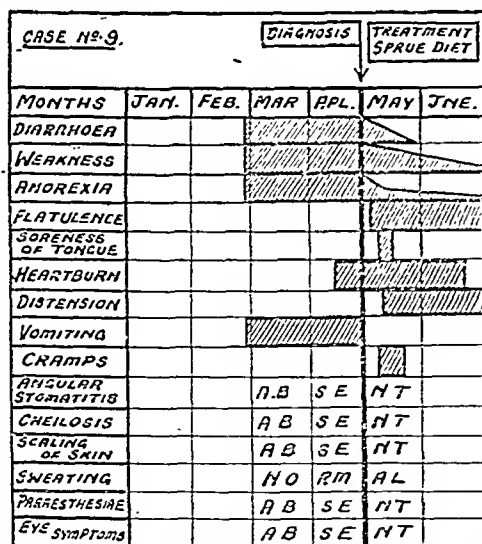


Fig. 1.—Diagram of the typical clinical picture in a case of acute sprue (mild).

of Case 9 of series B80. Symptoms of onset consist of anorexia, diarrhoea, vomiting, weakness, and loss of weight. Diarrhoea is usually, but not always, first; the other symptoms follow quickly, forming a clear symptom-complex which persists for a few weeks before further symptoms develop. These consist of glossitis, cheilosis, abdominal distension, and

scaling of the skin. At this time flatulence and heartburn increase and the symptoms of onset decrease or disappear; appetite returns to normal or to voracity, diarrhoea declines or changes to constipation, and weight loss ceases, often turning to weight gain.

In untreated cases this remission of diarrhoea and return of appetite results in overeating, which leads to return of diarrhoea, etc. With such relapse glossitis and distension decrease, but weight drops rapidly. This cycle may continue with progressive loss of weight and development of malnutrition.

The symptoms of onset and relapse are similar. The second group of symptoms—glossitis, distension, etc.—coincide with improvement in the general condition of the patient—e.g., return of appetite, gain of weight—and so have been grouped as symptoms of remission.

Fig. 2 shows the change of incidence of symptoms within two weeks of diagnosis of steatorrhoea and beginning of sprue

SYMPTOM	INCIDENCE OF SYMPTOM BEFORE DIAGNOSIS %	INCIDENCE OF SYMPTOM AFTER DIAGNOSIS %	CHANGE IN INCIDENCE %
DIARRHOEA	99	69	- 30
DISTURBANCE OF APPETITE	91	79	- 12
VOMITING	44	38	- 6
CRAMPS	14	15	+ 1
WEAKNESS	94	98	+ 4
HEARTBURN	60	65	+ 5
ANGULAR STOMATITIS	9	18	+ 9
CHEILOSIS	5	24	+ 19
SCALING OF SKIN	9	31	+ 22
FLATULENCE	73	96	+ 23
SORENESS OF TONGUE	61	90	+ 29
DISTENSION	60	95	+ 35

Fig. 2.—Showing change in incidence of symptoms after diagnosis and beginning of treatment in 80 cases of sprue.

diet. From this it will be seen that the symptoms of onset or relapse decreased rapidly in most cases in hospital, but those grouped as symptoms of remission increased in incidence. At first we failed to understand why patients should develop symptoms on sprue diet, but on observing relapses occurring under our own care it was noticed that the sequence diarrhoea, anorexia, loss of weight was often followed by sore tongue and distension on cessation of the diarrhoea, with improvement of appetite and gain of weight. Such a miniature cycle might be complete in a week in hospital. On a larger scale this was happening in cases admitted to hospital in persistent relapse, the symptoms changing to those of remission on treatment.

* Abridged excerpt from a report to G.H.Q.(I.).

† Keele, K. D., and Bound, J. P., *British Medical Journal*, 1946, 1, 77.

Symptoms of Onset or Relapse

Anorexia.—Starting usually after diarrhoea, this symptom may be pronounced. Weakness accompanies it. One of our cases had been for months diagnosed as anorexia nervosa. This patient responded to sprue therapy.

Vomiting.—Common in these cases. The symptom was often produced by men forcing down food in spite of anorexia. In severe relapse vomiting dangerously contributes to dehydration.

Diarrhoea.—This is almost constantly the mode of onset; pallor of stools appears after a variable interval. Stools may be frequent—15 to 20 a day. This, and response to sulphaguanidine, often lead to a diagnosis of "clinical dysentery." In remission the stools are always firm.

Asthenia.—A constant and marked symptom often occurring early. It is not accompanied by the symptoms of effort syndrome.

Loss of Weight.—Change of weight in normal men in India is about $\pm 10\%$. On admission to hospital many sprue cases had lost 25% of their English weight. Loss is very rapid in acute cases with dehydration.

Transition from Relapse to Remission

In the majority of patients admitted diet therapy produced the change of symptoms from relapse to remission (63% of cases treated dietetically alone). In some transition is slow and symptoms of relapse persist and vary, those of remission also appearing—e.g., diarrhoea alternates with constipation, glossitis comes and goes, and weight is not gained. Such static cases are turned into full remission with parenteral liver therapy, on which, after one week, the signs of relapse disappear, while distension increases, appetite returns, and weight is gained. When remission is induced by liver therapy, glossitis is always slight—much less than with remission on diet alone.

Symptoms of Remission

Diminution of the symptoms of the relapse phase is constant in remission. Symptoms that appear or are accentuated are:

Glossitis, Cheilosis, and Angular Stomatitis.—Glossitis has been present in over 90% of our cases. But it is not an early symptom. Many cases of steatorrhoea, on treatment, produced the necessary evidence to change that diagnosis to sprue. The average duration of diarrhoea before glossitis was three months. Glossitis appears at a period when signs of relapse are decreasing; it lasts about two weeks in a case treated by diet, during which time appetite improves, distension increases, and stools firm, pale, and bulky. After two to three weeks glossitis appears without any alteration in therapy—not to return less the patient relapses, when again it appears at transition from relapse to remission. Diets assessed at the time of onset of diarrhoea and the glossitis have not been deficient in vitamins of the B group. The appearance of the tongue has been frequently described. Emphasis should be given to the transient nature of the changes in early sprue. Improvement from a painful, fiery-red tongue to normal has often occurred in a few days. True depapillation is not present early. Angular stomatitis and cheilosis were less common, but they, too, markedly increased their incidence after admission to hospital.

Abdominal Distension.—At onset and during relapse abdominal distension is usually absent. This is particularly noticeable in acute severe cases. There is a remarkable increase of distension with response to treatment, coincident with the cessation of diarrhoea and vomiting. In this context it is a welcome sign. Distension persists through remission with steatorrhoea. Though flatulence increases with the distension, barium meals did not show this to be its cause.

Skin Changes.—Scaling of the skin with loss of hair increases during remission. This lasts about one month and subsides with continued satisfactory progress. Scaling is general, the size of scale varying from fine, branny desquamation to coarse ichthyotic plaques.

Signs of Vitamin Deficiency

In series A600, glossitis, angular stomatitis, and scaling of skin were often present. Out of 20 cases with scaling of the skin 19 showed no evidence of deficiency in dark-adaptation, rendering vitamin A deficiency doubtful. All these signs were

found to clear without specific vitamin therapy. The syndromes suggestive of deficiency of vitamins D and K, thiamine, or ascorbic acid were not seen.

In the series B80 it has been noticed that glossitis, angular stomatitis, and scaling of the skin increase in degree or appear for the first time in hospital on ordinary or sprue diets of high-protein low-fat type. Such diets have been adequate in nicotinic acid and riboflavin content.

In our wards, on an investigation diet designed to contain nicotinic acid 5–10 mg./diem and riboflavin 3 mg./diem, cases B53 and B66 developed marked exacerbation of glossitis, which cleared in 14 and 10 days respectively without any alteration of the diet; and in several instances patients admitted with glossitis have lost it on this diet without other treatment. These and other observations have not supported our expectations of relating the glossitis of sprue to simple nicotinic acid or riboflavin deficiency. In remission with parenteral liver therapy, however, glossitis is minimal or absent.

Nine cases of steatorrhoea of short duration with loss of weight responded to sprue diet therapy without glossitis. Thus early in this steatorrhoeic syndrome remission may occur without development of these so-called deficiency symptoms. Larval sprue (glossitis without steatorrhoea) was seen in only 7.5% of series B80. Such cases become rarer the more persistently steatorrhoea is looked for.

Barium Meal Skiagrams

The results of barium meal examination in 9 cases are summarized in the accompanying table. All patients were screened and filmed standing; films were taken using 0.12

Summary of Barium Meal Findings in Nine Cases of Sprue

Case	Weight Change	Stomach Emptied by	Mucosal Pattern	Region of Gut reached in			Marker Time (hours)
				1 hour	3 hours	6 hours	
1	—	6 hours	Bolus ++	Caecum	Descending colon	Sigmoid colon	13
2	++	6 "	Normal	Ileum	Caecum	Ascending colon	41
3	0	3 "	Bolus +	"	Ileum	"	8
4	0	3 "	"	"	"	Hepatic flexure	31
5	0	3 "	Bolus slight	"	"	Ascending colon	—
6	+	1 hour	Normal	"	Caecum	"	47
7	+	1 "	"	"	Ileum	Splenic flexure	56
8	++	6 hours	"	"	Splenic flexure	"	22
9	+	6 "	"	Hepatic flexure	"	Sigmoid colon	24

second exposure with 80–85 kV at 15 minutes, 30 minutes, 1 hour, 3 hours, 6 hours, and 24 hours following 4 oz. (113 g.) of barium sulphate in watery suspension, free of fat, and an iron marker of ferrous sulphate $7\frac{1}{2}$ gr. (0.5 g.), in capsule, at the start.

(1) The stomach-emptying time was variable—from 1 to 6 hours—and was not correlated with relapse and remission phase.

(2) The mucosal pattern could not be investigated by special contrast methods; gross changes only were noted.

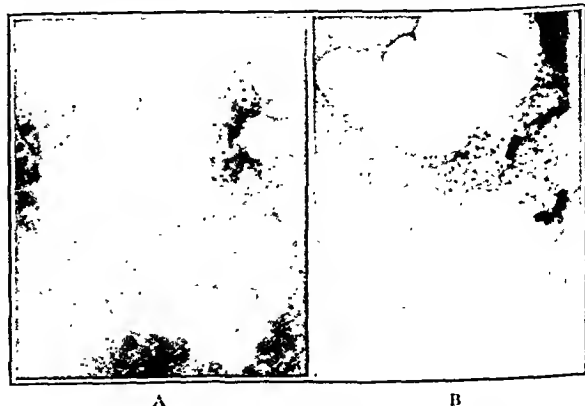


FIG. 3.—Appearing of barium meal at 30 minutes in Case 1. A, In relapse. B, After one month of parenteral liver therapy, in remission.

Only one case was examined in severe relapse: with diarrhoea and loss of weight of over 40 lb. (18 kg.). In him the barium lumped into large masses in the jejunal region. Though these masses were firm and appeared static the marker was passed in 13 hours. This patient was re-examined one month later, in remission, having gained 20 lb. (9 kg.) on sprue diet and parenteral liver therapy. The intestinal pattern is shown in Fig. 3.

occurred motility decreased, markers being passed in about 24 hours in all such cases.

Anaemia in Sprue

Investigations were done on venous blood drawn without stasis, using Wintrobe's mixture as anticoagulant. Haemoglobin was estimated by Sahli's method: 15 g. % was taken

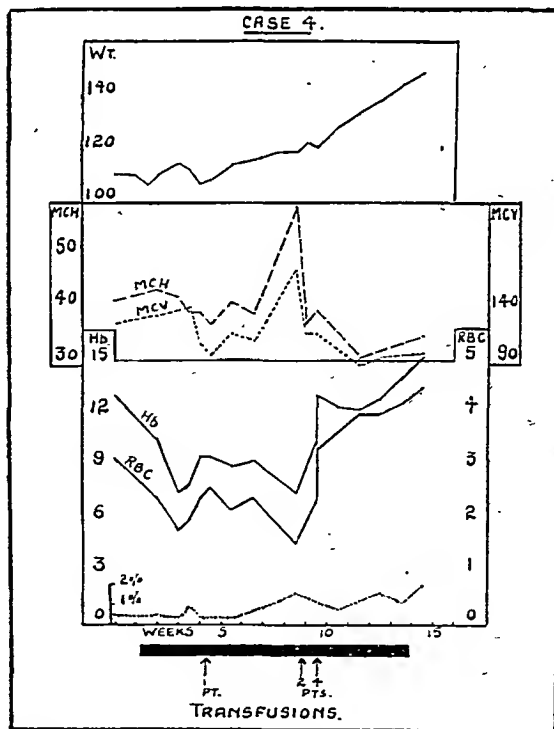
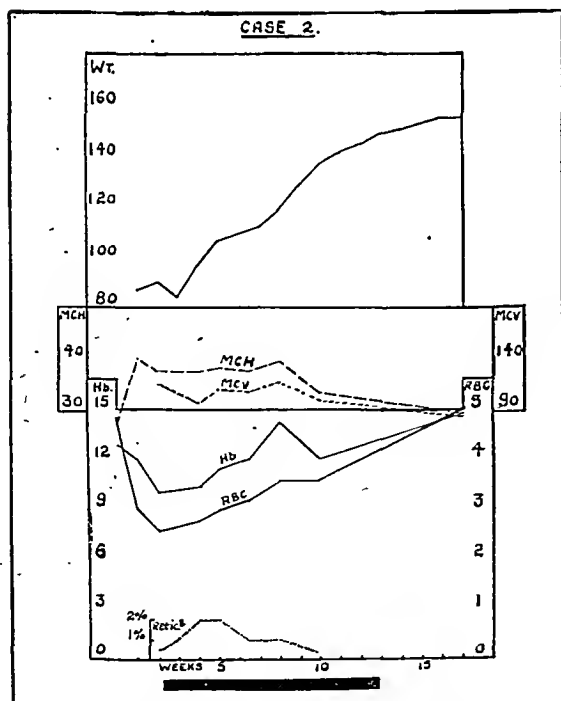
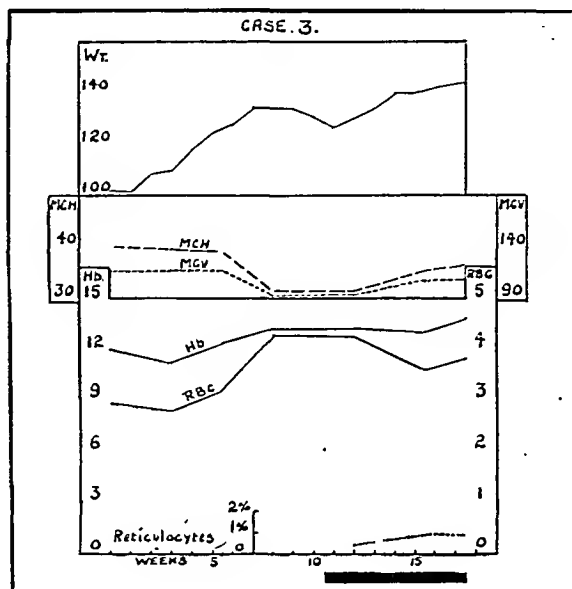
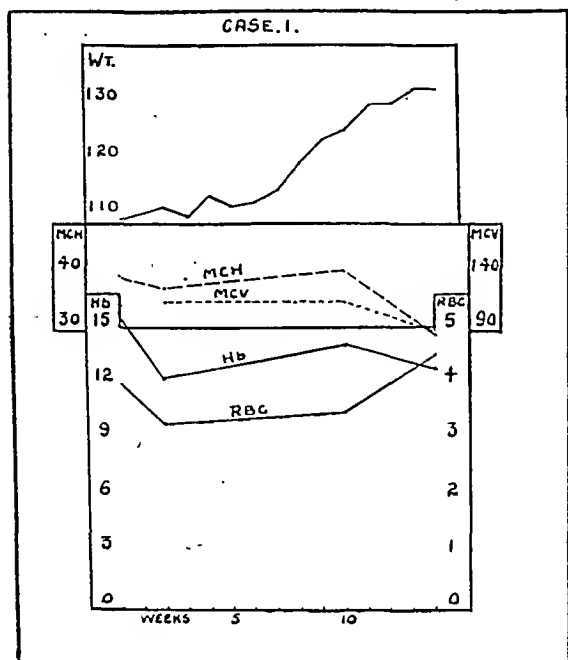


Fig. 4.—Typical blood picture in four cases of acute sprue. Hb in g. %; weight in pounds; RBC in millions/c.mm.; MCH (mean corpuscular haemoglobin) in γ ; MCV (mean corpuscular volume) in c. μ ; — Liver (T.C.F) 10 ml. for 4 days, then 4 ml. daily, I.M.

The change from the earlier appearance corresponds to that from relapse to remission. Cases 2, 3, and 4 were static; they showed less marked bolus formation. All four cases in remission showed apparently normal mucosal patterns.

(3) *Motility* was grossly variable, both through the whole gut and through various parts of it. But, in general, as remission

as normal. Erythrocytes were counted in a Neubauer's chamber, blood being diluted with Hayem's fluid in a Hawksley pipette. Packed-cell volumes were estimated, using cut-down Westergren tubes (Wintrobe's tubes were not available). Reticulocytes were counted by the Osgood-Wilhelm technique.

The degree of anaemia is not usually severe in early cases. In series A600 only 24% of cases had haemoglobin below 12 g. %. The blood changes were followed in several cases of series B80 (Fig. 4, which illustrates four representative types, with corresponding weight curves). Case 1 shows the response on diet therapy alone. Case 2 had very severe acute sprue (loss of weight 71 lb. (32.2 kg.), dehydration gross), which responded to parenteral liver therapy. Case 3 shows relapse on diet therapy with later response to parenteral liver therapy. Case 4 was a severe acute sprue which failed to respond to diet and liver but responded to transfusion.

In series B80 the initial blood counts showed: (a) macrocytic anaemia (26%); (b) normal haemoglobin and red blood cell count, but macrocytosis (30%); (c) normal blood counts (35%); (d) hypochromic anaemia (9%). In remission the change has always been: from macrocytic anaemia to normal haemoglobin with macrocytosis; to normal counts with complete remission.

Hypochromic anaemia has been uncommon (9%); all were cases of mild sprue, responding to diet therapy alone. Helminthiasis was found in 3 cases only—in one, ascariasis; in one, *Strongyloides stercoralis*; and in one, *Ancylostoma duodenale*.

The following summarizes the red blood cell changes found:

At the onset of sprue the blood changes are slight, even with profound loss of weight. Dehydration may mask some changes. When anaemia develops it is macrocytic from the start in most cases. With remission the macrocytosis persists, the haemoglobin rising slowly. Reticulocytosis is not marked: normoblasts do not appear. As the patient reaches normal weight, and not before, the blood picture returns to normal.

Dehydration at onset and during relapse may obscure the presence of anaemia by producing haemoconcentration. Conversely, in response to therapy haemodilution reveals an abnormal blood count. Plasma protein values confirm this.

The degree of anaemia is not correlated with the degree of glossitis or achlorhydria, though glossitis and anaemia appear at the same time—i.e., at the beginning of remission.

Liver therapy has less effect on the anaemia than on other aspects of sprue. Reticulocytosis is poor and delayed, and is comparable with that in tropical megalocytic anaemia rather than with pernicious anaemia.

Intestinal Absorption during Relapse and Remission Phases

The following brief statement is based upon fat balances, chylomicron counts, blood-sugar curves, and nitrogen balances performed with Major D. A. K. Black, Major R. Clutton, and for P. Fourman on cases from series B80, fully described where.

relapse, diarrhoea is always a prominent symptom, and is accompanied by failure of absorption. In all cases fat absorption has been found grossly diminished as judged by fat balances. Sugar absorption is diminished as judged by flat blood-sugar curves, and in one case a negative nitrogen balance was found, due to increase of faecal nitrogen.

Electrolytes are deficiently absorbed, as judged by excess of faecal sodium with low blood levels. Serum iron, too, was low in one case at the end of a relapse, and rose to normal in remission. Plasma volumes are low in relapse, reflecting dehydration. There is thus evidence that protein, fat, carbohydrate salts, and water are deficiently absorbed in this phase. Whatever the primary absorption defect may be it is rapidly overlaid by secondary deficiencies due to diarrhoea, which is, however, an integral part of this disease.

In the remission phase on diet alone, improved absorption is reflected in gain of weight; chylomicron counts become normal long before steatorrhoea disappears; fat absorption does not improve in proportion with the clinical condition, cessation of diarrhoea perhaps entirely accounting for it. In remission with liver therapy, fat absorption is again only slightly improved; it does not become normal. Blood-sugar curves may improve markedly, but this is not constant.

Ten nitrogen balances showed all such cases to be in positive balance, and plasma proteins rise rapidly to normal.

The rapid improvement of the stools with liver therapy suggests marked increase of water absorption.

Summary and Conclusion

The diversity of symptoms in sprue as seen in British soldiers in India has been found to be presented in two groups: (a) the symptoms of onset or relapse consisting of diarrhoea, anorexia, weakness, vomiting, and loss of weight; and (b) symptoms of remission: these

are glossitis, cheilosis, distension, scaling of skin, with diminution of the symptoms of onset.

Transition from relapse to remission may be slow, with a mixed symptomatology. Fig. 5 shows diagrammatically the progress of

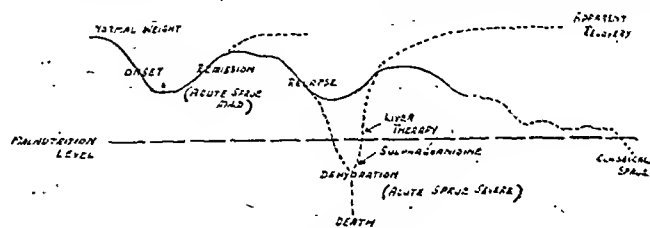


FIG. 5.—Diagrammatic representation of the course of sprue.

sprue from onset to recovery, death, or development of the classical syndrome, and its relation to malnutrition as it has been seen during these years.

During relapse dehydration is responsible for some of the clinical features. Barium meal examination has shown gross obliteration of the intestinal mucosal pattern. Absorption of protein, fat, carbohydrate, water, and salts is grossly affected.

During remission many of these defects remain for at least 1 to 2 months in spite of rapid gain in weight and marked clinical improvement. Macrocytosis with or without anaemia persists until weight reaches normal. Absorption of fats and sugars returns to normal only after 1 to 2 months, with or without liver therapy. Early in remission, however, improvement appears to occur in protein and water absorption, particularly with parenteral liver therapy.

Signs which may be interpreted as those of deficiency of B vitamins occur at transition from relapse or in early remission.

It will be apparent that remission is in no sense synonymous with cure—criteria for which it is not easy to state.

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SURGERY AND THE RELAPSE RATE OF MALARIA

BY

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It is generally believed that surgical operations commonly precipitate a relapse of fever in a subject infected with malaria. Manson-Bahr (1941) emphasizes that surgeons should keep the possibility of post-operative relapse constantly in mind. Napier (1943a) considers it advisable, even in cases of possible latent infection, to give a course of cinchona as a routine measure before a surgical operation on anyone coming from a highly malarious area.

An attempt is made in this paper to assess the relapse rate of malaria in relation to surgical procedures; it is based upon personal case records collected during the past three years. The cases are considered in three groups.

Classification of Cases

Group I consists of patients having a history of pre-operative malaria, and also those without such history but in whom an early post-operative attack was suggestive of a previous latent malaria. Manson-Bahr (1941) emphasizes that surgeons should keep the possibility of post-operative relapse constantly in mind. Napier (1943a) considers it advisable, even in cases of possible latent infection, to give a course of cinchona as a routine measure before a surgical operation on anyone coming from a highly malarious area.

Group II refers to those cases, with and without a past history of malaria, submitted to operative surgery after the conclusion of a course of suppressive antimalarial treatment and either after or during the terminal "blanket" treatment. The preventive malarial regime consisted of mepacrine 0.1 g. twice daily for the first three days, followed by 0.1 g. once daily for as long as exposure in malarious "battle" areas continued. This suppressive course was then concluded by a "blanket" of mepacrine, 0.1 g. thrice daily for five days; no drug for two days; and pamaquin 0.01 g. thrice daily for three days. There were 147 operations in this group. The cases, as well as those in Group I, were observed in a "rear" hospital area.

Group III consists of surgical cases with or without a previous malarial history, evacuated from battle areas in which all personnel had been treated with daily suppressive mepacrine for a considerable

period. This mepacrine, 0.1 g. per day, was continued throughout the period in hospital, pre- and post-operatively. In this group there are some 1,900 cases. All were observed in a "forward" hospital area.

The relapse rate is considered in relation to major and minor surgery. The distinction is made dependent upon the time taken for the operation: a duration of less than 20 minutes is regarded as minor, and an operation lasting longer than this time is regarded as major. On this basis similar operations may fall into either class: e.g., some appendicectomies and herniotomies are classified as minor, others as major. This method of distinction has, however, seemed the most satisfactory for the purposes of the investigation in that the time factor is probably more closely related to the degree and extent of surgical trauma than any other factors which would lend themselves to general and simple classification.

Group I: No Suppressive Treatment

The incidence of relapses and fresh attacks, their types, and the times of onset after surgical operation are given in Tables I and II.

TABLE I.—Incidence of Post-operative Malaria

Operation	No.	Post-op. Relapse	Post-op. "Fresh" Attack	Total
Minor	121	9 cases (7.4%)	4 cases (3.3%)	13 (10.7%)
Major	55	4 cases (7.3%)	1 case (1.9%)	5 (9.1%)
Total	176	13 cases (7.4%)	5 cases (2.8%)	18 (10.2%)

TABLE II.—Analysis of Relapses and Fresh Attacks

Operation	Type of Malaria	Time of Onset in Days after Operation	No. of Cases	Relapse or Fresh
Minor: 13 cases	B.T.	3	1	R
	B.T.	11	2	R
	B.T.	12	1	R
	B.T.	14	3	R
	B.T.	15	1	R
	Clin.	4	1	F
	B.T.	7	3	F
Major: 5 cases	Clin.	3	1	F
	B.T.	2	2	R
	B.T.	11	1	R
	Clin.	12	1	F

"Clin." refers to clinical malaria—i.e., having all the signs and symptoms and a typical reaction to treatment, but no identifiable malaria parasites in blood smears. In the two cases of relapse the previous attacks had been diagnosed as malignant tertian infections.

Relapse Rate

Definite conclusions as to the relapse rate due to surgery are not possible because of a number of problematic features of such an assessment. The most notable difficulty in this regard derives from the fact that the investigation was conducted in an endemic area with an appreciable malarial incidence. In the medical division of the same unit, during the period under review for this group of cases, there were 1,824 fresh cases and 2,285 relapses of malarial fever; and these figures represent approximately one-quarter of all admissions on the medical side. It thus becomes doubtful whether the post-operative attacks were in fact precipitated by the operation or whether they were either fresh or relapsing fevers having no specific relation to the surgical event. In the tables in this paper the heading "Post-op. Relapse" is used to indicate an attack of malarial fever in a case with a history of pre-operative malaria: it could be a relapse or a fresh infection, the former being the more probable. The heading "Post-op. Fresh Attack" refers to the first clinically appreciable malarial fever that has been diagnosed. This attack might also be a relapse—the original infection having been a subclinical one—or a true fresh infection; here the latter contingency is the more probable.

Another element of doubt arises in that the post-operative period, during which it was assumed that the relapse might bear causal relationship with the operation, was defined as 15 days. This exceeds not only the minimum latent period but also the usual incubation period for benign tertian infection—according to Napier (1943b) 8 and 14 days respectively; but this period of 15 days was chosen in order to include the possible influence of various post-operative states (e.g., non-malarial fever, dehydration, exhaustion, and other complica-

tions arising within a week or so after the operation) which in themselves might be regarded as essential precipitating causes of the relapse.

The two features, the local endemicity and the allowance of a period in excess of the average incubation time, would in this investigation tend to raise the figure of the post-operative relapse rate beyond that proportion actually precipitated by the operation; but, even disregarding these influences, the total incidence of relapses amounts to 10%—a surprisingly low figure in view of the expectation of a higher relapse rate as implied by current teaching.

The time of onset of fever is recorded in Table II. The earlier the onset of fever after operation the more culpable does the latter appear as the precipitating factor; and this seems more especially to be the case when the onset of a benign tertian infection occurs within eight days—i.e., the minimal incubation period for this type. Of the 15 cases of post-operative benign tertian fever, 6 occurred within such a period; if the clinical malaria cases be included the ratio becomes 9 early post-operative attacks out of the total of 18. These figures of the earlier relapses, rather than the totals, may be regarded as a truer index of the proportion brought about by the surgical operation. However, even this index is presumptive and not definite, in view of the possibility of fresh infection having been acquired within a few days prior to operation.

Influence of Major and Minor Surgery

The relapse rates following major and minor surgery afford a comparison of significance. If the extent and the duration of the surgical trauma were important causative factors the proportion of relapses occurring after major surgical operations might be expected to exceed that after minor surgery. The incidence in this series of cases does not support such a contention. As the records in Table I demonstrate, the relapse rates after both major and minor surgery are almost identical.

Effect of Anaesthesia

The post-operative incidence of malaria in relation to the types of anaesthetic employed is analysed in Table III.

TABLE III.—Post-operative Malaria in Relation to Anaesthesia

	Intravenous Pentothal	Inhalational	Spinal	Local
Total anaesthetics	77	38	31	30
No. of attacks after minor operations	5	2	1	5
No. of attacks after major operations	2	1	2	0

The number of cases is not sufficient to allow of definite deduction; but there is the suggestion that the proportion of attacks of malaria after local analgesia is higher than after other anaesthetics. The 5 attacks after local analgesia represent a ratio of 1 in 6 cases; for the other anaesthetics the ratio is roughly 1 in 10 to 12 for each variety. It is noteworthy that the local analgesic used contained adrenaline, and that all five cases were minor operations. This finding provides a hint for caution in the use of even minute quantities of adrenaline in operating upon patients who may have quiescent malarial fever.

Type of Relapse

A great proportion of post-operative attacks were due to benign tertian infections: 15 out of 18 were identified as this variety; the types of the remaining 3 were not identified. The incidence of the pre-operative types of infection is given in Table IV.

TABLE IV.—Incidence of Types of Pre-operative Malaria

Type of Malaria	No. of Cases
Benign tertian	64
Malignant tertian	30
Benign and malignant	42
Quartan fever	1
Clinical	11
	148

Comparison between Tables II and IV shows that out of the total of 110 cases of B.T. infection (i.e., 106 with a pre-operative history plus 4 possible latent infections) there were 15 relapses; whereas out of 72 malignant tertian cases there were but two

relapses, the type of which, though not identified during the post-operative attack, might have been malignant. This relative incidence of B.T. relapse accords with the general and far greater tendency of this type to relapse quite apart from surgical influences, and the comparative figures provide no evidence, either way, of surgery as a precipitating factor.

Influence of Immunity

All the patients to whom the figures in Group I refer were British troops. The data collected for Indian troops have not been used in this paper because of the unreliability of the past history: "buchar"—i.e., fever—of any origin is apt to be ascribed by Indian troops to malaria. It is of interest, however, to record that, out of roughly 400 cases observed, the post-operative attacks of malarial fever amounted to between 5 and 6%—i.e., approximately half the relapse rate found among British troops. The lower rate among Indians is an expected finding in view of the greater numbers that have acquired an immunity by long residence in endemic areas.

The influence of the factor of immunity, or relative immunity in which there is a lack of febrile response, in so far as it affects post-operative relapse rates in British personnel, may be assessed by consideration of cases having a history of numerous pre-operative attacks. These cases have been abstracted, and the details of the number of attacks which occurred during four half-yearly periods prior to operation are recorded in Table V.

TABLE V.—Cases with Frequent Pre-operative Attacks

Pre-op. Period	No. of Pre-op. Attacks	Case Incidence	Post-op. Relapse
6 months	3 4 to 5	8 7	—
12 "	3 4 to 5 6 to 7	7 9 3	—
18 "	3 4 to 5 6 to 8	3 6 3	—
24 "	3 4 to 6 7 to 10	7 9 5	1 × R.-B.T.

The single relapse after 67 operations is in marked contrast to the remaining cases in this series—viz., 17 post-operative relapses in 109 cases in which there had been less than three attacks during the two-year period preceding operation. The contrast provides very suggestive evidence of the acquisition of immunity which reduces the liability to post-operative relapse of malarial fever. Table V further indicates that, even during such short periods as 6, 12, and 18 months prior to operation, 3 or more attacks of fever appear to confer a degree of immunity.

Influence of Proximity of Most Recent Attack

The liability to post-operative relapse relative to the proximity of the latest pre-operative attack is indicated in Table VI.

TABLE VI.—Proximity of Pre-operative Attack Relative to Post-operative Relapse

Type of Malaria	No. of Cases having an Attack within a Pre-operative Period of:						Totals	
	1 mth.	2 mths.	3 mths.	4 mths.	5 mths.	6 mths.	Cases	Relapses
B.T. ..	19 (2R)	3 (1R)	6	7 (2R)	8 (1R)	5 (2R)	48	8
M.T. ..	5	1	5	1	4	17	17	—
B.T. and M.T. ..	—	—	—	—	—	3	3	—
Clinical	1 (1R)	—	1	2	—	2	6	1
Total ..	25 (3R)	4 (1R)	12	10 (2R)	9 (1R)	14 (2R)	74	9

The figures in parenthesis give the number of post-operative relapses.

Out of a total of 13 post-operative relapses 9 occurred in the 74 cases in which there had been an attack of fever within the 6 months prior to operation—an incidence of about 12%. The remaining 4 relapses occurred in the 102 cases in which there had not been a pre-operative attack within this period—an incidence of about 4%. There is thus some evidence that post-operative relapse is more likely to occur when there has been a recent—within 6 months—pre-operative attack. Corre-

lation with the data given in the preceding section on the influence of immunity brings the conclusion that the possibility of post-operative relapse is enhanced by the occurrence of one or two attacks during this period of six months, but that the occurrence of three attacks markedly reduces it.

Group II: Surgery after Suppressive Treatment

In this group the period of observation after operation was not limited to 15 days; a longer period was allowed in order to cater for the effects of "blanket" treatment, which was often begun at the time of operation, and which would tend to delay the onset of relapse. The findings in this group of cases are recorded in Table VII.

TABLE VII.—Relapse Rate Following Suppressive Treatment

Past History	No. of Operations	No. of Post-op. Attacks	Type	Time of Onset	
				After Op.	After Completing "Blanket" Course
Previous malaria, positive	68	6 (9%)	6 × B.T.	8 wks.	6 wks.
				14 days	20 days
				14 "	5 "
				14 "	21 "
				3 "	8 wks.
No history of prior malaria	79	5 (6%)	4 × B.T.	4 wks.	8 "
				18 days	11 days
				13 "	23 "
				3 "	30 "
				4 wks.	8 wks.
			1 × M.T.	20 days	8 "

With reference to the 79 cases in which there was no history of previous malaria the significance of the 5 post-operative attacks is not readily calculable; for, apart from the possibility of a post-operative fresh infection having occurred, the proportion of cases with a previously suppressed malarial infection is unknown. The post-operative incidence of 6% is, however, an indication that this particular form of suppressive and "blanket" treatment cannot be regarded as assuring freedom from attacks after surgical procedures. This is more strongly indicated by the figures of the cases which did present a history of previous malaria. In these 68 cases there was a relapse rate of 9%—a proportion closely similar to that found in Group I, in which suppressive treatment had not been given. It therefore appears that the relapse rate of malaria following surgery is not affected by previous suppressive and "blanket" treatment of the type used in the Group II series of cases.

Of the 11 post-operative attacks, 6 followed major and 5 followed minor operations—a finding in agreement with that in the Group I series, where there was also no appreciable difference in the influence exercised by the two grades of severity of surgical operation.

Group III: Surgery and Continued Suppressive Treatment

This group consists of some 1,900 surgical cases seen in a "forward" hospital during the 1945 campaign season. They were admitted to the hospital after 3 to 14 days from the time of being wounded. In addition to their wounds, the great majority of patients had undergone severe physical exertion, followed by evacuation over long distances by road, air, rail, and river steamer. The battles had taken place in areas which were hyperendemic for malaria and in which unprotected personnel developed nearly 100% malarial infection. Almost every patient had had at least one operation before coming under my observation, and 743 were submitted to further operative treatment. All the patients had been taking suppressive mepacrine, 0.1 g. daily, for a considerable time, and this was continued during the evacuation stages and throughout the period of observation in hospital.

Two cases of post-operative malaria occurred; in both there was reason to believe that the men had evaded taking the daily dose of mepacrine. There is thus strong evidence that this form of treatment suppresses malarial fever even in the presence of severe trauma, prolonged physical strain, and extensive surgical operations.

Summary and Conclusions

This paper records observations upon the relapse rate of malarial fever in relation to surgical procedures.

In a series of 176 surgical operations performed on patients with a history of previous malarial infection, and to whom neither suppressive nor prophylactic antimalarial treatment was given, there was

post-operative attack of malarial fever in 10% of cases. The findings under which observations were made render it certain that this figure of 10% is in excess of the relapses brought on by local operation; and the investigation tends to throw doubt upon the validity of the assumption that surgery commonly precipitates relapses of malarial fever.

The relapse rate was practically the same whether the surgical operation had been of major or minor variety.

Local analgesics containing adrenaline were followed by a higher proportion of attacks of fever than were other forms of anaesthesia. The relative incidence of the types of post-operative relapse compared to the general relapse rate, and was predominantly due to malignant tertian parasites.

Three or more attacks of malarial fever during a period of two years preceding operation appeared to confer a degree of immunity to reduce the incidence of post-operative relapse.

A first or second attack within a period of six months preceding operation seemed to increase the liability to post-operative malaria. The findings in the first series of cases are compared with those found in 147 operations upon patients who had received and commenced suppressive treatment before operation. The post-operative relapse rate in cases with a history of pre-operative malaria in this second group was found to be practically the same as that in which suppressive treatment had not been administered.

In the third group of 1,900 surgical battle casualties suppressive treatment, instituted a considerable time before the battle trauma, continued throughout the period in hospital, virtually eliminated post-operative malaria.

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VINESTHENE ANAESTHESIA FOR REPAIR OF HARE-LIP AND CLEFT PALATE

BY

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Operations for the repair of hare-lip and cleft palate have in the past presented the anaesthetist with many difficulties. The patients are small babies or very young children, and therefore require more careful handling than adult patients; there is considerable interference with the airway; and there is the ever-present danger of blood finding its way into the air passages. The introduction of endotracheal anaesthesia solved the problem of keeping the airway open, but in the early days the anaesthetic vapour was delivered through a rubber catheter to the region of the larynx, and a free passage for returning air had to be assured. It was not until the modern method of to-and-fro intratracheal anaesthesia came into use that it was possible to pack off the larynx adequately, and so eliminate the danger of inhaled blood and allow the surgeon to have complete control of the field of operation. Ether, or gas-oxygen-and-ether, is the common anaesthetic chosen, but lately the use of vinesthene with gas and oxygen has been found to give even better results.

Properties.—Vinesthene is divinyl ether— $(CH_2:CH)_2O$ —to which has been added 3.5% absolute alcohol and 0.01% of a non-volatile oxidation inhibitor to render it less volatile and more stable. It is decomposed by acids, with the formation of aldehydes, one being formaldehyde, so it is considered safer to use only freshly opened bottles of the drug; like other ethers, it decomposes when exposed to light and air. Vinesthene is highly inflammable and as explosive as ethyl ether when mixed with air, oxygen, or nitrous oxide.

Some Aspects of Vinesthene as an Anaesthetic

Compared with other anaesthetic substances vinesthene possesses various advantages. It is less irritating than ethyl ether or ethyl chloride, causing very little salivation, and produces no nausea or vomiting after short administrations, and rarely very slight vomiting after longer administrations. In one series of 364 patients of varying ages, but consisting mostly of dental cases, no vomiting was reported (Goldman, 1936). Unlike chloroform, vinesthene does not cause any cardiac or respira-

tory depression. The induction is quick and recovery remarkably rapid.

On the other hand, vinesthene is a very potent anaesthetic, and it is as well for the anaesthetist to become really familiar with the drug in minor surgery before using it for lengthy operations. This was stressed when the substance was first investigated in this country (Shipway, 1935), and again by later workers. Ravdin *et al.* (1938) say: "It is exceedingly potent, and even though the traditional margin of safety is wide, the lethal concentration is such that the anaesthetic should be administered with due regard for its potency."

Some investigators have found that vinesthene may produce liver damage. Orth *et al.* (1940), for instance, found that weekly administrations of vinesthene to dogs produced central-zone necrosis of the liver and a progressive decrease of urea-clearance values, and a case of hepato-renal damage has been reported in a patient who had a second administration of vinesthene, lasting 104 minutes, ten weeks after the first administration, lasting 40 minutes (Hawk, Orth, and Pohle, 1941).

Ravdin (Ravdin *et al.*, 1937) has suggested that vinesthene should be used for short administrations only, as he believes that liver necrosis may follow long administrations even when every precaution to prevent anoxaemia has been taken; and he regards vinesthene as more toxic than ethyl ether. As a result of later work (Ravdin *et al.*, 1938) he and his fellow workers consider that vinesthene is not contraindicated in the presence of renal or cardiac disease, as there is no evidence that further damage is caused in such cases.

More recently vinesthene has been used extensively for war surgery by one anaesthetist (Ogus, 1941), who records the almost daily use of this substance for a year by open and closed methods. He specially commends the convenience of administration under war conditions, the lack of nausea and vomiting even in the case of patients with full stomachs, the rapid induction and recovery. He considers vinesthene combined with gas and oxygen to be superior to gas-oxygen-and-ether, but is careful to observe the safe dose limit of no more than half an hour's administration, set by the Council of Pharmacy and Chemistry of the American Medical Association, and adds a limit of 50 to 75 ml. by the open method at one time.

Convulsions occurring under vinesthene anaesthesia have been recorded in America and in this country. Dawkins (1940) published nine cases of convulsions—four occurring in patients who were undergoing major operations and five among children in the dental department. Another isolated case has been recorded (Boston, 1940), and I myself have seen two cases occurring in children after vinesthene anaesthesia for dental extraction. These convulsions resemble ether convulsions except in the fact that those following a short administration of vinesthene (e.g., for dental extraction) may occur some few minutes after the child has recovered consciousness. Ether convulsions always appear to be controlled by the intravenous injection of a barbiturate, and none has been recorded after an induction with a barbiturate. But the four cases reported by Dawkins (1940) showed convulsions with vinesthene following induction with hexobarbitone (evipan).

The recent work carried out by Williams and Sweet (1944) throws a new light on the subject of anaesthetic convulsions. They investigated, by means of electro-encephalography, 22 cases in which convulsions under anaesthesia had occurred, and obtained abnormal results in about three-quarters of them. Paroxysmal outbursts of abnormal waves were seen in over half, and larval epileptic attacks in a quarter, of the cases. The incidence and nature of the abnormal results were identical with those found in a large number of idiopathic epileptics, and were not considered to be the result of the convulsion. They came to the conclusion that all the evidence presented supports the view that anaesthetic convulsions are primarily due to an inborn but latent epileptic liability; that the factors which precipitate a convulsion in these predisposed persons vary between individuals, but many of the factors which have been incriminated are well-recognized precipitants of epileptic fits in conscious subjects; and that the main difference between fits lies in the degree of predisposition to convulsions, the many factors which arise during anaesthesia being merely precipitants of the convulsion. Williams and Sweet (1944) point out that anaesthetic convulsions are more rare among epileptics than among normal patients, and give the explanation that the

epileptics are probably receiving anticonvulsant treatment. In view of this it may be that the four cases reported by Dawkins (1940) did not receive enough barbiturate to overcome their predisposition to convulse.

Latent epileptics exist in considerable numbers in the population, according to the work of Lennox, Gibbs, and Gibbs (1940), who found that 2.4% of the relatives of epileptics develop epilepsy and 60% show a dysrhythmia with electroencephalography, latent epileptics therefore outnumbering overt epileptics by 25 to 1. It is perhaps astonishing that anaesthetic convulsions are not seen more often than they are. The conclusion would seem to be that the correct combination of factors leading to convulsions must be present for each individual, the inborn convulsive tendency and the anaesthetic being constant factors, and the precipitating cause or causes—e.g., toxæmia, low blood sugar, high body temperature, pain, etc.—varying in each case.

Most of the cases investigated by Williams and Sweet (1944) had been anaesthetized with ethyl ether in combination with gas and oxygen, and ether is known to produce persistent high-voltage discharges during induction. It would be interesting to know whether vinesthene has a similar effect on the cortical rhythm.

Present Series

In this series of 50 cases, 20 patients underwent repair of hare-lip and 30 repair of cleft palate. These patients were not picked, but formed the routine cases on the operating list at an E.M.S. children's hospital. The ages of the hare-lip cases ranged from 3 to 19 months, and those of the cleft-palate cases from 1 year 3 months to 8 years. The latter case, however, was an exceptional one, and the average age of the cleft-palate cases was 2.8 years.

Details of Cases

Operation	No. of Cases	Average Age	Length of Administn.	Chest Complications	Vomiting		Results
					Yes	No	
Hare-lip	20	5.4 mths.	20-30 min.	Nil	0	20 (100%)	Good
Cleft palate	30	2.8 yrs.	30-40 "	"	2 Very slight	28 (93.3%)	"

Method Used

The premedication was atropine only, and each case was intubated with a Humby tube (Fig. 1), a reinforced tube (Fig. 2), or a Magill tube with the special angled connexion

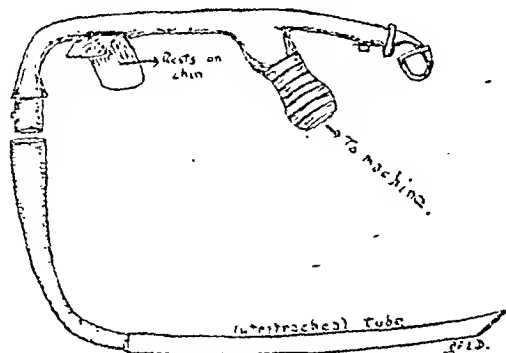


FIG. 1.—The Humby tube.



FIG. 2.—Reinforced tube.

comes this trouble, as it bridges the gap, or a small roll of gauze packed into the cleft will also serve.

The anaesthetic in each case was gas, oxygen, and vinesthene from a standard Coxeter machine, fitted with a Goldman drip vaporizer (Fig. 5). This allows very fine adjustment and perfect control that the anaesthesia can be lightened or deepened in a matter of seconds. After intubation the anaesthesia never

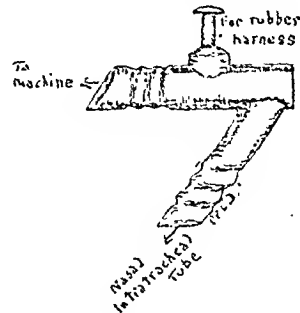


FIG. 3.—Magill tube with angled connexion.

needs to be deeper than the first plane of the third stage, and at the close of the operation the patient is ready to gag and cough as soon as the tube is removed. This relieves the nursing staff of much anxiety during the return trip from the theatre to the ward.

As will be seen by the accompanying Table, the hare-lip cases averaged 20 to 30 minutes under the anaesthetic and the cleft-palate cases 30 to 40 minutes.

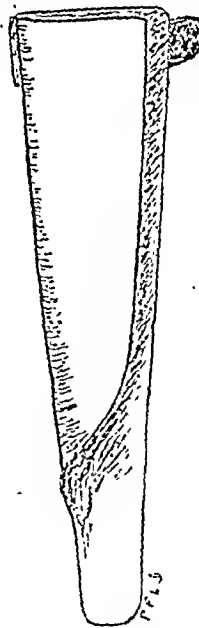


FIG. 4.—Broad blade for the laryngoscope.

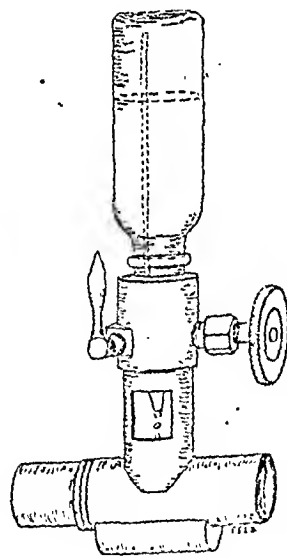


FIG. 5.—Goldman drip vaporizer.

Results

The results were uniformly good. There were no chest complications, and very slight vomiting occurred in only two of the cleft-palate cases. Healing in every case was by first intention. The ward sisters reported that the children were easy to manage and in very good shape following operation. Their opinion was that vinesthene was preferable to ether for these cases and that the children were much brighter and in better general condition than when ether was used.

Summary

Anaesthesia for the repair of hare-lip and cleft palate is reviewed. The properties and some aspects of vinesthene as an anaesthetic substance are discussed.

A series of 50 cases of hare-lip and cleft palate anaesthetized with gas, oxygen, and vinesthene is reported, with the method used and the results obtained.

My acknowledgments are due to Mr. Denis Browne, under whose care were the patients in this series; and I wish to thank Sister Veridge, sister in charge of the theatres, for the loan of apparatus. The appliances shown in Figs. 2, 3, and 4 were designed by Mr. Denis Browne.

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A CASE OF POLYNEURITIS DUE TO GOLD

BY

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Treatment by gold injections is considered to be of value in rheumatoid arthritis, in which it is much used. Toxic effects are unfortunately not uncommon. These may take different forms. In the following report one of the more unusual toxic complications of gold therapy is described.

Case Record

The patient, a woman of 52, was seen elsewhere in February, 1945, with a two-months history of pain and stiffness in the joints, beginning in the hands and spreading rapidly to the left shoulder, cervical spine, knees, and right ankle. At the time moderate peritendinous swelling was noted in the metacarpo-phalangeal joints of both hands. The knees were also somewhat swollen, but the other affected joints showed merely restricted painful movement. The S.R. was 60 mm. in an hour (Westergren). Nothing of significance was found elsewhere, and a diagnosis of early rheumatoid arthritis was made. Treatment included physiotherapy and 13 injections of 2 g. of myocrisin (sodium aurothiomalate), the first three at weekly intervals and thereafter at five-day intervals. Considerable benefit resulted and the pain and swelling became steadily less. Towards the end of the course the patient noticed some soreness of the mouth, but thought it so insignificant that she did not mention it. On the day after the last injection, however, she also experienced some difficulty in getting up from a chair and in climbing steps. This was quickly followed by an increasing sense of weakness and uselessness throughout both legs. Some days later the arms became affected in the same way, though to a lesser degree, movements at the shoulders, as on raising the arms, being first involved. The feet and the hands felt numb, and tingled "as if they had been stung," except in the finger-tips, which ached, no complaint was made of pain. A twitching of the face was noted as well as occasional sensations of heat in the trunk. These symptoms became so incapacitating that soon the patient was reduced to a helpless state and confined to bed, unable to feed or dress herself, or even to sit up or turn round without help.

She was first seen by me seven weeks after the last injection of myocrisin. By that time all pain, tenderness, swelling, and stiffness had disappeared from the affected joints. Her general condition was fair, and, with the exceptions noted below, no abnormality was found in the cardiovascular, respiratory, alimentary, and urinary systems elsewhere. The blood count was normal. The mucous membrane of the mouth and pharynx was studded with numerous tiny superficial ulcers.

The mental faculties were normal, and the patient was intelligent and co-operative. All the cranial-nerve functions were normal, as were the fundi. In spite of the patient's complaint of twitching of the face, this was not observed, and there was no facial weakness.

Motor System.—There was a widespread symmetrical flaccid paresis affecting all four limbs, more severe in the legs than in the arms, and accompanied by a mild degree of wasting of the muscles. Though nowhere absolute, the weakness was well marked in all the muscle groups, and was especially severe proximally. In the hips and pelvic girdle this led to inability to sit up or even to turn over in bed, and the patient had to push herself up bodily with her arms on the sides of the chair when rising from it. Standing was as possible but extremely unstable, while walking was quite impossible. From weakness of the shoulder muscles, elevation at

the shoulders was limited to about 60°. There was also considerable ataxia of the upper limbs in the finger-nose test—doubtless due, at least in part, to the deep sensory loss described below. The neck and trunk muscles appeared unaffected.

Reflexes.—The supinator, biceps, triceps, knee, ankle, and abdominal reflexes were all absent. The plantars were feeble but flexor. The pupillary reflexes were normal, as were also the sphincters.

Sensory System.—Objective sensory disturbances were much less evident than motor loss. Thus no impairment could be demonstrated in the sensation of the skin to cotton-wool, pin-prick, heat and cold, nor in deep pain sensibility, but there was some loss in the sense of position and passive movement in the hands and feet, and vibration was not fully appreciated in the distal parts of the limbs.

The cerebrospinal fluid was clear and colourless, under normal pressure, and contained 290 mg. of protein per 100 ml. and 45 lymphocytes per c.mm.

Treatment was expectant and included rest in bed, means to prevent deformity such as footdrop, and, as is customary in polyneuritis, large doses of yeast by mouth to supply the vitamin B complex. Later, massage to the muscles and active and passive movements were added. Under this regime spontaneous recovery followed. Paraesthesia and objective sensory loss had almost completely disappeared in three weeks, but recovery of power was a much slower process. It occurred earliest and was most advanced in movements at the distal joints. In six weeks the patient was just able to get up from a chair and to stand without using her arms, and her tendon reflexes were still absent. It was not until a further two months that there was full clinical recovery with normal muscular power, and even then the knee- and ankle-jerks could not be elicited and the tendon reflexes were very sluggish. The stomatitis was also slow in healing, but eventually it did so completely.

Discussion

From the clinical and other features it is evident that this is a case of polyneuritis, and there is little reason to doubt that the gold injections were responsible for the condition as well as for the stomatitis. In an exhaustive review of the toxic effects of chrysotherapy Sundelin (1941) includes polyneuritis among a wide variety of nervous lesions. He points out that either the central or the peripheral nervous system may be involved. Cerebral symptoms are frequent, ranging from simple depression through excitable restless states to frank psychoses with hallucinations and confusion; more localizing symptoms also occur, such as aphasia, hemiparesis, and bilateral central facial paralysis. In the peripheral nervous system damage to a cranial nerve is sometimes seen, either alone or along with other neurological features. Some of the lesions—e.g., unilateral blindness—have occurred in purpuric states due to gold and may have been caused by haemorrhage; but others, such as unilateral facial paralysis, abducent nerve paralysis, and nerve deafness, are evidently due to a localized toxic neuritis. Vertigo, of similar peripheral origin, though also possibly due to disturbance of more central labyrinthine connexions, may also occur, as well as diplopia and inequality of the pupils. Local involvement of a peripheral nerve is further exemplified by cases which have developed herpes zoster during treatment with gold. More widespread forms of neuritis, like polyneuritis of other aetiology, affect all four limbs symmetrically. They resemble the case here recorded and show both motor and sensory features as well as changes in the cerebrospinal fluid in the direction of an increase in the protein and cells. Flaccid paralysis with loss of reflexes and wasting, though varying somewhat in intensity and distribution, is always a prominent feature and may be both widespread and severe. Objective sensory loss also occurs, as well as pain and paraesthesia. Some authors have stressed the presence of pain in the limbs in gold polyneuritis and consider it may be the sole indication of damage to the peripheral nerves during treatment by gold. If so, this is in marked contrast with the present case, in which pain was minimal and muscular tenderness almost absent.

It will be seen, then, that the possible toxic effects of gold upon the nervous system are many and varied. In Sundelin's series, out of a total of 964 toxic manifestations of gold 107 were referable to the nervous system. From their nature these neurological side-effects, except in their mildest forms, are more or less serious. At times they may be exceedingly alarming and may even endanger life, or they may be succeeded by permanent sequelae, such as deafness. Fortunately, however, most cases recover completely, sometimes remarkably rapidly

in the course of a few days, at other times only after a long and tedious illness attended by much disability, as in the case recorded.

As at present there is no specific treatment for the toxic effects of gold, and as they occur in a regrettably high proportion of cases treated in this way, the question of prophylaxis assumes particular importance. In an endeavour to reduce them to a minimum various schemes of administering gold have been suggested. A study of the literature shows how great is the diversity between these schemes as regards the size, number, and spacing of the individual doses, but, on the whole, opinion now seems to favour relatively small doses as being less toxic than, and as efficacious as, the larger doses previously given. This was the view expressed at a meeting of the American Rheumatism Association (1941), where a total of 1 g. was suggested for a course and where, in respect of toxicity, calcium aurothiomalate was very favourably compared with sodium aurothiomalate. Douthwaite (1944) likewise recommends a total maximum of 1 g. and suggests, as a course, 6 weekly injections of 0.02 g. of an oily suspension followed by 10 doses of 0.05 g. and, if necessary, a further 2 doses of 0.1 g.; he emphasizes the necessity for repeated courses—e.g., four in two years—to prevent relapse. Another common scheme consists of 10 weekly doses of 0.1 g. preceded by 2 doses of 0.01 g. and 0.05 g. respectively. By such standards the course administered in the present case—13 injections of 0.2 g. of myocrisin in 64 days—must be judged an intensive one. At the same time, it must be admitted that toxic effects are by no means entirely confined to those receiving a relatively heavy dosage. There appears to be great variability in the susceptibility of individuals to gold, so that even a few injections or a small total dosage may at times be sufficient to provoke unpleasant reactions. Even when all precautions are observed as regards dose, it remains true that the toxicity of gold is unpleasantly high, and some really effective means of preventing or counteracting its poisonous effects is much to be desired.

Summary

A case of polyneuritis due to gold used in the treatment of rheumatoid arthritis is recorded.

The toxic effects of gold upon the nervous system are briefly discussed.

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A CASE OF MYIASIS DUE TO WARBLE-FLY LARVAE

BY

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Myiasis in man due to the larvae of flies, particularly various species of Diptera, is common in many parts of the world, especially in the Tropics. The warble-fly, however, is responsible for very few of these cases. Of the two varieties—namely, *Hypoderma bovis* and *Hypoderma lineatum*—we have found only six fully authenticated cases caused by the latter variety. The first was recorded in America in 1889 by Kane and Freeman, followed by another in 1910 by Miller; two cases from France by Topsent in 1901 and 1909 respectively; a fifth from Germany in 1913 by Gläser; and the sixth (the first in this country) by F. W. Style in 1924.

Case Report

The patient, a boy aged 7, lives on a farm in the Hope valley, in Derbyshire. He attended the ophthalmic out-patient department of Sheffield Royal Hospital on Jan. 14, 1946, with a swelling of the right upper eyelid and supraorbital region which appeared suddenly 14 days previously. The swelling was diffuse, smooth, and regular,

and extended 1½ in. (3.8 cm.) above the eyebrow and the whole length of the orbital margin. It was soft but did not fluctuate, and it appeared to be partially connected to the skin but not to the deeper tissues. There was no tenderness, erythema, or regional adenitis, and he showed no constitutional disturbance. He complained only of persistent visual obstruction, obviously due to the oedema. The eye was slightly proptosed and markedly depressed, diplopia being prevented by the total pseudoptosis. Ocular upward movement was restricted, but there was full range of all other movements. The right disk was slightly paler than normal.

The following investigations were carried out the same day: E.S.R. 10 mm./hr., W.R. negative, x-ray appearances of orbit and sinuses normal; differential white cell count: myelocytes 1%, metamyelocytes 18%, polymorphs 57%, lymphocytes 19%, monocytes 3%, plasma cells 2%. On Jan. 25 the eyelids opened slightly, but by the evening became more swollen than before. On the 26th a tiny hole, like a pin-prick, was seen in the centre of the skin of the upper eyelid, from which small beads of blood-stained serum oozed out. The following day the brow and right frontal region became swollen and purplish, and a similar hole appeared in the skin about 2 cm. above the centre of the right eyebrow. The report from the aural surgeon at this time showed that there was no sinus infection.

He was admitted to hospital on Jan. 28, and sulphonamide and penicillin therapy was continued during the next six days together with the application of diathermy to the orbit twice daily. On Feb. 3 the swelling around the hole in the supraorbital skin was indurating but not fluctuating. Slight pressure extruded a few beads of pus, and further pressure resulted in the expression of a white

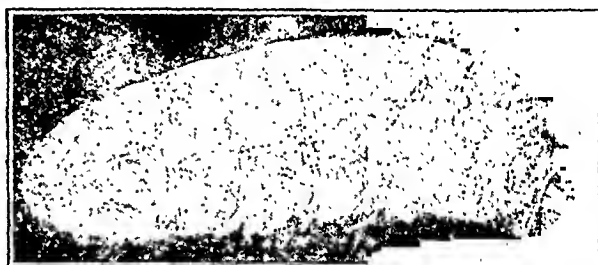


FIG. 1.—Photographic enlargement of the larva expressed from the boy's forehead. Size, 11 mm. long by 2.5 mm. diameter. The segmental markings and the spiracles at the posterior extremity are clearly seen.

spindle-shaped living larva, 11 mm. long and 2.5 mm. in diameter (Fig. 1). The clean-cut circular hole, about 1 mm. in diameter, was left exuding thin pus, which on culture proved to be sterile. It contained polymorphs and other white cells, the majority of which were eosinophils. A differential blood count showed: total white cells,



FIG. 2

FIG. 3

Fig. 2.—Photograph of patient three days after extrusion of the larva. The residual oedema and pseudoptosis subsiding.

Fig. 3.—Photograph of patient when discharged. There is fibrosis round the site of the first warble in the upper lid.

7,600 (polymorphs 34%, lymphocytes 36%, monocytes 2%, eosinophils 28%); the red cells were normal. On Feb. 11 another count showed: total white cells, 7,400 (polymorphs 43%, lymphocytes 46%, monocytes 2%, basophils 1%, eosinophils 8%). By Feb. 20 the white cell count had fallen to 5,600 (polymorphs 39%, lymphocytes 48%, monocytes 5%, eosinophils 8%). Another count on Feb. 27 showed: total white cells, 5,600 (polymorphs 44%, lymphocytes 48%, monocytes 5%, eosinophils 8%).

cytes 49%, monocytes 2%, basophils 1%, eosinophils 4%). The red cells were normal. Haemoglobin 90%, colour index 1.1, and the E.S.R. 4 mm./hr. By March 11 the eosinophilia persisted at 6%.

After expression of the larva the reactionary oedema quickly subsided (Fig. 2). By Feb. 26 a slight fullness of the upper lid was all that remained. The eye was no longer depressed, there was full range of ocular movement in all directions, and the diplopia test was negative. The fundus was normal and vision was 6/6 in both eyes. Deep palpation suggested the presence of a small spindle-shaped object nestling beneath the supraorbital margin just above the scar marking the puncture in the skin of the eyelid. In view of the possibility that this might be another larva, surgical exploration was carried out, but failed to reveal anything abnormal beyond some fibrosis (Fig. 3).

Life History of the Warble-fly

We are indebted to Prof. L. E. Eastham, Zoological Department, University of Sheffield, who identified the larva as *Hypoderma lineatum* in the second stage of its life cycle (Natwig, 1937; Ono, 1938). The full significance of this unusual form of myiasis can be appreciated only by considering the life history of the warble-fly (Warburton, 1922; Miller, 1910).

Warble-flies appear in hot sunny weather, most commonly in July in this country, but they may be found at any time between April and September. They are commonly known as gadflies owing to the terror and "gadding" they cause among cattle. They lay their eggs on the hairs of the hocks and along the flanks of recumbent cattle. The *H. bovis* lays its eggs singly, the *H. lineatum* in clusters of fourteen to a single hair. The eggs of *H. bovis* hatch out in four days; those of *H. lineatum* take a few days longer. The larva that emerges is 0.8 mm. long. It is segmented, covered with small spines, and provided at its anterior extremity with a pair of mouth-hooks separated by a median spear. With the help of this armory it enters the skin through a hair follicle and takes up its abode in the dermal connective tissue. Usually nothing is seen to indicate its presence until the warbles appear on the back of the animal seven months later.

During this period the larva travels in connective tissue, undergoing an uncertain number of changes in development by ecdysis. By the autumn it has arrived in the submucosa of the oesophagus, and during the winter months it migrates to the diaphragm, and thence along the ninth and tenth intercostal spaces so as to come to lie between the periosteum and the dura mater of the spinal canal in the lower dorsal region; here the larva is in an intermediate resting stage. This affords easy access to the saddle area of the back, the usual site for warble-tumours ("warbles").

The pin-hole opening in the centre of a warble is really a breathing-hole made by the larva through which it can draw air into the spiracles placed at its posterior extremity. The local tissue reaction produces a sero-purulent exudate on which the larva feeds until it is mature, when it emerges from its breathing-hole, falls to the ground, and quickly hardens to form a pupa. After five weeks the fly emerges from the pupa and is ready to lay its eggs and start the life cycle all over again.

Discussion

The mode of infection in this case is not known, but it is highly probable that the eggs or larvae became attached to the boy's clothing when in contact with recently infected cattle. The actual invasion of larvae may have passed unnoticed, beyond a slight and temporary skin irritation. This apparently was the only immediate discomfort felt by Gläser (1912-14), who accidentally infected himself whilst experimenting with *H. lineatum* larvae. He noticed that the newly hatched larva had disappeared into the skin within one and three-quarter hours.

The fact that the larva was expressed at an intermediate or immature stage supports the theory that these larvae do not reach the penultimate stage in the human host, such a habitat probably being unnatural for the mature development of the larva. That it rapidly grows in size soon after entering the skin was shown by Gläser, who stated that within four or five days the larva had grown to a length of 2.5 mm.; five months later he removed a typical oesophageal larva 7.5 mm. long from his own mouth. This suggests it was a mature

oesophageal larva. Animal experiments (Hadwen, 1915) have shown that only the largest oesophageal larvae of both species are ready to proceed at once to form warbles and that those less advanced continue their wanderings. Referring to human infection by *H. bovis*, Schoyen (1886), who collected a number of cases that had occurred in Norway during the previous hundred years, states that as a rule the larvae have undertaken long ramblings under the skin, always in an upward direction, previous to their appearance through openings in warbles on the upper part of the body (head, neck, shoulders, etc.). All of them lived in this manner for months, and the larvae came out during the winter, most commonly in February, but were always much too young to be hatched. We may conclude that the larva does not undergo its full life cycle in man. On the other hand, we must record that the larva from Style's case was described by Major Austin as being a penultimate-stage larva of *H. lineatum*; but he also states that the full-grown larva is of considerable size and many times larger than the specimen forwarded to him.

In our case there is no history of the subcutaneous wanderings characteristic of the "pre-oesophageal" larva. In all the published reports available of human infection, subcutaneous migration has been extensive and readily observed, usually before the larva reaches the oesophagus. Ordinarily the course of a migrating larva is not betrayed by any track, but occasionally, when sepsis has occurred, a greenish track marks the wake of the larva. The tracks are always confined to connective tissue. Migration is maintained partly to avoid encystment; the organism would die if encystment occurred before it reached the final warble stage. The disappearance of the warble from the upper eyelid in the present case may indicate either encystment and death of the larva with subsequent absorption, or a migration from the eyelid with possible reappearance later elsewhere. The steadily falling eosinophilia supports the first alternative. Another explanation, however, may be that the larva emerged from the warble on the eyelid unknown to the patient or his parents before he entered hospital. The possibility that other larvae are still present in the boy's body must be borne in mind and a watch must be kept for the appearance of other warbles.

It is doubtful whether the treatment instituted influenced the course of the disease.

It is stated that the warble-fly attacks two-thirds of all cattle in this country, causing severe loss of condition, reducing milk yields, and damaging one million hides a year. The high incidence demands effective preventive and curative treatment. It also suggests the possibility that other cases of human infestation by contact with cattle may have remained undiscovered or unrecorded.

It is worth noting that the Hope valley, in Derbyshire, suffered the worst "gadfly" epidemic for many years last summer.

Summary

A rare case of human myiasis due to warble-fly larvae is reported.

The life cycle of the warble-fly illustrates the tendency for the larva to migrate and form warbles.

Experimental evidence and case reports suggest that in man the life cycle of both species of warble-fly is inhibited.

Contact with recently infected cattle is the probable mode of infection.

Prevention seems to be the only treatment available in human or animal myiasis caused by warble-fly larvae.

We are indebted to Dr. J. W. W. Baillie, who originally referred the case to hospital, and to Mr. Gordon Mackie, Honorary Ophthalmic Surgeon to the Royal Hospital, Sheffield, for permission to publish this report.

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VITAMIN C NUTRITION IN
NORTH-EAST ENGLAND

BY

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In the winter and spring months of 1943 an estimate was made of the vitamin C balance of 100 adults living in a mining town on the north-east coast of England. The findings may be of interest.

Harris (1939) noted that vitamin C subnutrition was increased during the 1914-18 war. Orr (1936) suggested that more than half of the population of Great Britain received less than the reputed optimum allowance of vitamin C. Harris (1940) found subnutrition prevalent among elementary-school children, and in 1942 he noted that nutrition among students and school-children was at a lower level than it had been before the war. Other reports of the nutritional state of various sections of the community have been published, but no recent findings have been noted from this area.

Rationale and Method of Investigation

The reader may be reminded that the minimum daily requirement of vitamin C for the preservation of health is in the region of 25 mg. (Abbasy *et al.*, 1935); that a normal adult on a middle or higher working-class diet excretes between 15 and 30 mg. a day (Harris and Ray, 1935); and that oral administration of a "test dose" of ascorbic acid to an undernourished subject results in its retention in the tissues until the deficiency is made good, while administration of the same dose to one who is well nourished results in the early overflow of a large part of that dose into the urine.

Cases suffering from any clinically recognizable disorder which *per se* could lead to an increased vitamin C demand and metabolism were excluded from the survey. In addition to clinical examination the B.S.R. was estimated in each case. One hundred intelligent and co-operative patients were selected, 38 being males and 62 females. Details of the present and past dietetic habits of each patient were obtained at the outset and correlated with the ultimate findings. No case included in the series developed an intercurrent infection. The ascorbic acid was administered by the "test-dose" method of Harris and Ray, the "test dose" being 700 mg. ascorbic acid per 10 st. (kg.) body weight. The vitamin C excreted in the urine ascertained by the method of Sendroy and Miller (1939), and the vitamin C content of the urine was made by against a freshly prepared standardized solution of chlorophenolindophenol.

Findings

(1) *Males*.—Of the 38 cases examined 35 responded briskly to test-dosing, the response coming on the first or second day. Three were sluggish in their response, the rise coming only on the third or fourth day. None showed clinical evidence of vitamin C subnutrition. The three cases with sluggish response were regarded as being unsaturated but not undernourished.

(2) *Females*.—Of the 62 cases 27 responded briskly on the first or second day. The remaining 35 were sluggish in their response and were distributed as follows: third day, 25 cases; fourth day, eight cases; fifth day, two cases. Slow response (and therefore presumably slightly depleted reserves) was found more frequently in those women whose husbands were living away from home than in those whose husbands were at home, the ratio being 5:1; and, conversely, the bulk of the women who responded briskly had their husbands living at home.

The clinical findings in one of the women with slow response were of interest. Her husband was in the Forces, her children had their midday meal at school, and she herself was living on an obviously inadequate diet. The response to test-dosing with ascorbic acid came on the fifth day. She was slightly under weight, and there were two large bruises on the extremities at the time of examination, which she attributed to slight trauma. There was no obvious pyorrhoea, but the gums were spongy and bled easily. Hess's test was positive, and there was a normocytic normochromic anaemia, the red cells numbering 3,200,000 per c.mm. and the Hb (Sahli)

being 65%. Unfortunately, continuous observation in this case was interrupted, but when the patient was seen again several months later the sponginess and bruising tendency had disappeared, Hess's test was negative, and the blood picture had improved, the red cells now numbering 4,200,000 per c.mm. and the Hb being 80%. In the interval she had had a more balanced diet and had taken ascorbic acid 200 mg. daily by mouth. No medicinal iron had been given. Her original state was due to general malnutrition and not to avitaminosis C alone. There is no relation between spongy bleeding gums and vitamin C deficiency unless this is so severe as to produce scurvy; and increased capillary fragility does not appear to be related to vitamin C deficiency. One must conclude that the improvement was due to the better diet and not to the ascorbic acid supplement.

Summary and Conclusions

The results of assessment of the vitamin C balance of 100 adults resident on the north-east coast of England are given. From a study of this comparatively small series one might say that: (1) The men on the whole were well nourished. (2) Many of the women had less satisfactory reserves. (3) Diminished reserves were found more often among those women whose husbands were living away from home than among those whose husbands were at home. (4) As would be expected, the quickest response was seen in those cases which had a satisfactory dietetic history. (5) Diminished intake of vitamin C was due to apathy or ignorance and not to poverty or non-availability of suitable foodstuffs. (6) Close inquiry should be made into the intake in all doubtful cases and advice on suitable diet given. A nutritious diet, with perhaps added ascorbic acid, is necessary in conditions where there is likely to be an increased vitamin C demand—e.g., toxic, infective, and traumatic states.

I would like to thank Dr. H. A. Cookson and Prof. F. J. Nattrass for their interest and advice.

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Medical Memoranda

Gangrenous Enteric Intussusception in
Adolescence

The following case is considered to be worthy of record owing to its rarity. The management of the case also presented interesting features.

CASE HISTORY

The patient, a girl aged 14, was admitted to the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Jan. 16, 1946. She gave a history of vomiting for five days, severe abdominal pain, and almost complete constipation, with the passage of blood per rectum for two days before admission. She was extremely dehydrated, with sub-normal temperature and a pulse rate of 126 per minute. On examination there was generalized abdominal rigidity, with marked central abdominal swelling. She was given three pints (1.7 l.) of intravenous glucose-saline before operation, which was delayed six hours for this purpose.

Through a right longitudinal rectus-splitting incision the abdomen was explored. A greatly distended loop of jejunum was found; this was 40 cm. long, and was delivered through the wound after the incision had been enlarged upwards. The intussusceptum and intussuseptum were both seen to be gangrenous, the former being perforated. The intussusception was resected, with end-to-side anastomosis, and the abdomen closed with drainage.

Ten pints (5.68 l.) of glucose-saline were given during the next 24 hours. The blood-urea estimation was 60 mg. per 100 ml. and serum chlorides 298 mg. per 100 ml. These tests were performed on Jan. 17. In the first 24 hours 15 oz. (425 ml.) of urine were passed. On the second post-operative day five pints (2.84 l.) of intravenous glucose-saline were given: urinary output was increased to 42 oz. (1.2 l.). Four days after operation the patient was taking fluids well by mouth, bowel sounds had returned, and flatus had been passed. On Jan. 22 a bile-stained discharge was observed on the dressing. By the next day the trickle had become a flood. Fluids by mouth were severely restricted and intravenous therapy restarted; four pints (2.27 l.) of glucose-saline and one pint (568 ml.) of plasma were given every 24 hours. Continuous suction was applied to the fistula, but some leakage occurred.

On Jan. 26 the patient's general condition was satisfactory. Skin tension was becoming troublesome and there was no sign of the tula closing; consequently it was decided to explore the anastomosis. It was then found that the antemesenteric border of the oximal loop had sloughed; the remainder of the anastomosis had healed satisfactorily. A mucosal fold was forming a valve over the distal loop. A further 2 in. (5 cm.) of bowel was resected and an end-to-end anastomosis was performed, as enough bowel could not be mobilized for any other type without breaking down protective adhesions. On account of disparity in the diameter of the proximal and distal loops the anastomosis was difficult. The wound was closed with silk sutures throughout and without drainage.

As expected, some leakage continued for a further 10 days. One pint (568 ml.) of plasma and four pints (2.27 l.) of glucose-saline were given every 24 hours until the sixth post-operative day, when the fistula was showing signs of becoming dry. Suction was unsatisfactory, and the skin was protected to some degree by a paste containing aluminium. A fortnight after the second operation the wound was completely healed. Continuous gastric suction was employed for two or three days after each operation. Small quantities of fluid were given by mouth throughout. Penicillin was administered for 10 days after the first and five days after the second operation. The patient was discharged from hospital on Feb. 28.

The pathological report on the specimen stated that there was no obvious tumour to account for the intussusception."

COMMENT

The interesting feature of this case is the length of time it is possible to keep the general condition of a patient satisfactory with intravenous therapy. This girl had very little nourishment by mouth from Jan. 11 to Feb. 6. She showed no clinical signs of hypoproteinaemia. Further, the inadvisability of being too conservative regarding the point of section of the bowel proximal to the intussusception was clearly shown.

No account of this case would be complete without praise for the nursing staff, whose care and attention largely contributed to the successful result.

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Royal Victoria Infirmary, Newcastle-upon-Tyne.

Heterospecific Pregnancy as a Possible Cause of Erythroblastosis Foetalis

The following case seems to merit publication in view of certain unusual features.

CASE HISTORY

A full-time male infant was delivered spontaneously on Jan. 25, 1946, and found to be jaundiced. Suspecting erythroblastosis foetalis, samples of blood were sent to the Department of Pathology, Dundee. The infant's haemoglobin was 120% and the blood film showed evidence of erythroblastæmia, as many as 10 erythroblasts being found per oil-immersion field. This was the third pregnancy. The first child was illegitimate and is alive and well. The second child was 3 weeks prematurely delivered, in 1944, and lived 5 days. This child was diagnosed from a blood film as a case of erythroblastosis, but, unfortunately, serological examinations were not carried out, and necropsy findings were reported as inconclusive. The mother did not show any evidence of toxæmia of pregnancy at any time. Her blood was found to be group O Rh-positive (R,R₁), the child's group A Rh-positive (R,R₁): there could be no Rh incompatibility in this case. The maternal iso-agglutinin titres were: anti-A, 1:10,000; anti-B, 1:80. The infant's saliva reduced these titres to 1:128 and 1:32 respectively—evidence that he is a "secretor."

In three days the jaundice was disappearing, the haemoglobin had risen to 135%, and erythroblasts had almost entirely gone from the peripheral blood. To date the infant remains healthy.

The placenta was healthy and the mother's Wassermann reaction was negative. In view of the abnormally high anti-A agglutinin titre in the mother's serum this case may have been a mild type of erythroblastosis foetalis, such as has been described by Polayes and Ohlbaum (1945), who report nine cases of erythroblastosis foetalis in which the Rh factor was excluded as a possible immunizing agent. All of the children were group A and their mother group O, with high anti-A agglutinin titres in the mother's sera. With the exception of two cases which terminated fatally, the affected children in this group suffer from a relatively mild form of haemolytic anaemia of the newborn.

In connexion with this, should the affected infant require blood transfusion it would probably be advisable to use group O blood instead of group A, as anti-A agglutinin may be present. In this respect transfusion therapy is analogous to that used in cases where an Rh-positive affected infant is transfused with Rh-negative blood.

We are indebted to Dr. Joyce Rounthwaite, Elsie Inglis Maternity Hospital, for sending us the samples of blood and saliva.

ANN B. AUSTIN, M.B., Ch.B.
GEORGE H. SMITH, M.D.

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Reviews

D.D.T.

DDT. The Synthetic Insecticide. By T. F. West, M.Sc., Ph.D., and G. A. Campbell, M.Sc. (Pp. 301; illustrated. 21s.) London: Chapman and Hall, 1946.

The discovery of the insecticidal properties of D.D.T. was made in Switzerland just before the recent war, and the information reached the allied nations at the end of 1942. In the comparatively short intervening time there has been such a concentration of work on the subject that nearly 300 names appear in the author index of this book, many of them relating to several publications. The volume is, in fact, a summary of the results of research on D.D.T. up to the end of 1945. Further data are, of course, continually appearing; but enough has been accumulated to produce a very useful reference book and bibliography for the worker in applied entomology. Its scope and layout can be indicated by the list of contents, which includes the following chapters: History and development, the basic researches, manufacture and chemistry, principles of formulation, toxic manifestations, D.D.T. in paints, etc., D.D.T. in textiles and paper, D.D.T. miscellany, D.D.T. against lice, D.D.T. against mosquitoes, D.D.T. against household pests, D.D.T. against other pests of man and animals, D.D.T. against plant pests, miscellaneous uses, effects of D.D.T. on beneficial insects, and phytotoxicity. This arrangement is convenient, although there are two "miscellaneous" chapters which make for redundancy or lack of sequence, so that a note on "D.D.T. dispersed as a fog" is 274 pages away from the "use of D.D.T. in aerosols." Also, the various species included in such chapters as the one on plant pests are given in alphabetical order of the common names. Surely it would be more interesting scientifically to group them biologically? Despite a perceptible favourable bias towards D.D.T., the authors have reviewed the results of trials very fairly. Perhaps the most questionable chapter is the one dealing with paints containing D.D.T. The authors give results of their own tests, hitherto unpublished, without comparable results from D.D.T. applied as a superficial spray. The latter is generally believed to be more efficient, and the important question as to the residual toxicity of the two methods is still not determined.

EVERYDAY PSYCHIATRY

Everyday Psychiatry. By John D. Campbell, M.D. (Pp. 333. 36s.) London: J. B. Lippincott Company.

The author of this book has had a wide experience of medical work, including general practice, and finally in the American Navy. Impressed with the very great importance of psychiatry for medicine, and especially with the large number of borderline patients who ask the advice of their family doctors, he seeks in this volume to do something to elucidate the problems presented by these patients for the general physician and surgeon, but especially for the general practitioner. While paying full tribute to the great advances achieved in this field by modern medical psychology and psychotherapy, he is by no means a convinced environmentalist, and regards the innate constitution as playing a very large part in the aetiology of all the cases presenting themselves, including the psychoneuroses. For this reason the book under review is valuable inasmuch as it presents a point of view which has perhaps been neglected in modern psychiatric literature. The main feature of his advocacy is, however, that scarcely any branch of medicine and surgery can be neglected when considering the treatment of these patients. Thus in discussing psychoneurosis he says:

"The treatment of psychoneurosis, therefore, is one of the most challenging problems in medicine. It requires the skill of the experienced examiner, the tact of the sympathetic listener, the insight of the psycho-analytic student, the ingenuity of the physiologist, the erudition of the literary scholar, and the human understanding of the general practitioner. Since psychoneurosis involves cortical activities, autonomic function, and all the personality factors, its treatment necessitates knowledge of life and all its vicissitudes. It is sincerely hoped that the day of pure psychotherapy has ended, and that the psychoneurotic patient may be considered as an individual with a sensitive cortex and a hyperactive autonomic nervous system, and not as an interesting case with many unconscious mechanisms."

Dr. Campbell points out the value of the sympathetic companionship of the family doctor with a patient coming through a depression, perhaps the only valuable treatment until the

biochemical secrets which undoubtedly underlie the condition are elucidated. His descriptive method is to classify patients into personality types, and as a whole this method seems to be profitable; but perhaps he takes it too far in trying to differentiate too clearly a homosexual type, who, he says, is the very opposite to the psychoneurotic type and almost never suffers from bodily somatic complaints and is emotionally quite stable—few would agree wholeheartedly with such a statement. He thinks that just as there are special schools for mental defectives so there should be special schools for schizoid children, since this will allow these solitary thinkers to be of most benefit to the world, and that any attempt to socialize them by mixing with normal children is futile. The chapter on chronic alcoholism is excellent, and the final chapters on personality examination and rehabilitation are well worthy of study.

This book may therefore be read with profit by all doctors, inasmuch as it presents clearly a useful point of view rather different from that of the usual run of books on medical psychology.

PARASITES AND PARASITIC DISEASES OF MAN

Enfermedades Parasitarias del Hombre y Parásitos de Interés Médico. By Dr. Rodolfo V. Talice, in the Faculty of Medicine, Montevideo. Vol. I. (Pp. 778; 189 figures and 3 coloured plates. No price given.) Published by Editorial Científica del Sindicato Médico del Uruguay.

In his preface to this first volume of his treatise on the parasites and parasitic diseases of man Prof. Talice discusses his reasons for writing it. He expresses the opinion that the excellent and very useful textbooks on parasitology which have been written in various languages all deal much more fully with the parasites than with the diseases they cause, so that the practical medical man may find it difficult, unless he has special knowledge, to read them. He also considers that works on pathology and clinical medicine which deal with parasitic diseases are written without sufficient biological knowledge, and that the abundant and valuable North and South American literature on these diseases is insufficiently known, both in the Americas and elsewhere. These judgments, if they could be admitted, would certainly justify the considerable task which Prof. Talice has undertaken. But can they be admitted? If the Latin-American doctor finds it difficult to read such books as Manson-Bahr's editions of *Manson's Tropical Diseases*, Strong's editions of Stitt's *Tropical Diseases*, Craig and Faust's *Clinical Parasitology*, and Brumpt's *Précis de Parasitologie*, it can hardly be because these books require too much special knowledge or are clinically inadequate. Nor can it be agreed that North and South American literature on parasitic diseases is insufficiently appreciated outside the Americas, for it is constantly being summarized and critically appraised by experts in the pages of the *Tropical Diseases Bulletin* and similar journals printed in English. It is valuable, nevertheless, to have in this volume the fruits of Prof. Talice's wide experience. His book is not likely to supplant any of those just mentioned, but its text, at any rate, may well prove to be a valuable supplement to them. This first volume deals with only the protozoa and the spirochaetes and the diseases they cause, the Rickettsias being excluded because they are not protozoa. Some experts will insist that the spirochaetes also are not protozoa, but Prof. Talice decides that they are, and a consideration of the diseases which they cause alongside those caused by the protozoa has certain clinical advantages.

It is impossible in the space available to comment upon the whole of a book of this size. It contains so much that there are bound to be some statements with which some experts will not agree. Its five parts deal respectively with the protozoa and protozoal diseases in general, amoebiasis, the flagellates and the diseases which they cause, balantidiosis, and the spirochaetoses (including syphilis and its allied diseases and the leptospiroses). Under each heading there is a complete account of the aetiology, epidemiology, pathology, symptoms, treatment, and prophylaxis of each disease, together with the laboratory and other methods of diagnosis. The reader thus gets a complete clinical picture of each disease and a description of the parasite which causes it. The author gives especially detailed consideration to treatment, and in the epidemiological sections he records Latin-American work as a basis for regional studies and prophylaxis. The results of some work done during the recent war were doubtless not available when the book was written. There is no mention, for example, of the Russian

work on cutaneous leishmaniasis published since 1941 and admirably reviewed by Dr. C. A. Hoare in the *Tropical Diseases Bulletin* (1944, 41, 331), which establishes, among other important results, the fact that cutaneous leishmaniasis is a disease of gerbils and soughs in Middle Asia and is maintained in them, and also transmitted to man, by the sandflies which share their burrows. This work should be included in future editions, even though it means the abandonment of the priority given to parasitic diseases which occur in the Americas.

A few other criticisms need to be made, even in a brief review. It is doubtful whether the reader will really be helped by the particular typographical variations chosen by the author to emphasize the various aspects of each disease. More serious is the fact that the illustrations, especially the reproductions of the photomicrographs of the parasites concerned, compare unfavourably with those given in the textbooks mentioned above. Some of them, indeed, will mislead the inexperienced clinician or laboratory worker, who will get truer guidance from the line drawings wherever these are given. The author has chosen to record his bibliography in the form of footnotes, so that reference to the papers quoted is not easy, while some of the reference numbers in the text apply to more than one paper. And there is no index. An index to a work of this calibre is so important that most readers will hope that future editions of this first volume and also the first editions of any succeeding volumes will contain an index to the whole work. The most useful practice is that adopted by Strong's editions of Stitt's *Tropical Diseases*, each volume of which contains an index to the whole work.

Notes on Books

A book on the biochemistry and therapeutics of iron has been written by three Swedish physicians, Drs. C. G. HOLMBERG, Bo VAHLQUIST, and JAN WALDENSTRÖM, under the title *Om Järn Och Järnterapi*. It consists of five chapters. The review copy comes from Malmö and can be seen in the library of the British Medical Association by members who have a working knowledge of the Swedish language.

Mr. HAMILTON BAILEY's *Demonstrations of Physical Signs in Clinical Surgery* began its long career in 1927 and has now passed through seven reprintings and appears this year in a tenth edition. With each succeeding edition the author has striven to improve his work, and the text has been thoroughly overhauled. Pictures, both plain and coloured, remain a large feature of the book; they now number 573, and Mr. Hamilton Bailey pays just tribute to his publishers, Messrs. John Wright and Sons, of Bristol, for their skill in correlating the illustrations with the text. The price of the volume is now 30s.

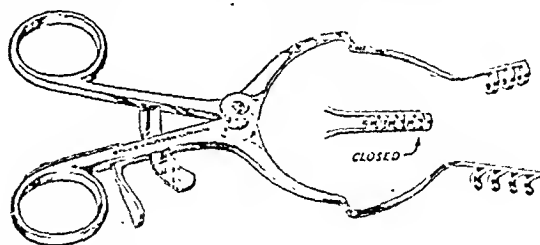
Preparations and Appliances

A RETRACTOR FOR VARICOSE VEIN SURGERY

Mr. R. ROWDEN FOOTE (London, W.1), writes:

The instrument illustrated is a modification of a self-retaining retractor used in other branches of surgery. The main points to be noted in this retractor, however, are as follows:

(1) It is so designed that the instrument does not get in the way of the surgeon. The angle of the shaft is adjusted so that the retractor lies flat on either side of the wound.



(2) The jaws of the retractor give a firm grip on the tissues, allowing them to be lifted without slip.

(3) The points of the teeth are so made that injury to neighbouring vessels may be avoided.

This retractor has been specially made for me by Mr. T. M. Proudfoot, M.B.E., of Messrs. Bell and Croyden, Wigmore Street, London, W.1.

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IMMUNIZATION WITH B.C.G.

In an issue of this *Journal* late in 1943 a good deal of space was given to reporting a meeting of the Tuberculosis Association and to editorial comment upon it (Dec. 4, 1943, p. 716, 722). The subject discussed was the use of B.C.G. vaccine for immunization against tuberculosis, and of the two principal speakers two came from Norway, one from Canada, and one from the U.S.A. The meeting concluded by passing a resolution in these terms: "The Council of the Tuberculosis Association is instructed to approach the Joint Tuberculosis Council and the Council of the National Association for the Prevention of Tuberculosis with a view to a joint request to the Minister of Health to make B.C.G. available for trial in this country." This resolution has now borne fruit: these three organizations appointed a joint committee to examine the question further, and the ultimate result was a deputation which went to the Ministry of Health last week. Sir Wilson Jameson received the deputation with sympathy and expressed himself willing to take steps to see if a suitable vaccine could be made available in this country. It would be necessary to appoint an expert committee to examine the use to which it could be put and the class of persons to be vaccinated. The whole question could be explored by the Ministry of Health.

The deputation presented a memorandum prepared by Prof. W. H. Tytler on behalf of the Joint Committee which gives a full account of the history and achievements of B.C.G. vaccine, and urges that official action should be taken to enable the vaccine to be used in this country. It

is to be hoped that this memorandum has been, or will be, printed in sufficient numbers for a considerable circulation as well as for its immediate purpose. It is an admirable statement, fair, complete, and thoroughly documented, and presents an overwhelming case. The story of B.C.G. may be retold briefly as follows: It is a tubercle bacillus of ovine origin originally found in 1908 by Calmette and Guérin to have lost its virulence after successive transfers on a bile-potato medium. Since then it has remained incapable of producing progressive disease even in the highly susceptible guinea-pig, and although there is a theoretical possibility of restoration of virulence, the danger of any such change during proper maintenance is highly remote. Although practically non-pathogenic, this organism, when administered in the form of a living vaccine, induces tuberculin sensitiveness and increases resistance to subsequent infection with virulent tubercle bacilli. It is unquestionably more effective in this direction than an ordinary heat-killed vaccine. It may perhaps be less effective than a living vaccine of Wells's vole bacillus, but that is another and more recent story. The immunizing effect of B.C.G. has been exhaustively studied in animals, and is the subject of

a long-term field trial in cattle which has now been in progress in this country for a number of years.

B.C.G. began to be used for human vaccination more than twenty years ago, and the first method employed by Calmette himself and his colleagues was administration by the mouth to infants within a few days of birth. Although this treatment was used for very large numbers of infants born into tuberculous families, with what were said to be promising results, it was abandoned within a few years in favour of subcutaneous injection: this proceeding was much more regularly followed by the development of tuberculin sensitiveness. Not long after these studies began in France the method was introduced in Norway, where the classical studies of Heimbeck and Wallgren have provided the soundest evidence we have of what B.C.G. can do. This consists largely of observations made in hospital nurses, who form a particularly suitable group for such study, and at the same time constitute a class in much greater need of protection against tuberculosis than the population as a whole. These nurses were Mantoux-tested on entry, and it had been observed that those who were negative more often developed tuberculosis during their training than those who were originally positive. Immunization of negative reactors with B.C.G. reduced the morbidity in one series from 17.6 to 2.6%. Similar effects were observed in medical students; and during recent years, in spite of the German occupation, other classes have been included, the ultimate object being to treat the whole of the tuberculin-negative population. One of the drawbacks of the method has recently been overcome: an abscess is fairly often produced by the subcutaneous injection of B.C.G., but the method of multiple puncture of skin to which the vaccine has been applied results in a trivial papular lesion leaving no scar, and appears also to be more effective than either subcutaneous or intracutaneous injection.

By no means all the results obtained with B.C.G. have been as conclusive as those in Scandinavia. There is still room for argument about the degree and duration of immunity, and the indications for using the method at all. But it is unquestionable that this is a method of increasing resistance to tuberculous infection which may be valuable in certain circumstances, and it is much to our discredit that this country has contributed nothing to its study in the human field. The submissions in this memorandum are that the method is safe, has a considerable degree of efficacy, and is relieved of one of its main drawbacks if the multiple puncture or scarification technique is used; further, "that there exists in the Tuberculosis Services of Great Britain, and among the medical profession generally, an active and widespread desire that a reliable supply of B.C.G. vaccine should be available here, as it has been for years in most other countries of the world." It is then pointed out that a single source of supply is highly desirable, and "that the product should have behind it some form of official backing: either preparation under direct auspices of a Government Department, such as the Ministry, or the Medical Research Council, or some form of guarantee or certification of the technical methods employed, provided by an official department such as the Standards Department of the Medical Research Council." The necessity for these

provisions is obvious: a uniform, safe, and active product is essential, and its manufacture should be as much a Government responsibility as that of smallpox vaccine lymph. The stringent precautions required in manufacture are detailed: since the vaccine is living neither heat nor antiseptics can be used; and since it must be used within ten days of preparation tests of pathogenicity cannot yield their results until later. These are required to show not only that no virulent bacilli are included, but that the bacillus has not undergone a further stage of degradation, resulting in failure to produce even a local lesion in the guinea-pig, and probably therefore in loss of immunizing power. The case for centralizing production under authority seems unanswerable. It seems a necessary corollary to official recognition that B.C.G. vaccination is worthy of adoption in this country, whether as a recognized method of immunization or for the purpose of further trial.

THE E.E.G. APPARATUS

Since the days of Galvani and Volta progress in electrophysiology has depended upon advances in electrical technique. For over a century the recording of the rapidly fluctuating minute potentials in living tissue necessitated the most sensitive devices. No amplification was available. The early mirror galvanometer, having too great inertia, gave place to the capillary electrometer, and that in turn to Einthoven's instrument. With each advance the sensitivity of the recording instrument was maintained while the inertia decreased, thus enabling the rapid changes of electrical potential to be followed more accurately. With the advent of the thermionic valve an instrument became available capable of detecting electrical fluctuations as small as two millionths of a volt and of following them faithfully. Even more important is the immense power of amplification possible, so that the sensitivity of the recording instrument is no longer so important. For very rapid electrical changes the cathode-ray oscillograph, with its inertia-less electron-beam, is an ideal recorder, but permanent records entail rather costly photography. For clinical electro-encephalography (E.E.G.) a permanent trace is needed, and, since the spontaneous rhythms of the brain are for the most part relatively slow, an inertia-less recorder is not essential. An electromagnetic oscillograph writing an ink trace on moving paper has become the accepted technique for clinical purposes.

These great technical advances might lead us to suppose that the detecting and recording problems of the electrophysiologist were at an end. But certain inherent difficulties remain. Just as the microscope cannot be used to observe at the same moment the very small and the very large, so there are difficulties in the way of recording accurately the slowest and fastest brain rhythms with the same amplifier conditions. For accuracy one or other must suffer. The range of frequencies so far studied in the human electro-encephalogram (E.E.G.) varies from 1/2 to 35 c/sec, but there are undoubtedly transients with a much faster frequency. It is fortunately possible to devise amplifiers and ink-writing instruments which give linear recording up to 60-70 c/sec. In this way the output is a faithful repro-

duction of the input, but the manufacture of good apparatus capable of maintaining this standard is apparently not easy. During the war clinical electro-encephalography was carried out in this country at fewer than a dozen centres, an American apparatus being used for the most part. This has proved itself to be generally reliable, but since it has been built only through the enterprise of its designer no large-scale manufacture has resulted. In any event, individual workers in England have shown that it is possible to construct apparatus as good, if not better. With the return of peace, clinical electro-encephalography will undoubtedly develop, and new departments will be established all over the country. The supply of suitable apparatus will become an acute problem. Gibbs and Lennox¹ drew attention to this difficulty in 1944. Max and his colleagues² expressed their anxiety at the poor performance of badly designed apparatus in the U.S.A. There is no doubt that inferior apparatus will yield inaccurate results and encourage dangerous fallacies. In the anticipation that British manufacturers would undertake the production of equipment, the Electro-encephalographic Society requested the preparation of recommendations for the design and performance of apparatus. These recommendations, accepted by the Ministry of Health as a basis for the development of equipment to be used in hospitals and clinics, have now been published by Dawson and Grey Walter.³ The authors emphasize that the performance recommended is not an unattained ideal, since such apparatus, both amateur and commercial, has been in existence for some time. Even the most inferior equipment will produce results of a sort, so that the unwary may be deceived by the external glitter and polish into the uncritical acceptance of poor performance. Indeed, only a thoroughly critical approach on the part of intending users of such apparatus will discourage the production of inferior and untrustworthy instruments. It is necessary to know not only what the apparatus *should* do but what it will not do and what it can do when it goes wrong. The warning implicit in this paper is clear, and intending users of E.E.G. apparatus should satisfy themselves that the performance fulfils these criteria.

In few branches of medicine are the results so easy to obtain and so easy to misinterpret as in the field of applied electrophysiology. Hitherto rapid advances in knowledge have been made by physiologists. Physiological "neurography" has become an established technique of neuro-anatomy; the limits set by histological methods for the identification of neural connexions have been overcome, and the existence of functional relationships within the brain become a matter of observation rather than speculation. Now, with the development of methods of automatic frequency analysis,⁴ the vastly complex E.E.G. data related to clinical problems of all sorts can be tackled. Dawson and Grey Walter⁵ have discussed the scope and limitations of the visual and the automatic methods of analysis. It is clear that initially automatic analysis will neither substantiate what is already partly known nor provide ready answers to what is unknown. Visual analysis selects the

¹ *Amer. J. Psychiat.*, 1944, 150, 154.

² Max, W., Wiesner, L., and Bullowa, J. G. M., *J. Lab. clin. Med.*, 1943, 23, 1365.

³ *J. Neurol. Neurosurg. Psychiat.*, 1945, 3 and 4, 61.

⁴ Grey Walter, W., *Electronic Engineering*, 1943, June, p. 9.

⁵ *J. Neurol. Psychiat.*, 1944, 7, 119.

obvious and makes it the familiar, whereas the automatic method makes no such human distinctions. By increasing the data about which nothing is known because it has been ignored, the issues for electro-encephalography will, no doubt for some time, be clouded rather than clarified by this new method. Certainly clinical work will at first be made no easier by it.

If it is necessary to urge upon designers and manufacturers the desirability of a thorough understanding of what is asked of them, it is equally important for clinicians and others entering this field to acquaint themselves with the instruments which technology can place in their hands. Only a critical approach by all concerned can prevent the development of an inferior practice and faulty theory so damaging as to retard electro-encephalography for years.

MENIERE'S DISEASE AND ALLERGY

Quincke suggested in 1893¹ that Ménière's disease might be due to an angioneurotic-oedema-like involvement of the internal ear or its nerve supply. In 1923 Duke² pointed out that Ménière's syndrome might be due to allergy, and recorded two cases in which attacks eased after withdrawal of the causative foods and were reproduced by their re-addition. Since then further cases sensitive either to foods or to inhalants have come to light. The total number over about a quarter of a century is no more than twenty, some of which are true cases of Ménière's disease, while others are doubtful. Thus, allergic reactions of the antigen-antibody type must be considered as only exceptional causes of the syndrome.

Williams³ has now put forward a new suggestion: that Ménière's disease (he prefers to call it endolymphatic hydrops) is the result of physical—or intrinsic—allergy. The term physical (intrinsic) allergy, also first introduced by Duke,⁴ implies that the stimulus of physical agents, such as heat, light, cold, and trauma, or even psychological disturbances, may produce symptoms identical with those of the antigen-antibody type of allergy. Williams emphasizes that the findings at necropsy in all the fourteen cases which have been described show that the unvarying pathological picture is one of a non-inflammatory distension of the endolymphatic system. From the intermittent nature of the illness it is clear that the pressures within the labyrinth must fluctuate. It would be difficult to conceive of such a fluctuating extracellular oedema having anything other than an allergic aetiology. Granted that two distinct physiological mechanisms may express themselves clinically in the same way, then the difficulties which have hitherto stood in the way of accepting this disease as a type of allergy seem to be resolved, according to Williams. The mechanism by which Ménière's disease is precipitated is as follows: a physical or emotional stimulus acting through the parasympathetic nervous system affects certain cells which have an inherited tendency to react in an abnormal manner. These cells are disrupted, with the release of histamine, a change in the permeability of the cell membranes, and an alteration of water and electrolyte metabolism. He cites Muller's work as the basis of his belief that the inherited tendency to physical allergy consists in a predisposition to the development of an abnormal capillary structure and function under certain stresses. Nicotinic acid is a vasodilating substance, which presumably acts by

releasing the contracted "lock muscle" at the beginning of the capillary loop, and its use in treatment is in keeping with this concept. The dose is 25 mg., increasing to usually 100 mg. daily, by hypodermic injection. This is continued for a month or more, when an attempt is made to change to oral therapy—100 mg. night and morning. Fluid is restricted to six glasses of water a day, and 6 g. of potassium nitrate are taken in divided doses with meals.

More recently, Williams⁵ has linked together Ménière's disease, vasomotor rhinitis, myalgia, and the vasodilating pain syndrome, including all four as the syndrome of physical allergy of the head. It is not advisable to define the word allergy too rigidly in the present state of our knowledge of clinical medicine, but at the same time care must be taken that it does not become a cloak for conditions that are but poorly understood.

THE BRAIN IN URAEMIA

Neurological study of cases of uraemia produces much which is of interest. The clinical pictures are diverse and include manifestations which can be related to all levels of the neuraxis, and features which have at times been regarded as due both to depression and to exaltation of function. A large literature has arisen on the question of the histopathological changes in the brain in fatal cases of uraemia. J. Knutson and A. B. Baker⁶ have done a service in combining a description of their findings of five cases with a summary of the earlier contributions on the subject. In the acute cases the nervous system may reveal but little naked-eye abnormality. Microscopically, however, there occurs swelling of neurones with greater or less degree of chromatolysis and with loss of staining properties. There is no characteristic distribution, and in the less severe cases diseased cells may be found lying among others which are normal in appearance. Where the uraemia has been more intense or prolonged the cell destruction occurs over wider areas, and the Purkinje cells of the cerebellum are particularly affected. Vascular congestion, perivascular infiltration, and petechiae may be found throughout the grey and white matter. In subacute cases (where the illness has lasted a matter of weeks or months) the nerve-cell changes are more variable in character and more widespread in distribution. Both acute and chronic changes can be detected. Focal and perivascular demyelination is prominent, especially in the white substance. Necrotic foci, sometimes actual cavitation, may be revealed. Vascular reaction is less intense, and there may be a mild glial increase, especially around the regions of necrosis. With chronic cases, where the illness has lasted many months or years, the lesions are parenchymal rather than neuronal. Pyknosis, shrinkage, and even disappearance of nerve cells may be detected, especially in the cerebellum and brain-stem. Both tissue-necroses and demyelination are pronounced, and small cavities may occur with thick glial surroundings. Vascular changes are not seen.

Perhaps the most interesting and difficult problem is that of pathogenesis. The interesting hypothesis of P. von Monakow⁷ is quoted. Struck by the sudden onset of cerebral symptoms in uraemia, the toxic and humoral features remaining unaltered, he concluded that there must have taken place some abrupt failure of a mechanism which had hitherto been protecting the nervous system from circulating poisons. This barrier, he believed, resided in the choroid plexus, which was capable of putting up for a long time a successful resistance.

¹ *Samml. Klin. Vorträge*, 1893, N.F. No. 67.

² *J. Amer. med. Ass.*, 1923, 81, 2179.

³ *Proc. Mayo Clin.*, 1945, 20, 373.

⁴ *Allergy, Asthma, Hay Fever, etc.*, St. Louis, 1925, p. 399.

⁵ *Proc. Mayo Clin.*, 1946, 21, 58.

⁶ *Arch. Neurol. Psychiat.*, Chicago, 1945, 54, 130.

⁷ *Schweiz. Arch. Neurol. Psychiat.*, 1923, 13, 515.

The nature of the circulating poison in cases of uraemia remains a matter of debate. Whether or not a phenol is responsible for the cerebral symptoms in uraemia⁸⁻¹⁰ or alterations in the blood potassium level¹¹ is not yet known.

HOUSING IN THE TROPICS

Two interesting papers published by the University of Queensland deal with housing in tropical and subtropical regions. Prof. D. H. K. Lee¹² sets out the physiological principles which should be taken into account in designing dwellings for hot climates, and Langer¹³ deals with house construction and town planning.

A stable body temperature can be maintained even in very warm surroundings, but Lee remarks that this heat-regulation is not achieved without cost. The strain imposed on the circulatory and nervous systems, and on the digestive tract, is such that the margins of safety are reduced, so that other deleterious influences may more readily gain an ascendancy. Asthenia and laxity are common among dwellers in the Tropics, and they result from a combination of prolonged work, bad surroundings, and anxiety or malnutrition with exposure to heat. Mental instability and chronic neurasthenia are said to be due to heat and either too much or too little work combined with bad social conditions. In very hot environments the capacity for work is reduced, but the output of steady labour declines, as a defensive reaction, before the maximum capacity for work is affected. Of prime importance in the design of houses for regions such as Queensland is protection from solar radiation. The shade afforded by trees should be utilized so far as possible. Clearly, the best protection is obtained when the sun's rays are prevented from reaching the roof. Roofs made of bright metal, or treated with metallic paints, whitewash, or light-coloured paints reflect much of the incident radiation. Well-insulated roofs and walls are desirable, and ventilated cavities greatly reduce heat transmission through the structure. Windows should be restricted to aspects little exposed to the sun. Cooking appliances should be designed and arranged so that there is no avoidable "wild" heat. Air-conditioning should relieve the burden of heat during the hottest periods and provide comfortable resting conditions. When nights are hot enough to interfere with sleep, the cooling of sleeping quarters is of great importance.

Langer, in his outline of the essentials of a subtropical house, advocates three main methods of reducing heat indoors: cooling the walls with overhangs, ventilating the roof space as well as the rooms below, and the proper orientation of the house. Overhanging roofs can do much to protect walls from the sun's rays. Ventilation of the roof space by adjustable louvres is recommended, and where enough water is available pitched roofs can be further cooled by the provision of perforated water-pipes for spraying the roof surfaces. While adequate ventilation of rooms is necessary, protection is needed not only from cold winds in winter but also from the hot winds of summer. Large windows, allowing really good natural lighting, are favoured. They are productive of less direct glare than is experienced when windows are smaller and the general level of illumination less. Screens of vegetation can be used to protect windows from indirect glare. The strain imposed on the housewife by the tropical climate

is aggravated by the lack of domestic help, and Langer lays emphasis on the need for planning so as to reduce the burden of housework. The kitchen should overlook the children's play area, thus making supervision easier. Stairs cause much strain on the housewife, and on that score single-story houses are to be preferred. Labour-saving principles should be extended to town planning. Shops and other communal amenities should be not more than ten minutes' walk from any house. Opportunities for outdoor recreation are important, and ample provision should therefore be made for this in town-planning schemes.

ABSTRACTS OF WORLD MEDICINE

Under the above title the first issue of a new monthly abstracting journal will be published by the British Medical Association in January next year. A second monthly journal will appear at the same time under the title of *Abstracts of World Surgery, Obstetrics, and Gynaecology*. The work of these journals, and of other abstracting services, will be conducted under the general direction of the Editor of the *British Medical Journal*, and the Council of the Association has just appointed Dr. G. W. M. Findlay as Editor of *Abstracts*, and Dr. S. S. B. Gilder as Assistant Editor. Dr. Findlay, who comes to this new appointment from the Wellcome Research Institution, is well known for his researches on tropical infections, and is author of *Recent Advances in Chemotherapy*. Dr. Gilder, who as a prisoner-of-war in Germany had a varied surgical experience, brings to the abstracting service a useful knowledge of several foreign languages.

It is hoped to include within the scope of the two journals the principal medical periodicals published in different parts of the world. The service is international. The abstracts will be classified under headings, and will, for the most part, be "informative" in nature. That is to say, they will be full enough to give the reader a clear idea of the contents of the article abstracted. Careful selection of the articles to be abstracted will, it is believed, make the two new monthly journals a trustworthy guide through the maze of the multitudinous medical periodicals now coming off the world's printing presses. The journals will also contain shorter or "indicative" abstracts. In addition to the abstracting journals it is hoped to provide abstracting sections, or supplements, for specialist use. In the first instance these will be at the disposal of the Editors of the quarterly journals published by the B.M.A. It may be possible to extend this service to other specialist journals.

The abstracting journals will continue in an ampler form, made possible by peace, the work done by the *Bulletin of War Medicine* during the past five or six years. The *Bulletin* will cease publication next month, and we take this opportunity of paying a tribute to those who through its medium performed such a valuable service to Medicine during the war in exceptionally difficult circumstances.

Drs. E. G. Murphy and D. Swinscow have been appointed sub-editors on the staff of the *British Medical Journal*.

At a meeting of county medical officers of health, assistant county medical officers of health, and resident staffs of sanatoria held at University College, Dublin, on April 13, a society to be known as the Irish Tuberculosis Society was formed. Its object is the study of tuberculosis in Ireland in all its aspects, and for this purpose clinical meetings will be held at various centres. Ordinary membership is open to all registered medical practitioners. Applications for membership should be made to the honorary secretary, Irish Tuberculosis Society, The Hospital, Newcastle, Co. Wicklow. Annual subscription 10s. 6d.

⁸ Dickes, R., *Arch. Intern. Med.*, 1942, 69, 446.

⁹ Becher, E., *Ergebn. ges. Med.*, 1933, 18, 51.

¹⁰ Mason, M. F., Resnick, H., Minot, A. S., Rainey, L., Pilcher, C., and Harrison, T. R., *Arch. intern. Med.*, 1937, 60, 312.

¹¹ Brown, M. R., Currens, J. H., and Marchand, J. F., *J. Amer. med. Ass.*, 1944, 124, 545.

¹² *Physiological Principles in Tropical Housing, with especial reference to Queensland. University of Queensland Papers, Dept. of Physiology, May 29, 1944, Vol. I, No. 8.*

¹³ *Sub-Tropical Housing. University of Queensland Papers, Faculty of Engineering, May 29, 1944, Vol. I, No. 7.*

PSYCHOLOGICAL REACTIONS IN WAR-BLINDED

BY

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Loss of vision, it can hardly be disputed, is the most seriously disabling sensory deprivation that can befall human beings. In account of the very far-reaching individual reorganization which it calls for, it has always been a topic of such sympathetic interest as to warrant this brief review of 40 cases of war-blinded men.

At the Scottish National Institution for War-blinded, near Edinburgh, men who lost their sight in the war of 1939-45 undergo a "basic" training consisting of Braille reading, typing, horthand, woodwork, and basket-making—not as an end in themselves but as part of a reconstitutive process; the process, as it is called, of "learning how to be blind." While basic training is going on attempts are made to discover indications in each man for types of future occupation. The intention and programme is to reintegrate the blinded man into society as a functioning unit and to avoid segregation and over-protection.

The case material under review here has consisted, up to the present, of 40 men aged from 22 to 38, representing a wide range of occupations consisting of accountants, bakers, bricklayers, butchers, clerks, cooks, joiners, labourers, mechanics, miners, motor drivers, painters, plasterers, plumbers, policemen, quarrymen, roundsmen, saddlers, stokers, tramway conductors, and upholsterers.

As part of a general scrutiny of the patients, psychiatric examination was carried out in order that as full an understanding as possible might be gained of each man and his setting is a whole, and any possible resulting guidance obtained. The scheme followed was essentially along the lines of Adolf Meyer's personality study, and certain features were noticed with sufficient consistency to justify their mention as reactions to a special variety of trauma and as a contribution to the study of emotional responses generally.

Early Reaction to Loss of Vision

As a preliminary, each man was asked how he came to be disabled, and it was at once noted that definite and elaborate details were willingly supplied without any evidence that the recital caused distress of mind. Nor was this due to any defect in emotional facial play in the blind, as later became apparent.

It was then not difficult, without running an undue risk of wounding the subject's feelings, to insert a query as to the actual reaction to loss of vision. Here there was no definiteness of recall; the answers were vague, indifferent, and objective. Such replies were made as: "It got me down for a bit, but I got over it"; "There's no use crying about it"; "I knew I'd got it, and I could do nothing about it"; "It was just a case of my own guts." The most articulate and probably the most intelligent of the series, Case 40, with evident amusement said: "There was a week when I was like a bull in a china shop and fair mad, especially if anybody sympathized with me. Then it was all over, and I was only interested in overcoming it" (i.e., the handicap of total blindness). This man showed an overcompensatory reaction.

All the cases revealed in this way an apparent retrospective latching out of an emotion which must inevitably have been considerable, but this apparency was modified by further inquiry. Cases 3 and 20 spontaneously declared that at the time when they found they had lost their sight they wished they had been killed. This feeling persisted for, apparently, about eight to ten weeks. Cases 9, 10, 11, 13, 18, 26, 27, 28, 30, 33, and 40 all described a period of clear-cut distress of mind, hopelessness, misery, and sense of loss characterized by them as depression, for this was the word they used. They all wished to make it clear that this period of depression was over and that it had disappeared by a process of "wearing off." Only three of the men ascribed any specific benefit to any internal agency, and they said that association with other blinded men who were getting on well had "cheered them up."

One of the three, Case 30, subsequently falsified this. The remainder gave evidence of a similar reaction but of shorter duration. Whether the response had been marked, as in the first group, or less severe, as in the second, it was described quietly and objectively as a thing of the past. The calamitousness of loss of vision needs no emphasis—its implications seize the imagination with some force; and yet in the series the emotional reaction of depression seemed to have been the ordinary human response to loss or bereavement, failing completely to show any long-lasting characteristics of a true depressive reaction. Even the tragic predicament of blindness apparently did not here mobilize those deep instinctive mechanisms that produce psychopathological depression.

Such depression as was in fact reported by the men would seem to come under the heading of reactive "depressions, which are the direct reaction to circumscribed life situations. . . . [Reactive depressions] are usually of shorter duration than the more constitutionally determined type" (Diethelm, 1936).

All this, of course, was largely retrospective. The emotion under discussion was concerned with a static, finite entity, blindness, which had happened and was unmodifiable, and this seemed to be the attitude of the subjects. This, however, was in a proportion of the cases not an end-point, and as investigation proceeded three reaction types were seen rather clearly defined.

Late Reactions to Loss of Vision: (A) With Tension

This reaction made its appearance objectively and subjectively. Objectively, these subjects showed various behaviour disorders in connexion with the basic training, such as undue slowness in learning—possibly the expression of resistance, for no retardation was apparent—querulous fault-finding, uncooperativeness of various kinds, and insistence on the immediate finding of a future career or occupation with rejection of all suggestions.

Subjectively, there were complaints of various kinds quite consonant with the objective behaviour. In the interests of brevity and space, one typical case is quoted.

Case 21.—This patient was a man aged 38, formerly a cashier. He has no vision. Objectively, although an office worker, he was particularly slow at Braille typing and shorthand, and worked unwillingly at handicrafts. At an interview he described little shock over the actual loss of vision, but showed great concern about his future occupation. No suggestions for a career satisfied him, and he dismissed them all as "charity" or as jobs that a child could do. His facial expression was one of strain and worry. He said that he felt strung up and restless. He showed restlessness and irritability during interview. It was significant that the only suggestions he made for occupation were such things as could in fact be done only by a sighted person and involved a good deal of mobility.

Cases 3, 6, 7, 8, 9, 13, 20, 23, 28, 30, 32, 35, and 37 all showed similar reactions, with such additional symptoms as refusing occupation on the basis of a rationalized fear of failure, restlessness and discomfort when not moving about, "strung-upness," constant restlessness at interview, over-concern about unrelated and unimportant details of the life situation, nervousness, and poor sleep with relaxation only towards morning.

There was no association between the exhibition of these symptoms and the description of initial depression, as a glance at the case numbers will show. Nor, more important, could the symptoms be related to simple concern for the future, since Case 30, showing marked symptoms, was going back to an interesting post with his pre-war employers and with his pay and prospects unchanged. Attempts to relate the condition to personality traits were inconclusive.

This reaction is obviously one of tension, and as such is within the subjective life experience of almost everyone as a reaction to inevitably arising situations of frustration and indecision. Its chief interest is that it shares with anxiety some mobilization of vasovegetative mechanisms, but to a lesser degree and without the acuteness and "attack" of anxiety. To be noted also, probably, is the generally held view that anxiety, while reactive to some extent, really has to depend for its production on an inherent constitutional tendency towards special types of imagery connected with anticipation and a special type of vasovegetative responsiveness, and on the involvement of deep instinctive factors.

Security of the future played no real part in modifying the tension these cases showed; but emphasis was repeatedly laid by the subjects on mobility, and the inference seemed unavoidable that an important factor in the production of tension was the enforced relative immobility and helplessness of the sightless, which prevented it from being drafted off, as is so naturally done with the passing tensions of everyday life that are produced by transitory "impasse" or dilemma situations.

Watson's now classical demonstration of anger as the fundamental reaction to limitation of movement was interestingly illustrated. With the tension was seen, as is always the case, some angry irritability, and this found a peculiar target, for many of the men, in the persons of the one-eyed among their number. Towards these the sightless men showed jealousy and anger, and complained that they had no right to consideration—a new view of the proverb "In the country of the blind the one-eyed man is king."

As with the transitory and apparently non-pathologic depressive reaction to loss of vision, so also the later reactions in this group of 35% of the cases at first seem to consist of non-pathologic tension. It is striking, however, to read Muncie's (1934, 1939) description of tension depression, which might well have been specifically written of this group of cases: "In tension depression there are the outward manifestations of tension and, to a less obvious degree, of depression. Tension is expressed in a constant urge to restless strenuousness, chafing at restriction, and in an inability to submit to the collaboration necessary to therapy; a great demand for immediate results. . . . The unwary physician is in danger of minimizing the depression, to the patient's own detriment. . . . The reaction occurs in young adults who do not know how to adapt themselves to the exigencies of the difficult situation producing the reaction: commonly an unpleasant dilemma. . . . The reaction is likely to be prolonged."

These words, so accurately descriptive, show how, underneath an apparently rather everyday reaction to a grievous loss, there may well be a body of distress unclearly seen. Even Muncie's estimate of duration seems accurate. Case 21 lost his sight over four years ago and is still tense.

To sum up, the rather striking fact emerges that 35% of a group of 40 blinded men have developed a classical tension depression and that no other variety of depressive reaction was seen, thus showing the specificity of tension for certain types of situation and opening up again the question of reactivity generally.

(B) Overcompensation

Case 40 was the only clear-cut example of this. He was a man of high intelligence who was seen privately because he had cut himself off from any organization for the blind. He said he did not want to live in the country of the blind. He came carrying an ebony walking-stick in contempt of the white cane carried, very usefully, by sightless people. He caricatured, very accurately and cleverly, the posture and manner of blinded people and showed how differently he comported himself. He had gone, alone, to an engineering works, had been kindly received by the management, and had in front of them produced 50% of the maximum output on a precision lathe which he had never "seen" before. This was confirmed. He did at least one delicate assembly job better than a sighted worker could. He said that a major proportion, not a minor proportion, of jobs in an engineering shop could be done by sightless people. He declared he was just as safe as a sighted person at unguarded machinery—manifestly incorrect. He was active, pushing, driving, always on the move, full of plans and missionary ideas, and quite unable to understand that his abilities were far in excess of the average. The mood was stable; there was no suggestion of any morbid excitement. His whole personality was enthusiastically absorbed in defeating his handicap. One can only speculate as to how this reaction will go on.

(C) Re-stabilization

This group accounts for the remainder of the cases. It is impossible to convey adequately in words the marked difference in type of rapport experienced in talking to this section of the case material, due, of course, to the absence of tension and to the real re-stabilization. One typical example may suffice.

Case 5.—A single man of 32, by trade a baker, was totally blinded by a grenade in the action at Imphal in May, 1944. Unaided, he crawled away, was found, and was ultimately flown home. He said he knew at once that his sight was gone, and had to keep a grip of himself for "a little." The mood was stable, and the content of thought was a modestly depreciatory account of his slowness at the basic training, especially Braille. It was ascertained objectively later that he was in fact a persevering worker who was making good progress. He expressed great satisfaction with his surroundings, with the organization, and with the training. He said he knew his range of occupation depended on how well he mastered his training, which he was trying to do while awaiting developments.

This reaction of patient endeavour, the reaction of the majority of the cases, is evidently a true re-establishment of an emotional balance, and an example of how far personality reorganization can go. It seems to give a special meaning to that last line of blind John Milton, written on his blindness: "They also serve who only stand and wait."

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LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY

The annual general meeting of the London and Counties Medical Protection Society was held at Victory House, Leicester Square, on July 3. Sir Ernest Rock Carling, the president, said that the Society had had a successful year, with the election of over 1,000 new members. The secretary, Dr. R. W. Durand, had returned from service in the Royal Air Force, and, the work of the office having been reorganized, he was engaged in giving lectures at medical and dental schools, attending, at the instance of the council, court proceedings which might be of interest to the Society, and was also available for interviewing members who had complaints or difficulties. The joint committee representing the Society, together with the Medical Defence Union and the Medical and Dental Defence Union of Scotland, had worked out a number of recommendations for the reform of the General Medical Council, and these had already been submitted to that body (*Journal*, July 6, p. 21).

Sir Ernest Rock Carling went on to say that many people were wondering whether impending legislation, with the incorporation of medical men in a State service, would have any effect upon the work of a defence society. He could not believe that it would result in any diminution in the number of disputes likely to arise, and he felt quite sure that the number of complaints against medical men before regional boards and perhaps before the Ministry of Health would be considerable. On the occasion of this annual meeting it was customary for the president to remark on various defaults by some members of the profession which caused trouble to the Society, but he would mention only one—the frequent failure of medical men to keep records. Over and over again difficulties arose in cases which came to the Society's attention because complete and precise records had not been kept. A case unsupported by documentary evidence was very likely to go down under clever cross-examination.

The financial report, presented by Mr. W. M. Mollison, the treasurer, showed an excess of income over expenditure of nearly £6,000, and accumulated funds to the amount of £112,000.

The annual report, which was adopted at the meeting, was in its pre-war form and contained notes on some of the more important and interesting cases undertaken by the Society during the years 1939-45. It stated that the public is becoming increasingly litigious and tends to complain to the "authorities" regarding the work of practitioners, apart altogether from legal actions, more than it did before the war. An impression, the report said, exists among certain practitioners who are in the whole-time employment of local authorities or hospitals that there is no need for them to be members of a protection society because their employers will defend and indemnify them against any actions. This is a misapprehension, and there is even greater misapprehension on the part of those in the Forces that by reason of their service they are immune from legal process. The manual of law of each Service states quite clearly that an individual by reason of his service is neither deprived of his civil rights nor freed from his civil obligations, and those in the Services are liable to have actions brought against them on account of their professional work.

The officers and retiring members of Council were all re-elected.

AN OUTBREAK OF INFECTION DUE TO SALM. TYPHI-MURIUM

BY

F. E. CAMPS, M.D.

A view of the possibility of similar outbreaks of infection it is felt that a short preliminary description of this epidemic is justified at this stage, although the investigation is not yet complete in full detail.

On Thursday, July 4, three cases of acute gastro-enteritis were notified in the Witham Urban District. There were a further twelve cases on the Friday, and a large number of cases on the Saturday, Sunday, and Monday, giving the classical picture of an explosive outbreak.

Clinical Findings

The clinical picture of the disease was constant. Headache was a prominent early symptom, and pyrexia was also present. At the onset there was intermittent epigastric pain, associated with nausea or vomiting, and followed some two to three hours later by diarrhoea. This would last in severe cases for as long as three days or more, and be accompanied by prostration. In milder cases the pain might resemble that of a dyspepsia and be followed by a few loose bowel actions. The presence of blood was more common in children than in adults. In many of the mild cases a more severe recurrence appeared seven days after the primary symptoms.

Information was difficult to obtain in the early stages of the epidemic. Only the more severe cases were notified, while those patients with mild attacks were regarded as suffering from merely the usual upsets which are liable to occur at this time of the year. Many of those affected did not seek medical advice at all. A further complication lay in the fact that many practitioners did not know that such cases can be notified, and for these reasons the existence of an epidemic was not realized in some districts until it had been present for a considerable time. In Witham, however, its presence was rapidly appreciated, owing to the fact that all the local doctors are in partnership, and one of them is the acting Medical Officer of Health.

An analysis of all the available data as to food consumed by the infected persons showed the only common factor to be the meat supply. The slaughter-house distributing meat was in Witham itself, and this rendered the investigation considerably easier. The raw meat ration for the infected area and also tinned meat were supplied by this slaughter-house to the retail butchers.

Bacteriological Investigation

Bacteriological investigation of the faeces of those infected showed *Salmonella typhi-murium* in all specimens. Cases were soon identified among the employees of the retail meat distributors, and, as was to be expected, secondary cases rapidly arose from this source. Although the exact origin of the infection is still under investigation, certain possible sources of spread have been identified. Measures for the control of the epidemic have been based upon this data.

The tinned meat was found to be uninfected in the tins but to be infected in the butcher's shop. As the distribution was from a common source, the raw meat appears to have been the infectious agent. Raw meat, however, would be cooked before consumption, and although it is recognized that cooking does not always destroy this organism, it seems unlikely that inadequate cooking could have been the cause of so many cases. It seems more probable that the spread was due to contamination of the tinned meat, after opening, by the raw meat. This could have followed contact on the butcher's slabs, infection of the slabs themselves, infection of the knives, cleavers, and other cutting instruments, infection of the workers' hands, and contact in parcelling. It seems likely that all these factors played a part. At the same time, once the retail distributors became infected themselves they would be in a position to re-infect further cooked food.

Control therefore took the form of:

1. Removing any source of infection from the slaughter-house.
2. Cleaning of all slabs, containers, and knives in the retail establishments.
3. Tightening up generally the hygiene of food-handlers, with stress on the desirability of careful washing of the hands, particularly after using the w.c.
4. Circularization of all retailers on the importance of early recognition of symptoms among their workers, and of cessation of work by all doubtful cases or contacts.
5. A recommendation that cooked meat should be packed independently of raw meat.
6. Circularization of medical practitioners informing them about the epidemic, and about the measures being taken, together with a request for their co-operation, particularly with regard to notification.

As a result of these measures, the number of cases appears to have abated, although secondary cases may be expected to continue. Full appreciation should be recorded of the efforts of Dr. T. G. Benjamin and Dr. J. G. Denholme of Witham, and of the work done by Mr. E. Wadhams, the sanitary inspector. Dr. Ross Mackenzie, pathologist at the Essex County Hospital, Black Notley, was responsible for all the bacteriological investigations. Dr. W. A. Bullough, County Medical Officer of Health, placed the full resources of his department at our disposal.

Two Important Points

This outbreak of food-poisoning due to an organism of the *Salmonella* group involved a combination of circumstances the most important of which was the presence of the organism at a central point for food distribution during a spell of hot weather. Nevertheless, it once again draws attention to certain basic principles of hygiene.

Advice about washing the hands after using the w.c. is often repeated but rarely heeded. The risk of infection of cooked food by assistants in the distributing shops should be negligible if this elementary precaution is carried out; and this also applies to case-to-case infection in private houses.

Countless investigations have shown this route to be the source of infection in similar outbreaks. Yet it appears that the public still do not appreciate this very real danger. In some schools notices are posted on the lavatory doors reminding the users to wash their hands. If the public generally could be fully educated on this point, gastro-intestinal infections, which are becoming more and more prevalent, could be considerably curtailed.

Fortunately, up till now most of these outbreaks have been mild, from a clinical point of view, but this has led to the acceptance of attacks of diarrhoea as being quite an ordinary event. Patients fail to seek medical advice, and practitioners fail to notify such cases as they do come across. It is not generally realized that attacks of this kind associated with food are notifiable under the Food and Drugs Act. There is a real danger in this attitude of mind on the part of both patients and doctors. Once an outbreak is allowed to gain momentum it is almost impossible to control it, whereas if it is caught early it can often be cut short. It should be appreciated that all such outbreaks are not necessarily mild clinically, and an uncontrolled epidemic of a more serious nature might well be a major catastrophe.

The work of the Red Cross and St. John Hospital Library, which during the war distributed more than four million books to Service patients, has been reorganized for peace-time work as a department of St. John and Red Cross. It has now moved to new headquarters, 40, William IV Street, Trafalgar Square, W.C.2, and is extending and developing its activities in all Service hospitals, both at home and overseas, and in civilian hospitals, and kindred institutions in England, Wales, and Northern Ireland. While the hospital library department will continue to provide books by direct gift to form the nucleus of any new hospital library or to restock any existing one, a special feature will be the loan libraries. These will provide an individual service for patients requiring special technical, foreign, or books difficult to obtain. One of these technical libraries will be solely available for tuberculous patients in sanatoria, and the books will be kept in a room apart from other books and will go only to and from the sanatoria.

WORK OF THE LISTER INSTITUTE

Nutritive Value of Different Food Proteins

The report for 1946 of the Governing Body of the Lister Institute contains an account of some continued work by Dr. Harriette Chick and Mr. E. B. Slack at Cambridge on the growth-promoting value of wheat proteins for young rats. This work has been extended in view of the changes introduced in the percentage of wheat grain in national flour. A set of tests made with flours of respectively 70, 80, 85, and 100% extraction, milled from the same grist, confirm previous results in showing a progressive increase in growth-promoting value for young rats of the proteins of these flours. The analysis at the end of the trials showed that the proportion of ingested nitrogen finally incorporated in the animals' tissues was increased from 23% to 27% as the degree of extraction of flour was raised from 70% to 100%.

The superior nutritive value of whole-wheat-flour proteins over those in white flour led to the study of all the proteins in the outer coat of the grain, more especially in the aleurone layer, which, in ordinary milling, is separated with the bran and contains about 16% of the total protein of the grain. The nutritive value of a diet containing white flour as the protein source was compared with a similar diet in which one-fifth of this flour was replaced by bran. The result showed an advantage of about 25% in the utilization for growth of the nitrogen in the mixture containing bran, although the bran lowered the coefficient of its digestibility.

Work has also been carried out by the Institute on the milk substitutes used in infant feeding. Biological tests with newly weaned rats were made, at the request of U.N.R.R.A., on the nutritive value of the proteins in a series of "Maltavena" emergency baby foods, designed to replace milk where milk may be unobtainable or in short supply. The common ingredient is an extract of malted barley, which provides about one-third of the total nitrogen, the remaining two-thirds being derived from wheat flour and skim milk powder, and the total amount of protein so arranged as to be about equal to that in human milk. The proteins in foods containing wheat flour and skim milk powder (as well as in another food containing wheat flour and dried human serum) were much inferior in value to those of the milk in the standard diet, but those in a food containing soya flour had a value only very slightly inferior to that of milk proteins. This result is presumably due to the effect of the supplementary action of the proteins contained in the different foods (malt extract, wheat flour, soya flour) included. In addition, the soya preparations provided a useful amount of fat and an adequate supply of B vitamins. These milk-substitute baby foods would, however, need supplementing with vitamins A and D. A report is given on the work of the unit for the preparation of plasma and plasma products administered by the Medical Research Council on behalf of the Ministry of Health. The filtration of large pools of human plasma from hundreds of donors—the original method of operation—has been discontinued, and unfiltered plasma for transfusion is now distributed for drying from pools consisting of plasma from only ten donors. Experiments are in progress for determining the effect on liquid and dried plasma of storage under various conditions. Another investigation concerns the possibility of delaying the absorption of penicillin by incorporating it in fibrinogen products. The Army authorities have presented to the Institute, on long loan, the human-plasma drying-plant used by them during the war. Part of this plant is being erected for the purpose of drying human plasma for civilian needs.

Other studies which have been (or in most cases are being) undertaken by the staff of the Institute include the investigation of certain types of serum antibody described as incomplete, immature, or univalent; the distribution of lecithin in muscle, by separation of various fractions and determination of the lipid constituents; the morphological, and particularly the cytological, characters of the group of myxococci; the cardiac hypertrophy produced by arterio-venous anastomosis; the search for a test to detect the presence of pyrogens and other reacting substances in transfusion material; the chemical changes in ischaemic muscle; the isolation of the specific blood group O substance (antigenic when given intravenously to rabbits and inducing the formation of potent and useful anti-O sera which

have been employed in the examination of A, B and O erythrocytes); the breakdown of fibrinogen under the influence of serum protease; the mutual reaction of tetanus toxin and antitoxin, and many other studies in the fields of pathology, biochemistry, and biophysics. Much work has been done on nicotinamide and related compounds, including an investigation to decide which species of bacteria are most concerned with the nicotinamide supply by the intestinal flora of man, and how variation in diet and administration of drugs affect the composition of the flora as well as the urinary elimination of nicotinamide methochloride.

All members of the Institute staff, with two exceptions, have evacuated their wartime home at Cambridge and have returned to the Institute. The report, which is signed by Sir Henry Dale, the chairman of the Governing Body, records appreciation of the continued collaboration of the Institute with the Medical Research Council.

FUTURE OF THE KING'S FUND

The possible effect upon hospitals of the National Health Service Bill was the principal topic at the meeting of the general council of King Edward's Hospital Fund for London, held at St. James's Palace. The Speaker of the House of Commons, Col. Clifton Brown, presided. He pointed out that the King's Fund was not immediately affected by the Bill, but it was obvious that the Fund would have to take account of the vast changes impending in the hospital system. The fact that, after the appointed day, the Minister would assume responsibility for the ordinary expenditure of the hospitals would set free a large proportion of the income of the Fund for purposes other than those to which it had been for the most part devoted in the past. He reminded the meeting that the King's Fund had never been confined to financial support alone; it had always taken a deep interest in the efficiency of the hospital services, and the Act of 1907 by which it was governed was in wide terms, allowing for the expansion of activities in which the Fund even at that date was already engaged. It seemed clear that the way would be open to the Fund to use its resources to promote progress in all those many directions which lay outside the immediate purview of a State hospital service.

The effect of the Bill upon individual voluntary hospitals, said the Speaker, was regarded with anxiety, but some minds would be relieved by the Minister's declared intention to preserve a measure of freedom and independence throughout the new organization and also by the provision for hospital management committees to have free money to use for purposes outside the State-provided service. The hospital endowments fund, representing the common pool in which endowments and other funds now held by hospitals (other than teaching hospitals) would be put, was to be distributed to the various regional boards, and through them to the hospital management committees, and it was understood that those committees, which might control a number of hospitals in an area, would be able to accept and use gifts of money from outside sources. "This 'free' money will be of great importance to the hospitals as it will prevent the strangling effect of reliance on the State for the whole of the income, with the rules and regulations that must govern such expenditure, while it will still be possible for the public to express in concrete form their goodwill and confidence in the hospital services."

Coming events do not seem as yet to be reflected in financial deficiency. It was reported by the treasurer, Sir Edward Peacock, that the income of the Fund for 1945 had been well maintained. Excluding legacies, the general receipts were £324,095, over £20,000 more than in the previous year. General legacies amounted to £140,615, an increase of £90,000, and a further instalment of £75,000 was received from the Nuffield Trust for special areas. Ordinary distributions for 1945 amounted to £302,500, together with provision for two special grants of £10,000 each.

Reports were presented by Sir Ernest Rock Carling for the Radium Committee, which has maintained the services of the radium pool and the consultant panel of physicists; by Dr. Morley Fletcher for the Nursing Recruitment Committee, which has continued its policy of seeking to augment and assist the recruitment work of individual hospitals; by Sir Hugh Lee

the Diet Committee, and by Sir Harold Wernher for the emergency Bed Service Committee.

Sir Alfred Webb-Johnson, P.R.C.S., said that many had held the view that a change of ownership of hospitals was unnecessary in order to achieve an integrated hospital service for the nation; but if Parliament decided otherwise they must find their efforts to ensure that under a State service the atmosphere of freedom in which so much had been done for the advancement of medical science was preserved.

"We are fortunate in having a Minister of Health who, although determined to carry through bold and revolutionary changes, is ready and anxious to discuss the dangers of such proceedings and how to avoid them. He realizes that safeguards are necessary, and is undertaking to propose amendments on the report stage of the Bill which will give a greater measure of freedom to hospital management committees."

FOOD AND MATERNITY AND CHILD WELFARE

The annual general meeting of the National Baby Welfare Council, which was held at St. Pancras Town Hall on May 21, as addressed by Dr. Edith Summerskill, M.P., Parliamentary Secretary to the Ministry of Food, who announced that she was leaving for the United States next day as a delegate to the Food and Agricultural Committee, which was an offshoot of the United Nations Organization. She felt that this form of international social service on nutrition was essential.

Dr. Summerskill said that for twenty years she had been a practising doctor, and for twenty years she had prescribed medicine, sometimes even for babies, but she felt that her work now was in the field of social medicine. In taking on her post in the Ministry of Food she had made her special task the provision of adequate food supplies for children. Even in these difficult times babies would and could be adequately fed. Immense strides had been made in this respect since the earlier European war, and there had come about a general realization that in the past not enough attention had been paid to the proper feeding of children and expectant mothers, and that they must be better looked after in the future.

The Ministry of Food, which began as a purely wartime expedient, would now be permanent. While rationing continued, children's diet would need to be reinforced with milk and with vitamins as it was during the war, and the expectant mother must have additions to her basic food supply. It was a sad fact that before the war 30% of the babies in this country were bottle-fed, owing in a great measure to the mother getting up too soon and losing the milk. Therefore the care of nursing mothers was an important factor, as well as extra rations and queue priority. Family allowances (Dr. Summerskill continued) were to begin this year; also, from July 21 next, priority milk would be at 1½d. a pint instead of 2d., and cod-liver oil and orange juice would be at reduced prices. These two facts put this country in the forefront in baby welfare. Despite war conditions there had been no serious epidemics; the infant mortality rate had steadily dropped, and rickets, sometimes called the "English disease," was much reduced owing to the attention paid to maternal and infant dietetics. The education of mothers on the proper balancing of the diet was of the utmost necessity. She added that the extra milk scheme was entirely successful and on the whole it had not been abused. The way in which vitamins had been taken up was less encouraging.

In reply to questions from the audience Dr. Summerskill said that the provision of milk for school-children during holidays was a great administrative problem. It was not merely a question of delivering milk to the children's homes instead of to the schools, for it had to be remembered that a large number of children were away during the holidays and the distribution would be extremely complicated. Children who were at home had been invited to go to get the milk, but it was surprising in how few cases this had been done. It was possible that dried milk might be distributed to the parents. She added a word of sympathy with the teachers, who had so many additional duties thrust upon them in connexion with the service of food as to interfere with their teaching duties proper.

Lord Forrester, chairman of the council, said that he had lately visited many countries in Europe, as well as South Africa, Australia, and New Zealand, and he had found almost everywhere a new realization of responsibility towards children. He hoped that the National Baby Welfare Council would be able to send a mission of goodwill to Europe, with the offer of help, advice, and skilled assistance.

Dr. D. H. Geffen, chairman of the Executive Committee, in reporting on the year's work, said that the Council had restarted a series of competitions, one of which had been directed to ascertaining the views of housewives on housing. Exceedingly few women showed any desire for communal living, practically all preferring an individual home of their own.

EPSOM COLLEGE

At the 93rd annual general meeting of the Governors of Epsom College, held on July 5, Mr. Douglas C. Bartley, chairman of the Council, presided in the absence of the President, Lord Leverhulme, who was in America. He referred to the raising of the school fees, a matter over which the Council had taken a great deal of trouble before ultimately deciding to raise them as follows: Sons of medical men: £170 p.a. for boarders, £65 p.a. for day-boys; sons of registered dental surgeons: £175 p.a. for boarders, £70 p.a. for day-boys; other boys: £180 p.a. for boarders, £75 p.a. for day-boys. To show the spirit prevailing at Epsom between the parents and the College, he mentioned that though parents of boys already in the school were not legally bound to pay the increased fees, 90% of those parents agreed voluntarily to do so. Furthermore, out of the 10% who did not do so, 9% were parents who simply could not afford to pay the increased rate. In moving the adoption of the report, the Chairman referred to the loss sustained by the death of Mr. T. Hollis Walker, K.C., an Old Epsomian and vice-president, who served on the Council for 24 years, during which time his wide legal knowledge and experience had been freely placed at the service of the College. On the motion of Dr. Harold Spitta, vice-chairman of the Council, the Governors unanimously elected Surgeon Vice-Admiral Sir Reginald Bond, K.C.B., F.R.C.P., F.R.C.S., a Vice-President of the College as some slight token of gratitude for the valuable services he had rendered as Treasurer during the difficult war years.

Reports of Societies

PROGRESS IN UROLOGY

An address entitled "Urological Reflections" was given to the Section of Urology of the Royal Society of Medicine on June 27 by Sir HENRY WADE, of Edinburgh. In tracing the progress of urology during his own career he said that when he was a surgical youngster urology occupied a very humble seat at the banquet, but to-day it had a well-earned place at the high table. Methods of diagnosis in urology were now so exact, so perfect, that at the end of an examination the urologist did not express an opinion, he stated a fact, which almost invariably proved correct.

Many things accounted for this rise to pre-eminence: the physicist had given urology x rays; the chemist, pyelographic media; the biochemist had made excretion urography possible; the bacteriologist and the clinical pathologist had assisted in diagnosis and treatment. When he was a student the diagnostic methods were almost entirely clinical. In renal surgery diagnostic incision was considered justifiable, not only exposing the kidney but cutting its substance. One in three of the kidneys so exposed revealed no visible disease. In speaking of the introduction of new methods he expressed the view that excretion urography, a most valuable method in the hands of the skilled urologist, had on the whole done more harm than good, for, like a modern operation, its value must not be judged by the cases treated by the expert, but by the results in the hands of the common surgeon. "I suppose there is not one of us who has not seen this method of excretion urography used to delineate a renal tumour or similar disease, oblivious of the fact that the alleged deformity of the contour that is seen in the photograph is the result of the photographing of a running stream which varies from moment to moment like a Highland burn in spate."

The determination of renal function by the physician was most commonly made by carrying out a urea concentration test or similar method. In his own experience the simpler method of blood examination, in which the blood urea was estimated and the urea nitrogen or non-protein nitrogen and creatinine determined, had proved a most valuable diagnostic aid. A method, however, which he would put first of all, and which many younger urologists were liable to overlook, was the examination of the patient's tongue.

In speaking of treatment Sir Henry Wade gave some interesting recollections of his experience as a civil surgeon in the South African war and later as conservator of the museum of the Royal College of Surgeons of Edinburgh. For two years he was pathologist to the Royal Infirmary and carried out all the post-mortem examinations done on surgical cases. In certain of these the operation of prostatectomy had been done,

and he was interested to observe how frequently there was a pronounced degree of hydronephrosis, and how sometimes the renal secreting tissue was reduced to a thin membrane covering bags of water. He found on analysing 50 specimens presented to the museum as illustrating simple prostatic hypertrophy that 10%, unknown to the operator, were the site of carcinoma. If the case was one of simple hypertrophy the conditions were ideal for treatment by suprapubic enucleation, an operation which was then being popularized by Freyer, but in prostatic carcinoma or interstitial prostatitis an attempt at enucleation from above might be attended by serious consequences. At this period the mortality attending the operative treatment for prostatic enlargement was extremely high; even down to 1920 in one institution with which he had been associated it amounted to 25%.

Sir Henry Wade then went on to describe the work of Hugh Young, of Baltimore. When he went to the U.S.A. in 1920 the operation of transurethral prostatectomy was sweeping the country. He himself was drawn to the technique of perineal prostatectomy practised by Hugh Young in all cases of simple enlargement, but this again called for a special technique with special instruments, a very accurate anatomical knowledge, and a well-trained team. A technique very similar was employed by Young in his operation of total excision of the genital tract for tuberculous disease, in which the epididymis, vas deferens, seminal vesicles, and frequently a part of the prostate were removed in one piece.

Renal Tuberculosis

Turning to the role of surgery in renal tuberculosis, he said that it had been his lot to excise many tuberculous kidneys, but in almost all cases he had done this with an apology and a hope for a better treatment in the future. When he was a student and house surgeon hardly an operating day passed without joints being excised or bones resected for tuberculous disease, yet this treatment was now unknown, for it had been shown, by Sir Robert Jones especially, that a better result could be obtained, without mutilation, by conservative means. Why, then, should not a similar result be possible in renal surgery? The underlying process of natural healing was the same in both cases. In both the infection was combated and walled off and the debris conveyed to a free surface and there discharged and the sinus healed. But unfortunately the free surface in the kidney was the renal pelvis, and into it the debris containing tubercle bacilli was discharged to reinfect the kidney at some other part and to infect the ureter and bladder, the process of cure and reinfection continuing until the organ was completely destroyed. Meanwhile a systolic bladder had been produced which by its backward pressure ultimately destroyed the functioning tissue of the remaining kidney and led to death by uraemia. He had had several such cases and had tried various remedies, the most successful of which was transplantation of the remaining ureter into the pelvic colon. He hoped that the day was not far distant when nephrectomy in renal tuberculosis would be required no longer. If it was indicated, the surgeon was under an obligation to care for his patient for two years afterwards and to arrange sanatorium treatment.

Sir Henry Wade closed his address with some sombre reflections, as he called them, on the future of urology.

"My fear for you arises from the tools you have fashioned, the skill you have shown, and the dexterity you possess. Others may seek your aid, asking for your services as a technician, not as a physician. Be warned against this insidious evil. Never examine an organ or a region, examine only a patient. Remember that medicine is an art, not a science, and that you possess many an instrument to tell you when a man is ill, but none to tell you when he is well. Man is not a motor-car, susceptible to the methods of overhaul and repair of such a vehicle. Psychological derangements, particularly in the young female, may simulate actual organic disease. I recall one summer morning meeting in his consulting room in Boston Dr. Harvey Cushing, the father of neurosurgery. With a twinkle in his eye he told me that he had just seen a case sent to him as one of pituitary tumour, and it really was the case of an overworked stenographer who required a six weeks' holiday!"

It was important to bear in mind that the final conclusions at which the urologist arrived were not a diagnosis but a confirmed observation of the presence of an abnormality in the organ he had examined, and from the limited vision of the

specialist he might honestly believe it to be the cause of ill-health, while in fact the ill-health was due to something outside his knowledge. The answer to this was possibly the establishment of a polyclinic or health centre, where a whole-time staff would be available to carry out a complete investigation with all aids known and in all departments of medicine. Such a health centre might be an institution of the greatest value. On the other hand, a so-called diagnostic clinic might simply lead to procrastination and transform the educated clinician into a collector of chits. The majority of ailments of which mankind complained were incapable of exact scientific demonstration.

Correspondence

Demobilized Specialists

SIR,—Medical officers who have just been released from the Services where they had been trained, or were training, as specialists are finding difficulty in obtaining work in civilian life for which they are fitted, and their predicament has been causing us much concern. We are impressed not only by the individual hardship involved, but also by the fact that these men may be driven to abandon their plans for specialization at a time when there is a great dearth of specialists in every branch of medicine and surgery. In this fashion a reservoir of most useful recruits for the consultant service of the future will be lost.

The men concerned fall into two groups. Group I consists of about 800 men who were being trained as consultants, and have perhaps acted as graded specialists. They are about 28–33 years old, and they have either taken, or are preparing for, higher qualifications. They are now acting as registrars at teaching or other hospitals where they are paid £550 plus £100 for maintenance. We propose that their term of office should be extended, if they so desire, until the Bill comes into operation, provided that the postgraduate deans who selected them are satisfied with their work.

Group II is an older group of men who have been qualified perhaps for ten years or more, and some of whom are nearly 40 years of age. Nearly all of them have consultant qualifications. We ask the Ministry of Health to create for these men a number of more senior, salaried whole-time appointments. Since their appointments will occupy all their time, these men will not compete for private practice with the other unpaid assistant physicians and surgeons on the staff of the hospital. Hospitals would be asked how many posts of this kind they need, and the appointments would be made by a small committee in each region. The term of office would end when the new service begins.

We believe that these proposals should in some measure mitigate the uncertainties of the present time, while the country would surely gain.—We are, etc.,

MORAN,

President, Royal College of Physicians.

ALFRED WEBB-JOHNSON,

President, Royal College of Surgeons.

EARDLEY HOLLAND,

President, Royal College of Obstetricians and Gynaecologists.

Bread Rationing

SIR,—Apparently, from the published scale allowances of Bread Units, the school boy or girl and undergraduate on attaining the age of eighteen years is classed as a normal adult, and his or her B.U. allowance per week drops from 12 to 9; while, should he be lucky enough to become a manual worker, he gains 3 B.U.s per week. Increase of growth is possible up to the age of twenty-five years, and in addition to this there is the added strain of scholarship work and the responsibilities of leadership entailed by monitorial and other activities in the one class, which correspond closely to the extra output which is apparently and rightly expected from the manual worker.

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From 1933 to 1939 the figures show that of an average of 10.5 boys: 17 were over 18 years; 77.8 were under 11 years; 15.7 were between 11 and 18 years. Their allowance under the suggested scale would be 9,403.8 B.U.s per week, but during this period they ate the equivalent of 10,009.6 B.U.s per week. Each boy's requirements on an average thus exceeded the suggested allowance by 0.747 B.U.s per week.

From 1939 to 1945 the figures show that of an average of 10.38 boys: 13.9 were over 18 years; 75.7 were under 11 years; 14.2 were between 11 and 18 years. Their allowance under the suggested scale would be 9,457 B.U.s per week, but during this period they ate the equivalent of 11,526 B.U.s per week. Each boy's requirements on an average thus exceeded the suggested allowance by 2.47 B.U.s per week.

Appetite and requirement vary with the individual, and it is impossible to assess within narrow limits, but these figures prove that the average requirement per boy is greater than the suggested allowance. It is of importance to note that just as in 1914 to 1918 the consumption of bread increased proportionally with the reduction of meat and fats, so from 1939 to 1945 a similar increase has occurred. It is fair to expect that if the suggested restriction is enforced, the rate of growth, which in my opinion is a reliable index of the general health of the adolescent, must show a regression.

It has been suggested that the vacuum can be filled by potatoes, which now seem to be the only substitute available without points. The objections to this, which should be obvious, are these: (1) The amount of potatoes which the English adolescent will consume is limited. (2) Recent experience has shown that the supply of potatoes can be very variable. (3) In institutional catering shortage of labour and equipment put a definite limit to the quantity of potatoes which can be handled.

Surely it follows that in any plan which has the interest of the future generation at heart, it would be wise not only to increase the allowance for all adolescents, but also to make one class of all students from 8 to 25 years of age.—I am, etc.,

G. E. FRIEND,

Medical Officer, Christ's Hospital.

Horsham.

Inadequate Feeding in Hospitals

SIR,—The report of Major J. A. F. Stevenson, Capt. Joan Whittaker, and Lieut.-Col. R. Kark (July 13, p. 45) of their inquiry into the adequacy of feeding in Canadian military hospitals hits several nails right on the head, and provides me with a most appropriate excuse for drawing attention to another aspect of the same question. I am a chemist with special interests in the field of nutrition, and a close relative of mine was recently appointed as head cook at an isolation hospital under a local authority in whose public health department I have other contacts. On the evidence which has thus become available to me, I am appalled at the inadequacy of the diets provided. Moreover, while this is admittedly but a single instance of hospital practice, it is most unlikely to be an isolated one, for the two main reasons for the trouble probably hold good in many—perhaps the large majority—of the hundreds of similar institutions scattered about the country.

In the first place, the menus are the sole responsibility of the matron (there is no sister housekeeper), who appears to know nothing, and certainly cares less, about the importance of an adequate and appropriate diet for patients suffering from infectious fevers. The medical officer takes no interest in this side of the hospital administration. In the second place, the cost of "food-plus-medicines" per patient-day is a statistic which is calculated every week; both the matron and the M.O.H. eagerly watch this figure, and obviously take it as one of their primary duties to keep this cost at the lowest possible level. The M.O.H. has often, in his reports to the public health committee, told them how cheaply he runs their hospital for them, quoting the statistic in question as proof. It occurs to no one that the patients' recoveries might well be hastened, the average stay in hospital per patient reduced materially, and a saving effected on the total cost of running the hospital if the diet were improved.

I am certain, on the evidence presented to me, that the recovery of many patients must have been seriously delayed by the gross inadequacy of their diets, both in quantity and quality. Space does not permit me to detail the many facts on which

I base this statement. It will be sufficient if I quote but one. During one continuous period of nearly four months, no kind of green vegetables or fruit was served; and this in spite of the fact that the vitamin C requirement is known to be considerably enhanced in febrile conditions. To my mind this dietary crime is made the more heinous by the fact that practically all the patients in such a hospital are naturally children, who, however unattractive or insufficient they may find their meals, do not realize that conditions could be very different. Even the meals that are served to the nursing staff are dietetically shocking and far too low in calories; all the nurses are in the habit, from sheer necessity, of buying supplementary food outside.

It is high time that the medical superintendents of hospitals appreciated the prime function of diet as a major therapeutic adjunct; that governing boards and controlling committees were taught to recognize that money spent on food is every bit as essential, and yields at least as large a dividend in the form of health, as that which is spent on drugs; and that an interest in the dietetic well-being of the patients should be carried right into the wards, for it is only those who come into immediate daily contact with the patients who are in a position to see whether what the patient is given to eat is not only qualitatively and quantitatively adequate, but is presented in an attractive and appetizing form. Some of these points have already been made in the recent memoranda of King Edward's Hospital Fund, and I do not suggest that there is anything original about the sentiments expressed in this letter. I do believe, however, that the matter is one about which something would have been done long ago if only the fierce light of publicity could have been made to beat upon it soon enough and for long enough, and I should like to think that the paper by Major Stevenson and his collaborators will result in similar studies being made in British hospitals, and the directing of attention to a very bad business.

Since publication of my name would probably result in local identification of the hospital to which I refer, I will ask you not to publish my name and address, but I enclose my professional card.—I am, etc.,

"DIETIST."

Tuberculosis under the Bill

SIR,—In your annotation of July 6 (p. 20) reference is made to the anxiety felt lest the arrangements under the new Health Service Bill for dealing with the tuberculosis problem should prove a retrograde step. The intentions of the Minister are not yet stated in detail, but the proposed division of responsibility for the various aspects of the new scheme carries a serious risk of disruption unless proper co-ordination can be achieved. This will not be easy, since the established principle of control of all aspects of each case by the tuberculosis physician may conflict with administrative arrangements for the provision of certain necessary facilities. Thus we have the prospect of the clinical, environmental, insurance, and rehabilitation aspects of each case being dealt with by separate authorities. Into this complicated pattern a complete tuberculosis service must somehow be fitted without interfering with the physician's control of his patients, or his freedom to guide them through the many difficulties with which they are faced. The danger lies in each of the authorities concerned attempting to assess the needs of a case for themselves, possibly with separate medical advisors at each stage, instead of acting directly on the basis of an assessment made by the tuberculosis physician himself, whose decision should be final. It is essential that this latter method be adopted, and practical arrangements must be made accordingly.

The first requirement is that all cases of the disease, of any type, should be referred to the new hospital chest clinics, so that the environmental aspects of each case may be dealt with by the physician to that department. He will, in any event, be dealing with the pulmonary cases which form by far the greater part of the problem, and while leaving clinical control of non-pulmonary disease in the hands of his colleagues, he can most easily supervise social and preventive measures as a whole. For this purpose he should have direct control of the nursing and health visiting staff of his clinic. The duties of such staff are becoming increasingly those of out-patient department nurses, associated with social work in the home, in about equal proportions. The proposal in the Bill is that all health visiting

staff shall be employed by the local authority. There does not, in fact, appear to be much justification for this; it would be better if they were employed by the hospital authority itself. Whatever the final decision may be, they should certainly work full-time at the chest clinics, under the control of the clinic physician. The local medical officer of health, responsible for environmental conditions generally, would receive reports from the clinic, as he does now from the dispensaries, whether it is under the same authority or not.

As regards financial aid, it appears that the tuberculous patient will be paid from a common insurance fund. The assessment of need, however, should be carried out at the chest clinic, where it is hoped there will be adequate welfare staff to deal sympathetically with such matters under the direction of the physician. Rehabilitation and placing in industry is to be the responsibility of the Ministry of Labour; already memoranda and forms are circulating. Routine form-filling will not do in this case. The tuberculosis physician should have detailed knowledge of posts available in local industry under the quota, and should be able to settle questions of placing directly with the D.R.O. Sheltered employment is to be provided for the less fit. Units of this kind must be regarded as having more a clinical than an industrial function. Here particularly the physician should have control and should exercise a general supervision in all medical aspects of the scheme.

Altogether recent developments and proposals for the future offer much that the tuberculosis service has sought for years past: a much closer contact with general medicine, financial assistance for the patients, and schemes for protected conditions of employment. It is not the principle that is questioned, but the possibility of a ponderous administrative machinery breaking down what should be a unified scheme into uncoordinated sections. This can only be avoided if officials of all kinds regard themselves as a single group concerned primarily with the welfare of the patient, no matter what authority employs them. Above all, the tuberculosis physician must be in control at all points where medical direction is essential. If the Minister will ensure this when the time comes for deciding practical details, all may yet be well,—I am, etc.,

Theydon Bois, Essex.

HUGH RAMSAY.

Duodenal Ulceration

SIR,—Mr. Harry Freeman is to be congratulated on his interesting paper (June 29, p. 980). His description of the subject presenting symptoms of duodenal ulceration as "an extremely sensitive and hyper-irritable type in a constant state of nervous tension . . . above all he is stomach conscious" is the most complete and accurate picture in a few words that I have yet seen.

How many of even our most eminent consultants remember this in dealing with cases of this type? Mr. Freeman's ligature operation, gastrectomies, and gastro-enterostomies will still be required, as well as "medical treatment"; but his statement regarding gastrectomy, "the creation of a very grossly distorted anatomy and a grossly deranged physiological function of the stomach does not seem rational in the quest for a cure of a condition the aetiology of which is still unknown," is surely a lamentable fact.

Is it too much to hope, that—remembering Mr. Freeman's description of the type—the key to the problem lies in the hands of the psychiatrist?—I am, etc.,

Newark.

J. J. KENNEDY.

The Hypochondriac's Treatment

SIR,—I venture to comment on the remarks of Drs. Summer-skill, Cox, Lindsey Batten, and Crichton-Miller in regard to cases of hypochondriasis treated under private medicine or under a State system. Surely the main point is that hypochondriacal patients are ill, and should have whatever treatment or sympathy is available, whether it is paid for and sought by rich private patients or by poor patients who are entitled to national State medicine. Rich patients and poor patients of a hypochondriacal type are not to be cold-shouldered because they are very rich or very poor. Surely the time has come when the actual needs of the patients come before the prejudices of caste or the narrowness of social theories.—I am, etc.,

London, N.W.11.

L. S. WOOLF.

SIR,—In adverting upon our new charter of liberty I seem, unintentionally, to have opened a discussion on the hypochondriac's treatment, and I must now endeavour to set myself right with Dr. H. Crichton-Miller (July 13, p. 62). I fear we have all used the word "hypochondriac" too loosely. It covers two kinds of patient, and though the line of demarcation is a little hazy most people with "functional symptoms" can, I think, after a few interviews, be placed where they belong.

Those in the first group are, very nearly, "conscious delinquents." They use their symptoms quite flagrantly to evade duties and secure sympathy. They exploit friends and relations. They try at once to use and to irritate their doctors as a spoilt child will use and irritate its mother. They have no intention of getting well. These people are usually, though by no means always, well off. I do not believe they are very numerous, and their chief importance lies in the ammunition they provide for Socialist propaganda. *Tout comprendre c'est tout pardonner*, but we are only human, and as they discard their doctors without compunction it seems to me at least excusable, on occasion, to discard them. To tell one of them plainly to seek another doctor is a grand tonic for self-respect, and I know nothing which gives a livelier sense of the freedom we still enjoy. It is well worth its price in guineas. I suspect, too, that it is good psychotherapy.

The other kind is the anxious and fearful person of every class and income level. These people do, indeed, bulk large in every practice. There are days on which I seem to have done nothing else than to attempt to dissect the clinical pictures they present, evaluate their symptoms for them, and try to allay their fears. I confess I believe they are very often incurable, whether by psychologists or anyone else, but I am certain that with wiser upbringing at home and more imaginative and courageous medical advice in childhood and youth, many of them need never reach the sad state in which we find them. Typically they are people who prefer security to adventure, integrity of body to integrity of soul, dependence to independence. They would sooner save their lives than live them, and in their eyes the unforgivable medical sin is to fail to discover or disclose a danger, to accept or, worse still, advise the, taking of a risk. Since their philosophy is the familiar guiding principle of British bureaucracy, and since bureaucracy is grasping both medicine and education, I fear their numbers will greatly increase. Often enough their one friend is their doctor, but he must have time to listen, time to advise, time to do it again and again, and, unless he be a saint, some direct incentive, such as undivided responsibility and perhaps even a fee to encourage him to lift and carry this heaviest of professional burdens. To disclaim responsibility for them is in the highest degree unjust, but I shall be astonished if the service does anything more for them than to send them round in circles from one irritated specialist to another, until they sicken of it and seek whatever help may remain to them outside.—I am, etc.,

Hampstead, N.W.3.

LINDSEY W. BATTEN.

Protection against Sexual Offences

SIR,—When sentencing a man to two years' imprisonment for assaulting a six-year-old girl at Birmingham, Mr. Justice Croom-Johnson said that this was the maximum sentence he was allowed to pass, and added, "Our law—and at the risk of being misunderstood I intend to say it—does not pay sufficient attention to the protection of women and girls with regard to many sexual offences." It is to be noted that the man upon whom he passed this sentence had been released three weeks previously after serving eighteen months in prison for a similar offence.

It is without any sense of criticism that I heartily concur with the learned judge and agree that the law does not offer any protection against this type of offence. Men suffering from sexual neuroses are sentenced to imprisonment, where they have no treatment whatsoever, and after a period of years (during which they suffer sexual deprivation) they are released with increased urges and commit the same type of offence again. It is obvious that incarceration does not affect the man's condition—except adversely—one iota. The only solution to this problem would be to give the prisoner a life sentence or else to regard the behaviour as an illness (which every psychiatrist knows it is) and treat it.

it is customary for judges to say that if treatment is necessary it will be given in prison. I have taken the trouble to wire from patients I have had who have served sentences such offences and the reply has always been "None whatever." A short while ago there was a correspondence in the *Journal* on the neuroses due to confinement in prisoners of war, and the general opinion appeared to be that being immured did produce abnormal mental states. How much sense is there in putting the already abnormal in a place where—unless they are treated—they will become more so?—I am, etc.,

London, W.1.

CLIFFORD ALLEN.

Treatment of Bacterial Endocarditis

SIR,—The medical world is now much intrigued by the result of treatment of bacterial endocarditis by penicillin and by the appointing results of the sulpha drugs. We have been over-one to label diseases by certain names and to refuse to recognize any variation which did not comply with certain definitions. One hears men discussing the exact types of aemias, nephritis, and many other conditions in which there is no clearly defined line of demarcation, instead of recognizing the pathogenesis in process. It is all very well talking about bacterial endocarditis as if it is a *fait accompli* and starting off on there to treat it, but it is far more important to try and analyze how it comes about, for once that is understood our lines of treatment may be much modified.

Bacterial invasion of the blood stream in many people is almost daily occurrence, but it does not lead to their deaths, because the defence mechanisms are able to destroy the organisms, either in the blood stream or in such tissues as they may lodge in, as is seen in abscesses, nephritis, arthritis, etc. For organisms to enter the blood stream they must have a point of entry, and they must also have the power to multiply in such places where they are uninfluenced by any means the body has to destroy them. In many of these cases the breeding ground is in such a protected focus that the defence mechanisms are unable to overcome the invaders. This we see in infection within the cavity of the uterus, tonsillar crypts, between the gums and the teeth, within the cavity of a dead tooth or nasal sinus, so we must look upon these foci as being guarded by a trap-door or valve through which the micro-organisms can slip but nothing can get in to irritate them.

In the majority of cases the defence mechanisms of the blood and tissues are able to destroy invaders before they have done too much damage; but once this power is lost the organisms overwhelm the host, as is seen in fatal cases of septicaemia, of which bacterial endocarditis represents a certain proportion. Of the large number of cases of septicaemia from puerperal infection only a small proportion develop bacterial endocarditis. In such conditions we must suppose the myocardium and valves to have become sensitized, or that the strain of organism had a specific elective affinity for those tissues. Some of the commonest causes of severe and fatal bacteraemia result from dead teeth, extractions for pyorrhoea, removal of septic tonsils, as well as uterine infections. With regard to root abscesses, which are frequently devoid of pain, and so give no warning of their presence, they have no outlet for the infection except into the blood stream.

The removal of teeth for severe pyorrhoea is always a serious undertaking unless a cleaning-up process is carried out beforehand to reduce the infection, and then only a few teeth must be extracted at a time and much time be allowed to elapse before others are drawn, to escape the negative phase. It may even be desirable to give a course of vaccine treatment to boost up the defence mechanism, especially if many teeth have to be extracted at once. This same procedure may be advisable in the removal of tonsils, where the hunter-guillotine is used, as there is a risk of forcing organisms into the tissues; but where a clean dissection is employed this danger is much reduced.

On the whole the defence mechanisms of the blood are able to deal with a few stray organisms entering the blood stream, but if they should come in in overwhelming numbers, this mechanism may be taxed beyond its power, so that organisms multiply within the blood stream with fatal results. In the presence of any septic focus organisms are liable to enter the blood stream daily for a prolonged period with little to show for it, but with the extraction of teeth and the removal of tonsils or some flare-up in the focus they may then enter in overwhelming numbers.

With this view in mind the approach to the treatment of bacterial endocarditis should be totally different from saying, "Here is a case of bacterial endocarditis, let us give it penicillin." The first objective should be to try to find where the organisms are coming from and close the door by the removal of the focus, as those that are already in the blood stream will

be much more easily dealt with if a fresh supply is not coming in daily. There are some who doubt the ability of organisms to breed in the blood stream and maintain that bacteraemia is only kept up by continuous entry. So in spite of the ill condition of the patient it is sound policy to remove any source of entry. Nasal sinuses, especially when blocked, are very apt to be overlooked. I feel sure that such lines of treatment would lead to a greatly improved percentage of cures.—I am, etc.,

Ballarat, Victoria.

SYDNEY PERN.

Allergic Response to Penicillin

SIR,—The following account of what appears to be an allergic phenomenon due to penicillin may interest your readers.

About fourteen months ago I was making a bronchoscopic examination on a "clean" case and the patient happened to cough into my right eye. I omitted the usual prophylactic precautions owing to pressure of work, and next day I had a mild conjunctivitis. This was swabbed for purposes of culture and examined by an ophthalmic surgeon, who found no injury to the cornea and advised penicillin instillation if the culture showed penicillin-sensitive organisms present. These were found, and penicillin in normal saline at a strength of 1,000 units per ml. was instilled, a drop or two at a time, every three hours.

My eye became steadily worse, both lids becoming red and swollen so that I could only just open them actively, and the surface of the skin of the lids and the free margin began to desquamate. Slight irritation of the skin surface of the inner canthus of the other eye also occurred. After three days, on the advice of the specialist, the penicillin was stopped and "albicid" (sulphacetamide) instilled instead—I forget the strength. The condition of the eye and lids immediately improved and had returned to normal in forty-eight hours, except that some desquamation continued.

About two months later, a recurrence of the irritation, especially of the lid margins, took place. Penicillin was tried once more, resulting in an immediate flare-up of the lids to their former condition. All this subsided as soon as albucid was substituted for the penicillin. About three months later, there was a slight recurrence of the irritation, which cleared up with albucid. I had no further trouble until a fortnight ago.

I had been in hospital for a week, after an abdominal operation. I have a very old left mastoid sinus which occasionally discharges, and it was decided to culture it with a view to local treatment while I was an in-patient. Very few organisms were present, but as they were mixed and all seemed penicillin-sensitive, insufflation three times daily of penicillin and sulphathiazole powder was suggested, to which I agreed.

Twenty-four hours after the first dose into my left mastoid cavity, my right eyelids became red, swollen, and sore—the pain being felt as a constant burning sensation on the skin surface—not unlike that following over-exposure of the lids to sunshine. The lid margins were irritating, and after twenty-four hours slight desquamation started. I am told the conjunctiva was infected, but at no time did I experience the symptoms of conjunctivitis.

The insufflations continued for three days and were then stopped. Throughout this time the lids remained "inflamed" so that visitors kept remarking I was getting a sty. The irritation, burning, and scaling also involved the right eyebrow, a small area of the right forehead, a small area of the right cheek immediately below the eye, and the inner canthus of the left eye. At the same time a similar condition occurred in the meatus of the left ear and behind the lobe of the ear.

There was never any local site of tenderness nor the massive lid oedema that generally occurs with a sty, and as I was convinced it was an allergic phenomenon, no local treatment to the eye was carried out. The insufflations were stopped five days ago and the condition of the eyelids immediately improved. Two days later, the "stain" of penicillin was still present on cleansing the left ear, but was greatly diminished. The meatus was far less irritating and the burning and discoloration of the eyelids had subsided completely, although there was slight irritation from the finely desquamating skin of the lids, chiefly in the region of the inner canthus.

For the past two days I have been completely free from irritation or any other symptom both in and around my right eye and in my left ear.

Another point that may have some bearing on the two earlier recurrences of this unusual condition was that I was at that time penicillin officer in the hospital in which I worked and handled penicillin daily in one form or another, and it is quite possible that a trace of penicillin at that time was the cause of the flare-up. If penicillin can cause this type of reaction around an eye, it is equally likely to cause it elsewhere in the body where penicillin has been applied locally, and this should be borne in mind.—I am, etc.,

London, E.1.

W. R. WELFELY.

Varicella Herpetiformis

SIR,—I was interested in the memorandum on varicella herpetiformis by Dr. P. H. Peterson and Dr. S. A. B. Black (May 18, p. 762) because of a recent case here. This sparsely populated district in N.W. Canada is isolated by over 60 miles (96 km.) of forest from the nearest other settlement. In April it is completely cut off by the spring thaw and the break-up of ice in the rivers. There is not even a mail service during this month. It is, therefore, almost as much an island community as the Shetland Isles. With the exception of the cases described there have been no cases of chickenpox or herpes zoster in this community for the past 15 months.

Case 1.—April 7, 1946, I was called to see a very mild case of chickenpox in a 2-year-old girl. The family had moved into this district from a village 180 miles (288 km.) away, seven days previously. The child had been playing all afternoon with a family of three cousins, none of whom had had chickenpox, on the day the rash was first noticed, April 6. There was no further contact between the families till this case had cleared up.

Case 2.—April 15, the eldest of the cousins, aged 6, developed a typical well-marked herpes zoster over the left lower ribs. There was no pain or malaise.

Cases 3 and 4.—The two younger cousins, aged 8 months and 2 years, developed moderately severe chickenpox.

Since all other sources of infection can be excluded in this isolated community, it seems much more likely that Cases 3 and 4 contracted chickenpox from their brother's herpes than that they contracted it from Case 1, and developed it simultaneously after an incubation period of 24 days. It will be interesting to see if the boy who had herpes will prove immune to chickenpox when we next have an epidemic. It is remarkable that he did not catch it from the other two cases in the house if his herpes had no connexion with chickenpox.—I am, etc.,

Keg River, Alberta.

MARY PERCY JACKSON.

Migrainous Headaches

SIR,—Dr. Wilfred Harris in his letter (July 6, p. 24) seems to miss the point of my criticism of his paper. If his operation is successful he will get not analgesia of the cornea, but complete loss of sensation. This is such a serious state of affairs that it should be stressed. The palliatives he suggests are excellent in themselves, but how can a man or woman continue to use them if he or she is to live a normal life? This anaesthesia of the cornea will last for ever, or else the neuralgia will return.—I am, etc.,

Plymouth.

CECIL B. F. TIVY.

"Drug Eruption" following Sodium Pentothal

SIR,—With reference to the case reported by Dr. G. A. Grant Peterkin (July 13, p. 52) of skin eruption following sodium enthal, two cases of a somewhat similar nature occurred during my service as anaesthetic specialist at a British military hospital in India. Both were healthy British soldiers undergoing minor orthopaedic procedures on the same day. One received 0.75 g., the other 0.5 g., pentothal. On the following day, each patient had a temperature between 100 and 101° F. (37.8 and 38.3° C.), an urticarial rash, sore throat, and coryza. These symptoms disappeared within forty-eight hours. In investigating these cases, I had samples of sterile, distilled water examined from the same batch used. These were manufactured by an Indian firm of druggists. The pathologist reported the samples to be heavily contaminated with *Bacillus subtilis*.—I am, etc.,

London, W.4.

DONALD BLATCHLEY.

Black Tongue

SIR,—The letter on this subject (July 13, p. 63) prompts me to record an experience of my own. It happened twenty years ago when I was called early one morning to see a woman patient who was in a great state of alarm on finding her tongue to be intensely black. There was nothing else the matter and there appeared to be no cause. There was only one possible origin and that was the eating of boiled eggs that morning. I was able to allay my patient's fears by suggesting that the

blackness was due to the sulphur in the eggs and that it would pass off in the course of a short time. That is what did happen. I also suggested that she should repeat the experiment after the lapse of a few days. This she did, and the black tongue reappeared. She had, of course, eaten boiled eggs many times before but had possibly never noticed this particular effect on any previous occasion.

My book of notes on *Curious Happenings* has recently been stolen, and I am unable to make any addition to this simple statement of fact, except that I have noticed the relationship between boiled egg and black tongue on several occasions in other patients, but the blackness has never been of the same intensity as in the first case.—I am, etc.,

Chelsea, S.W.3.

A. R. EATES.

Health Service Bill

SIR,—Within a month or two we may expect to see the National Health Service Bill reach the statute book, unaltered in all essentials. There has been widespread talk of a "refusal of service" in such a case. This obviously does not mean that we shall refuse to attend the sick at all, but simply that we shall refuse to attend them under the provisions of the Act but will continue to do so as private or Public Medical Service patients. What will be the economic effect on the Government, on the public, and on ourselves? The Government will gain enormously. It will, directly and indirectly, draw vast sums from the public without the obligation to pay the doctors a single penny. The public will be very little affected. It will receive the same medical treatment as heretofore. Its economic position will be so much affected by the compulsory Government levies that it will receive this treatment either gratuitously, or at a mere fraction of its former fees. The doctors will be the only losers. They will do the same work as before at greatly reduced rates. In addition, as there will be neither a mileage nor a drug fund, their expenses will be appreciably increased. So far as the Government is concerned, the situation can certainly be prolonged indefinitely; as regards the public, probably so; as regards the doctors, there is a definite time limit, which I put at not more than six weeks.

My argument is this. Except so far as purely cash practices are concerned, we live in any given quarter on the takings of the preceding quarter. For the first three months of the "strike" we shall therefore be able to subsist comfortably on previous earnings, but after that we shall be in dire straits, having to carry on largely on bank overdrafts. It must also be remembered that after the "strike" is settled, one way or another there will be nothing forthcoming from the Government until the end of that quarter, and that the longer our resistance is prolonged the worse our plight will be. For that reason I put the duration at not more than six weeks. The levy of £25 head now being called for by the B.M.A. does not affect the situation one way or another. It represents as nearly as can be one week's earnings of the average doctor (£1,300 p.a.). It means that we pay in one week's earnings now with the prospect of getting it back in instalments later on. We should be precisely as well off if we paid the same amount into our bank against the coming "rainy day." Such additions as the B.M.A. may be able to make to it are negligible considering the number of doctors concerned.

Is it probable that six weeks' refusal of certificates, for that is what resistance practically amounts to, will bring the Government to its knees? I regret to say that I do not think so. In the first place, the Government, by eliminating the friendly societies, has left itself entirely free to determine what form of "sick certificates" it will require. In an emergency, and for a short time, it might consider the production of a recent prescription or of a freshly issued bottle of medicine (neither of which we can refuse) to be enough. Further, by refusing to accept Government pay, we shall have obligingly provided it with a fund large enough for it to face a certain amount of fraud with equanimity.

My regretful conclusion therefore is that we shall be well advised to think twice or three times before embarking on a plan of action which will enrich the Government, impoverish ourselves, and have no decisive effect. What other possibilities there are, I will not attempt to discuss at present.—I am, etc.,

Andover.

J. A. BALCK-FOOTE.

SIR,—The decided opinions of Dr. J. V. Dockray (June 29, 1939), based on political conservatism and the desire to uphold the dignity and nobleness of the profession, provoke a reply. He states: "organized refusal to work the Bill is a rife." I doubt it. The essence of a strike is the withholding of one's labour. It is one of life's thrills that has been enjoyed by many who are thrusting the new health service upon us, and an adventure on which many doctors would, for various reasons, hesitate to embark, however modified the "strike" might be. Refusal to serve under contract with the new employing authority cannot be termed a strike if the Act leaves all of us free to engage in private practice.

It is generally agreed that our medical services will never be withheld. If we revert to private practice, giving the assurance that every sick person will be attended, thereby rendering to the community the essential service for which we were trained, up to that point there is no strike. But certification to enable people to draw statutory sick benefit is also an essential service under modern conditions, and if even as private practitioners we withheld that service, that would be a partial strike, and perhaps the extreme limit to which general practitioners would go. It is the form most likely to meet with success, and is true to the pattern of the workers' strike in that it would primarily embarrass the employer and secondarily cause inconvenience to the community. If carefully planned it need only be of short duration, thereby minimizing the hardship to the people. Dr. Dockray states that "the great majority of the people are in favour of the Bill." My feeling is that the masses are innocent and passive spectators in the present medico-political struggle, and will not express themselves sufficiently unless under the stimulus of some impending inconvenience. If Government and people failed to respond after several months' notice of our intentions, our subsequent action might be considered morally justified. The distribution of public funds would be no responsibility of ours.

If such action were timed to commence on "the appointed day" the chances of success would be good, even in industrial areas. Existing economic conditions are likely to prevail for some time, and recent years have shown that the masses are willing to pay for medical attendance when they are able. Arising from the scarcity of commodities and the abeyance of the evils of the instalment system, the display of bank-notes in surgeries is quite embarrassing. With a country full of bank-notes and full of disease it is hard to imagine a set of circumstances better calculated to ensure success in the sale of medical attendance. But success would be uncertain unless under an organization where central instructions demand peripheral obedience. Mere promises of action by the rank and file are apt to collapse as a result of mutual suspicion and distrust.

The impact of the National Health Service Bill has brought the subject of trade unionism into practical medical politics, as it is important to ascertain the degree to which collective action may be expected to function in an emergency. It may be anticipated that the early years of the operation of the new Act will be very toilsome ones for many general practitioners, pending the training of a sufficient number of recruits. Cases of hardship are likely to arise, and something like trade union methods may be necessary to ensure that a practitioner with a just grievance can rely on the support of his combined fellow-practitioners.

In the matter of collective bargaining we do not appear to have had any distinctive successes in the past. The Spens Committee has shown (perhaps not yet to the satisfaction of the Minister of Health) that for many years general practitioners were underpaid, yet in spite of approaches to successive Ministers of varying political convictions we observed during the inter-war period the movement of the capitation fee from the ceiling down. And there exists in the mind of the layman a delusion that the B.M.A. is a very powerful trade union. Observe his look of mingled suspicion and incredulity when he is informed that the B.M.A. is not a trade union at all. He does not know, and many members seem to be unaware, that the Memorandum of Association of the B.M.A., confirmed by the Chancery Division of the High Court of Justice, contains a prohibition as follows: "Provided that the Association shall not support with its funds any object or endeavour to impose on or procure to be observed by its members or others any

regulation restriction or condition which if an object of the Association would make it a trade union."

There already exists what may be termed in these columns "a certain union," with a membership that is far from negligible. Is it too much to hope, in these critical times, that a *rapprochement* might be effected in an effort to promote concerted action? The profession, having lost a certain amount of freedom, is forced to consider how far, in the interests of a shoulder-to-shoulder system of defence, it is prepared to submit to a self-imposed dictatorship within its own organization. General practitioners already have the framework in the Insurance Acts Committee and the Panel Committees. The personnel of the existing I.A.C. could, with their own assent and the approval of practitioners, assume the necessary functions as a collateral activity. Members would be asked to bind themselves to act in accordance with instructions received. The financing of such an activity would presumably (at the beginning) be a legitimate charge on the National Insurance Defence Trust. A questionnaire might be sent round. Answers would vary according to temperament, politics, religion, social consciousness, etc., but the present seems opportune to sound the profession on the subject.—I am, etc.,

Glasgow.

J. N. JAMIESON.

SIR,—I should like to congratulate Dr. W. Edwards (July 6, p. 27) on his splendid letter. I agree with every word of what he says; in fact, I made a similar plea as strongly as I could at the last Special Representative Meeting.

The issue before us is a simple one—it is a moral one—the choice between good and evil. The methods suggested in the Bill will lead inevitably to evil for the patients and ourselves. We must stick to our guns to maintain freedom in this country, and if we do we shall win. There are two ways of doing this. *First*, that every medical man at once send in his guarantee of at least £25 to the Guarantee Fund so that the profession can help those who may be temporarily in financial difficulties as a result of their courage. *Secondly*, at the appropriate time every man and woman in medicine who realizes the urgency of the great issue at stake must guarantee not to join the new service. I have no doubt that the majority of doctors in their heart of hearts disapprove of the totalitarian methods of the Bill.

There is no need to strike. We can continue to treat and serve our patients. All we have to do is to refuse to join the new service, and from the Guarantee Fund to back each other up and maintain our unity—if we do not, every one of us and every one of our patients will live to regret our failure to stick to our moral principles.—I am, etc.,

Reading.

S. F. LOGAN DAHNE.

Pay-beds in a Municipal Hospital

SIR,—It may interest your correspondents to know of an experiment in the organization of pay-beds that has been successful here for fifteen years. Each general ward in this hospital contains 30 beds, and has three side-wards which are utilized for the nursing of cases requiring isolation, privacy, or special care. The first full-time medical superintendent introduced their utilization, when not needed by ordinary hospital patients, for private patients who paid a weekly charge to include all investigations and treatment, including operation. This was so successful that when I took over nine years ago we introduced a further block of 20 single rooms on the same principle. The rooms are available to anyone, on their doctor's recommendation, who cares to pay for them. They are also used for ordinary ward patients when the side-wards are otherwise occupied (at the moment a large number are being used to house an overflow from the maternity department). Patients admitted to these rooms are treated medically as any other hospital patient, they are under those members of the staff who see them as out-patients, or to whom they are referred by the medical superintendent. The terms of appointment of consultants to this hospital contain the proviso that they shall see and treat any patient in the private ward at the request of the medical superintendent, this without special fee, but that where the consultant's advice is requested by the patient, or the patient's own doctor, then the consultant can charge any fee he desires. This applies also in the case of any patient sent into the private ward at the request of the consultant.

This system has worked smoothly and to everyone's satisfaction. The patients can obtain the privacy they desire if they care to pay for it, the facilities are available for other patients where, in the opinion of the medical officers, such isolation is indicated on medical or other grounds, and they provide a number of beds for fee-paying private patients. There is no control as to fees charged—they have varied from three guineas to a hundred. No salaried member of the staff may charge fees.

Although it bears no relationship to the above, I should like to comment upon the remarks of Dr. G. C. Pether (July 13, p. 65) concerning administration in municipal hospitals. I have no hesitation in summarily dismissing from hospital any patient who is abusive, unnecessarily rude, or obstreperous. Where these characteristics are due to their illness we transfer them to a side-ward, or when mentally deranged to a mental observation ward in another hospital. I have a "black list" of patients so discharged whom I refuse to admit again to hospital. In each case I note the reasons for such abrupt dismissal on the case card, giving names, times, and instances. So far no patient so dismissed has had the temerity to refer the matter to the hospital committee.—I am, etc.,

H. I. DETTCH,
Medical Superintendent.

Halifax General Hospital.

Socialism and the Pay-bed

SIR,—While sympathizing with the "refined, sensitive, and intelligent" mentioned in Dr. G. C. Pether's letter (July 13, p. 65), who will doubtless suffer agony in a public ward, whether the next patient is "foul and obscene" or not, I cannot desist from pointing out that our Hippocratic oath should protect not only those who can pay for a private bed but also those who cannot. In my experience, the refined, sensitive, and intelligent occur just as frequently in the one class as the other, and no patient, even if not very refined, cares for that other patient who is so foul and obscene. The first and most pressing need is a sufficiency of single beds for patients disturbing to the ward. It is scandalous that sick people, trying to get better, should have their days and nights made hideous by the worst horrors of illness and death, not to mention obscenity.

On the other hand, the case of the patient who wishes to pay for a single room is one which must be considered, not only because of our oath, but because large numbers will refuse absolutely to go into a general ward—and what are we to do with them? Are we to operate upon them in private houses or shall we have mobile units for operations? Something will have to be done, as the patient is at liberty to refuse to enter a State hospital, and we cannot let them die, even if they do go on strike.

Actually, the State should supply the mobile units free of charge, as the poor have as much right as the rich to refuse to enter a hospital and can more often base their refusal on appalling experiences in the past.—I am, etc.,

Milton.

M. G. H. EDWARDS.

SIR,—The resolution of the association representative of medical officers employed whole-time by the Middlesex County Council (June 1, p. 847), that "the pay-bed system in hospitals should terminate altogether; patients should receive extra privacy, etc., solely on medical grounds" would have come better from an organization that had first passed a resolution that its own members would no longer take advantage of the privacy of side-wards when they themselves are sick, unless, of course, they are afflicted by a malady that demands extra quiet.

If I may spend as I wish when I am well (which seems pretty doubtful), why may I not do so when I am ill? Are invalid luxuries, such as grapes, to be prescribed "solely on medical grounds" by the new medical priesthood?—I am, etc.,

London, W.1.

A. PINEY.

In the Words of Eliza Doolittle

SIR,—Perhaps you will spare me a little more space to reply to Dr. A. S. Barr and Dr. E. Brauer (July 13, p. 67). Let me say at once that I regret having misjudged Dr. Barr's intentions and willingly apologize to him for any unkind assumptions on my part that may not have been justified. However, I still think that the figure of £1,500 quoted by him appeared to be

an essential part of his argument and that it suggested an attempt on his part to prejudge the Spens Report and the probable remuneration under the new health scheme. Despite the advice of the B.M.A. Council, one has heard too many of our colleagues complaining bitterly to the public that the Government intends to grossly overwork and underpay them, and I took this to be another piece of this admittedly bad propaganda. If Dr. Barr had mentioned the figure of £10,000, his whole argument would have collapsed, for I will bet my boots that every member of his Spens Committee would have accepted the job on the spot, door-bell and all.

But surely, Sir, the doctors in industrial districts must partly blame themselves for their conditions and their poor returns for their work. I am not unfamiliar with working-class practice, and there are several ways in which I think they could help themselves, provided always that they can co-operate and not indulge in cut-throat competition. For example: mutual arrangements to "look-out" for one another on half-days and alternate Sundays; evening surgery hours from, say, 5 p.m. to 7 p.m., instead of from 6 p.m. to 8 p.m., or even later; arrangements with local chemists to dispense medicine for their patients; refusal to accept club patients for less than 6d. per week (a sum that can be afforded by anybody except in the case, perhaps, of unemployed persons with large families); the fixing of a reasonable minimum fee instead of the fantastic one shilling, including the medicine, which was the rate in the practice in which I once worked as an assistant; and so forth.

Finally, it may interest many young doctors to know that a few months ago, when seeking a place to settle after being demobilized from the Forces, I was assured by a well-known medical agent that the only hope of making a large income was to go to the industrial Midlands or North. He said that practically all the small practices were in the over-doctored South. The advertisements in the *B.M.J.* certainly suggested that he was right, but I decided on pure air and poverty. However, either the agent or Dr. Brauer must be wrong, and it would be interesting to know if one of the official Spens Committee could enlighten us on the point.—I am, etc.,

Margate.

M. CURWEN.

Psychology in the Child's Education

SIR,—I hope that in his doubts about the wisdom of "teaching the teachers" Dr. Michael Fordham (July 13, p. 62) is referring only to that type of teaching which consists of dogmatic statement. The admitted fact that we, as doctors, have much to learn from the teachers about the child does not in any way controvert the fact that teachers have much to learn from us about the child. Dr. Fordham reminds us that we are "living in glass houses," but if that is so, pulling down the blinds may be as unwise as throwing stones.

The education of the child is society's process of arming and training him for a healthy life in the fullest sense. If that process fails in any respect its failure is in some part the concern of the doctor. An examination system which, by demanding too-early specialization, prevents a child from being educated in accordance with his aptitudes; a worship of "scholarship prestige" which drives the child along an academic route of study when his temperament is far better suited to a practical career; a concentration upon the acquisition of facts rather than upon the development of wisdom and judgment—all contribute their measure to those physical and mental ills which are born of frustration and maladjustment in adolescence and adult life. It is quite clear that some teachers and educationists know these things very well. From the slowness with which such faults are being remedied—even the most recent official pronouncements on the reorganization of examinations go only a short way—we may deduce that the knowledge is not as widespread as it might be. In that case, it is likely that the teachers who "already know" might be helped and encouraged by the knowledge that medical opinion is on their side.

If health be accepted as one of the major aims of life and therefore, as a major aim of social organization, medicine has a duty of social leadership. More urgently, it has the duty to fit itself for social leadership. The doctor must speak, but he must also listen, criticize, and also invite criticism. Let us beware, in Dr. Fordham's words, of "setting ourselves up as authorities in the realm of another profession," but let us remember that the doctor and the teacher are both authorities

the wider field of human well-being. Unless they co-operate fully and in this field, the outlook for the future of social medicine and, we might add, for humanity itself, is most promising.

The issue is an important one, having implications outside the immediate matter of teaching. I would suggest that a large and important part of social medicine is the influencing of social activities in the interests of human welfare, and that this position, "Is it proper for the doctor to assume the role of an instructive social critic?" is one which needs an early affirmative answer from the profession as a whole.—I am, etc.,

Accrington.

JOHN D. KERSHAW.

SIR,—Dr. J. A. McCluskie's letter (July 13, p. 62), which you printed with mine, prompts me to make some further reflections.

It is not, I hope, necessary to draw the attention of our profession to the traumatic incidents, resulting from children going to hospitals, which produce gross psychopathological changes; these are already recorded. We do not, as Dr. McCluskie suggests, want tactful psychiatric treatment of children going in and out of hospitals. What we require is ordinary humanity. According to my experience doctors and nurses in hospitals concentrate so much on getting children physically well that almost all their attention is directed towards this aim. Consequently nobody notices what kind of feelings the child has when his mother comes and goes from hospital, unless they are of the grossest kind. Moreover, the staff are only too often prepared to avoid emotional demonstrations at almost any cost, quite regardless whether the "scene" may be desirable or undesirable for any particular child.

One finds at the end of Dr. McCluskie's letter the somewhat odd statement, presumably derived from Dr. Winnicott's letter, about deliberately keeping children sad. The point at issue is this: so long as children are expressing ordinary human feelings, one of which, though probably the most important, is sadness when their mothers go away, everything is all right in the relationship between mother and child; but directly the ordinary feelings stop then the child is mentally ill. This is something which any average human being could know. These kinds of realities may or not be revealed by statistics and "evidence." They depend on the emotional capacity of the person observing, whether they are seen or not. They are none the less absolutely vital, not only, I would suggest, to the child's mental, but also his physical health.

It seems to me a devastating commentary on medical sophistication that in order to understand simple human feelings it should be thought necessary to do control experiments and collect "evidence."—I am, etc.,

London, N.W.1.

MICHAEL FORDHAM.

The London College of Osteopathy

SIR,—I was greatly surprised, on turning over the pages of the *Lancet*, to find an advertisement inserted by the above college stating that it intended to teach osteopathy to registered medical practitioners. Not so long ago the medical profession, with the help of the British Medical Association, very rightly fought and prevented the official recognition of osteopathy in England, on the grounds that fundamentally the basic principles were wrong and the teaching by the then existing college was inadequate. Presumably the osteopaths have put their house in order, and now, at this time of unrest in medicine through the return of practitioners from the Forces and its transition into State medicine, hope to coax practitioners to take a nine months' course, for which a diploma may be given. The erroneous basic principles of osteopathy are still there.

There are several excellent books on manipulation by British authors. The benefits obtained in certain conditions by gentle manipulation without anaesthesia or the more forcible ones with anaesthesia are well known and practised now by many orthopaedic surgeons and physiotherapists throughout the country. It would appear that the British Osteopathic Association at this stage hopes to gain official recognition by teaching and bringing into its ranks registered medical men. I consider it most important that the medical profession should at this time dissociate itself from this association.—I am, etc.,

London, W.1.

W. E. TUCKER.

Obituary

SIR E. KAYE LE FLEMING, M.D.

Former Chairman of Council, British Medical Association

We announce with deep regret that Sir Kaye Le Fleming died on July 16. He was one of a small group of able men who exercised a decisive influence on the policy of the British Medical Association during those creative years in the interval between the two wars. He had already done much in his own locality, but his voice was first heard in the central council of the Association in the early 'twenties. So evidently was it the voice of a leader that before the middle of that decade he was marked out for high office. For five years he was chairman of the Annual Panel Conference; then after a short interval came his three years' chairmanship of the Representative Body, and this was followed by five years as Chairman of Council, from which he retired at the Aberdeen Meeting just before the outbreak of the last war. His exceptional gifts of leadership were shown alike in the control of large assemblies and in the intimate give and take of small committees, in the shaping of major policy, and in the conduct of routine business.

"E.K." as he came to be affectionately known in this office, was born in 1872, the fifth son of John Le Fleming, an Army coach of Eton House, Tonbridge, Kent, and a greatly-respected figure, known far and wide as the "Preceptor." The establishment was afterwards carried on by the eldest son, John, a famous all-round athlete—double blue at Cambridge, Kent cricketer, footballer, and hockey player, English rugby cap, and figure-skating champion at Davos. Another brother, Canon Hugh Le Fleming, also won fame as an athlete, and in his year was president of the Cambridge team in the inter-university sports. "E.K." himself was a good club cricketer, and in 1894 and 1895 he represented Cambridge at golf against Oxford—a game at which his skill continued for many years. Through his mother, a sister of Sir Ralph Neville, judge of the High Court, Chancery Division, he inherited the lawyer's clear mind and effective speech. His grandfather, Henry Neville, was a surgeon at Esher. The Le Flemings were one of several notable Tonbridge families who excelled at work and games, and "E.K." married into another; his wife was Florence Murton Beeching, daughter of Arthur Beeching, banker, J.P. for the county of Kent.

After a distinguished career at Tonbridge School he won a leaving exhibition and went up to Clare College, Cambridge, in 1891, and having graduated B.A. in 1894 he entered St. George's Hospital. He qualified in 1898, and took his Cambridge medical degrees in the following year. At St. George's he was house-physician and house-surgeon and assistant surgical registrar. Soon afterwards he settled in practice at Wimborne in a partnership of which later he became the head. As at Tonbridge, Cambridge, and St. George's, so in Dorset he identified himself with the life of the place, and soon stood out as a man of mark. His commanding figure and resonant voice were the outward expression of personal qualities above those of the ordinary man.

In Dorset, from the inception of national health insurance—that is, from 1912 onwards—he took a leading part on the Panel and Insurance Committees, and became chairman of the former. Dorset was one of the areas in which conflicting interests sometimes became acute, but "E.K." always bore in mind that the honour of the profession must be maintained and the rights of the insured person safeguarded. In later years he became a member of the Ministry of Health



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Advisory Committee on national health insurance disciplinary procedure. It need scarcely be said that he filled all the local offices in the British Medical Association. He was in turn honorary secretary and chairman of the Bournemouth Division and president of the Dorset and West Hants Branch.

From this thorough grounding in local administration and policy he went on to take an increasingly important part in central affairs. He joined the Council in 1922, being one of the twenty-four members elected by the Branches of the United Kingdom. In 1924 he was elected chairman of the Annual Panel Conference, and the first of these assemblies over which he presided was also the first to be held in the Great Hall at B.M.A. House. In 1931 he was elected Chairman of the Representative Body, and then in 1934, when the Annual Meeting was held in his own constituency, at Bournemouth, came his unanimous election to the Chairmanship of Council. In accepting office, he said that he was busily engaged in practice and could not promise to devote the time which might be expected of him to the routine work of committees, but he thought it an advantage, as did his fellow councillors, that the chairman should be an active practitioner. In presiding over the Council he showed himself a master in getting through a long and complicated agenda without any sense of hurry or injustice.

When in 1941 the Council resolved to award him the Gold Medal of the Association in recognition of his distinguished work for the B.M.A. and the profession, the address expressed cogently an appreciation of this aspect of his work:

"... First, on occasions not a few you have been called upon, and particularly as Chairman of Council, to represent the Association in public or semi-public, social or intra-professional functions; and again, in more severe service, to negotiate and discuss legislative and administrative proposals with representatives of H.M. Government and other public bodies. Each of these engagements has its own claim and opportunity, and on the verdict of your fellow-representatives you have ever proved equal to the event and have secured a presentation of the Association worthy of its status and traditions.

"Secondly, it is to be observed that while maintaining a high level of interest in the general administrative service of the Association, you have applied a particular attention to developments which offer to the medical profession an opportunity to apply its specialized skill and knowledge to the general welfare of the community, and this both in the prevention of disease and also in the promotion of health. Medicine, you have recognized, is in its widest application a mode of social service which aspires to contribute to the welfare, efficiency, and happiness of the whole body of the people. Particularly in the work of the Association's Committees concerned with Nutrition and with Physical Education you have provided both enthusiasm and direction, and have thus at one and the same time recognized a professional obligation and served well the cause of public policy. That these services have received official recognition is a welcome event to the profession generally, and particularly to those who have been associated with you in various public offices and responsibilities."

His report of the Nutrition Committee in 1935 was widely admired by the general public as an excellent and timely piece of work, and although the credit must be shared by Sir Kaye Le Fleming's hand was felt in it throughout. To the work of the Physical Education Committee he brought initiative, special knowledge, and experience. He himself had been medical officer of Canford School, a large public school for boys at Wimborne, since its foundation. He was also a vice-president of the Medical Officers of Schools' Association, and often contributed to its proceedings. The report of the committee, published in 1936, also attracted widespread attention, and its chairman was made a member of the Medical Advisory Committee to the Ministry of Health on the subject of physical fitness. He was also the representative of the B.M.A. on the Central Council for Recreative Physical Training. A brief mention must also be made of another committee of the Association on which he had long experience, namely, the Parliamentary Elections Committee, charged with the duty of securing, as opportunity offers, suitable representation of medical views in Parliament. Whoever conceived the idea of a Medical Planning Commission, its constitution and terms of reference owed much to Le Fleming's suggestions.

Sir Kaye Le Fleming became a member of the General Medical Council in 1928. He was elected a direct representative for England and Wales, and headed the poll. He was

returned again unopposed in 1933, and was re-elected a few weeks ago for a further term. He sought above all things the welfare of the general practitioner. No doubt he would have had a successful career in any branch of medicine, but he preferred general practice to specialization, and counted himself fortunate to practise in an area which gave him experience of every side of general practice, insurance and private, rural and urban. His *Introduction to General Practice*, published in 1936, summarized his ideas concerning this great primary branch of the profession.

"E. K." had many aspects, all of them engaging. One phase of his personality was seen in business meetings, where he never spoke without illuminating the subject, often swaying the decision. As chairman he was most admirable. Never once in his long series of chairmanships, in the recollection of the writer, did he allow a meeting to get into a difficulty as to procedure. A different phase was seen in his professional work in an old-world country town whose roots went far back into the past. One speaker at a dinner likened him to an ancient abbot of Wimborne presiding over submissive monks. He was a member of the urban district council, had written largely on the history of his county, and was honorary secretary for Dorset of the London Society of Antiquaries. Among his other accomplishments was a considerable knowledge of antique furniture, and with this he managed to combine a zest for so modern a thing as motoring; he was regarded as a pioneer of motoring in Dorset. His active interest in this *Journal*, and the powerful support he gave to its editors over many years, are things that must be recorded with gratitude here. He was a true friend and wise counsellor, constructive in criticism, and openly appreciative of good work.

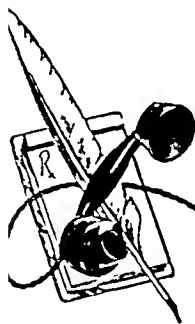
The honour of knighthood was conferred upon him in 1937. He received the M.D. degree *honoris causa* at Dublin during the Annual Meeting there in 1933, and a like honour at Melbourne, to which he went with the representatives of the Association on the "World Tour" in 1935. The sympathy of all who knew him goes out to Lady Le Fleming and their two sons.

Mr. H. S. SOUTTAR writes:

I first met Le Fleming at Netley in 1917, when we worked together at the Red Cross Hospital, and he stands out in my memory of those days both as a sound physician and a delightful companion. He had a knowledge of the world and a breadth of outlook which were quite exceptional, and I first learnt from him how wide and how deep can be the human interests of general practice. When after the war we met again at the Annual Meetings of the B.M.A. I was still more impressed by his wisdom and his knowledge of affairs. Contact with him was in itself an education in new fields of medical thought, and I am sure that many will feel with me the debt we all owed to his enterprise and inspiration. For years the Association held the chief place in his interest, and he made many sacrifices on its behalf. To its councils he brought dignity and wisdom and a felicity of speech which often carried difficult problems to a happy solution. He was an ornament to his profession, but those of us who had the privilege of his friendship will always remember him as the best of friends.

A memorial service for Sir Kaye Le Fleming will be held at Wimborne Minster on Wednesday, July 31, at 2.30 p.m.

The death of Dr. BINNIE DUNLOP on July 15, at Bracknell, removes an enthusiastic member of the group of social reformers who brought birth control into the foreground during the early years of this century. He was the last surviving son of James Dunlop, M.D., of Glasgow, where he was born in 1874. From King William's College, Isle of Man, he went to the Glasgow High School, and thence to the University of Glasgow. After graduating M.B., Ch.B. in 1898 he was house-physician and house-surgeon at the Victoria Infirmary, and thenceforward interested himself mainly in medical sociology. He served as a civil surgeon during the South African war, and in the latter part of the war of 1914-18 as a temporary captain in the R.A.M.C. From 1913 to 1918 he was treasurer and honorary secretary of the Malthusian League and then became vice-president of the New Generation League; he was also an active worker for the Eugenics Education Society. Dr. Dunlop published the Malthusian essay of 1909 under the title "National Happiness under Individualism," and six years later an article, "The



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"truth about Birth and Death Rates," in the *XIX Century*. He contributed to the report of the International Birth Control conference in 1921 and frequently sent notes or short letters to the medical journals. He had been a member of the B.M.A. or 44 years.

Dr. JOHN OSBERT WILSON died at Huntly, Aberdeenshire, on July 16 in his 93rd year. The son of George Wilson, M.D., he was born at Huntly on Aug. 8, 1853, and studied at the Universities of Aberdeen and Edinburgh, graduating M.A. Aberdeen in 1873, M.B., C.M. in 1876, and M.D. in 1878. Settling in practice in his native town, Dr. Wilson became M.O.H. for the burgh of Huntly, joint medical officer to the local cottage hospital, and medical officer to the Alexander Scott Hospital. A keen volunteer, he reached the rank of major, R.A.M.C.(T.), attached to the 6th Battalion Gordon Highlanders, and received the Volunteer Decoration. He was elected a member of the B.M.A. in 1880. In the spare hours of a long professional life he enjoyed angling and the study of local flora and fauna. He received a public presentation on retirement from active work in 1929.

Universities and Colleges

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council, held on July 12, Dr. G. R. Osborn was appointed honorary demonstrator in pathology. The Council received the resignations of Dr. A. Wilson and Dr. J. H. Hale of the posts of lecturer in pharmacology and therapeutics and assistant bacteriologist and demonstrator respectively, and thanked them for their services.

UNIVERSITY OF LEEDS

The following candidates have been approved at the examinations indicated:

M.D.—A. G. Hick.
FINAL M.B., Ch.B.—Part 1: Emma M. H. Albinson, Ruth M. Bowker, G. Castle, Alice M. Clulow, J. P. F. Cook, R. E. Coupland, J. S. Crawford, Charlotte Feldman, R. M. Gaunt, J. A. Gawthorpe, A. E. W. Gregson, Diana J. Haiste, G. B. C. Harrop, R. A. Holman, L. J. Ison, Barbara Jennings, J. R. Jolly, Gladys A. Kitching, A. T. Levine, Evelyn R. Lewis, G. W. Lewis, Ida Mather, D. H. Miller, N. E. Nathanson, B. G. Peet, A. P. Phillips, V. H. Redcliffe, Dorothy P. Russ, J. H. Rust, Catherine M. Rycroft, B. K. Scott, J. H. D. Smith, P. M. Smith, Joan C. Stephens, Elaine M. Sunderland, J. N. S. Taylor, J. D. Thornton, G. C. Turner, L. Vinegrad, Joan L. Walls, H. M. White, G. Wilson.

¹ Distinction in Forensic Medicine. ² Distinction in Public Health.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examination indicated:

M.D.—F. H. Bentley (with commendation), W. Fielding, F. Fletcher (gold medal), D. Sbuter.

UNIVERSITY OF EDINBURGH

The University Court has received the resignations of two lecturers in the Faculty of Medicine, each appointed to a chair in another university. Robert Walmsley, M.D., senior lecturer in the Department of Anatomy, has been appointed Bute professor of anatomy in the University of St. Andrews; Ian Aird, Ch.M., F.R.C.S.Ed., lecturer in the Department of Surgery, has been appointed to the chair of surgery at the British Postgraduate Medical School, University of London.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following surgery lectures will be delivered at the college (Lincoln's Inn Fields, W.C.) at 5 p.m. on each day: Oct. 21, Prof. Harry Platt, Localized Cystic Lesions of Bone; Oct. 22, Mr. Geoffrey Keynes, Surgery of the Anterior Mediastinum; Oct. 23, Mr. A. C. Palmer, Aetiology, Symptoms, and Treatment of Procaecidia; Oct. 24, Mr. W. B. Gabriel, Causation and Treatment of Anal Incontinence; Oct. 25, Mr. R. C. Brock, Surgery of Lung Abscess; Oct. 28, Mr. R. J. McNeill Love, Surgery of the Gall Bladder and Common Bile Duct; Oct. 29, Mr. A. E. Porritt, The Value of Penicillin in Surgery; Oct. 31, Prof. Geoffrey Jefferson, Surgery of Intracranial Aneurysms; Nov. 1, Prof. C. A. Pannett, Pancreatic Surgery; Nov. 4, Mr. Terence Millin, Surgery of the Prostate; Nov. 5, Mr. J. B. Hunter, Surgical Treatment of Pulmonary Tuberculosis; Nov. 6, Prof. R. St. Leger Broekman, Intestinal Obstruction.

Fellows and Members will be admitted free of charge, but must apply for a card of admission. A fee of £5 5s. will be charged in the case of others. Tickets may be obtained on application to the secretary.

At a meeting of the Council held on July 11, Sir Alfred Webb-Johnson, Bt., was elected President for the sixth year; Sir Heneage Ogilvie and Sir Cecil Wakeley were elected Vice-Presidents.

Leverhulme Research Scholarships were awarded to Mr. B. W. Rycroft ("The Surgery of Corneal Grafts") and Mr. David Barker, ("The Recovery of Proprioceptor Function after Nerve Injury"), and the seventeenth Maclellin Scholarship was awarded to J. P. H. Davies (Lewes County School).

The following appointments were made for the ensuing year:

Hunterian Professors.—Mr. Guy Blackburn, one lecture on Thoracic-Abdominal Wounds in Modern War; Mr. R. H. Franklin, one lecture on Congenital Atresia of the Oesophagus; Mr. H. A. Haxton, one lecture on Regeneration after Sympathectomy and its effects in Raynaud's Disease; Mr. John Howkins, one lecture on the Movement of the Diaphragm after Operation; Mr. Harvey Jackson, one lecture on the Association between certain Anatomical Facts, Normal and Morbid, and the Symptomatology of Intervertebral Disk Protrusions in the Lumbar Region; Mr. J. B. Macalpine, one lecture on Growths of the Renal Pelvis and Ureter; second lecture on Bladder Growths, with Special Reference to Growths occurring in Workers in Aniline Dyes; Mr. Joseph Minton, one lecture on Occupational Eye Diseases and Injuries; Mr. R. W. Nevin, one lecture on the Surgical Aspects of Intestinal Amoebiasis; Mr. H. W. Rodgers, one lecture on the Post-operative Course of Gunshot Wounds of the Abdomen; Mr. E. R. Smith, one lecture on Intestinal Decompression in the Treatment of Acute Obstructions; Mr. F. G. St. C. Strange, one lecture on the Place of Plastic Procedures in the Preparation of Amputation Stumps for Limb Fitting.

Arris and Gale Lectures.—Prof. Lambert Rogers, one lecture on Ligature of Arteries, with Particular Reference to Carotid Occlusion and the Circle of Willis; Mr. F. F. Rundle, one lecture on the Anatomy of Exophthalmos; one vacancy.

Erasmus Wilson Demonstrators.—Mr. J. T. Chesterman, one demonstration on the Pathological Contents of the Museum, showing Intestinal Obstruction; Mr. V. Zachary Cope, one demonstration on Actinomycosis; Mr. L. W. Proger, two demonstrations; Mr. R. W. Raven, two demonstrations, on (1) Diseases of the Pharynx and Oesophagus and (2) Melanoma and Related Tumours.

Arnott Demonstrator.—Six vacancies held in abeyance pending appointments to the Department of Anatomy.

Diplomas

A diploma of Fellowship was granted to J. R. M. Miller and diplomas of Membership to E. I. Bieber and Janet Sutherland.

Diplomas were granted, jointly with the Royal College of Physicians of London, to the following successful candidates:

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—Ada Barnett, G. V. Blaine, J. A. Campbell, A. H. R. Coombes, A. R. Darlow, J. de Zulueta, K. V. Earle, E. Fletcher, D. W. Gould, Y. G. Gupta, H. Y. Hain, T. H. Harrison, W. Hartston, S. W. Hinds, P. J. Jhaveri, J. W. L. Kemp, W. E. Kershaw, P. M. Lohar, E. A. Lumley, A. McGregor, D. H. Mackay, M. S. Moura, A. H. Mousa, A. K. Ng Chung Hin, P. Rau, H. A. A. Ragab, M. T. Read, A. F. Russell, P. W. J. Searle, B. A. Stoll, Alizon F. Stookes.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—W. V. Bremner; J. C. D. Carothers, G. S. Clouston, J. P. Dewsberry, L. A. Finiels, Joan Fitzherbert, M. Hamilton, W. L. Hardman, H. B. N. Jennings, J. Milne, E. W. Rees, A. P. Russell, Myre Sim, E. D. Taylor, R. L. Whitman, H. G. Williams, W. Warren.

DIPLOMA IN LARYNGOLOGY AND OTOLGY.—R. Barracough, J. C. Delap, H. D. Fairman, S. Gnessen, K. Harrison, L. H. Hiranandani, T. B. Hutton, P. H. Jobson, R. S. McCrea, J. F. O. Mitchell, E. N. Owen, T. A. Quilliam, H. D. Raffan, C. Remington-Hobbs, J. A. Seymour-Jones, H. M. Urquhart, L. E. Wood.

The Services

DEATHS IN THE SERVICES

Lieut.-Col. WILLIAM MAURICE ANDERSON, C.I.E., died after a short illness on July 8 at Hove in his 73rd year. He qualified from the London Hospital in 1897 and entered the Indian Medical Service in 1901. He subsequently took the London M.B. and B.S. degrees, the M.D. in 1904, and also the D.T.M.&H. Cambridge. He served in the 1914-18 war in Persia and Iraq and was twice mentioned in despatches. His work on the civil side was in the political department, during which he held the important appointments of Chief Medical Officer of the North-West Frontier Province in 1920 and Residency Surgeon, Hyderabad, in 1928. He was awarded the C.I.E. for his military service, retired in 1928 and lived at Fleet, Hants. He was a sound all-round medical officer. A member of the British Medical Association for 27 years, he held office as honorary secretary of the Hyderabad branch in 1925-6 and president in 1926-7.

As a token of gratitude for medical attendance to Swedes during the war, Sweden recently presented an x-ray plant to the National Hospital in London. It includes a Swedish invention in this field, a precision apparatus for cranial radiography constructed by Prof. Erik Lysholm, chief of the radiographic section of the Serafimer Hospital in Stockholm, and built by the firm of G. Sebonander.

Medical Notes in Parliament

HEALTH SERVICE BILL

REPORT STAGE

The House went into Committee on recommitment of the National Health Service Bill on Monday, July 22.

On Clause 16 an amendment was agreed to giving the hospital management committees power to carry out research.

On the motion that the clause, as amended, stand part of the Bill, Sir A. HERBERT said that teaching and research were the primary functions of the universities, yet there was no reference to the universities in the clause. This was a highly unsatisfactory situation and the universities took a most serious view of it.

Mr. BEVAN said the universities were in an entirely different position. They could conduct research in their own right, and no one desired to interfere with them. The clause, as amended, was ordered to stand part of the Bill.

A new clause was moved by Mr. KEY. Its object was to enable accommodation to be provided for district nurses and midwives in rural areas. The clause was read a second time and added to the Bill.

FUNDS OF VOLUNTARY HOSPITALS

Commander MAITLAND moved a new clause placing on the Minister of Health the responsibility to ensure that where the need existed hospitals should be provided, during the interim period before their transfer to the State, with sufficient funds to enable them to maintain efficiency. The clause would remove the uncertainty which existed in the minds of those responsible for managing voluntary hospitals. He thought there would be no falling off in subscriptions if it were accepted.

Mr. BEVAN said he had power to assist a hospital that got into difficulties. Everyone wanted to try to foster the enthusiasm and activities of voluntary hospitals in the intervening period before they were taken over, but the House of Commons could not give a blank cheque. There would have been nothing wrong if he had taken all the endowments and used them for general hospital purposes. That was what they were for. Now there was a complaint from Opposition members that in the intervening period before the hospitals were taken over they should be asked to use their money for the reason for which it was given. He had appealed to the voluntary hospitals to try to maintain themselves at maximum efficiency, and to people to continue their contributions to the hospitals. The bulk of the money for the voluntary hospitals came not from the rich people but from the poor, who would maintain their contributions. It was the well-to-do, in some instances, who would not maintain their contributions because the voluntary hospitals were to be taken over by the State. Where voluntary hospitals got into trouble and the efficiency of their service was likely to be impaired by financial conditions over which they had no control, they could come to him and seek assistance. The circumstances of each particular case would be taken into account, but no general promise could be given.

Mr. WILLINK asked if the Minister would disclose from what authority he derived the power to which he referred. Mr. BEVAN said that there were a variety of powers under which it was possible to do this and assured the House that there was no difficulty in the provision of money for hospitals in financial difficulties for reasons over which they had no control. The new clause was negatived by 228 votes to 107. This completed the recommitment stage and the Report stage was begun.

POWERS OF COUNTY COUNCILS

Mr. LIPSON moved a new clause to permit delegation of certain powers of county councils to boroughs within the counties. The powers related to the care of mothers and young children, the employment of midwives, health visiting, home nursing, vaccination and immunization, ambulance service, prevention of illness, care and after care, and domestic help.

Mr. BEVAN said that the new clause would wreck the Bill. If the question of delegation had to be considered before the health authorities, the county and county borough councils, were able to present their schemes, the new health services would not get into operation by April, 1948, possibly not before 1949 or 1950. He agreed that the supervision of the health service must be made as local as possible, but that was already provided for in the Bill. The new clause was negatived by 218 votes to 115.

A long discussion took place on an amendment to Clause 7, moved by Mr. REID, to provide that endowments should not go into a general pool, but should reside in the hands of the hospital management committees set up under the Act. The present proposals of the Government, he said, discouraged

efforts to keep the hospitals going at their fullest efficiency until they were taken over.

Mr. BEVAN said that the money in question could quite properly have been taken by the Government and put into the Exchequer for general hospital purposes. Endowments of teaching hospitals were to be treated separately. If people who had made endowments to particular hospitals could look down on the deliberations of the House they would be very pleased that their benefactions were to serve a wider area of the community.

Mr. WILLINK said that it was obvious that the Government and their supporters were unanimously in favour of the view that there was no harm whatever in diverting funds of donors and subscribers. The Opposition, on the other hand, could see no justification for flouting the wishes of these donors. The amendment was defeated by 249 votes to 107.

Commander GALBRAITH moved the first of a series of amendments to exclude gratuitous covenants from endowments transferred under the Bill. He said that these were moneys which persons had covenanted to pay to voluntary hospitals over a period of years and that it was indefensible that they should be diverted from the purpose for which those who covenanted to give them had intended.

Mr. BEVAN said that at the moment these gratuitous covenants were the legal property of the voluntary hospitals and therefore ought to be transferred along with the other endowments. The amendment was negatived by 255 votes to 110.

L.C.C. AND METROPOLITAN BOROUGHES

On Clause 19 Mr. WILLINK moved an amendment to secure the delegation by the L.C.C. of its functions, relating to certain health services, to the metropolitan boroughs. He said the removal of these functions from the large local authorities without consultation with them was a grossly tyrannical act. It was strange to find the Parliamentary Secretary to the Ministry putting forward views on this matter exactly contrary to those he pressed so strongly in discussions between the metropolitan boroughs and the L.C.C.; the fervid advocacy in public affairs of views which were not one's own was anything but sincere. If the Parliamentary Secretary now expressed surprise, was one to understand that Ministers believed it to be sincere in public affairs to advocate policies in which they did not believe?

Mr. BEVAN said he regretted that Mr. Willink had repeated offensive language he had used in Committee about the Parliamentary Secretary, who was speaking in a representative capacity at the time as chairman of the standing joint committee and was expressing a view he had been asked to put up by his colleagues. Taking into account the shifting population, the problem of Greater London, the creation of new towns, and the establishment of new relations between the local government units, the whole position of the London area was in a state of flux, and one of the main provisions of the Bill should not be changed in order to meet a situation which in the nature of things was bound to be transcended. He was following, in the case of London, the same principle he had applied to the rest of the country, and to make exceptions in London would lay him open to attack from the other authorities. It would be part of his duty to see that as much decentralization as possible was brought in, and it might be that in many places area committees would be a better solution of the difficulties. The amendment was negatived by 224 votes to 99.

Further consideration of the Bill was adjourned.

X-ray Equipment

Asked on July 11 whether the Minister of Supply was aware of the difficulties experienced by hospital authorities in this country in obtaining x-ray equipment, Mr. WILLIAM LEONARD replied that he did not know of a general difficulty in obtaining this equipment. There was, however, difficulty in obtaining replacements for apparatus of German manufacture. Alternative types of valves were now available and the manufacture of tubes was being developed.

Mr. KEY stated on July 11 that it was intended to issue mass radiography plants, as soon as they became available, so as to give a general service to the country.

Health Risks in "Reduxing" Process

Mr. DUMPLETON inquired on July 11 what the Minister of Labour was doing to safeguard the health of workers from the possible harmful effects of new processes introduced into industry without adequate knowledge of their effect upon the health of the workers concerned. He cited the process known as "reduxing" in the aircraft industry. Mr. ISAACS replied that it was the practice of the Factory Department of the Ministry of Labour to keep in touch with new industrial processes and to advise as to any special health risks. "Reduxing" in the aircraft industry was not particularly new. It involved

he use of synthetic resin glues which were known to be liable to cause dermatitis if adequate precautions were not taken. Following inquiries by the Factory Department in 1942 a Departmental leaflet describing the precautions to be adopted is well as a poster for display in factories were widely issued. The main precautions were good ventilation to avoid exposing the skin to vapour from the glue, and measures to reduce contact with the glue and avoid it drying on the skin.

Temporary Registration of Alien Practitioners

On July 18 Sir HENRY MORRIS-JONES inquired on what date the Temporary Registration Scheme for alien medical practitioners expired, and what was the policy of His Majesty's Government in regard to these doctors, particularly those of allied nations.

Mr. BEVAN answered that under the Emergency Laws (Transitional Provisions) Act, 1946, the scheme expired on Dec. 31, 1947, unless the relevant Defence Regulation was revoked earlier by Order in Council. Future arrangements were under consideration and it was not yet possible to make a statement on the subject.

Panel Patients and Osteopaths

On July 18 Mr. HOUSE asked whether Mr. Bevan was aware that Mrs. C. Barker, 118, Fairview Road, Penn, was refused a medical certificate by her doctor on the ground that she attended an osteopath without the doctor's permission, and she thereby lost benefit from her friendly society.

Mr. BEVAN said he knew of the doctor's refusal to issue a medical certificate in this case. An insurance doctor was under no obligation to issue a medical certificate to a patient who was obtaining treatment from some other person without his consent.

Diphtheria Immunization

In reply to Mr. PETER FREEMAN on July 18 Mr. BEVAN said returns from local authorities in England and Wales showed that between January, 1940, and June, 1945, diphtheria notifications and deaths, respectively, numbered 19,040 and 142 among immunized children, as compared with 141,600 and 3,635 among children not immunized. Of some six million children immunized in England and Wales 14 cases had come to notice of later illnesses in the possible causes of which the diphtheria prophylaxis could not be positively excluded as having had no part. He knew of no evidence to support the suggestion that children who had been immunized proved more subject to other diseases in later life.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In England and Wales an increase in prevalence was recorded for measles 347 and whooping-cough 174, with a decrease in scarlet fever 66, dysentery 36, and diphtheria 23.

The increase in the notifications of measles in the counties surrounding London continued; the largest rises were Essex 77, Warwickshire 60, Surrey 55, and Kent 54. In London itself 69 fewer cases were notified than in the preceding week.

The only large rise in whooping-cough was 80 in Yorkshire West Riding. The decline in scarlet fever was confined to the southern part of the country, and the largest fall was London 36. Variations in the trend of diphtheria were decreases in Durham 14 and Middlesex 10, and an increase in Yorkshire West Riding 12. The notifications of dysentery were the lowest for over three years. The only county where more than 8 cases were reported was Lancashire with 21.

An outbreak of food-poisoning has affected persons in the Witham, Braintree, and Maldon districts of Essex. A full account appears at page 131 of this issue.

Five cases of poliomyelitis have been reported from Potters Bar, Middlesex. The patients are all school-children and were attending four different schools.

In Scotland a fall was recorded in the incidence of measles 143 and whooping-cough 30; rises were reported for diphtheria 18 and dysentery 15. The increase in diphtheria was contributed by the western area, despite a decrease of 9 in Glasgow.

In Eire the chief feature of the returns was a rise of 22 in the incidence of measles. There were 6 more cases of diarrhoea and enteritis in Dublin C.B. than in the preceding week.

In Northern Ireland the notifications of measles fell by 19.

Week Ending July 13

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 845, whooping-cough 2,270, diphtheria 277, measles 3,981, acute pneumonia 416, cerebrospinal fever 33, dysentery 61, poliomyelitis 12, paratyphoid 17, typhoid 6.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 6.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	37	4	30	2	—	51	4	27	4	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	290	32	93	31	10	458	21	96	66	16
Deaths	3	—	2	—	—	5	—	2	—	—
Dysentery	87	7	48	2	—	210	38	46	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	1	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	29	4	2	—	—	35	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	56	—	—	—	—	55	—
Deaths	32	5	6	15	2	40	4	8	17	2
Measles*	4,524	797	344	54	6	4,544	220	77	40	13
Deaths	1	1	2	—	—	—	—	3	—	—
Ophthalmia neonatorum	79	3	17	—	—	61	4	14	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	10	—	5(B)	1(B)	—	6	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	478	33	12	5	4	352	19	5	3	1
Deaths (from influenza)† ..	6	—	—	1	—	5	—	—	—	1
Pneumonia, primary	—	—	155	23	5	—	18	165	10	5
Deaths	—	—	23	2	—	—	—	8	—	—
Polio-encephalitis, acute ..	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	9	—	—	—	1	15	2	1	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	3	23	—	—	—	1	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	144	8	14	2	1	120	12	11	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	997	64	151	30	15	1,312	55	224	25	40
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	13	2	5	2	1	11	2	1	6	—
Deaths	1	1	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,247	158	34	34	15	1,050	67	21	24	12
Deaths	8	11	—	—	—	2	2	—	—	—
Deaths (0-1 year)	310	53	39	34	10	296	36	33	37	11
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,102	629	519	196	90	3,874	509	520	194	103
Annual death rate (per 1,000 persons living) ..	—	—	11.4	12.6	—	—	—	11.8	12.5	—
Live births	8,482	1332	1078	395	254	6,796	788	889	466	254
Annual rate per 1,000 persons living ..	—	—	21.7	25.3	—	—	—	17.8	30.1	—
Stillbirths	243	22	33	—	—	181	20	38	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	30	—	—	—	—	41	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Medical News

The King has made the following promotions in and appointments to His Majesty's Household: Mr. A. E. Porritt, Surgeon to the Household, to be a Surgeon to the King; Mr. R. Marnham, to be Surgeon to the Household; Sir Reginald Watson-Jones, to be Orthopaedic Surgeon to the King; Mr. C. S. Morris, Surgeon-Dentist to the King, to be Sergeant Surgeon-Dentist to His Majesty; and Mr. A. C. R. McLeod, to be Surgeon-Dentist to the King.

The 25th annual general meeting of the Medical Society for the Study of Venereal Diseases will be held at 11, Chandos Street, W., to-day (Saturday, July 27) at 2.30 p.m. The presidential address will be read by Dr. G. L. M. McElligott on "The Management and Treatment of the Late and Latent Syphilitic." A discussion will follow.

There will be a clinical meeting of the Medical Society of the L.C.C. Service on Thursday, Aug. 8, at 3 p.m., at Hammersmith Hospital and Post-Graduate Medical School, Du Cane Road, Shepherd's Bush, W.12. Cases will be demonstrated by the staff of Hammersmith Hospital.

A special series of lectures, conferences, and demonstrations in clinical and laboratory medicine will be held at the Hospital de la Santa Cruz y San Pablo at Barcelona from Oct. 5 to Dec. 21. Copies of the programme printed in Spanish may be had from the director of the hospital, Dr. F. Gallart Monés.

The political committee of the Constitutional Club on July 18 entertained to lunch Dr. Charles Hill, Secretary of the British Medical Association, and Lt.-Col. J. Lockwood, Conservative candidate for Bexley. After lunch Dr. Hill spoke to members of the club on the National Health Service Bill. The chair was taken by Sir Herbert Williams.

The Duchess of Portland, speaking at the annual meeting of the National Association for the Prevention of Tuberculosis, stated that a tuberculosis survey in the West Indies had just been completed, and a most interesting report published. The Association had appointed Dr. Kenneth Waller Todd to make a similar survey in the Gold Coast Territory. More research, education, and propaganda were needed, especially in the smaller colonies, and the N.A.P.T. was ready to play its part.

The following Ministry of Health appointments took effect from Jan. 1, 1946: Principal Medical Officer in charge of Epidemiology and International Health, Dr. M. D. Mackenzie; Principal Medical Officer in charge of the Insurance Medical Service, Dr. R. E. Whitting; Principal Medical Officers, Drs. C. F. Good, T. S. McIntosh, E. L. Sturdee, T. W. Wade (Welsh Board of Health); Senior Medical Officers, Drs. A. L. Banks, N. R. Beattie, W. H. Bradley, E. Donaldson, C. J. Donelan, R. E. Ford, G. E. Godber, N. M. Goodman (*in absentia*), G. C. Kelly, C. T. Maitland, F. N. Marshall, H. A. Raeburn, W. D. Hopkins, A. E. Huxtable, E. Martin, R. O. C. Thomson.

Higher salaries in a wide range of hospital nursing posts, including matrons, and in the public health service—in all for nearly thirty grades—are recommended by the Rushcliffe Committee. Concessions are also proposed where trained nurses have returned to nursing from the Forces, or where male student nurses have resumed their training after war service. With the recommendation of these increases the Rushcliffe Committee's current review of nursing salaries is almost completed. The Minister of Health has welcomed the new scales and recommended their adoption to the employing authorities. Salary increases are retrospective from January 1 last.

The Newcastle and North-east Branch of the Socialist Medical Association has issued as a 6d. pamphlet a report on Tuberculosis on Tyneside with suggestions for remedying the high incidence of this disease there. Copies can be had from 43, Albury Park Road, Tynemouth.

A Bill to create a mental health institute is under discussion in the United States Senate. The institute is planned as a research and training centre for a broad attack on mental disease problems which have been detected through recent research, especially during the war.

In recognition of his studies upon chemotherapy in tuberculosis the College of Physicians of Philadelphia has awarded the Alvarenga Prize for this year to Dr. William H. Feldman, of the Mayo Foundation for Medical Education and Research. The College usually makes this award for outstanding work and invites the recipient to deliver an Alvarenga Lecture.

Miss E. Alden, deputy chief nursing officer of the Ministry of Health, has been appointed to represent the Ministry as a member of the Central Midwives Board for England and Wales which is responsible for carrying into effect regulations of the Midwives Acts.

Dr. Norman C. Parfit has been appointed deputy medical adviser to the Central Council for Health Education.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Althology* *Westcent*, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Gonococcal Vulvo-vaginitis

Q.—A girl of 6 developed a gonococcal vulvo-vaginitis three years ago. She had several courses of sulphonamides and two one-day courses of penicillin (100,000 units). A swab taken one month ago showed no gonococci but many pus cells and staphylococci. The discharge is yellow, profuse, and offensive. Antiseptic douching has proved of no avail. What general and local treatment would you advise?

A.—First, the presence of gonococci should be established or excluded by repeated smears and cultures; a complement fixation test for gonorrhoea might be helpful, especially if positive. All these pathological examinations should be carried out in a laboratory which normally deals with such specimens. Two other possible causes of the vaginitis should be investigated—*Trichomonas vaginalis* and *Oidium albicans*; the former can be most easily demonstrated by means of the dark-ground microscope.

Treatment will depend on the results of the pathological examinations. If gonococci are found a further course of penicillin extending over forty-eight hours is indicated. For trichomonas vaginitis the best remedy is stavarsol, insufflated in powder form or as pessaries inserted high up in the vagina. For vaginal thrush painting with 1% gentian violet solution is recommended; this may be done through a short male urethroscope. In general, dry swabbing and painting with a mild antiseptic, such as 2 to 5% mercurochrome, are preferable to douching. As a last resort, oestradiol may be given by injection, 4,000 to 5,000 units daily. General treatment should include fresh air and an adequate diet with milk, fresh fruit, and vitamins. Tonics may help, and iron should be given if the child is anaemic.

Symptoms due to Glass-fibre Wool

Q.—Some patients of mine, working on a new fabric made from glass, complain of dryness of the mouth and a tickling sensation in the throat. Occasionally, minute splinters of glass still adhere to the fabric. I am unable to detect any abnormality in the mouth or pharynx. Is there any danger of fibrosis of the lungs due to inhaling dust from the fabric, and would it be advisable for these workers to wear masks?

A.—Nothing is known of harmful effects from the new fabric made from glass; but it might be assumed to be similar to glass-fibre wool. This substance is highly irritant and is known to produce dermatitis and symptoms similar to those mentioned. The irritant effects are caused by tiny pieces of glass. Glass is a silicate, and information is not available to prove that it is harmless to the lungs. Animal experiments were carried out with the dust from glass-fibre wool, but no disease in the lung resulted, probably because the particles were too large to enter the alveoli. It would be wise, however, to take precautions, and if the workers will wear masks it would be good for them to do so.

Drinking at Meal-times

Q.—Is there any evidence whatever in favour of abstinence from drinking at meals?

A.—There is no scientific evidence in favour of abstinence from drinking at meals. The point to remember is that the fluid ingested will dilute the chyme in the stomach; the existence of a *magenstrasse*, or physiological short cut for liquids

aving the stomach, has not been confirmed by recent experiments. The drinking of moderate amounts of water with meals tends to increase the secretion of digestive juices and to promote digestion. Handbooks of dietetics commonly recommend that a glass of water should be drunk before or during each meal. Fluid at meal-times is only harmful if it is taken in too great bulk, if it is iced or otherwise irritating, or if it is used to wash down unchewed food. The suggestion that the drinking of normal amounts of fluid at meal-times is harmful may be a misconception, due to the fact that patients with a weak digestion are sometimes recommended to take a large tumblerful of warm water, with a quarter- to half-teaspoonful of baking soda at a half an hour before meals to stimulate the flow of gastric juice.

Mammary Duct Infection with Staphylococci

Q.—What is the best treatment, and the outlook, as regards breast-feeding for a primigravida, in the thirty-sixth week, from whose mammary ducts yellow pus containing *Staph. aureus* can be expressed?

A.—Two counter-questions naturally arise: (1) How is it known that the organisms are in the fluid as it comes from the ducts and not merely contaminants from the skin of the nipple? (2) Has it been verified microscopically that the fluid is pus and not colostrum, which looks purulent? If it be established that *Staph. aureus* is present in the ducts without local inflammatory reaction, then the finding is not of great significance. Little is known of the occurrence of *Staph. aureus* in the ducts during pregnancy, and investigation is difficult for the reason implied in (1) above. However, it is probably not uncommon, for it has been shown to be present in the colostrum in a small percentage of cases on the first day after delivery, in the milk in about 50% of cases by the end of the first week, and in an even higher percentage by the tenth or eleventh day. The organisms as a rule do not appear to be pathogenic to either mother or child—unless the milk is stored without provision for inhibiting bacterial growth before being given to the baby.

On the other hand, if there is in this case a local inflammatory reaction in the breast and the discharge is purulent, caution is necessary. There would then be a risk of staphylococcal infection of the baby, and presumably an increased likelihood of breast abscess in the mother. In such circumstances efforts should be made now to clear up the infection. Probably this would be best achieved by the administration of penicillin systemically, and also locally to the nipple and surrounding skin. Preliminary penicillin sensitivity tests on the organisms are desirable.

Menopausal Headaches

Q.—A woman of 47 had severe headaches up to a year ago. Her periods then ceased and the headaches almost disappeared. The periods started again a few months ago and so did the headaches. What would be a useful line of treatment?

A.—It is impossible to make a definite diagnosis on the somewhat meagre data. In particular, it would be useful to know whether the headaches bore any relationship in time to menstruation. Pre-menstrual headache is a common complaint, and is apparently in many cases related to fluid retention. Such cases should be treated by a low salt diet for the week preceding menstruation. A diuretic should also be given—e.g., urea—one heaped teaspoonful of the crystals three times daily. As the patient is 47 years of age and is already on the verge of the menopause, it might be worth while to consider inducing an artificial menopause by means of radium.

Penicillin in Pyorrhoea

Q.—Is penicillin of any value in the treatment of pyorrhoea?

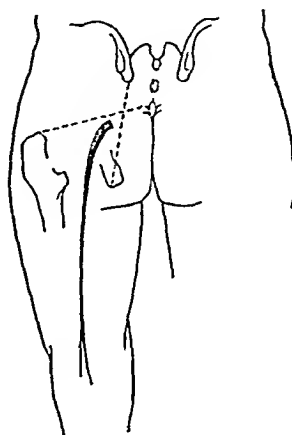
A.—The chronic and subacute types of gingivitis, loosely classified together as "pyorrhoea," usually show pocketing of the gum round the teeth with active infection at the base of the pockets. The majority of oral pathological organisms are sensitive to penicillin, and the types found at the bottom of these pockets are no exception. It follows, therefore, that organisms can be eliminated from the pockets with penicillin. The pockets themselves, however, remain. Experience has shown that after a course of penicillin treatment the condition recurs unless the pockets are dealt with mechanically—e.g., by gingivectomy, cautery, etc. In the acute forms of gingivitis, penicillin is of

great value, though here again on subsidence of the acute symptoms attention must be directed to eliminating foci by mechanical means. Penicillin is most conveniently employed in the mouth in the form of pastilles or lozenges containing 500 units each, the high diffusibility of the drug necessitating a slowly dissolving medium. For further information see *British Medical Journal*, 1944, 2, 686.

Sites for Intramuscular Injection

Q.—With the increasing use of penicillin, which may mean 50 or more intramuscular injections in the course of six or seven days, a choice of sites for injection is particularly important. Please describe how intramuscular injections can be given with safety into the buttocks, thighs, deltoids, and interscapular region.

A.—**Buttock.**—Injections are often made close to the tuberosity of the ischium into what is thought to be the thickest part of the gluteus maximus muscle. The curve of this part of the buttock is produced largely by fat, there is less thickness of muscle than elsewhere in the buttock, and the course of the great sciatic nerve runs dangerously close to the site of injection. The accompanying sketch shows that in relation to the great sciatic nerve the safe area of the buttock lies above a line joining the top of the greater trochanter of the femur to the third sacral spine. The latter usually lies deep to the top of the natal cleft, but its position can be checked by finding the second sacral spine at the level of the line joining the two posterior superior iliac spines. It is a good plan to mark this safety line on the skin with dye or a skin pencil when injections have to be given by assistants who have not had much experience of the technique. Just above the junction of the middle and posterior thirds of this line is the optimum spot.

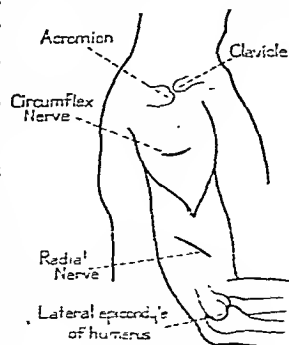


Thigh.—Intramuscular injections may be given with safety into the lateral aspect of the upper two-thirds of the thigh, as all the important structures lie medial or posterior to the femur and out of harm's way. Injection here is usually more painful than in the buttock.

Deltoid Region.—Although injections in this region can safely be made by an experienced person, it is not a suitable site for routine use when deep injection is required. Near its insertion the deltoid muscle becomes too thin for an injection to be made without giving an unnecessary amount of pain. In the upper and more fleshy part of the muscle there is a risk of damaging the circumflex nerve, or of making the injection into the shoulder joint. Distal to the deltoid insertion the radial nerve is in danger.

Interscapular Region.—This site would be chosen for injection only when circumstances forbade the use of the more suitable areas. The injection should be made into the sacrospinalis (erector spinae) muscle. The risks of going too far laterally and entering the chest, or too far medially and entering the subarachnoid space may easily be avoided by the expert, but must not be run by those with little knowledge or experience. Furthermore, even in expert hands, an injection given in this area must surely be more uncomfortable for the patient than injections made in almost any other part of the body.

In conclusion it may be said that experience shows the safe area of the buttock to be far and away the best site in the body for intramuscular injections.



Tests for Smallpox

Q.—The public health authority at Padua use a "rabbit test" to decide the diagnosis in doubtful cases of smallpox. What is this test? How reliable is it? How much significance has a negative result?

A.—It is difficult to be dogmatic on what is meant by a "rabbit test," but in the absence of fuller details it could be regarded as the old Paul's test¹ in which the contents of variolar pustules, after drying, were applied to the scarified cornea of the rabbit. This test is not now considered reliable, and a negative result should be regarded as inconclusive. The name, however, could be applied, very loosely, to the precipitation or complement-fixation test in which vesicular or pustular fluid or extracts of scabs are used as the antigen and an immune rabbit serum as the antibody. The results, of the complement-fixation test particularly, are highly reliable; a diagnosis should stand or fall on this test. In cases where the diagnosis is in doubt the questioner might obtain valuable help from Van Rooyen and Illingworth's technique.² Scrapings of papular or vesicular material are smeared on clean glass slides and stained by Paschen's method; the elementary bodies of variola are much larger than those of herpes or varicella. Here again, however, a negative result does not rule out smallpox.

INCOME TAX

Car Transactions

J. C. proposes to sell car "A" and buy another car "B" at a net cost of £800—"B" is presumably not a car of superior quality to "A" when the latter was bought. Can he treat the £800 as an expense against his income as a consultant? The car is used entirely for professional purposes.

* There appears to be no legal bar to treating the transaction in that way, though in the long run it would seem preferable not to do so, but to claim in due course the new "initial" and depreciation allowances against the gross cost (£1,400) of car "B."

J. M. resumed consulting medical practice after Army service on December 14, 1945, and will discontinue it as from September 1, 1946, when he will become a whole-time salaried employee. In preparing an income tax statement covering the 8½ months to September 1, how should he treat the following transactions? Car "A" was bought on December 14 for £495 and sold on June 12, 1946, for £357. That car ceased to be used as from March 17, 1946, when car "B" was bought for £390.

* If a single account is prepared J. M. can choose between (a) charging the cost of renewal as an expense or (b) claiming depreciation. The claim under (a) would be to deduct £495—£357=£138.

The claim under (b) would be as follows:

Car A. £495 at 24% for 3 months, i.e., ¼ of £119, i.e., £30.
Car B. £390 at 24% for 5½ months, i.e., 11/24 of £94, i.e., £43.

Total for both cars £30+£43=£73.

As an alternative, J. M. might consider preparing two accounts, one for the period to April 5, 1946, and the other for the remainder the 8½ months. As the latter would be the final account of the practice, and as car B would be deemed to have been acquired April 6, 1946, an "initial" allowance as well as the depreciation allowance could then be claimed in respect of car B.

Car Expenses of Assistant

"ASSISTANT" started work in an appointment as from Dec. 1, 1945, in a wide rural practice. He needs the use of two cars, one of which, however, is also used by his wife.

* As "ASSISTANT'S" liability for the year from April 6, 1947, will ultimately be dealt with on the actual year's basis, the allowances he will be entitled to (subject to some adjustment in view of the partial use by his wife) are: (a) a wear-and-tear allowance at 25% on the written-down value of each car as at April 6, 1946; (b) an "initial" allowance at 20% of cost in respect of the car bought in February, 1946, but, for the purposes of this allowance, regarded as having been bought on April 6, 1946; and (c) the usual running expenses including repairs, insurance, tax, etc. To avoid excessive deductions we advise our correspondent to prepare an estimate of these amounts and send them to the local tax office—or call with them—and ask for a modification in his code number for 1946-7, pending a more precise ascertainment of his assessable income at the end of the year.

"Cash Receipts" or "Earnings" Basis

M. C. dissolved partnership on April 1, 1945, and practises on his own account. The partnership was assessed to tax on the basis of cash receipts, but the inspector of taxes refuses to agree to the new practice being dealt with on that basis.

* The inspector is legally justified, and is following the usual method in dealing with a new practice. The reason is that in such circumstances the cash received in the first two or three years of the practice are an inadequate index of the real gross earnings. It is admittedly difficult to estimate the value of outstanding medical debts, but the inspector will presumably agree to M. C.'s estimate if done to the best of his ability.

LETTERS, NOTES, ETC.

Artificial Pneumoperitonium

Dr. S. C. COLUECK (Jersey) writes: In the answer to the question on artificial pneumoperitonium (June 22, p. 974) one sentence—"Others feel that the procedure has certain limited indications—for instance, for the treatment of cavitating lesions situated in the lower lobe, especially in its dorsal segment, or in the treatment of acute pneumonic tuberculosis"—is too misleading to go unchallenged. If the mechanics of respiration are considered in conjunction with the anatomical configuration of the thorax it will be realized that the upper half of the thorax is a comparatively fixed structure that relies almost entirely on the up and down movements of the diaphragm for its respiratory excursions, whereas the mobility of the lower half of the chest wall with its 2 to 4 in. (5 to 10 cm.) of circumferential expansion is in the main responsible for the aeration of the lower areas of the lung fields. From anatomical considerations, and from clinical and radiological results, diaphragmatic paralysis with or without pneumoperitoneum gives more relaxation and rest to the upper lung areas than it does to the lower.

While on the subject of thoracic anatomy, I would like to refer to a clinical sign that still occurs in modern text-books—Grocco's triangle. If anyone will take the opportunity to study drawings of the thorax in cross-section, and take note of the spinal column and paravertebral muscles in relation to the pleural spaces, the lung fields, and the mediastinum, they will be struck by the realization that Grocco's triangle should be, and is, percussible as an area of dullness bilaterally on normal subjects, as well as on patients with a contra-lateral pleural effusion.

Medical Terminology

Dr. C. J. EARL writes from Guy's Hospital: All those who use medical language to try to express their thoughts accurately will agree that in many fields of medicine the terminology may be very confusing. We must admit, of course, that much of this confusion arises because we are uncertain in our own minds about the exact nature of the condition we set out to describe or classify. Anyone who tries to master the classification of nephritis, for example, will realize this at once. There is, however, another cause for this confusion, which does not operate only where our knowledge is deficient; it is the unhappy, if well-meaning, enthusiasm of some of our teachers and authors for inventing new names for conditions already often well defined and well named. The inventor will regard his new name as more apposite, descriptive, or easily remembered. Usually, however, the old name lingers on, and the new name is but slowly universally adopted, so that for many years, and maybe even for ever, the last state is very much worse than the first. It is for this reason that I think the section on causalgia in the latest edition of *Price's Textbook of Medicine* deserves comment. It is there suggested, on the grounds that in causalgia the pain is of a burning nature, that we call the condition "thermalgia." Now has the author of this suggestion forgotten that the word causalgia is derived from the Greek *αλγος*, meaning pain, and *καλο* (Aorist *εκαυσα*), meaning I burn? I think he might well have consulted his dictionary before suggesting an alternative which, though he thought it described the condition more accurately, will serve only to increase the burden which the seeker after knowledge must carry in his mind.

The Itchy Patient

Dr. J. W. HAUGHTON (Truro) writes: In the excellent article by Drs. H. MacCormac, P. H. Sandifer, and A. M. Jelliffe (July 13, p. 48), there is no mention of diabetes being a possible cause. I was an itchy man for twelve months. Itching very severe on legs and serotum. Tendency to incontinence. My urine was loaded with sugar. Friend I consulted modified my diet—and the sugar and itching ceased.

"Burning Feet": Correction

Dr. HUGH S. STANNUS writes: In my letter in your issue of July 13 (p. 63), by a slip of the pen, I mentioned folic acid. This should of course have been pantothenic acid. I apologize for this error.

¹ Berl. klin. Wschr., 1916, 53, 874.

² Wien. klin. Wschr., 1916, 29, 996.

³ British Medical Journal, 1944, 2, 526.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 27 1946

INSURANCE ACTS COMMITTEE OF THE B.M.A.

REPORT OF SPECIAL MEETING

INSURANCE CAPITATION FEE

Minister's Offer of 12s. 6d.

A special meeting of the Insurance Acts Committee was held on July 22 to consider an offer by the Minister of Health, orally communicated to the committee's representatives on July 17, of an increase in the capitation fee to 12s. 6d.—that is, an increase of 2s.—with retrospective effect from January 1, 1946. Before proceeding to the business of the meeting a silent tribute was paid to the memory of the late Sir Kaye Le Fleming, former Chairman of the Panel Conference, of the Representative Body, and of the Council.

Dr. E. A. GREGG, who presided, said that the representatives of the committee had met the Ministry, as instructed, and had pressed the claim for an increase in the capitation fee for insurance practitioners, urging in support of the claim the statement in the report of the Spens Committee (*Supplement*, May 18, p. 143) that the remuneration of doctors in general in 1939, was up to £200 a year below (on average £170) what it should have been. This deficiency should be considered wholly in relation to the insurance income. Taking the 9s. pre-war capitation fee, which the profession considered to be much too low, this addition would have brought it up, on pre-war standards, to between 12s. and 13s. To this had to be added a betterment factor to meet the change in values. Although 2% was considered low, it was the figure which had been discussed in other connexions, and if this low figure were applied it would yield a capitation fee of somewhere in the neighbourhood of 15s.

Dr. Gregg went on to say that the Minister had been present at the first discussion, but generally his point of view appeared to be that he wanted to wrap up the question of the immediate capitation fee with discussions on the remuneration of doctors under the proposed new National Health Service. To this, of course, on a number of grounds they could not agree, and they came away from that first meeting extremely dissatisfied. They were, however, invited to go again, but once more it was argued on the part of the Ministry that the question of remuneration under the new service must be regarded as having a hearing in the settlement of the insurance capitation fee in the interim period. The representatives of the Insurance Acts Committee took up the position that they were not authorized to enter into any discussions or haggling in relation to the new service; the terms and conditions appertaining to the new service were matters on which the profession as a whole would have to be consulted, and indeed the profession had already expressed a strong view on the method of payment to be adopted—they were opposed, for example, to basic salary. The point was still pressed upon the Ministry that there was no reason why questions relating to the future service should be tied up with this immediate issue of an increase in the capitation fee, which was acknowledged as long overdue.

At the third meeting an offer was made of an increase in the capitation fee to 12s. 6d., which was regarded as wholly inadequate. In making their original claim they had urged that the increase should operate as from January 1 of this year. This was at first opposed by the Ministry, and indeed the Minister himself actually suggested that the increase should not operate until January 1, 1947, a suggestion to which strong objection was taken. Ultimately the offer was made that the increase be retrospective from January 1, 1946, and this, the Ministry's spokesman said, was equivalent to a capitation fee of 13s. 1d. as from July 1. The representatives of the committee

pointed out that if it had been found that the true increase was 13s. 1d.—still an entirely inadequate figure—the conditions which made the increase suitable applied just as much to January as to July.

The Minister and the Spens Report

It was on this oral offer that the present meeting was called, but that day, within an hour of the meeting, the following letter had been received from the Ministry:

"Dear Dr. Hill,

"The Minister has asked me to refer to the recent meetings between his officers and representatives of the profession and in particular to the meeting held on Wednesday last with representatives of the Insurance Acts Committee about the remuneration of doctors within the National Health Insurance Scheme during the period before the proposed National Health Service comes into operation.

"The principal factor in any consideration of this question and of the question of remuneration in the future health service is the report of the Spens Committee on the Remuneration of General Practitioners. The Minister desires to make his attitude to that report quite clear. He fully accepts the substance of the recommendations of the committee in their majority report upon the general scope and range of remuneration which general practitioners should enjoy in a public service. The actual terms of remuneration cannot, however, be calculated from the recommendations by a simple process of arithmetic; the calculation involves consideration of a number of factors (e.g., the effect of a superannuation scheme and the percentage of betterment to be applied to pre-war figures) which are matters for discussion.

"The Minister is consequently of opinion that the translation of the Spens recommendations into actual terms of remuneration—whether for the new health service or for the present health insurance scheme—is a matter which must be discussed with the profession. Moreover, in his view, it must be discussed as a whole; it is impossible to divorce the question of the current capitation rate from that of remuneration under the new health service since some of the problems to be examined affect both questions. He learnt, therefore, with regret of the feeling among your representatives that they are not authorized to discuss the terms of remuneration in the future health service now. He would have assumed that they could do so expressly without prejudice to the profession's subsequent general attitude to the National Health Service proposals, just as other representatives of the profession recently discussed the question of amounts of compensation without prejudice to the future attitude of the profession to the proposal to abolish the sale of practices in the public service. He still trusts that on further consideration your representatives will be willing to take part in the wider discussions which he for his part is prepared to begin at once.

"If, however, the profession's representatives adhere to the view that they cannot do this, the Minister is left with no alternative but to defer discussion. In the meantime, he is prepared to increase the current capitation rate by an amount which appears to him to be reasonable. He therefore proposes to raise the present capitation fee to 12s. 6d. and in addition to regard this rate as having been operative since January 1, 1946.

"Yours sincerely,

"(Sgd.) WM. S. DOUGLAS."

Dr. Gregg added that Sir Wilson Jameson, who was in the chair on the occasion of the last meeting, had used the term "interim payment," which most people would interpret as a payment on account, but whether it meant much or little he could not say. The word "interim" did not appear in the letter quoted above, but the phrase "in the meantime" appeared in the penultimate sentence, and might possibly bear the same meaning as "interim."

"Gravely Inadequate"

The committee then embarked upon a long discussion on the Minister's offer and its implications. Every member of the committee gave his views, and several gave the views, so far as it had been possible to gather them, of other practitioners in the different localities. It was the unanimous opinion that the proposed increase was gravely inadequate. It was pointed out that the Spens Committee had made proposals approximately equivalent to the augmentation of net incomes in 1939 by £200 over a large income range, and that if this augmentation were spread over the entire profession it would mean an average annual increase of £170 for each practitioner. The argument of the committee on this point had been that as the rate of remuneration from private practice was under the control of the practitioner, whereas that from insurance practice was not, the deficiency should be considered as appertaining to the insurance side of the practice. Dr. J. A. BROWN, who was a member of the Spens Committee, said it was abundantly clear that, if not the whole of the £170, at all events very nearly the whole, should be regarded as belonging to the insurance side.

The Secretary (Dr. CHARLES HILL) pointed out that in the different interviews there had been no commitment by the Ministry to the acceptance of the Spens Committee's findings, but in the letter now received from the Ministry it was stated that the Minister "fully accepts the substance of the recommendations of the [Spens] committee in their majority report upon the general scope and range of remuneration which general practitioners should enjoy in a public service." The Chairman of Council (Dr. DAIN) said that the Minister had intimated that he was not prepared to discuss at all the effect of the Spens Committee report so far as concerned the insurance capitation fee, but that he was prepared to discuss the terms and conditions of doctors in the new service, and when these were determined, to consider their bearing upon the new capitation fee. The representatives who met him had explained that they represented the Insurance Acts Committee only, and had no authority to negotiate any terms or conditions in a service which had not yet come into being; and there a disappointing interview terminated.

In a later interview with Ministry officials they found the same insistence that the implications of the Spens Committee report must not be considered except in relation to the new service, a position they could not accept.

In a very long and frank discussion, in which various forms of resolution were proposed, these were withdrawn in favour of a resolution proposed by Dr. J. A. IRELAND as follows:

"That the Minister be informed that the Insurance Acts Committee, while it welcomes the Minister's acceptance of the majority report of the Spens Committee and his recognition of the inadequacy of the capitation fee, regards the proposed increase of the capitation fee to 12s. 6d. as gravely inadequate."

This was carried unanimously.

The Next Step

Discussion then took place on the next step. Some members took the view, on a careful reading of the letter, that the door was not closed to further conversations. The chairman pointed out that any new approach must be accompanied by some counter-suggestion, expressing willingness to accept some body to which the controversy might be referred. The body which suggested itself as the most fitting for such a reference was the Spens Committee. The alternative would be the acceptance of some form of arbitration. Many members of the committee spoke in favour of the Spens Committee resuming its activities for this special purpose. On the other hand some question arose whether constitutionally the Spens Committee could properly function in this respect. On this point, however, Dr. TALBOT ROGERS drew attention to a letter from the Ministry of Health to the Association, dated May 17, 1944, when the suggestions which led up to the formation of the Spens Committee were brought forward by the Ministry. One passage from the letter read as follows:

"It seems to the Minister that what is required is to approach the whole subject afresh and with a clear field, and in co-operation with the profession to set on foot an inquiry by a small independent committee which would arrive at useful general standards, on which future arrangements between the profession and the Minister could be confidently founded. . . . It is realized that while the proposals

of the White Paper on a National Health Service are under discussion with the profession and others, it is not possible to anticipate what exact form any public general medical practice may take in the future, or what will be the terms and conditions on which practitioners are invited to take part in it. But in the Minister's view this does not affect the desirability of an early inquiry of the kind just indicated, the results of which would not prejudice the discussions of the White Paper at all, and would be equally valuable and usable no matter what forms of public medical practice may continue or may come into being under the present law or under any future legislation."

It was felt by the committee that this letter effectually disposed of the claim that the Spens Committee findings could be considered only in relation to the projected new National Health Service.

Resolutions were tentatively put forward by members of the committee. Dr. W. D. STEEL proposed that the Committee should express the opinion that the capitation fee should be at least 15s., retrospective to January 1, and that if this was not agreed to by the Minister steps should be taken to consult all insurance practitioners concerning future action.

The chairman suggested that in sending to the Minister the resolution already adopted it might be stated in a covering letter that this subject had received the very closest attention of the Insurance Acts Committee, and that certain matters had emerged in the course of discussion which they desired at a further meeting to place before the Ministry. The Minister might then be informed of the desire of the committee that the Spens Committee (which he could reconstitute without requiring further legislative sanction) should look into the matter, and that both the Minister and the Insurance Acts Committee should abide by its findings. That would be a clean-cut issue, and if the Minister refused they could then meet again and decide as to the summoning of a Special Panel Conference. The letter of May, 1944, would be brought to the attention of the Minister, and those who represented the committee would continue to insist that the present capitation fee must be considered on its own, quite divorced from any sort of fee which might obtain in the new service.

Claim for 15s.

After further discussion, a resolution was proposed to the committee, and Dr. Steel and others withdrew their wordings in its favour. It read as follows:

"That the Minister be informed that the Insurance Acts Committee would be prepared to recommend insurance practitioners to accept in the interim a capitation fee of 15s., retrospective to January 1, 1946. The committee would be willing, if the Minister so prefers, that the Spens Committee should be asked to state the implications of its majority report in relation to the current insurance capitation fee on the understanding that the Minister and the Insurance Acts Committee accepted, in advance, the findings of that Committee."

This also was carried unanimously, and a meeting which had lasted almost three hours terminated.

Correspondence**The Bill and the Capitation Fee**

SIR,—The most important fact facing the medical profession as a whole to-day is the matter of the N.H.I. capitation fee. The amount of the payment for the value of practices has already been decided upon and has been calculated on the capitation fee at its present level. Soon the payment of doctors' salaries will be determined. It is to be by capitation payment and will no doubt be influenced by the present capitation fee. The Winchester division have forwarded a motion on this subject for the next conference. We should remember, however, that the inadequacy of the capitation fee has been before the Insurance Acts Committee continuously for at least twenty-five years, and for twenty-five years they have failed dimly to effect any appreciable alteration. They have been to the Minister time after time with an excellent case and have been told they can have no more. What next? The matter is then dropped and raised again at the next conference. The Winchester division is merely continuing this hopeless cycle.

All through the last few years useless discussions have been taking place in respect of the new Health Act, when any other

ganization would have pressed for adequate payment before any discussion of any kind were held. The tendency in industry to-day is to pay 5½-day wages for a 5-day week, but we must still carry our 7-day week, with no increase in pay. When I raised the question of the capitation fee at a meeting some months ago, I was answered by an official of the B.M.A. that this would be dealt with immediately after the publication of the Spens report. Why has nothing been done now? Why is it necessary to have the matter on the agenda again and again with more and more delay? Surely the time has come for some other body to deal with this question. Cannot the divisions of the B.M.A. elect another body, led by adequate counsel, who would at least have the courage to hammer the matter out until a proper fee has been obtained? Have all the country doctors forgotten how Dr. Williams Freckman, acting alone, obtained the country practitioners' mileage grant when the Insurance Acts Committee had failed, as usual, so miserably?—I am, etc.,

Reading.

S. C. ALCOCK.

* The Ministry's reply to the repeated representations of the Insurance Acts Committee for an increased capitation fee will be found in the report of a special meeting of that committee at page 31 of the *Supplement*.—Ed., B.M.J.

A Good Augury

SIR,—Much correspondence has been written about the evils of State control of medicine, and the cold hand of officialdom as been referred to at times. May I be permitted to give my own experience with the nearest approach we have had so far—the National Health Insurance Scheme? In 1942 I was elected for service with the armed Forces, and I communicated with the clerk of the London Insurance Committee. He invited me to go and see him, and I was surprised at the kindness shown to me. Nothing appeared to be too much trouble to help me, and in one matter the clerk went much beyond what I need do in meeting my wishes.

Since then on several occasions I have found the same unailing courtesy and kindness, and I wish to place on record my gratitude to him. I have no connexion with the committee in any way, except as one of numerous "panel practitioners." If this is an augury for the State service, it is a good one.—I am, etc.,

CHARLES F. STOTT.

Rehabilitation

SIR,—I was much interested to read the report of the committee on rehabilitation (June 29, p. 187). I note that at the end of Section I (para. J) the committee ask for details of other facilities available for rehabilitation. I have recently become the medical officer of an industrial concern which is specializing in this form of work. This consists of a woodwork factory started by individual initiative and from a real social conscience in order to provide facilities for rehabilitation. It is taking 75% of disabled cases, class I and II, and providing employment for them at trade union rates. The cases consist of all types, both civilian and Service, and range from psychological disabilities to severe war injuries. The following condensed reports may give some idea of the range of cases:

B.S. 56.—Congenital heart with patent septum. Lengthy history of psychological difficulties resulting, finally, in complete dereliction.

B.S. 49.—Post-encephalitic Parkinsonism confined to one side. Injuries as test pilot.

B.S. 42.—Shrapnel in the right foot (Sicily 1943) resulting in very painful scars, and ankylosis of ankle joint from septic arthritis.

B.S. 44.—Rheumatic fever after 11-mile route march before D-Day. Psychological difficulties.

B.S. 47.—Blind.

B.S. 52.—Epileptic. Muscular cramp due to previous occupation in iron foundry, holding heavy objects in tongs all day.

B.S. 41.—Epilepsy.

B.S. 43.—Diabetes. Liability to hypoglycaemic attacks.

B.S. 48.—Psychological difficulties. Repeated treatment in psychological clinics and hospitals. Hyperhidrosis of hands—can be followed by trail of drops of sweat on the floor.

B.S. 50.—War injury to spine in Navy.

B.S. 55.—Bronchitis and asthma.

B.S. 57.—Both legs amputated.

This brief cross-section of some of the cases should give a fairly clear indication of the type of material. The medical

team consists of a psychologist, a trained physiotherapist, and myself. Frequent consultations are held between us and the managing director to ensure co-operation and a unified approach to the problems which arise. The foremen have been specially chosen for qualities of sympathy, tact, and ability to handle men of this type. They are kept informed of the medical aspect of each case and given special instructions by the medical team. The psychologist, in addition to taking full psychological histories, including periods of unemployment, making psychological tests and giving interviews, will also, where necessary, visit the homes of patients as a psychiatric social worker. Full reports are being obtained from medical attendants and hospitals.

The managing director and administrative personnel also work in the factory and make a first-hand study of the difficulties encountered by the workers. Everything is avoided which can give any suggestion of charity and the emphasis is laid on the desire of each individual to support himself by doing a worth-while job. The management invites inspection by members of the Rehabilitation Committee at any time.—I am, etc.,

London, N.W.3.

T. GLADSTONE.

Doctors' Houses

SIR,—I should like to point out to "Ex-Service Assistant" (*Supplement*, July 13, p. 12) that "colossal premiums asked for doctors' houses" are due to the colossal prices asked for any house. If a retiring practitioner were to sell his house for a pre-war price he would have to pay twice as much for a mere cottage—if he could get one. Even retired people have to live somewhere.—I am, etc.,

South Godstone.

H. E. GIBSON.

Association Notices

Meetings of Branches and Divisions

EXETER DIVISION

A general meeting of the Exeter Division was held on June 23 at the Royal Devon and Exeter Hospital, with Dr. J. D. Murray in the chair. The Annual Report of Council for 1945-6 (*Supplement*, April 20) was considered, and the chairman asked members if there was any clause to which they wished to draw particular attention. Dr. Richard referred to clause 65, relating to cost of living bonus to pensioners, and Dr. Eager, supporting this clause, hoped that representatives would do all in their power to ensure that this should be granted. Dr. Murray, referring to clause 66 (National Maternity Service), noted that the Royal College of Obstetricians and Gynaecologists had refused to modify in any way the conditions under which it was prepared to grant its diploma. He said that anxiety was felt lest, as a result of this, doctors who had been practising midwifery for a considerable time would be debarred from that work in spite of being authorized to do so by virtue of their position as qualified doctors. The meeting endorsed Dr. Murray's hope that strong representations would be made. On clause 75 (Education Act) concern was expressed at the different rates of pay for school children in hospital which were laid down by the education authorities and the health authorities respectively. The fees offered by the education authorities of one guinea for the first week and 1s. 6d. a day subsequently were held to be inadequate; they had been accepted only as a wartime measure and patriotic gesture. It was thought that the payment should be not less than one and a half guineas for the first week and 4s. 6d. a day for subsequent days. Dr. Roper drew attention to the point that no arrangements had been made for non-domiciliary treatment by general practitioners, but that after representations it had been agreed that a fee of 5s. per attendance would be authorized.

MALAYA BRANCH

With the return of many members of the B.M.A. to British Malaya, and on account of numerous inquiries from Asiatic members whose membership was in abeyance during the Japanese occupation, an effort is being made to reconstitute the Malaya Branch. The Northern Division (hon. secretary Dr. R. K. Ponniah, General Hospital, Penang) has already held its first meeting with an attendance of 20. A few clinical cases were shown and a discussion as to the business of the Division was held. The Division has agreed to meet monthly. The Southern Division has also held a meeting, but so far no report has been received. The F.M.S. Division (now styled Central) is holding a meeting soon. The object is to elect office bearers, and discuss ways and means of bringing the Divisions up to their former strength.

The Council of the Malaya Branch has, through the depredations of war, not yet been reconstituted, but the President-elect (Dr. J. W. Winchester), the hon. treasurer (Dr. Lee Choo Neo), and the hon. secretary (Dr. R. E. Anderson) have been working together to establish the Branch again. As many members have changed their

addresses, or have got out of touch with the Association, the hon. secretary is anxious that they should communicate with him (Dr. R. E. Anderson, Health Office, Kinta District Board, Ipoh).

MORPETH DIVISION

A meeting of all members of the profession in the area of the Morpeth Division was held on June 14.

A report on the activities of the Local Medical War Committee during the year 1945-6 was given by its chairman, Dr. H. Skinner Brown. The constitution of that committee in its present form was approved. The meeting then elected the members of the Local Medical War Committee to be appointed by the whole profession: Dr. T. S. Blacklock and Dr. A. B. H. Irvine. Members elected by the Executive Committee of the Division: Dr. W. Stephenson and Dr. G. R. Spence. Member elected by the M.O.H.: Dr. C. B. McGregor. Representatives of the medical staffs of hospitals, municipal and voluntary, in the area: Mr. A. A. Bonar and Dr. G. Stenhouse. Proposed representatives of the Local Medical and Panel Committee: Dr. H. S. Brown and Dr. M. Maclean. It was resolved that further members be co-opted by the above committee if considered necessary.

Dr. Brown then proposed a vote of thanks to Dr. Spence for his valuable services and expressed the appreciation of members for the large amount of conscientious work which Dr. Spence had carried out in the interest of the Division since he took up his duties as honorary secretary. This was passed with acclamation. After some discussion it was decided that the Executive Committee should meet at an early date and draw up a programme of meetings and lectures for the winter of 1946-7.

A meeting of members of the Morpeth Division was held immediately after the above meeting. An address was given by Mr. A. A. Bonar on the uses of penicillin in general practice. Dr. McGregor described her experience of the use of a penicillin spray in the treatment of diphtheria carriers. Some discussion followed. Dr. Willbur C. Lowry then showed two films dealing with the discovery, preparation, and methods of use of penicillin and the methods of detecting the sensitivity of various organisms to penicillin.

H.M. Forces Appointments

ROYAL NAVY

Temp. Acting Surg. Lieut.-Cmdr. (R.N.V.R.) R. W. Tipple has been transferred to the R.N. in the rank of Surg. Lieut.-Cmdr.

Temp. Acting Surg. Lieut.-Cmdr. (R.N.V.R.) A. J. Barrett and Temp. Surg. Lieuts. (R.N.V.R.) R. St. C. Mooney, D.S.C., A. C. Hamer, N. S. Marsden and R. W. Simpson have been transferred to the R.N. in the rank of Surg. Lieut.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Cmdr. E. E. D. Gray has been placed on the Retired List. Temp. Acting Surg. Lieut.-Cmdrs. J. H. Burkinshaw, D. W. Wallace, A. C. C. Hughes, and J. H. E. Summerhill to be Temp. Surg. Lieut.-Cmdrs.

Temp. Surg. Lieuts. T. G. Williams, H. S. Provis, A. B. Pollard, and R. S. P. Hawkins to be Temp. Surg. Lieut.-Cmdrs.

ARMY

Col. R. W. Galloway, C.B., C.B.E., D.S.O., late R.A.M.C., to be D.D.M.S., and has been granted the acting rank of Major-Gen. Col. E. B. Marsh, M.C., late R.A.M.C., to be Acting Major-Gen. Col. H. A. Sandiford, M.C., K.H.P., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brig. Col. F. C. K. Austin, late R.A.M.C., having completed four years in the rank, is retained on the Active List supernumerary. Lieut.-Cols. E. Underhill and J. M. Macfie, C.B.E., M.C., from A.M.C., to be Cols. Lieut.-Col. A. E. Richmond, C.B.E., from R.A.M.C., to be Col. (Substituted for the notification in a *Supplement* to the *London Gazette*, Nov. 19, 1945.)

ROYAL ARMY MEDICAL CORPS

Major-Gen. O. W. McSheehy, C.B., D.S.O., O.B.E., to be Col. Comdt.

Lieut.-Cols. P. J. Ryan, M.C., and G. T. Garraway have retired on retired pay, and have been granted the honorary rank of Col. Major (War Subs. Lieut.-Col.) J. M. Ryan to be Lieut.-Col. Major G. F. Harrison to be Lieut.-Col.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

War Subs. Majors W. G. Love and J. B. Bishop to be Majors.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) M. D. W. Hamilton has relinquished her commission on account of disability, and has been granted the honorary rank of Capt.

War Subs. Capt. (Mrs.) H. Polakova has relinquished her commission.

B.M.A. LIBRARY

The following books were added to the library during May and June, 1946:

- Albee, F. H., Powers, E. J., and McDowell, H. G.: *Surgery of the Spinal Column*. 1945.
- Bailey, H.: *Demonstrations of Operative Surgery for Nurses*. 1946.
- Bailey, H., and Lovc, R. J. McN.: *Short Practice of Surgery*. Seventh edition. 1946.
- Bockus, H. L.: *Gastro-Enterology*. Vols. 1, 2, and 3 and General Index. 1946.
- Brown, W.: *Personality and Religion*. 1946.
- Burrows, H.: *Biological Actions of Sex Hormones*. 1945.
- Cawadias, A. P.: *Hermaphroditos: the human intersex*. 1946.
- Christopher, F. (Editor): *A Textbook of Surgery*. By American Authors. Fourth edition. 1945.
- Crile, G., and Shively, F. L.: *Hospital Care of Surgical Patients*. Second edition. 1946.
- Drinker, C. K.: *Pulmonary Edema and Inflammation*. 1945.
- Dubrisay, L., and Jeannin, C.: *Précis d'Accouchement*. Tenth edition. 1945.
- Fothergill, C. F.: *A Doctor in Many Countries*. 1945.
- Gigon, F.: *The Epic of the Red Cross or the Knight-Errent of Charity*. 1946.
- Gley, E.: *Traité Élémentaire de Physiologie*. Tenth edition. 1942.
- Gurd, F. B., and Ackman, F. D.: *Technique in Trauma: planned timing in the treatment of wounds including burns*. 1945.
- Haynes, W.: *This Chemical Age: the miracle of man-made materials*. 1946.
- Honig, P., and Verdoorn, F. (Editors): *Science and Scientists in the Netherlands Indies*. 1945.
- Iselin, M.: *Chirurgie de la Main*. 1945.
- Jackson, C., and Jackson, C. L. (Editors): *Diseases of Nose, Throat, and Ear, including bronchoscopy*. 1945.
- Jones, T., and Sheppard, W. C.: *A Manual of Surgical Anatomy*. 1945.
- Jordan, E. O., and Burrows, W.: *Textbook of Bacteriology*. Fourteenth edition. 1945.
- Karnosh, L. J.: *A Handbook of Psychiatry*. 1945.
- Keith, Sir Arthur: *Essays on Human Evolution*. 1946.
- King, E. S. J.: *Surgery of the Heart*. 1941.
- Kolmer, J. A., and Boerner, F.: *Approved Laboratory Technique*. Fourth edition. 1945.
- Kuntz, A.: *The Autonomic Nervous System*. Third edition. 1946.
- Lawrence, J. S.: *The Sulphonamides in Theory and Practice*. 1946.
- League of Nations: *Handbook of Infectious Diseases*. 1945.
- Leitner, S.: *Die intravitale Knochenmarksuntersuchung*. 1945.
- Mayer, C.: *L'Homme ne Vaut que par le Progrès*. 1945.
- Michaelis, L. S.: *Anatomical Atlas of Orthopaedic Operations*. 1946.
- Millet, R.: *Claud Bernarde, ou l'Aventure scientifique*. 1945.
- Molesworth, H. W. L.: *Regional Analgesia*. 1946.
- Musser, J. H. (Editor): *Internal Medicine: its theory and practice*. Fourth edition. 1945.
- Orr, Sir John B.: *A Charter for Health*. By a Committee of the British Medical Association. 1946.
- Rollston, Sir Humphry, and Moncrieff, A.: *Modern Anaesthetic Practice*. Second edition. 1946.
- Rosseau, P.: *Histoire de la Science*. 1945.
- Rowbotham, S.: *Anaesthesia in Operations for Goitre*. 1945.
- Smithers, D. W.: *X-Ray Treatment of Accessible Cancer*. 1946.
- Stevenson, R. Scott: *Morell Mackenzie*. 1946.
- Stovin, G. H. T.: *Gas and Air Analgesia in Midwifery*. 1944.
- Thorndike, L.: *The Herbal of Rufinus*. 1945.
- Todd, A. T.: *Medical Aspects of Growing Old*. 1946.
- Tredgold, A. T.: *Manual of Psychological Medicine*. Second edition. 1946.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

- BROWN.—On July 13, 1946, to Kathleen, wife of James L. Brown, M.D., R.A.F.O., of 95, Hornby Road, Blackpool, a daughter.
- KELLY.—On July 16, 1946, at the Royal Cornwall Infirmary, Truro, to Susanna (née Findlay), wife of Dr. John Kelly, Isles of Scilly, a son.
- KENYON.—On July 11, 1946, in Manchester, to Dr. Marjorie Landau, wife of R. H. Kenyon, F.R.I.C., a daughter.
- RADCLIFFE.—On July 7, 1946, to Lilian, wife of Anthony Radcliffe, F.R.C.S., 15, Wimpole Street, a son.
- WILSON.—On July 9, 1946, at Spinners Wood, Sevenoaks, to Mary (née Silva), M.R.C.S., L.R.C.P., and Major J. Michael Wilson, R.A.M.C., a son.

MARRIAGES

- DORNHORST-INNES.—On July 8, 1946, in London, Antony Clifford Dornhorst, M.D., M.R.C.P., to Helen Mary Innes, M.B., Ch.B., D.M.R.
- SARGENT-SCOTT.—On July 4, 1946, Frank Sargeot, M.D., M.R.C.P., D.P.M., to Mary Margaret Scott.

DEATH

- CRICHTON.—On July 20, 1946, at Inverbrothock, Redhill, Crawford Smith Crichton, M.D., Edin., M.B., Ch.B., the dearly loved husband of Barbara and devoted father of Elizabeth, Ann, Robert, Susan, and Richard. Age 64 years.

BRITISH MEDICAL JOURNAL

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BRITISH MEDICAL ASSOCIATION

ANNUAL REPRESENTATIVE MEETING, LONDON, 1946

PRESIDENTIAL ADDRESS

MEDICINE IN TRANSITION*

BY

Sir HUGH LETT, Bt., C.B.E., F.R.C.S.

Consultant Surgeon to the London Hospital

I propose to begin my address by briefly reviewing the work of our profession during the anxious and exacting years of the war. It will not be possible to do more than outline some of the most outstanding features, but they will serve to show how great this work was and how much this country owes to its medical men and women, and to the profession as a whole.

Medicine During the War

When we speak of war our thoughts by reason of our training dwell first on the casualties, the wounded, and the sick. I will therefore begin by discussing the treatment of the wounded, the proportion that survived, and the extent to which they regained their full capacity. The final statistics are not yet published, but we know enough to realize that they will show a remarkable improvement over those of the first world war. Brigadier Philip Wiles,† for instance, has told us that in the M.E.F. during the year April 1, 1942, to March 31, 1943, the over-all mortality rate was only 2.1%, which is less than one-third of the rate in Egypt and Palestine during the previous war. No less striking is the very large proportion of the wounded who recovered completely and were able to return to their units.

These results must be mainly attributed to the work done by our medical scientists on the sulphonamides and allied preparations, and more recently the discovery of the value of penicillin, but important contributing factors were the establishment of the mobile field surgical units and the admirable organization for the collection and disposal of casualties, which enabled the wounded to be treated with so little delay. Perhaps only those who served in the last war and remember the extent and severity of suppuration in the wards, the long and often painful convalescence of so many of the wounded, and the number of amputations that had to be performed, can fully appreciate the change that has taken place. Then again, the science of blood transfusion has made great progress, and due credit must

be given to those who by their work in the laboratory and in the field were instrumental in saving many thousands who without this treatment would have had little chance of recovery. Among other surgical triumphs the intensive study of rehabilitation has enabled large numbers to return to a life of full activity who in the last war would have been permanently and often seriously handicapped by their injuries.

If we turn to Medicine we find that in this war, as in the last, preventive inoculation, combined with chlorination of water supplies, almost eliminated typhoid, which was such a scourge in the South African War, when among the relatively small forces employed there were 59,750 cases, with 8,227 deaths. With the help of the sulphonamides the mortality of cerebrospinal meningitis fell from the high proportion of 50-70%, which obtained in the previous war, to 10% in this, and in some outbreaks to as low as 4%. Nor can we forget the triumph over typhus through immunization and the use of D.D.T.

In the early stages of the campaign in South-East Asia tropical diseases took a heavy toll and presented a very serious problem. A special word of praise is due to those who solved it and brought the prevention and control of these diseases to such a high level that they made a great contribution to the success of the campaign. I need only recall the speech of Admiral Lord Louis Mountbatten at the Guildhall on July 10, when he said that to the discomfort of the Japanese, who had no remedy against these diseases, he deliberately chose unhealthy areas in which to fight. It would be difficult to imagine a greater tribute to the work of the Medical Services.

I have of necessity to omit much that should be mentioned and must pass over much of the valuable work that was done at home by the E.M.S., by the rank and file of the profession, and by the medical officers of health. I cannot, however, omit reference to the Central Medical War Committee and its laborious task of classifying all the doctors on the *Register* and keeping the lists up to date. In addition it undertook the responsible work of making

* A brief address on his election to the Presidency of the Association at the Annual General Meeting on July 24.

† *Lancet*, April 22, 1944.

nominations for the Services with the help of the Committee of Reference and the local Medical War Committees. This was arduous and most difficult, for, while the Committees had to meet the tremendous demands of the Services, they had to keep constantly in mind the needs of the civil population and at the same time to give sympathetic consideration to cases of special hardship. All these things make a worthy record, and the profession may well feel proud of what it has achieved.

The Royal Colleges and the B.M.A.

As we review the last seven or eight years we cannot overlook the close relations that have developed between the Royal Colleges and this Association. Until shortly before the war each pursued its own path; each was concerned almost entirely with its own affairs, and there was no regular channel of communication between them.

In 1938, however, when the Committee of Reference of the Royal Colleges in England, originally appointed in the first Great War, was revived, a move was made to put an end to this isolation. Dr. Anderson, then Secretary of the Association, was invited to serve as liaison officer between this Committee and the Central Medical War Committee, and it was decided to hold meetings in the house of the Association. As the late Chairman of the Committee of Reference, I gratefully acknowledge the courtesy of the Association in providing the accommodation, and its generosity in placing its secretarial department at the disposal of the Committee.

Then in 1940 the Association invited all the Royal Colleges to join with it in reviewing the peacetime organization of the general medical and hospital services, to consider how far they were satisfactory and how they could be made more efficient. After a little negotiation the invitation was accepted and the Medical Planning Commission was formed. This was a historical event. For the first time the various bodies met together in common council to debate matters in which all members of the profession were concerned.

When, therefore, the last Government published its White Paper on a National Health Service the profession as ready and prepared for discussions with the Minister

Health, and the Negotiating Committee arose almost automatically from the Medical Planning Commission.

Lastly, the President and Council of the Royal College of Surgeons invited the Association to send a representative to attend the meetings of the College Council. Dr. Guy Dain was nominated and received a warm welcome.

Critical Days

These are critical days, and this increasing co-operation must give satisfaction to those who look ahead and see the dangers that may arise from State control over the profession in their care of the sick.

The high standard of British Medicine and its prestige are due in no small measure to the freedom the profession has hitherto enjoyed: a freedom unfettered by the trammels, the frustrations, and the infinite delays of bureaucracy, and, above all, a freedom untouched by the ebb and flow of politics.

The care of the sick is an art as well as a science. Medicine is not a plumbing job, nor is it as simple as building houses. Men and women are not robots—they

are sentient human beings, varying in their constitution and in their response to different forms of treatment. Each patient is an individual with his own temperament, foibles, likes, and dislikes; each needs sympathetic understanding and encouragement. If we are to maintain our ideals, if we are to continue to regard our patients as individuals and not merely as cases and types of certain forms of disease, if we are to preserve the invaluable confidential relationship between doctor and patient, the freedom of the profession in clinical matters must be preserved. Research must be encouraged in every possible way, but it is to be remembered that money alone cannot bring results, nor have all men the temperament and mental qualities it demands: discoveries are not made to order. Most important is the fact that successful research is a rare and delicate plant which flourishes at its best only in an atmosphere of freedom.

In the uncertain months and years that lie ahead it is vital that the medical profession should be united and able to speak with one voice; otherwise it cannot hope to have the influence that is essential if the interests of the sick are to be safeguarded to the full and the members of the profession are to have proper consideration. Every effort, therefore, must be made to maintain and develop the close relationship that now exists between the Association and the Royal Colleges. Each body has its own province. The Royal Colleges are concerned with the promotion of the art and science of medicine, surgery, obstetrics, and gynaecology, and they are responsible for the growth of their branch of learning both directly and through their Fellows on the councils of the universities. On the other hand, there is much that can be done only by the British Medical Association. It has rendered great services to the profession, and its task has not always been easy. In such a democratic body criticism is of course inevitable; but constructive criticism is always welcome: it is a valuable corrective and strengthens the whole system. The Council must be gratified and encouraged by the rapid increase in the membership of the Association, which has grown from 38,000 in 1938 to 52,000, and now represents some 80% of the profession. It is to be hoped that it will grow even stronger and ultimately include all British medical men and women.

Constant Vigilance

I have drawn attention to the high standard of Medicine in this country and have mentioned some of the great achievements of our medical men and women during the war. Now, however, that Medicine has been dragged into the turbulent sea of politics the future is obscure. Steeped as we have been in the great traditions of our profession since we first entered the wards of our teaching hospitals, some of us may feel that we can afford to smile at the little minds and loud voices that decry us and accuse us of being self-seeking obstructionists. But constant vigilance will be necessary, and, for this reason the present happy co-operation between the Association and the Royal Colleges should be permanent and not allowed to lapse when the immediate emergency has passed. It is only by working together, consolidating our profession, and making it as strong as possible that we can protect the sick and maintain the proud position of British Medicine, together with all those things tangible and intangible for which it stands.

PROBLEMS ARISING FROM THE USE OF PENICILLIN IN GONORRHOEA

BY

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Among the problems which have arisen from the penicillin therapy of gonorrhoea are the following: (1) Can the multiple- (five or ten) injection technique used so successfully in the Services be superseded in civilian out-patient practice by a "one-shot" or a "two-shot" method? (2) Does the dosage of penicillin used in the treatment of gonorrhoea "mask" the presence of a concomitantly acquired syphilis, or does it not? (3) Is there any danger that the single-injection method of treatment, if it should fail, will produce a penicillin-fast strain of the gonococcus? (4) Is it advisable to give irrigation when penicillin is used?

Articles that have recently been published show that among those engaged in treating venereal disease there are very decided differences of opinion on these questions. For example, Allan (1946) describes the apparently completely successful use of a single-injection method (dose 200,000 or 300,000 units) in a small group of thirty cases of gonorrhoea, and expresses the hope that "in some clinic dealing with large numbers, and where patients can be under more continuous supervision, the single-injection method will be tried out on enough cases to provide accurate statistics." Allan states that "the single-injection method has several demerits"—for example, "the danger of producing a penicillin-fast strain of the gonococcus" and "the very real danger of masking an early syphilis"—and in this latter connexion he stresses "the necessity for regular serological tests for the following twelve months." On the other hand, Marshall (1946), in commenting on Allan's pronouncements, states that he has "not yet seen any cases where syphilis became evident later than three months after penicillin therapy for gonorrhoea and without another exposure to possible infection." Marshall remarks that "it would be interesting to have . . . reasoned opinions . . . on the length of follow-up necessary after the treatment of gonorrhoea with penicillin in the doses now used."

Various Injection Techniques Compared

The efficacy of multiple-injection techniques in gonorrhoea, either untreated or sulphonamide-resistant, has been emphasized by Harrison (1945), who recommended five 2-hourly doses of 30,000 units, and more recently by Lées (1946), who adduced a cure rate of 98% in 344 sulphonamide-resistant cases treated with ten 3-hourly doses of 10,000 units. Marshall (1945) has stated recently that "the best method of treatment of gonorrhoea with penicillin . . . is with doses of not less than 100,000 units given intramuscularly in four or five separate injections at 2-hourly or 3-hourly intervals over a period of 8-12 hours." On the other hand, from the point of view of civilian practice, multiple-injection techniques have distinct drawbacks, and a "one-shot" or "two-shot" method much more nearly approaches the ideal. But is it practicable by only one or two injections to achieve a cure rate comparable to the high efficiency of the five-injection plan? Romansky and Rittman (1944) have shown that a single dose of 100,000 units could be highly effective when its action was delayed and prolonged by suspending the penicillin in peanut oil containing 2 or 3% of beeswax. Lloyd Jones *et al.* (1946), using suspensions of penicillin containing magnesium sulphate to delay absorption, have described a one-injection method which achieved apparent cure in 95.6% of 113 male out-patients. In the hope of arriving at a satisfactory minimal-injection technique, various methods have been tried in groups of cases at the Edinburgh clinic, and the results recorded are shown in Tables I and II.

Certain cases were considered unsuitable for a one-injection or a two-injection technique, and for these a multiple-injection

method was used; these cases fell into one or other of the following groups: those with metastatic complications, such as arthritis and iritis; those with local complications, such as abscess of the prostate gland in the male or abscess of Bartholin's gland in the female; young girls with gonococcal vulvo-vaginitis; and babies with gonococcal ophthalmia. In one of these cases chosen for multiple-injection treatment—that of a little girl of 4 suffering from gonococcal vulvo-vaginitis—the gonococcal infection showed amazing persistence after what constituted a colossal dosage of penicillin even for this resistant type of case. First of all this child was given fifteen 3-hourly intramuscular doses, each of 20,000 units, which resulted in an apparent clearing-up and temporary disappearance of gonococci from the smears. But slight redness and discharge returned and gonococci reappeared in the smears, so another course of twenty-four 3-hourly doses, each of 20,000 units, was administered. Again there was temporary improvement, and thereafter again recurrence. A third course was now given, comprising sixty 3-hourly doses each of 40,000 units, and, after the usual improvement, again relapse occurred. By this time the child had received no fewer than ninety-nine intramuscular injections of penicillin to a total dosage of 3,180,000 units—more than enough to cure most cases of sero-negative primary syphilis in an adult—and still the gonococcus had not been beaten. In pity for the little patient the idea of still more penicillin was abandoned; instead recourse was had to the sulphonamides, and 15 g. of sulphadiazine caused disappearance of signs and gonococci, though the period of observation has not been long enough to justify claiming a cure.

Tables I and II show in comparison the results obtained by one-shot and two-shot techniques.

TABLE I.—Results of Giving One Single Intramuscular Injection of 200,000 Units

	Period of Investigation	Nature of Preparation	No. of Cases	No. of Relapses	Cure Rate %
Male cases:					
Group 1 . .	June, 1945, to Feb., 1946	Saline solution without adrenaline	135	31	77.0
" 2 . .	July, 1945, to Oct., 1945	Saline solution plus adrenaline	103	20	80.6
" 3 . .	Nov., 1945, to Dec., 1945	Oil-beeswax suspension	41	4	90.2
Female cases:					
Group 1 . .	July, 1945, to Jan., 1946	Saline solution without adrenaline	35	4	88.6
" 2 . .	July, 1945, to Dec., 1945	Saline solution plus adrenaline	58	7	87.9

TABLE II.—Results from Two Intramuscular Injections, Each of 200,000 Units

	Period of Investigation	Nature of Preparation	No. of Cases	No. of Relapses	Cure Rate %
Male cases . .	Jan., 1946, to April, 1946	Saline solution	190	8	95.8
Female cases	Jan., 1946, to April, 1946	Saline solution	55	5	90.9

Description of Preparations Used

All solutions of penicillin were made up with sterile normal saline, the usual concentration being 200,000 units of the sodium salt dissolved in 4 or 5 ml. of saline. The beeswax-peanut-oil suspensions contained 2.5 or 3.5% beeswax, and the strength of the suspension was 50,000 units per ml.

In the group of cases in which adrenaline was used to prolong the action of the penicillin by delaying absorption and

excretion, 2 minims of 1 in 1,000 solution of adrenaline hydrochloride were added to and mixed with the penicillin solution in the syringe, the adrenaline being used in an attempt to prolong the bacteriostatic concentration of penicillin in the blood according to the method suggested by Fisk, Foord, and Alles (1945). In the second group of cases, which received two intramuscular injections, the second injection was given six to eight hours after the first. With this scheme it is necessary for the patient to report for treatment twice in the same day. So far it has been possible for every patient to arrange to do this. In the event of a person's reporting for the first time in the evening, for the sake of consistency, and to avoid having to give a second injection in the middle of the night, the first injection might be deferred till the following morning. There is, however, an obvious risk in delaying treatment, and it is, on the whole, probably better in these cases to use a single-shot technique, and repeat it the next morning if smears still show gonococci.

Method of Administration, and Tolerance

All injections were made intramuscularly into the upper outer quadrant of the buttock, and when two injections were given both buttocks were used. As a rule the intramuscular injections were well received by the tissues. Reaction, expressed by pain, swelling, redness, and induration, varied with the make and batch of penicillin used, and was apparently due to impurities, being most evident where the sample was dark brown in colour and of low penicillin content, and very slight with light-yellow samples of greater purity and potency. In most cases the local intolerance was negligible, and, in the few where local pain and stiffness were encountered, these were not of an incapacitating nature.

General intolerance has been minimal, though in a few cases faintness, nausea, pallor, sweating, and rapid feeble pulse occurred after the injection. It is thought that in most instances this was psychological, and due to the prick of the needle rather than to the action of the penicillin solution. The majority of the patients exhibiting these features occurred in the series receiving 2 minims of adrenaline in addition to the penicillin, and in these the untoward effects might have been due to the rapid absorption of the adrenaline. This was a transient phenomenon and passed off quickly without special treatment.

Relapses

A certain number of cases in each series had received previous treatment with sulphonamides and some had been treated with penicillin. Those which had received previous sulphonamide treatment were neither more nor less liable to relapse on the dose of penicillin given than those which had had no previous treatment. In each series 91% of the males had no urethral discharge the second day after treatment. The duration of the discharge depended on the severity of the infection before treatment was instituted; in only 2.4% of the male patients did it persist for more than three days.

11 cases which relapsed on the initial dose of penicillin—where the urethral discharge persisted or returned (usually within 14 days) and was found to contain gonococci—were cured by further treatment with penicillin, usually by one of the methods using multiple injections of saline solution at 3-hourly intervals. A few of these relapse cases were cured by a course of 25 g. of sulphathiazole or sulphadiazine given in five days.

All cases reported have been under observation for at least two weeks after treatment with penicillin. Most of them have been under observation for some months, and several have been observed for six months and discharged as cured.

Concomitant Syphilis

Five of the male patients in the series now reported on, and two additional males, have during their period of observation developed syphilis, and, so far as has been ascertained, infection with *Sp. pallida* took place at the same time as infection with the gonococcus. In these cases the incubation period before the appearance of the chancre has varied from 39 to 184 days. All the patients strongly denied any exposure to infection after having had their gonorrhoea treated with penicillin. The salient features of these seven cases are now detailed.

Reports of Cases

Case 1.—Age 33. Exposure, Dec. 6, 1944; urethral discharge, Dec. 12. Took 12 g. sulphapyridine. Seen on Jan. 10, 1945; gonococci still present in urethral smear. Blood Wassermann negative. Given 30 g. sulphathiazole, after which discharge stopped. Jan. 24: Reported with return of urethral discharge, and gonococci again present in the smears. Given 30 g. sulphadiazine. Feb. 1: No discharge; urine clear. Feb. 15: Recurrence of profuse purulent urethral discharge containing gonococci. Given penicillin in oil-beeswax suspension, 100,000 units. Feb. 16: No discharge; urine clear. Feb. 19: Routine blood tests showed both Wassermann and Kahn to be strongly positive. March 8: Course of sixty 3-hourly injections, each of 40,000 units, of penicillin started. March 9: Quantitative Wassermann titre, 36 doses. March 11: First appearance noted of indurated sore at the urinary meatus and of a scar in the coronal sulcus. The period between exposure and the development of positive blood tests was 75 days; to the appearance of a "sore," 95 days.

Case 2.—Age 23. Exposure, April 14, 1945; urethral discharge, April 19. April 21: Gonococci very numerous in urethral smear. Blood Wassermann and Kahn reaction both negative. Given 25 g. sulphathiazole, followed after an interval by 30 g. May 22: As the discharge containing gonococci still persisted he was given 4 injections of penicillin, each of 15,000 units 3-hourly (total, 60,000 units). May 23: Indurated lesion on under-surface of shaft of penis. Three successive dark-field examinations of serum were negative for *Sp. pallida*. Lesion healed satisfactorily. Blood Wassermann and Kahn negative. July 18: Blood Wassermann weak to moderately strong positive; Kahn strongly positive. Incubation period to development of "sore," 39 days; to positive blood-Kahn, 95 days.

Case 3.—Age 30. Exposure, Aug. 16, 1945; urethral discharge, Aug. 22. Seen on Aug. 23. Urethral discharge contained very numerous gonococci. Blood Wassermann and Kahn both negative. Given one dose of penicillin, 200,000 units, plus 2 minims of adrenaline. Sept. 22: Blood Wassermann negative. Oct. 1: Two small circular abrasions in coronal sulcus, not indurated and with no associated inguinal adenitis. Three successive dark-field examinations of serum were negative for *Sp. pallida*. Lesions healed by Oct. 6, and on this date blood Wassermann and Kahn both negative. Oct. 22: Routine blood Wassermann and Kahn strongly positive. Oct. 27: Slightly indurated swelling in coronal sulcus, with no erosion of skin surface. After scarification a small bead of serum was obtained, and in this a few *Sp. pallida* were demonstrated. Quantitative blood Wassermann strongly positive 10 doses; Kahn strongly positive. Incubation period, 72 days.

Case 4.—Age 35. Exposure, Oct. 30, 1945; urethral discharge, Nov. 2. Seen on Nov. 5. Gonococci very numerous in purulent urethral discharge. Blood Wassermann negative. Given one dose of penicillin, 200,000 units. Relapsed. Nov. 9: Given 4 doses of penicillin, each of 40,000 units, 3-hourly (total, 360,000 units). Jan. 3, 1946: Circular indurated lesion on shaft of penis present for one week, serum from which contained *Sp. pallida*. Blood Wassermann negative. Incubation period, 60 days.

Case 5.—Age 39. Exposure Oct. 29, 1945, urethral discharge, Oct. 31. Seen on Nov. 3: numerous gonococci were demonstrated in the purulent urethral discharge. Blood Wassermann and Kahn both negative. Given one dose of penicillin, 200,000 units. Feb. 11, 1946: Erosion on glans penis, in serum from which *Sp. pallida* demonstrated, present for four weeks. Blood Wassermann strongly positive. Incubation period 70 days.

Case 6.—Age 40. Reported on March 8, 1946. Indurated erosion in coronal sulcus present since Feb. 15, serum from which contained *Sp. pallida*. Blood Wassermann strongly positive. Last exposure on Aug. 15, 1945, in Germany. Gonorrhoea treated at that time with penicillin (no record of dosage). Strongly denied any further extramarital exposure. Wife first examined on March 9, 1946. No extramarital coitus; last marital coitus on March 2. Clinical examination negative and both blood Wassermann and Kahn negative. Kept under observation, and last seen on June 1. Blood Wassermann and Kahn tests made on nine further occasions up to that date had proved consistently negative. Incubation period, 184 days.

Case 7.—Age 25. Exposure, last week of December, 1945; urethral discharge, Jan. 1, 1946. Treated with 5 intramuscular injections of penicillin at 2-hourly intervals. Ulcer appeared at root of penis in middle of March. Seen on April 25, when he had florid secondary syphilis. Blood Wassermann strongly positive. Incubation period, 81 days (approximately).

In these seven cases the average incubation period is 82 days, being possibly heightened disproportionately by the phenomenally long period of 184 days recorded for Case 6. After excluding the doubtful No. 2, also No. 6, the average incubation period of the remaining five cases is 70 days, and, if we add to this a further 28 days, which may be

necessary for the serological tests to become positive, it is evident that well over three months may elapse before the phillix is recognized, provided, as may happen (see Case 2), the dark-field examinations of serum from the "sore" do not demonstrate *Sp. pallida*. This observation, if justified, would seem to have an important bearing on the argument that expectant mothers suffering from gonorrhoea should receive penicillin treatment in preference to penicillin in order to ward against the adverse effect on the foetus which might result from the presumed action of penicillin in delaying the recognition of a concomitant syphilis.

Commentary

In so far as the experience set out may help in the solution of the problems enunciated above, the answers provided are:

1. A two-shot technique used on an out-patient basis can provide, in male cases, a cure rate (95.8% in 190 cases) which compares favourably with the efficiency (around 95%) claimed for five- or ten-dose schemes. The two-shot cure rate achieved in 55 female cases was 90.9%.
2. The dosage of penicillin necessary to cure gonorrhoea may apparently prolong the inherently long incubation period of syphilis.
3. There is no evidence that failure of the one-injection or of the two-injection methods of treating gonorrhoea will produce a penicillin-fast strain of the gonococcus.
4. As it is only in a small proportion (2.4% in this series) of penicillin-treated cases that urethral discharge persists after the third day, the practice of giving routine irrigations is not likely to cause a significant increase of efficiency. Cases of gonorrhoea with superadded penicillin-resistant infections must be only a small minority, and, when encountered, it is reasonable to anticipate that some of them may be benefited by irrigations.

Summary and Conclusions

A one-shot or two-shot technique in the treatment of gonorrhoea is more suitable in civilian practice than the multiple-dose methods, and such limited-dose techniques can be conveniently applied to out-patients.

In 190 male and 55 female cases of gonorrhoea a two-injection scheme (2 × 200,000 units) gave cure rates of 95.8% and 90.9% respectively.

The dosage of penicillin employed to cure a gonorrhoeal infection may apparently delay the development of concomitant syphilis, and therefore penicillin-treated gonorrhoea cases should be observed for at least six months, and possibly longer.

Failure of a limited-dose technique is not likely to produce resistance to penicillin. In the penicillin treatment of gonorrhoea routine irrigation is not necessary, but may be tried if a urethral discharge persists for longer than three days.

The two-dose method advocated, using saline solutions of sodium penicillin, is simple and easily applied, the solutions used requiring no special skill in dispensing beyond the care necessary to ensure sterility and aseptis.

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The Minister of Health, in exercise of his powers under Section 2 of the Water Act, 1945, has appointed the members of the Central Advisory Water Committee. Its terms of reference are to advise the Minister of Health, or any other Minister concerned, upon matters connected with the conservation and use of water resources; on the amendment of enactments which relate to, or in any way affect, the conservation or use of water resources or the provision of water supplies; and on any question that may be referred to the Committee by the Minister in connexion with the operation, or proposed amendment, of relevant enactments. It will also consider the operation of any such enactments, and make recommendations for their extension or modification. Communications concerning the work of the Committee should be sent to the secretary, Mr. M. R. P. Gregson, at the Ministry of Health.

INDIVIDUAL RESISTANCE TO MALIGNANT DISEASE

ILLUSTRATED BY A CASE IN WHICH A METASTATIC DEPOSIT FROM A CARCINOMA OF THE BREAST OCCURRED IN THE APPENDIX AND LED TO PERFORATION AND PERITONITIS

BY

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In general we are liable to think of the human body as capable of mustering only pathetic resistance to malignant disease. It has long been recognized, however, that in certain individuals an extraordinary power of resistance can be shown. Teicher (1908), Pearce Gould (1910), Bashford, Murray, and Cramer (1907), and Schmidt (1903) proved that a varying proportion of metastatic deposits can be strangled successfully by the natural mechanisms of defence, and probably most cancer cells carried in the blood fail to establish themselves. Unfortunately, in most cases the enemy's reserves seem to be interminable, and in the end a proportion of the secondary deposits succeed in establishing themselves, and, by spreading, finally win the battle and the patient dies.

Histologically, the local defence reaction of the body to malignant disease is manifested by fibrosis and lymphocytic and eosinophil infiltration; it would appear that the body attempts to restrain tumour growth by encapsulation and strangulation. As compared with most normal tissues, malignant tumours require a correspondingly greater supply of nutrient fluid, containing especially glucose and oxygen, because of the rapidity of their growth and their wasteful methods of metabolism. Warburg (1925, 1925-7, 1930) has shown that in most malignant cells glycolysis, or fermentation of glucose to lactic acid, overshadows the normal respiratory process, in which glucose is split into carbon dioxide and water. Thus encapsulation, associated with constriction of the blood vessels supplying the tumour, may succeed in destroying malignant cells in a certain proportion of the foci. Teicher (1908) demonstrated the success of these local defence mechanisms against isolated metastatic deposits of chorion-epithelioma, one of the most actively proliferative of all tumours. He investigated the histological processes of defence in great detail and showed that metastatic deposits of tumour cells became encapsulated by an even more active proliferation of connective-tissue cells, which surrounded, constricted, starved, and finally replaced the tumour. Haemorrhage followed by coagulation, which is a characteristic feature associated with the growth of many of the most malignant nodules, also plays an important part in the destruction of tumour cells. It obstructs the supply routes to peripheral areas by pressure from within, and Teicher (1908) believes that it also stimulates the peripheral connective-tissue cells of the host to proliferate and form a fibrous encirclement. Pearce Gould (1910), Bashford, Murray, and Cramer (1907), and Schmidt (1903) have all described cases in which the local success of the defence mechanisms against isolated metastatic deposits has been proved histologically.

In 1939 Atkins made the interesting suggestion that the fibrosis occurring in chronic mastitis is part of the mechanism of defence against the onset of malignant disease. He confirmed the important work of Bloodgood (1932), who followed up a long series of cases for some years and who concluded that the incidence of breast cancer in patients suffering from a chronic mastitis is no greater than in the general population. The various types of chronic mastitis show varying degrees of epithelial and fibrous-tissue proliferation. Such epithelial activity might conceivably progress towards carcinoma if further stimulation occurred. Atkins (1939) says: "If now this fibrosis accompanies epithelial changes, which threaten cancer but rarely fulfil their threat, it is possible that the fibrous tissue may be produced in response, to that threat and may play a part in preventing it from coming to fruition. Consequently it would be just those patients who are able to develop a fibrous-tissue reaction to epithelial overgrowth—that is, those who complain of the symptoms of chronic mastitis—who would be unlikely to develop cancer."

We believe that it must be recognized that peculiar individual resistance to malignant disease occurs as well as the more generally recognized individual and organ susceptibility. Unfortunately, patients with this extraordinary resistance to malignant disease are rarely seen, and even they often succumb eventually, perhaps after a lapse of years, to the relentless attack of malignancy.

Case Report

The patient, an unmarried woman aged 40 who worked as a wool-sorter, had had a radical amputation of the left breast 3 years 8 months previously (May 29, 1933). She had been in excellent health until about one month before admission to hospital, but during the last month her appetite had been poor, and she had lost weight and energy and suffered from constipation. Pain in the lower abdomen had started suddenly at 2.30 a.m. on the day of admission (Feb. 10, 1937); in the afternoon of the same day the pain became worse and she vomited two or three times. Later in the evening the pain became even more severe, and she was brought to hospital.

On examination (Feb. 10, 1937, 9.30 p.m.) the patient was flushed and sweating, and her tongue dry and coated. Her temperature was 100.4° F. (38° C.), pulse rate 132, and respirations 36. On the left side of her chest there was a scar such as occurs after a radical amputation of the breast. There were no signs of recurrence locally or in the axillary or supraclavicular glands. The right breast appeared to be normal. The abdomen did not move freely on respiration, and there was rigidity over the lower half. The whole abdomen was tender, but the tenderness was most marked below the umbilicus and especially in the right iliac fossa. On rectal examination there was extreme tenderness in the region of the pouch of Douglas.

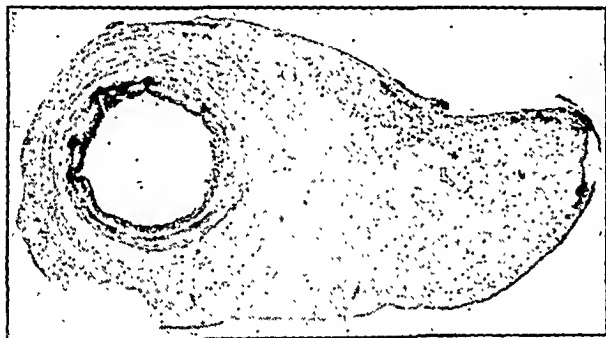


FIG. 1.—Transverse section of appendix and meso-appendix showing a nodule of secondary cancerous infiltration of the meso-appendix near the middle of the upper surface. ($\times 3$.)

Operation.—Under ether anaesthesia the abdomen was opened by a right paramedian incision. There was free pus in the pelvis. The appendix was perforated near its base; its distal extremity was adherent to the right side of the pelvis, and, after mobilization, the appendix was found to be stiff and extraordinarily hard. Both ovaries were enlarged, nodular, and indurated. The appendix, both ovaries, and both Fallopian tubes were removed. A rubber drainage-tube was placed in the pouch of Douglas, and the wound was closed with another (smaller) tube draining the abdominal wall.

Pathological Reports (Prof. M. J. Stewart).—(1) *Left Breast* (May, 1933):—"The tumour is a rather cellular scirrhus carcinoma which is spreading along the ducts. An outlying nodule of growth is involving some adjacent lymphoid tissue, but a separate lymph node shows no invasion." (2) *Appendix with Meso-appendix* (February, 1937):—"Wall greatly thickened. Serous surface shows a fibrinous exudate. At the distal extremity the lumen is dilated and contains frank pus. At one point there is a breach in the serous surface with numerous pale-yellow foci visible in the depths. Histological examination reveals deposits of infiltrating scirrhus carcinoma in the greatly fibrosed and thickened subserous coat." (Figs. 1 and 2.); (3) *Ovaries and Tubes* (February, 1937):—"The ovaries are enlarged and nodular. Their surface is congested and covered with adherent lymph. The Fallopian tubes show congestion of the serous coat, and their lumen is distended with clear fluid. Histological examination reveals infiltration of both ovaries and both tubes with a rather anaplastic carcinoma of scirrhus type which, from the character of the growth, most probably originated in the breast."

Progress.—The patient was severely ill for three days after the operation (February, 1937), but afterwards progress was uneventful, and the abdominal wound healed satisfactorily. An x-ray examination of the chest showed no signs of secondary deposits. On March 2 a course of deep x-ray therapy was started by Dr. J. M. Lees—200 kV 1 mm. Cu 2500 r in four weeks to five pelvic areas.

On March 10 the patient was discharged from hospital. In April 750 r to five areas was given, making a total of 3250 r in two months. On Oct. 27, 1937, the patient had gained 1 st. 2 lb. (7.25 kg.) in weight and was free from symptoms. There had been no menstrual periods since the day after the second operation. She was working, and felt "full of energy." Abdominal and rectal examination revealed no abnormality. On March 17, 1938, although the patient appeared to be in excellent general condition and had gained more

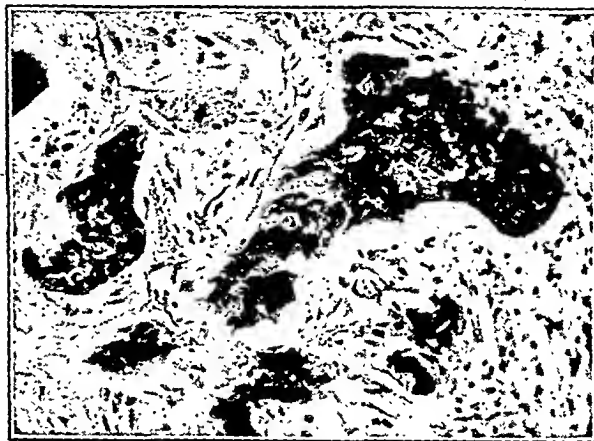


FIG. 2.—High-power view of secondary deposit in meso-appendix showing groups of cancer cells embedded in an abundant fibrous matrix. ($\times 180$.)

weight, physical examination revealed a small red indurated plaque 1/2 in. by 1/4 in. (1.27 cm. by 0.63 cm.) near the centre of the scar on the left side of the chest. As the plaque was movable over the underlying tissues it was excised, under local analgesia, with a circumscribed area of surrounding tissue.

Pathological Report (4) (March 18, 1938; Prof. M. J. Stewart).—"This portion of skin and subcutaneous tissue from the scar of the previous amputation of breast shows extensive infiltration by scirrhus carcinoma." (Fig. 3.)

In May, 1938, deep x-ray therapy was given to the left breast area by tangential fields and to the left axillary and supraclavicular regions (200 kV 1 mm. Cu 2400 r in 19 days). On May 3, 1939, the patient came to me and asked to have her right breast examined because it had "changed its shape." She was in sound general health, had gained more weight, and had no pain or other worry-

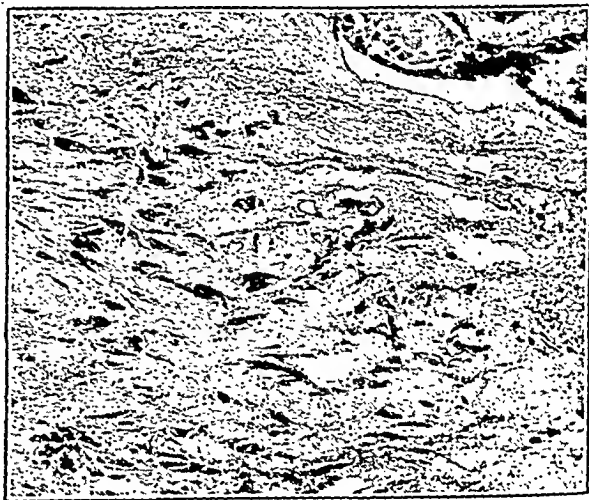


FIG. 3.—Section showing recurrence in scar of left breast. ($\times 40$.)

ing symptoms. The nipple on the right side was retracted and there was a small area of peau d'orange surrounding it for a distance of about 2 in. (5 cm.) in all directions. On palpation there was an ill-defined swelling about 4 in. (10 cm.) in diameter occupying the central portion of the breast. The swelling was adherent to the skin but movable over the deeper tissues. The glands in the right axilla were not palpable. No other abnormal physical signs were found on examination of the abdomen and pelvis, and no more nodules were palpable over the site of the left breast. Neither the left axillary nor the supraclavicular glands were enlarged. An x-ray examination of the chest revealed no evidence of secondaries.

On May 11, 1939, a radical amputation of the right breast was performed by Rodman's method at the Dewsbury and District Infirmary. The patient went home 16 days after the operation, by which time the wound had healed.

Pathological Report (5) (May 21, 1939; Prof. M. J. Stewart).—The nipple is completely retracted and slightly crusted on the surface. The substance of the breast is almost completely replaced by carcinomatous tissue, the main mass of which, in the zone beneath the nipple, measures 2½ in. (5.7 cm.) from above downwards and about 1½ in. (3.2 cm.) in depth. But the tumour tissue also spreads widely into the more remote portions of the breast and includes a nodule in the adipose tissue close to the pectoralis major muscle. There is evidence of cancerous involvement of axillary glands. Histologically the growth is a spheroidal-cell carcinoma, glandular in places and obviously very invasive. It has extended widely throughout the breast and has invaded the skin of the retracted nipple, with wide extension into the cutis vera and subcutaneous tissues of the areola, including the unstriped muscles of the nipple. Lymphatic permeation and invasion of adipose tissue are notable features. The nodule in the adipose tissue close to the pectoralis major muscle proves to be cancerously infiltrated fibrous tissue. Elsewhere in the depths of the breast there are several small cancerously invaded lymph glands and much lymphatic permeation, though without evidence of involvement of the pectoral muscle itself. The ultimate prognosis must be regarded as extremely bad."

In June, 1939, a course of deep x-ray therapy was given first to the right breast region (200 kV 1 mm. Cu 2000 r in 20 days), and further irradiation was given to the pelvis (200 kV 1 mm. Cu 2000 r in two weeks) and to the left breast (200 kV 1 mm. Cu 2000 r in two weeks). On Oct. 23, 1939, the patient was going out to work again and felt "perfectly well."

Comment

Whilst abroad I received a letter from her sister-in-law telling me that after a short illness my patient had died in July, 1941. She had insisted upon going to work to within a fortnight of her death.

The patient lived just over eight years from the time of removal of the left breast for a frankly malignant type of cancer. She showed remarkable resistance to the disease even after secondaries had appeared. It is also interesting to note that a second cancer, which was considered to be another primary, started in the opposite breast two years after bilateral oophorectomy had been performed.

Metastatic carcinoma from the breast as a cause of perforation of the appendix and general peritonitis must be extremely rare. No record of a similar case has been found in the literature.

Summary

Some of the natural defence mechanisms against malignant disease are discussed. Certain individuals seem to have exceptional powers of resistance to cancer.

A case is described in which a carcinoma of the left breast was removed before the menopause, and a secondary deposit involving the appendix led to perforation and general peritonitis 3 years and 8 months later. The appendix and both ovaries were removed. A year later a recurrence in the original breast scar was excised. The following year a carcinoma, thought to be a second primary, appeared in the right breast, and a radical amputation was performed. The patient died just over eight years after the original operation upon the left breast.

I wish to express my grateful thanks to Prof. M. J. Stewart for his kind help and advice.

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BILIARY PERITONITIS WITHOUT DEMONSTRABLE PERFORATION

BY

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Biliary peritonitis results from the escape of bile into the peritoneal cavity, which excites a marked peritoneal reaction, whether the liberated bile be infected or sterile. Three main varieties of the condition have been described according to the underlying pathology. Injuries to the biliary tract and perforations of the gall-bladder in acute cholecystitis account for the large majority of cases. A number of cases have been recorded in which no perforation could be found. This so-called "perforationless biliary peritonitis" is a rare condition which was first described in 1905 by Maurice Richardson. No general interest in this pathological entity was evoked, however, until Clairmont and von Haberer published a paper on the subject in 1910.

Symptomatology and Pathology

The clinical picture has shown wide variations, and cases have been described simulating perforation of a peptic ulcer (Illingworth and Dick, 1941), with a less sudden development resembling peritonitis resulting from perforation of the appendix (Buchanan, 1918), or of still more gradual nature, with increasing abdominal distension, vomiting, and a rising pulse rate (Rolleston, 1938).

In the cases with a relatively acute onset, which constitute by far the greatest number, remission of symptoms after the first acute attack has been the one almost constant feature (Cope, 1925-6). This can be explained by the fact that sterile human bile, differing from the bile of experimental animals in its small content of the toxic salt sodium taurocholate, is only slightly irritant after the initial concentrated effusion has been diluted by peritoneal exudate. Further, cases are on record where over 30 pints (17 litres) of bile, presumably diluted by ascitic fluid, have been aspirated from the peritoneal cavity over a period of six weeks.

The pathology would appear to be almost as variable as the symptomatology. While a grossly discoloured and almost necrotic common bile duct associated with a tense red gall-bladder has been described (Buchanan, 1918), the biliary system has also been found apparently intact (Rolleston, 1938). Thirteen out of sixteen cases reviewed by Buchanan (1918) showed inflammatory or carcinomatous lesions of the biliary tract or stones. Of the remaining three, one gave a history of trauma and one was thought to be due to typhoid ulceration.

Pohlmann (1939) describes a case with acute inflammation superimposed upon a chronic cholecystitis. Although the cystic duct was blocked and the tense gall-bladder was covered with fibrinous exudate, no perforation could be found to account for the biliary effusion.

McLaughlin (1942) reports eight cases of biliary peritonitis, but all except one of these fall into a different category, since they were a sequel to cholecystectomy. He suggests that in many such cases the leakage of bile is accounted for by accessory hepatic ducts entering the gall-bladder direct from the liver. Others are almost certainly due to duct perforation resulting from increased pressure in the biliary tree caused by overlooked stones in the common duct. The only case that was not post-operative showed at necropsy a gangrenous gall-bladder with stones in both the gall-bladder and the common duct. No perforation could be demonstrated. Four of the post-operative cases were fatal, and in three on which necropsy was performed stones were found in the common duct. Perforations of the cystic duct stump were found in two.

Smith (1926) reviewed 12 fatal cases, all with rupture of intra-hepatic ducts and with a history of calculus, cholecystitis, and intermittent symptoms of common-duct obstruction.

Retroperitoneal extravasation of bile was a characteristic feature in two cases described by Cope (1925-6). In one of these the overlying peritoneum appeared to "weep" bile, but no perforation could be found.

Nurses and midwives of the Commonwealth and Empire have already raised more than £17,000 as a memorial to their colleagues who fell in the war of 1939-45, and the Queen has shown her appreciation of their effort by consenting to become the Patron of the fund to which they are contributing—the British Empire Nurses War Memorial Fund—and the Princess Royal has consented to become Vice-Patron. The address of the fund is Dorset House, Stamford Street, London, S.E.1.

It has been suggested that post-peritoneal rupture or perforation of the common or hepatic ducts results from trauma or ulceration and leads to biliary effusion into the retroperitoneal tissues with subsequent rupture into the peritoneal cavity at a point more or less removed from the site of the perforated bile passage (Buchanan, 1918). This would seem a possible explanation of the two cases with retroperitoneal effusion referred to above.

Glands of Luschka which have penetrated abnormally deeply through the muscular coat of the gall-bladder have been cited as a possible path by which bile may escape, but in view of the very strong safeguard the overlying peritoneum presents against intraperitoneal extravasation this would appear improbable. German authors (Kaufmann, 1929) have blamed percolation and filtration of bile through the wall of the gall-bladder either as a form of diapedesis or as a result of digestion of the wall by pancreatic trypsin.

Ruptures of the intrahepatic bile canal have been found at biopsy, and have all been associated with obstruction to the common duct by stone or carcinoma (Buchanan, 1918). Perforations of a subserous bile duct on the liver surface have also been described.

McLaughlin (1942) remarks that in the majority of recorded cases a small perforation could be demonstrated, though often only by serial sections at the site. Because of their small size these would leak only when the intraperitoneal pressure was increased, closing spontaneously when the pressure was relieved. The natural tendency to spontaneous closure which these organs show is well known, and is attributed in part to the low pressure of bile excretion and the readiness with which adhesions to neighbouring viscera form.

Burckhardt (1923) also believes that there must always be a perforation, either not found or already healed. If this theory be correct at least a temporary obstruction to one of the bile passages must be assumed to promote the escape of considerable quantities of bile through a small opening.

Case Report

A tall well-built man aged 26 was admitted to hospital on May 16, 1945. Five days previously, when walking down the street, he felt a sudden pain in the upper abdomen which lasted probably less than a minute, but caused him to stand still during that time. Two days later he noticed that his urine was dark in colour and he began to suffer from nausea, lack of appetite, and lethargy.

On clinical examination nothing abnormal was detected beyond a yellow tinge in the sclerotics and slight tenderness in the right hypochondrium. Bile pigments were demonstrated in the urine. The leucocyte count was low (5,600), but the differential count showed no abnormality. On the day after admission jaundice was discernible. The van den Bergh reaction was immediate direct. The jaundice continued to deepen, and the patient vomited frequently. He was afebrile throughout and at no time was a raised pulse rate recorded. The patient noticed a change in the colour of his stools, which struck him as being abnormally light in colour, but this information was not obtained till later.

Twelve days after admission, in the early morning, he developed severe pain of very sudden onset, which was first felt between his shoulders posteriorly. He was returning from the lavatory when the pain began, and he found it difficult to straighten his back. A few moments later he felt pain in his abdomen. On examination two hours later he showed the clinical picture of acute general peritonitis, with abolition of abdominal respiration and generalized board-like rigidity. Tenderness was maximal in the right hypochondrium, and the flanks were dull on percussion. Nothing abnormal was detected in the chest.

A diagnosis of acute general peritonitis, possibly due to rupture of the gall-bladder or bile ducts, was made, and it was decided to perform laparotomy immediately. A drip blood transfusion was begun before starting the operation.

Operation.—Pentothal was given through the intravenous tube, supplemented by gas and oxygen. The abdomen was explored through a right upper paramedian incision. The peritoneal cavity was filled with a golden-brown fluid resembling bile, and amounting to about two pints (1.14 litres). In the absence of a sucker this was mopped out with towels. The upper abdominal organs were carefully and systematically examined. The liver appeared slightly congested but showed no gross pathology. The gall-bladder was thickened, suggestive of some chronic inflammation, but the peritoneal covering was healthy and intact, and no stones were palpable. The contained bile was not under tension and emptied easily on pressure. No perforation or other lesion could be found in the

cystic duct, the common bile duct, or the common hepatic duct. Both stomach and duodenum were normal. The pancreas was palpated and visually inspected through the lesser sac, and no lesion was found. The spleen was not enlarged. Inflammation of the bowel surface and other signs of acute infective peritonitis were entirely absent.

Some of the peritoneal fluid was collected in a sterile test-tube and was observed to coagulate almost immediately. A pelvic drain was inserted through a suprapubic stab wound. The peritoneum and rectus sheath were approximated with No. 2 twenty-day catgut. Cotton thread was used for ligatures and silkworm-gut for tension sutures and skin.

The drip blood transfusion was continued until two pints (1.14 l.) was given, and this was followed by intravenous saline to ensure adequate fluid and glucose intake until the patient was able to swallow fluids without vomiting.

After-history.—On the day after operation the intravenous drip was discontinued. There was profuse discharge of bile-stained fluid from the suprapubic tube. The peritoneal fluid was reported on as containing bile pigments. (It was sterile after seven days' culture.) The patient's general condition was poor, and his pulse varied from 110 to 130, and his temperature from 101 to 103° F. (38.3 to 39.4° C.). Jaundice was unchanged and bile pigments were still present in the urine. A bad taste in the mouth was a prominent symptom. The next day, much of the oral intake being vomited, an intravenous drip was restarted. The vomit was deeply bile-stained and was strongly positive to Hay's test. The leucocyte count had risen to 12,400. On the fourth day jaundice was noticeably disappearing, and his condition was much improved. The urine was bile-free. The suprapubic tube was removed. The following day the drip was considered no longer necessary. On the seventh day the sutures, which were cutting through the skin, were removed, and the skin edges appeared firmly united. Shortly after the patient "cleared his throat" and the wound fell apart and bowel protruded. Under pentothal anaesthesia the prolapsed bowel was replaced and the wound edges approximated with through-and-through sutures of stout silk. At this second operation there was still a small quantity of bile-stained peritoneal effusion. There was no sign of the catgut used to close the wound a week previously, nor was there any evidence of inflammation of the bowel wall. This complication resulted in a deterioration in the general condition, and intravenous glucose-saline was restarted, raising the systolic blood pressure from 80 to 120 mm. in the three hours following operation.

With the exception of a collapse of the base of the right lung the patient made steady progress, though there was considerable inflammatory reaction round the wound. A good formed motion of normal colour was passed on the eleventh day after the first operation. Three days later jaundice had almost disappeared.

Bile staining persisted in the discharge from the abdominal wound, and did not entirely disappear until four weeks after the abdominal crisis. Two weeks later a cholecystogram was done and showed deficient filling of the gall-bladder with poor concentration and delay in emptying. No calculi were seen.

Comments

The peritoneal effusion in this case was proved to be bile, from which no organisms could be cultured. The maximum intensity of jaundice coincided approximately with the abdominal crisis, after which both the jaundice and the bile content of the urine began to diminish. The pale colour of his stools attracted the patient's attention for several days before operation, but it was not possible to ascertain whether they were entirely free of bile pigment. The presence of bile in the post-operative vomit excludes the possibility of common-duct obstruction at this stage. A diagnosis of either infective hepatitis or obstructive jaundice is compatible with the history and findings in this case, at least until the advent of an abdominal crisis. Epigastric pain is apparently a not uncommon symptom in the former condition, which was the accepted pre-operative diagnosis. If this was a case of infective hepatitis, however, it is extremely difficult to postulate how the biliary effusion may have occurred. Obstructive jaundice is therefore considered a more likely explanation, being consistent with the symptomatology while at the same time offering a possible explanation of the biliary effusion, and one which is in keeping with the findings of at least a considerable proportion of the reported cases.

It is suggested that at the first attack of pain, before the appearance of jaundice, a small stone passed down from the gall-bladder, which from operative findings and a cholecystogram is known to be pathological, and lodged at or near the ampulla of Vater. This would result in jaundice and increased obstruction in the biliary system. A small perforation possibly occurred in the lower part of the common bile duct, which does

not lend itself to visual inspection. This may have been temporarily plugged with the stone, permitting the escape of bile as soon as it left its site of impaction.

The effusion would in this case be first of all retroperitoneal, accounting for the fact that the initial pain during the abdominal crisis was clearly located to the back. The intra-peritoneal effusion would follow a secondary perforation through the peritoneum, as suggested by Buchanan (1918). It will be remembered that Cope (1925-6) described the peritoneum as "appearing to weep" bile.

The obstruction to the biliary system was possibly not released until after the initial escape of bile. After the relief of tension in the common duct the perforation would tend to close spontaneously.

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EPIDEMIC PLEURITIC PAIN

A REVIEW OF 17 CASES IN A MILITARY CAMP,
INDIA COMMAND

BY

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During the period December, 1945, to January, 1946, a series of cases presenting themselves as pleurisy occurred in an Indian military camp for British personnel. The clinical picture led us to believe that the usual textbook accounts of dry pleurisy, which emphasize the tuberculous aspect, are unbalanced.

Symptomatology

The cases occurred in young troops arriving in India from England, and were seen in the space of six weeks. Coryza and pharyngitis were common owing to inhalation of dust and to change in climate. Pain in the chest was present in all cases with the exception of two. The men were not ill, and when asked if they would have continued at work in civilian life the majority answered "Yes." More than half reported sick with both pain and upper respiratory tract infection, while others gave a history of the latter during the previous three weeks. The pain was pleuritic in type, mostly localized to the lower thoracic region in the axillary line, and in two cases was felt in the second left intercostal space. It lasted from two to twenty-one days, and the majority of patients had a cough with slight sputum. In some cases there was local tenderness on pressure over the painful area. A pleural rub was heard in three cases, and six showed signs of a parenchymal lesion in the lung. These signs were fleeting, and for the most part consisted of localized crepitations at the site of the pain. They were heard in late inspiration and early expiration, and in one case disappeared after the first few deep breaths. The crepitations persisted after coughing.

It must be emphasized that the physical signs in the chest were transitory. One case presented with pain in the chest and had no physical signs until the sixth day, when crepitations were heard over the site of the pain. Another case had symptoms of pleuritic pain without physical signs over a period of fourteen days; physical signs suggesting a pleural effusion then occurred, but skiagrams showed a parenchymatous lesion of the right lobe—a pneumonitis.

Only four cases were pyrexial, the temperatures ranging from 100.6° F. (38.1° C.) to 103.8° F. (39.9° C.). Of cases transferred to hospital one developed a lung abscess, while another, de-

scribed above, showed radiological evidence of a pneumonitis. On being screened six others showed no radiological lesion whatsoever. Three patients had the blood sedimentation rate estimated: one was normal, one was 17 mm. (after an hour), and a third showed the series 39-20-9 mm. (after an hour) over a period of three weeks after admission. In no case was the leucocyte count abnormal.

A Typical Case

On Jan. 10, 1946, a youth aged 19 had a brief illness consisting of headache, sore throat, and rhinitis, with a temperature of 103° F. (39.4° C.). Next day there was no pyrexia, and the symptoms resolved. On the fourth day the temperature rose to 102° F. (38.9° C.) without any symptoms other than sweating. Blood slides were negative for malaria parasites. There was no rash or any further pyrexia. This was not a case of dengue fever, but an upper respiratory tract infection.

On Jan. 21 he developed pleuritic pain in the left second intercostal space, with a temperature of 100.6° F. (38.1° C.). There was a slight cough, but no sputum. At the site of the pain crepitations were heard for the first few breaths on deep inspiration. On Jan. 22 the pleuritic pain was less severe, and persistent crepitations were heard in the same position. On Jan. 23 the patient said the pain was felt only in the early morning. Temperature, 99.4° F. (37.4° C.). No signs were present in the chest. There was no further pyrexia and no further pain. The patient is quite well to-day.

Discussion

Access to literature was limited owing to difficulties of travel, and on account of Service conditions observations on the diseases are largely clinical. The cases sent to hospital were followed up there, but once the benign nature of the condition was realized they were treated in bed in the camp hospital for a few days.

The differential diagnosis lies between: (1) a pleurisy of tuberculous origin; (2) epidemic myalgia (Bornholm disease); (3) atypical virus pneumonia; (4) a benign condition such as that described by Williamson (1924) under the name of "epidemic pleurisy."

There are many reasons for not considering the condition a tuberculous process. In no case was there a suggestive personal or family history. With the exception of two, both now well, the condition was benign and recovery rapid; most of these patients were off duty for less than two weeks, and none developed a pleural effusion. Another point against tuberculosis is that a number of cases occurred in a short time among healthy troops—i.e., the condition was epidemic.

Epidemic myalgia, as first described by Daac in 1874, shows points of similarity, but there are differentiating features. Our chief reference is the Cincinnati outbreak of eleven cases. Here a syndrome was described in which the pain in the chest was severe and occurred in paroxysms, sometimes numbering five in all, with periods of quiescence during which the patient was comfortable. The quiescent periods lasted 24 to 30 hours. In our cases the pain was not usually intense, and was of definite pleuritic type; there were no intermissions. Fever of low grade is common to both syndromes. In the Cincinnati outbreak there were no physical signs, and this is our criterion for differentiation; physical signs were present in the majority of our cases, and were fleeting enough to make us think that we should have heard them in more if we had had the opportunity for further observation. We must agree that our cases seem to have taken an epidemic form, since they all occurred in a space of six weeks; and there were other cases in neighbouring camps, all showing the same benign process, migrating to the same hospital. Also, the end of the epidemic was coincident with a considerable fall in the numbers passing through the camp. Local tenderness may occur in both pleurisy and epidemic myalgia. Atypical virus pneumonia is ruled out by the absence of pyrexia in most cases and the fact that the patients were not ill; those in hospital showed no radiological evidence of the affection.

In 1924 Williamson described a condition having an onset resembling "subacute influenza," with pyrexia of short duration followed closely by pain of pleuritic type. In seven of his thirteen cases he detected a pleural rub, but no case developed

an effusion. Pickles, of Aysgarth, also in 1924, described a series of epidemics under the same name; pleural rubs were heard and there was pyrexia, with signs of upper respiratory tract infection. We believe that our cases were examples of the above condition; but data other than clinical evidence are lacking and we have failed to follow up our cases over a long period. Two have been followed, however, for four months; both are healthy men—Al and capable of carrying out any duties. The nature of the condition appears to be that of a dry pleurisy sharply localized, with a small underlying parenchymal lesion of the lung. It would also seem that it is secondary to an upper respiratory tract infection, which descends either in the air passages or in the lymphatics. In many cases of upper respiratory tract infection which we saw there was thick mucus in the nasopharynx; and in those cases of pleurisy occurring at the same time as the upper respiratory tract infection it is reasonable to assume that the infection spread down the air passages. In those in which the nasopharyngitis had apparently occurred some time previously the infection had probably persisted and then spread downwards; for we have found that mild infections such as coryza and pharyngitis are persistent in India. The lesion in the lung is superficial enough to give rise to physical signs, but does not penetrate deeply enough to be opaque to x rays.

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A CASE OF HUMAN RABIES IN SIERRA LEONE

BY

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This is the first case of human rabies reported in Sierra Leone which has been confirmed by animal inoculation, and is the only case notified during the last eleven years. It is of interest to note that this case was consequent on a cat-bite, and in view of the endemicity of canine rabies in this territory the paucity of reports of human rabies is surprising.

Case History

The patient, a 7-year-old African boy, was brought to the outpatient department of the Connaught Hospital, Freetown, at noon on Jan. 23, 1946, and was admitted to the wards in a restless state. Early on the morning of Jan. 10 a strange cat appeared at the door of the patient's house and was stoned by some of the young inmates, whereupon it hid near a fence in an abandoned cupboard. The patient, the last to come down that morning, went outside to urinate as was his custom and chose a spot near the abandoned cupboard. Whilst he was urinating the cat flew at him and bit him on the upper lip. Another child, seeing his plight, hit the cat, and it returned to hide in the same place. The cat was then stoned to death in its hiding-place, but unfortunately its body was not produced for post-mortem examination.

The bitten child was taken to a hospital near by, where the lip wound was stitched and dressed, after which he was referred to the Connaught Hospital, where the wound was further treated and the first dose of antirabic vaccine given, with instructions that he be brought in the morning to continue the course of prophylactic injections; but this was not done. Four days later (Jan. 14) the bite was nearly well. The child started going to school and remained in apparent good health until the 22nd, on which day he vomited early in the morning. His mother gave him a dose of "worm oil," which purged him, but he was feverish until evening, refusing to eat rice but taking pap. He played that evening and went to bed much improved; but at midnight his skin was hot again, and he was panting, so his mother woke him up; but he said nothing was wrong and slept again. The panting recurred twice or thrice before daybreak, when he complained of pain in the throat and later started retching. By 10 a.m. that day he was so ill that he was brought back to hospital.

Clinical Findings.—On admission at 1 p.m. on Jan. 23 he was seen to be having spasmodic attacks of fear and to be making

jerking movements of his arms. The tongue was furred and moist; T. 101° F. (38.3° C.), P. 72, R. 28. There were no appreciable findings in the various systems, and he was able to swallow. A provisional diagnosis of rabies was made, and he was isolated. In view of the history of cat-bite, with only tentative diagnosis of rabies, an intensive course of antirabic vaccine was started; meanwhile a more definite diagnosis was being made. Sedative treatment was also given.

Progress Notes.—At 3.15 p.m. on Jan. 23, the day of admission, the child behaved normally and then had a sudden spasm with generalized twitching, which started with difficult breathing. By 6.10 p.m. the sedative mixture had had no effect, and he was now unable to take anything by mouth, so an intramuscular injection of 4 ml. of paraldehyde was given. At 6.30 p.m. the child was sitting up and showed great fear when offered water; but he was persuaded to take some and immediately jumped about and held his stomach as if in pain. He retched continuously for five minutes and spat a great deal. By 9.15 p.m. he was fairly quiet.

The following day, at 9.30 a.m., he was sitting up. He refused even to look at water, and when it was offered hid his face by turning to the wall. He agreed to take some pap, but eventually refused to touch it. A lumbar puncture was done under general anaesthesia. The cerebrospinal fluid came away clear and not under pressure. At 1.30 p.m. he was sitting up. On being spoken to he held out his right arm and made movements in a slow deliberate manner, protruded a furred tongue on request, and then made a few spasmodic respirations. At 4 p.m. he was restless, made very jerky movements, which recurred at intervals, and was expectorating coffee-brown sputum. Paraldehyde 5 ml. was injected. At 6.30 p.m. the symptoms were restlessness, embarrassment of respiration, and sniffing with markedly dilating nostrils; he was kicking his legs about as if trying to interwine them. He seemed to be conscious of what was happening. At 7.30 p.m. he was still restless, and there was only a very slight sedative effect from the paraldehyde so far given. At 9.30 p.m. an intramuscular injection of 6 ml. of paraldehyde was given, and at 10 p.m. death occurred.

Post-mortem Findings.—Necropsy was performed on Jan. 25, twelve hours after death. The body was that of a rather poorly nourished African boy of apparently 7 years of age. Rigor mortis was present. There was a recent healed scar on the right side of the mouth, and old scars on the shins. The hands were clenched, and the finger-nails intensely cyanosed; there was less marked cyanosis of the toe-nails. **Thorax:** The heart showed scattered petechial haemorrhages on the visceral pericardium, especially along the auriculo-ventricular groove. The larynx and trachea were normal in appearance; the lungs were rather dry and pale, and filled the chest; there were scattered small subendothelial haemorrhages on the visceral pleura. **Abdomen:** The stomach was empty; the intestines showed no abnormality, and the liver, spleen, and kidneys were markedly congested. **Head:** On opening the skull the dura was bulging; the brain was rather soft; the grey matter was a generalized dark pink; there were small haemorrhages in the floor of the fourth ventricle.

Histological Examinations.—Sections of the brain showed well-marked cuffing of the vessels, with patchy degeneration of the neurons and cellular infiltration among the degenerated cells in the medulla, pons, and basal motor ganglia. The rest of the brain was not affected. No Negri bodies were found. The liver revealed cellular infiltration and some fibrosis around the main bile ducts, artery, and vein. There was black pigment in the Kupffer cells. The kidneys showed cloudy swelling of the tubular epithelium.

Animal Inoculation.—Subdurally, 0.2 ml. of a glycerinated extract of the brain of the child was inoculated into a rabbit. The animal died on the fifteenth day after inoculation. Histological examination of the brain showed a diffuse encephalitis, with marked cuffing of the vessels. Negri bodies were present.

Laboratory Investigations (Jan. 24).—**Urine:** Reaction acid; a thick cloud of albumin; no sugar; acetone present. **Blood:** Culture sterile; R.B.C., 5.3 million per c.mm.; white cells, 18,600 per c.mm.; Hb, 13.5 g. per 100 ml.; M.C.H., 26 γ ; M.C.V., 81 c μ . Differential count: neutrophils, 51%; eosinophils, 2%; small lymphocytes, 30%; large lymphocytes, 9%; large hyalines, 8%. C.S.F.: Clear fluid. No clot on standing. Cells, 44 per c.mm. (lymphocytes). Protein, 30 mg. per 100 ml.; chlorides, 770 mg. per 100 ml.

We are indebted to the Honorary Director of Medical Services, Sierra Leone, for permission to publish this paper, and to Mr. W. Quin, Surgical Specialist, for seeing the case and performing a lumbar tap under general anaesthesia.

Revised recommendations of the Nurses' Salaries Committee for the salaries of, among others, matrons, head nurses, qualified sister tutors, night staff, student and pupil assistant nurses, and male and public health nurses are contained in "Nurses S.C. Notes No. 12," which has just been issued (H.M. Stationery Office; 4d. net). The new scales will have effect from Jan. 1, 1946.

AMENORRHOEA AT STANLEY CAMP, HONG KONG, DURING INTERNMENT

BY

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Amenorrhoea is well known to occur as the result of emotional shock, change of environment, and metabolic disturbances, either nutritional or endocrine. A situation in which all these factors may have been operative upon a large number of women, and which gave rise to amenorrhoea in over half of them, is worthy of record.

A month after the fall of Hong Kong on Dec. 25, 1941, British civilian subjects were interned in Stanley Camp. Periodical medical surveys were conducted in order to ascertain the state of health and nutrition of internees. The following is a summary of the menstrual histories which were obtained at the time of the first medical survey of 655 women made in July/August, 1942:

Group 1: Postmenopause ..	205
" 2: Amenorrhoea of pregnancy and lactation ..	14
" 3: Regular menstruation ..	152
" 4: "Irregular" menstruation, with increased frequency of menstrual periods, and menorrhagia ..	20
" 5: Amenorrhoea:	
(a) Delay up to 60 days ..	30
(b) Delay for over 3 months ..	234

Omitting groups 1 and 2, a survey of the remaining 436 women between the ages of 15 and 45 years, who would in normal circumstances be menstruating regularly, reveals that only 34.86% had regular menstruation; 4.59% were irregular, with menorrhagia, and 60.55% had amenorrhoea (53.67% with amenorrhoea for more than three months). Absence of menstruation was a convenience, especially in the early months of internment, and treatment was given only in cases presenting symptoms of discomfort.

Symptoms and Treatment

(a) The most constant symptom was excessive gain in weight in the form of flabby unhealthy fat. This was in marked contrast to the majority of women in camp, who lost weight. The patients suffering from excessive gain in weight with amenorrhoea were usually young women, and, although the chief reason for this condition was probably the unaccustomed excessive rice diet, it was considered that thyroid deficiency might also be a factor.

(b) In other patients the chief symptoms were nervousness and irritability or depression at the time the period would normally be due, sometimes associated with distension and discomfort in the abdomen. For these it was considered that additional ovarian stimulation might be of use.

Our supplies of drugs were very limited. We had small quantities of thyroid extract and of menformon injections. Group (a) were treated with the former and group (b) with the latter. Some patients received benefit from the treatment, but, owing to scarcity of drugs and of facilities for investigation, the results were inconclusive.

Length of Period of Amenorrhoea

Of the 234 women with amenorrhoea for more than three months, 81 had restarted menstruating within six months, and all except six had menstruated within 18 months (i.e., by May, 1943), although a number stopped again in the early months of 1944. Six women were known to have had amenorrhoea through the whole period of internment—i.e., 45 months. I have been able to get into touch with two of them since arriving in this country. In one patient menstruation restarted after 48 months without treatment, following a stay on a farm with good fresh food. The second patient was under treatment for three months, and menstruation was re-established after 51 months' amenorrhoea. (This patient had lost her husband in the fighting in Hong Kong on Dec. 25, 1941.)

It is interesting to note that a number of women between the ages of 45 and 50 ceased menstruating in December, 1941.

and had amenorrhoea throughout the internment. These cases were considered to be menopausal and are not included in the "amenorrhoea" figures, although they were surprisingly free from any menopausal symptoms other than amenorrhoea.

Possible Causes for Cessation of Menstruation

The emotional shock of war and internment, with the change of environment and occupation, was no doubt the initial cause of the amenorrhoea. It is difficult, however, to attribute to this factor alone so long a period of amenorrhoea as a year or more in many cases, although the food factor could not have come into the picture until later; for in most instances amenorrhoea dated from December, 1941, before the effects of undernourishment on general metabolism could have been manifest.

Undernourishment, especially deficiency of proteins (either "first-class" or other proteins); also possibly vitamin deficiency. The protein content of the rations never reached the normal minimum requirement, but it came nearest to this after a Red Cross shipment reached us in November, 1942, containing a large supply of tinned meat. Apart from this welcome addition to our protein, which lasted for about six months, we were about 30g. per day below the minimum requirement of 75 g. per day, the chief shortage being in animal protein. From December, 1942, to May, 1943, even the most resistant cases of amenorrhoea, with the exception of six, cleared up. Some meat or fish was included in the Japanese rations for the remainder of 1943, but in January, 1944, meat stopped, and did not reappear in the menu until the last eight weeks of our internment. For a few months in 1945 even the fish supply disappeared entirely, and our only proteins were obtained from soya beans and root vegetables. The average value of the rations amounted to about 1,600 calories daily, of which 1,200 were derived from rice. The second "wave" of amenorrhoea started in the early months of 1944, after the meat ration ceased. It may be argued that our poorer Chinese patients who came to gynaecological clinics before the war were not suffering from amenorrhoea, although they were living on a diet similar to ours, but the change in our diet had been sudden both in quality and in quantity.

Summary

In Stanley Internment Camp, Hong Kong, from January, 1942, to September, 1945, 53.67% of the women between the ages of 15 and 45 suffered from amenorrhoea of more than three months' duration.

A few women presenting symptoms of discomfort were treated with the available drugs—namely, thyroid extract and menformon injections.

Within six months 81 women had started menstruating again, and within 18 months menstruation was re-established in all except six cases, which persisted throughout the period of internment.

Possible causes of amenorrhoea are discussed under the headings of (a) emotional shock, and (b) undernourishment with special reference to protein deficiency.

Medical Memoranda

Delayed Appearance of a Syphilitic Chancre after Penicillin

Because of the curative effect of penicillin on syphilis, it is reasonable to suppose that a small dose may delay the onset of the appearance of a primary syphilitic chancre. It has been shown that the amount of penicillin usually given for cases of gonococcal urethritis is sufficient to destroy surface spirochaetes and lead to the partial or complete healing of a syphilitic chancre.

Walker and Barton (1945), in a review of cases in which a papule had already been noticed, only stress the temporary masking of the primary state, and maintain that all patients should be observed for at least twelve weeks. Cronin (1945) describes ten cases of gonorrhoea treated with penicillin in which syphilis subsequently developed. In his cases the average time interval from penicillin treatment to the appearance of the chancre was 38.9 days, and from the probable date of exposure 47.2 days. He suggests that the incubation period may have been delayed by days rather than weeks, and therefore that surveillance of

iorrhoea

to exclude syphilis does not require to be extended beyond the customary three months.

The incubation period which elapses between the implantation of the spirochaete and the appearance of a visible lesion is generally under six weeks. An incubation period longer than two months, though described, should be regarded with suspicion. Until recently it has generally been the custom in this country to put cases of gonorrhoea on surveillance for three months. That this may not be long enough is suggested in the case described.

CASE REPORT

A male patient aged 29, who denied previous venereal infection, had reported elsewhere on Jan. 3, 1946, with a gonococcal urethritis. He admitted exposing himself to infection three days previously. Penicillin, 200,000 units given in 3-hourly doses all tests were quickly cured his gonorrhoea. While on surveillance all tests were negative until he reported to this hospital on April 10. He complained that he had had a sore on his penis for seven days, which was not healing. On examination he was found to have a typical indurated syphilitic sore on the shaft of the penis, with marked inguinal adenitis. Dark-ground examination of material from this sore showed large numbers of treponemata. A Wassermann test on a sample of blood taken at the same time was negative. This finding fits in with the story of the patient that the sore had been present only for seven days. On questioning he stated that he had run no further risk since Jan. 1, 1946, and was able at the same time to name the prostitute with whom he had taken the risk. I believe his story to be true.

On tracing the record card of the prostitute it was found that she had been treated for gonorrhoea in May, 1945; in the following September she had had salpingitis, but had defaulted since October. She reported again to the clinic on Feb. 25, 1946, with condylomata around the posterior fourchette, in specimens from which *Treponema pallidum* was easily recognized on dark-ground examination. Her blood Wassermann was strongly positive. Gonococci were not found in smear or culture from either urethra or cervix. It can, however, be presumed that she was doubly infectious on Jan. 1, 1946, and therefore the almost certain source of the infection in our male patient.

The case is interesting in suggesting that, as had already been tentatively postulated, the onset of primary syphilis may be considerably delayed after treatment with penicillin. It is to be expected that further cases similar to this will be described.

Cronin's article is useful in showing that a long delaying action is probably not at all common; however, if some cases can occur, three months is too short a period for surveillance of cases of gonorrhoea, since infection with syphilis may pass undetected. This is particularly important in women, when the chancre may not be obvious—e.g., when it is on the cervix.

My thanks are due to Dr. G. L. M. McElligott, Director of the Department, for permission to publish this case.

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Silent Perforation of the Gut Wall

The recent report (*Journal*, March 2, p. 315) of a case of a foreign body piercing the gut wall and causing an "acute women" has prompted me to place on record the following which show that, apparently, silent perforation of the wall can occur.

The patient, an intelligent woman of 33, was admitted to this hospital with a typical history, signs, and symptoms of acute appendicitis. An early acutely inflamed appendix was removed, and when arranging the greater omentum to protect the operation site a hard mass was felt in the omentum. On inspection this proved to be a rubber ring embedded in the omentum about 1 in. (2.5 cm.) from the transverse colon. There was some discoloration of the surrounding fat but no evidence of ulceration through the bowel. Resection of a small wedge of omentum containing the ring was performed and the abdomen closed. The patient made an uneventful recovery.

Careful questioning of the patient afterwards failed to bring to light any explanation of the route which the ring must have followed. She had never had any previous stomach trouble such as one would expect when this foreign body was ulcerating through the gut wall. The only explanation which occurs to me is that the ring, presumably ingested, ulcerated through the greater curvature of the stomach between the anterior two layers of the greater omentum, and so was never free in the peritoneal cavity. In this way the absence of symptoms may be explained.

I wish to thank Mr. L. E. C. Norbury, under whose care the patient was admitted, for advice and encouragement in the reporting of this case.

W. HOUSTON, M.Ch., F.R.C.S.,
Surgical Registrar.

Reviews

THE COMPOSITION OF FOODS

The Chemical Composition of Foods. By R. A. McCance and E. M. Widdowson. Second edition. (Pp. 156, 6s.) M.R.C. Special Report Series No. 235. London: H.M.S.O. 1946.

Six years ago Prof. McCance and Miss Widdowson published their *Chemical Composition of Foods*, a compilation giving the most important organic and mineral constituents of the more common foodstuffs. The steady demand for this book over the last six years, and the fact that it was reprinted several times, were evidence of its value to workers in the field of nutrition.

The war and its associated nutritional problems created a demand for new analytical data. The composition of cooked dishes altered during the war, partly because of the introduction of 85% extraction flour, dried eggs, and dried skimmed milk, and also because rationing led to the adoption of plainer recipes. This did not necessarily lead to the consumption of less nutritious products. After minor modifications and additions in 1942 a new edition of *Chemical Composition of Foods* became necessary. There has been little change in the form of the volume. Information has been brought up to date and figures on new foodstuffs introduced during and after the war have been added. A special feature of the book is that it gives figures not only for uncooked food but also for the same food prepared by various methods. An interesting table is that on the phytic acid content of foodstuffs. The importance of phytic acid is twofold. Its calcium and magnesium salts being insoluble, they are precipitated in the gut if the food contains much phytic acid, and thus not only are calcium and magnesium salts lost to the body but also the phosphorus in the phytic acid.

Food research is not only technically exacting—some 20 constituents have been estimated for each food, and there are over 600 foodstuffs listed—but it is very laborious. Almost every substance analysed brings up fresh problems, and the solution of these may take weeks or even months. Many Ministry of Food recipes using wartime foodstuffs were prepared and submitted to analysis. The number of man hours that went into the making of McCance and Widdowson's book must be phenomenal. It is indispensable not only to the nutritionist but also to the physician, because a knowledge of the chemical composition of foods is the first essential in the dietetic treatment of disease as well as in research on problems of human nutrition.

INTRODUCTION TO HUMAN ANATOMY

An Introduction to Human Anatomy. By Clyde Marshall, M.D. Revised by Edgar L. Lazier, Ph.D. Third Edition. (Pp. 418; 303 illustrations, 13 in. colour. 12s. 6d.) London: W. B. Saunders Company. 1946.

A third edition of Clyde Marshall's book has now been published, the new edition having been enlarged and revised by Prof. E. L. Lazier, of the University of California at Los Angeles, but without any substantial alteration in the general plan of the original work. Certain improvements and differences in the presentation of the subjects have, however, been made, more especially with regard to the description of the joints and ligaments in the chapter on the skeleton, and in the grouping of muscles according to their function rather than the order in which they are usually exposed in a dissection. The description of the circulatory system has also been rearranged on the basis of the principal functions of the system rather than the anatomical relations of the vessels to the surrounding parts. Some new diagrams and figures have been added, or introduced in place of less adequate older figures, more especially in the description of the muscular system and of the optic visual and reflex paths, and the chapter on the endocrine glands, in which recent work on the functions of these organs has been referred to in considerable detail.

The purpose of the book as an introduction to human anatomy, with special stress on the association of structure with function, is thus well fulfilled; a word of warning to

lical students is, however, necessary, for although a knowledge of general principles may be quickly acquired by the use of an elementary textbook, a mastery of the details of human anatomy is essential for both medical and surgical practice; and, however good an introductory textbook may be, such books must be supplemented by the use of the best dissecting manuals, and the study of the classical works on descriptive anatomy and histology.

PATHOLOGY OF THE C.N.S.

Pathology of the Central Nervous System. A Study based upon a Survey of Lesions Found in a Series of Thirty Thousand Autopsies. By Cyril B. Courville, M.D. Second edition, revised and enlarged. (Pp. 450; 208 illustrations, 36s.) California: Pacific Press Publishing Association; London: H. K. Lewis and Co.

The first edition of Prof. Courville's *Pathology of the Central Nervous System* was unusual for three main reasons: it incorporated the results of observation of an enormous mass of pathological material in one centre, it depended to an unusual extent upon the author's own researches, and because of this it presented neuropathology as a living, and therefore progressing, process, the dynamics of which may be misunderstood in its final immobile stage. In the second edition the extension of the author's work on cellular pathology has been included, and the serial diagrams of cellular changes, which are a feature of the first chapter, lend meaning to the later and more orthodox illustrations. It is a pity in this respect that Prof. Courville's recent work on the cellular pathology of brain trauma appeared too late for inclusion in the present edition.

There is a very large chapter, of over 70 pages, on trauma, which is of topical importance. This, like other chapters, has numerous diagrams of the mechanism of the disorder, but some of the diagrams of the mechanics of brain injury have been over-simplified for the sake of clarity. Recent experimental work has shown how very complicated may be the results of the most simple head injury.

This edition, like its predecessor, is really a textbook of applied neuropathology for the practising neurologist and neurosurgeon, rather than for the student of neuropathology. It is intended for general study rather than for casual reference. The additions which have been made to the second edition make it as welcome as the first. The material is attractively presented and the illustrations are excellent.

THE LAW OF PHARMACY

A Textbook of Forensic Pharmacy. By Thomas Dewar, Ph.D., B.Pharm., B.Sc., Ph.C., Barrister-at-Law. (Pp. 253. 10s. 6d.) London: Edward Arnold. 1946.

This is a concise but comprehensive textbook of the law relating to the practice of pharmacy. Much of its information is contained in standard textbooks of medical jurisprudence, but not nearly so fully nor systematically. The author's aim has been to present in a single volume all the forensic pharmacy which is ordinarily taught to candidates seeking qualification as pharmacists, and his book is the first we have seen which fulfils his object. Its first part deals with pharmacy, poisons, and dangerous drugs; its second with medicines; and its third with the law governing retail business. It gives in appendices the text of the Poisons List, the schedules to the Poisons Rules, a list of the poisons the subject of monographs in the *British Pharmacopoeia*, a list of the drugs and preparations exempted from the Dangerous Drugs Regulations, the relevant schedules to the National Health Insurance regulations, and a number of examination questions arranged in order of the chapters of the book. Mr. Dewar does not confine himself to examinations, but covers the subject fairly and fully. His first chapter is a complete account of the constitution and functions of the Pharmaceutical Society of Great Britain and its statutory committee. The test of examination requirements has, however, ensured so far as is practicable that nothing important shall have been omitted, and indeed this book should prove a valuable day-to-day guide to every practising pharmacist. It is good value at half a guinea, but the reader may feel moved to ask whether, in a formal didactic reference book, the Shakespearean quotations at the head of each chapter are really necessary.

Notes on Books

A Laboratory Manual of Anatomy and Physiology, by NELLIE D. MILLARD and MARY JANE C. SHOWERS, of the Michael Reese Hospital School of Nursing, Chicago, and the Christ Hospital School of Nursing, Cincinnati, indicates a departure from the extent and character of the physiological training which has hitherto been customary in the teaching of nurses. The manual consists of a series of drawings, with directions for 30 practical classes in anatomy and physiology, and each is accompanied by a summary in which questions are asked respecting the day's lesson. The drawings, mostly in outline, are intended to help the students in making a record of the demonstrations. These include the study of the human skeleton and dissection of various animals, such as the frog, cat, guinea-pig, or rabbit, or of parts of animals—e.g., a veal or sheep heart, or a pork kidney. The students work singly, or in pairs, and in the physiological section are expected to "pith" or anaesthetize frogs and, after identifying particular organs and nerves, to study the effects of division or stimulation of nerves, or direct stimulation of limb-muscles or parts of the heart; also the effect of drugs, and observations on segmentation and peristalsis of the intestine. Instructions are given on the estimation of haemoglobin and the coagulation time of blood, and there is also an excellent diagram of a haemocytometer, with directions for making blood-cell counts. The nurse's training in Chicago and Cincinnati thus includes much practical work which has hitherto come only within the scope of advanced medical study and in this country has very properly been considered outside the nursing curriculum. The book is published by W. B. Saunders Company at 5s.

A second edition of *Hydrotherapy*, by RUTH M. LE QUESNE and MARY GRANVILLE (Cassel and Co; 7s. 6d.), is welcome. Primarily intended for students working for the diploma of the Chartered Society of Physiotherapy (formerly the C.S.M.M.G.), it would certainly be advantageous to medical students to remind them of what they see in the somewhat cursory official visit to the neighbouring spa or hydrotherapeutic clinic. After preliminary chapters on the history of the subject, on the physical principles involved and a few physiological implications, short descriptions of the usual methods of hydrological treatment are given. A short chapter on "treatment of some common conditions" may be useful, but has the inevitable defects of such very brief summaries of a complicated subject. Finally there is a not too accurate list of the facilities at British spas. For example, it is stated that several of the springs of Bath are rich in radium emanations, and its waters are chiefly used externally. Actually there is no variation in the water of Bath, so that it is all radioactive, for what that is worth, and it is extensively used internally.

Flying Visit (London: Church Missionary Society; 2s. 6d.) is the record, in the form of a diary, of a remarkable wartime journey through West and East Africa and the Middle East by Dr. H. G. ANDERSON, who travelled 26,000 miles in twenty-four weeks to visit missionary establishments in Nigeria, Kenya, Uganda, Sudan, Egypt, Palestine, and Iran. His observations, necessarily fleeting, are full of interest, especially to those in sympathy with missionary work. The book is illustrated by some excellent photographs, and it includes nine relevant maps.

Preparations and Appliances

A SIMPLE DRIP-FEED TYPE OF ANAESTHETIC APPARATUS

Dr. RALPH BIBBINGS writes from Princess Elizabeth Orthopaedic Hospital, Exeter:

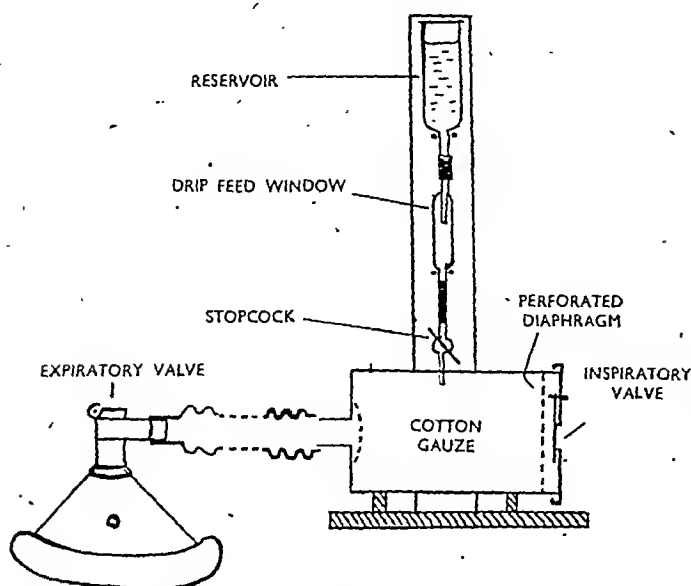
The need for a simple anaesthetic unit, suitable for a wide variety of surgical procedures, is one that arises frequently. The following account describes a simple machine that has been devised at this hospital. Already it has been used in some 250 instances, and the results have been most successful.

Description of the Machine

The apparatus has been so designed that it may be easily constructed on the premises of the average hospital from standard parts. The vaporizer consists essentially of a metal canister with a removable lid. I have found that a small "Kodak" developing tank (about 5 in. long) suits the purpose admirably. The bottom and the lid of the canister are each perforated by a single central hole of about 3/4 in. diameter. Into the aperture in the bottom of the canister is soldered a short length (2 in.) of metal tubing over which one end of a length of "concertina" tubing is fitted. The bole in the lid has, arranged on its inner side, a flap of rubber which occludes it. This flap is attached to the periphery of the lid, being

held there between two washers by means of a screw. Thus a simple inspiratory valve is formed. To prevent the valve from sticking and to ensure an airtight closure, the margin of this aperture should be raised. This may be effected by soldering a sharp-edged metal ring about the hole, or else the hole may be made by punching it from the outside instead of being drilled.

Into one side of the can is soldered a small metal tap. In my own model a most satisfactory one was obtained from the local gas company. The vaporizer is now set up as shown in the diagram.



It is mounted on a wooden stand which carries a short upright to which are wired a small glass reservoir and a drip feed window. These are connected by short lengths of rubber tubing. The inside of the canister is now packed with cotton gauze, just so tightly as not to form any appreciable obstruction to respiration. The face-piece, into which the other end of the delivery tube is plugged, is fitted with a standard expiratory valve. Both apertures in the canister are separated from the gauze by perforated zinc diaphragms. These are to prevent cotton gauze from being sucked into the delivery tube and also to prevent the rubber flap valve being fouled by the gauze. The machine is now complete and ready for use.

Action.—The principle of the machine may be gathered from a study of the diagram. Liquid anaesthetic is placed in the reservoir, whence it is delivered to the vaporizer at a controlled rate, the latter being determined by the opening of the stopcock. In the vaporizer, through which air destined for inspiration is caused to pass, the anaesthetic is adsorbed on to a fine gauze mesh. Hence a small quantity of anaesthetic is split up so as to present a relatively large surface area to the incoming air. On expiration, the valve openings are reversed, air escaping through the face-piece valve. This arrangement provides for a high degree of vaporization.

Methods of Use

The apparatus may be used for the administration of either trichlorethylene or ether.

Trichlorethylene may be used for producing either analgesia or anaesthesia. For induction purposes, the mask is closely applied to the patient's face so as to ensure a gas-tight fit, the patient meanwhile being instructed to continue breathing quietly. As there is no appreciable obstruction to respiration, no particular effort is required of the patient. Hence one may pause for a few moments at this stage, for by so doing the patient is enabled to realize that he can breathe without embarrassment, while at the same time a few words of explanation serve to reinforce his confidence. With the patient now at ease and breathing comfortably, the stopcock is opened a trifle, to allow a delivery of some 30 drops a minute. This is of course an average rate for induction purposes. Naturally, it tends to vary with the type of patient, the extent of the premedication, etc. In the robust type, one may require more, but an increase beyond this rate should be made with caution. In most cases it pays to be patient, provided that the airway is good and that breathing is of satisfactory rate and depth. The aim should be to deliver fluid at such a rate that a steadily rising concentration of vapour is produced. It is expedient therefore to avoid trying to hurry a patient by douching, while on the other hand too slow a rate only prolongs the induction unnecessarily. The patient should be aware only of the smell of the anaesthetic. He should never be sensible to its pungency. When the desired level of anaesthesia has been attained, the delivery may be suitably reduced. The depth is

surprisingly and rapidly sensitive to small variations in the rate of flow. In general, I have found that the longer the operating period the more the delivery rate can be reduced. In a robust man, for example, after the first half hour or so, 10-20 drops a minute is usually sufficient for maintenance purposes. The usual precautions must of course be taken in using trichlorethylene. Hence, one must avoid trying to "push" the drug in the hope of obtaining a lower level of anaesthesia. Should that become necessary then the reservoir should be emptied and replaced by ether.

With ether the same methods apply, except that the rate at which ether must be delivered is considerably greater than that required for trichlorethylene. About 90-120 drops are necessary during the induction period, with a maintenance rate of perhaps 50-70 drops a minute.

In general, the machine is more suitable for use with trichlorethylene than with ether, on account of the greater latent heat of vaporization of the latter. However, in spite of this, the results with ether have been very promising. Despite the fact of there being no water jacket, the degree of cooling that takes place brings about but a slight condensation on the outer surface of the canister, even with the delivery rate up to 120.

Types of Operation

There would appear to be few operations for which the apparatus could not be used. So far, its use has been confined to the several types of operation employed in orthopaedic surgery. Fortunately, for trial purposes, this has provided a relatively wide field. Thus the machine has been found effective and useful in obtaining suitable anaesthesia for repair and reconstructive work necessitating the mobilization of muscle and tendon. For incisions and drainage of osteomyelitic cavities, and manipulative surgery in children, the type of anaesthesia obtained has been found exceedingly smooth and uneventful. In the longer operating periods demanded by peripheral nerve surgery, anaesthesia has presented several problems which have been solved through the use of the apparatus. I have found that induction with sufficient intravenous barbiturate to carry the patient into the third stage, followed by trichlorethylene, is the anaesthesia of choice in these cases. The absence of such distractions as the hissing of valves, or the noise made during the changing of cylinders, is a very considerable advantage and one that is much appreciated by the surgeon in operations of long duration. In addition, the machine has been found especially convenient for obtaining analgesia for painful dressings, the removal of packs, drains, etc. Such procedures are often carried out in ward dressing-rooms. In such cases the small and easily transportable machine can be readily available.

Advantages.—(1) Ease of construction. The machine is assembled mainly from standard hospital accessories. (2) Portability. The whole unit, when packed into a small suitcase, weighs only a pound or two. (3) High degree of anaesthesia obtainable. (4) Pleasant induction. (5) Economy. The amounts used are not at all excessive. In established anaesthesia the consumption is at the rate of 10 dr. of ether, or about 4-6 dr. of trichlorethylene, per hour. (6) Remote control. The only control, the stopcock, is situated at a distance from the patient. (7) Silent action. (8) Adaptability to any head position. (9) Incidence of post-operative vomiting is low. After trichlorethylene it is a rare event. (10) No complicated valve for rebreathing mechanism. (11) No hot-water jacket, chemicals, etc. (12) No resistance to respiration. (13) No appreciable increase in dead space. (14) The exact amount of anaesthetic used is known.

Disadvantages.—(1) The exact percentage of anaesthetic vapour is unknown. (2) Inability to reduce vaporization instantaneously: hence the necessity for care being taken against admitting an excessive quantity to the vaporizer.

I wish to express my thanks to Mr. Norman Capener, F.R.C.S., for his encouragement and the interest he has shown during the development of the apparatus.

"BENADRYL"

Parke, Davis and Co. are now supplying capsules containing 50 mg. "benadryl," which is a substance having the property of neutralizing the action of histamine in many directions, and which is therefore recommended for the relief of allergic symptoms. It has a spasmolytic action also, which is not surprising in view of the similarity of its chemical structure to that of other spasmolytic substances. Its chemical name is β -dimethylaminoethyl benzhydrol ether hydrochloride. Benadryl is to be taken four times daily by patients with acute or chronic urticaria and by those with hay fever. It is also of use in drug sensitization. The clinical reports are very promising.

Hanovia Ltd., of Slough, Bucks, have prepared a treatment record card for the use of light clinics and practitioners for systematic recording of actinotherapy applications and results. These cards cost 6s. for 50 and proportionately much less for larger quantities.

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THE REPRESENTATIVES AND THE BILL

the Annual Representative Meeting was held last week at M.A. House and completed its business in two and a half days. A report of the proceedings appears in this week's Supplement, and at page 168 of the *Journal* we print in full a statement by Dr. H. Guy Dain, the Chairman of the Council, on the National Health Service Bill. The Special Representative Meeting in May, coincided with the debate on the Second Reading in the House of Commons, and last week's A.R.M. coincided with the Report Stage and the Third Reading, accounts of which appear in this week's Parliamentary Notes. The dominant theme before the Representative Body was the National Health Service Bill, and the principal variation on this was Dr. Dain's speech. He reminded the Meeting that when they met Mr. Ernest Brown three years ago the Ministry of Health had ideas for a whole-time service. By discussion and negotiation they went some way to agreement both with Mr. Brown and his successor, Mr. Willink, on the disadvantages to the public of a whole-time service. When they succeeded in making contact with Mr. Aneurin Bevan they found that he had practically adopted the framework of the service as left by Mr. Willink, but had added to it the principle of nationalization. It was this that made such an enormous difference to the medical profession. Mr. Bevan had refused to negotiate or to talk on the principles on which the Bill was founded: these were the State ownership of hospitals, the destruction of the goodwill of general practices, the direction of practitioners, and the payment of practitioners, in part at least, by salary. These were the steps by which the Government proposed to take the practitioner under control in a State service. Not one of them was necessary to the efficiency of the service and served no purpose except to carry out Socialist ideals. Dr. Dain considered that neither voluntary nor local authority hospitals had fully understood the position of national ownership of hospitals. There would be no possibility of practice by consultants and specialists outside the new service, for they could not practise without access to beds, and all beds would be under control of the Minister, the owner of all the hospitals. "Thus an important section of our profession will become, for practical purposes, servants of the State almost immediately, and their opportunities for independent practice will be infinitesimal." Dr. Dain reminded the Meeting that when they discussed the compensation figure with the Minister they clearly stated that this was not to mean that they admitted the principle of forfeiture of goodwill. They had maintained that the general practitioner in a national service should be employed by and responsible to the patient; they were, therefore, opposed to payment by any form of

salary, which meant the transference of the practitioner's responsibility from the patient to the person who paid the bill. The Minister had appreciated that the principle of free choice by patients would be interfered with by a salaried service. Dr. Dain observed that the Bill contained many excellent points, but on the Report Stage the Minister had not conceded the right of every practitioner to come into the Service if he wished—a right conceded to the profession in 1911. "Nor has he conceded, what we should certainly require, the right of appeal from a decision of the Minister which would take the doctor out of the Service." In the progress of the Bill through the House of Commons the Minister had maintained the complete right to do everything himself. "He is the complete and uncontrolled dictator." The Minister was to determine every committee and council set up under the Act and even have the power to elect the chairmen of those various bodies. This meant that the appointments would be made on the advice of the Civil Servants—"and we ourselves will be employed by and dictated to by the Civil Servants straightaway, and our freedom in many respects will disappear."

Dr. Dain reminded the R.B. that last May they decided (1) that there should be no direction of medical men, (2) that they were opposed to State ownership of hospitals, (3) that doctors should retain the goodwill of their practices, and (4) they were against any modification of the method of remuneration by capitation fee. "Now we have come to the time when one side or the other has to give way. A conflict is inevitable." Decision would have to be made by each individual member of the profession, and the Council would act on their instructions. The first problem was whether there should be negotiations unless the principles of the profession were conceded. They therefore had it in mind to invite every practitioner on the *Medical Register* to state whether he wished negotiations on the regulations of the Act to take place or whether there should be a refusal to negotiate. The latter would mean a refusal to take part in the Service whatever the form of the regulations. He hoped they could get a straight question put to the profession—"it is up to us to know exactly what is the opinion of the people who have sent representatives to this meeting." It was true they could not foresee the precise form of the Act, which had yet to go through the House of Lords, but it would be an advantage to proceed on the assumption that no very material change was likely. Dr. Dain concluded by referring to the recent broadcast by the Lord President of the Council, Mr. Herbert Morrison, in which he said that the Government was out for planning with liberty and order with freedom. "That," Dr. Dain continued, "is just exactly where we ourselves stand, and if we look at the Lord President's speech concerning the Press a few days later we shall begin to wonder whether on the occasion of that broadcast he was not talking with his tongue in his cheek." In a later contribution to the debate Dr. Dain said that if they went into negotiations in detail they would be giving way on their principles. It was essential to know before very long the attitude of the profession on the question of adherence to the principles.

The discussion which followed the Chairman of Council's statement showed the Meeting's high appreciation

of his able speech and agreement with the main issues raised in it; and also widespread uneasiness over the course of events since the present Government came into office a year ago. One speaker, however, doubted whether any section of the community should flout the law and drew attention to the difficult position in which "the average general practitioner" would be if he refused to work the Act. He claimed that what mattered to the majority of the general practitioners in this country was whether they were going to have a living wage. Another speaker asked whether, as the progress of medicine and the welfare of the patient was the proposed objective of the Government, they could not "play together in the same team." In connexion with one of Dr. Dain's statements Dr. J. A. Brown intervened that he was sure Dr. Dain had no intention of making this a political issue. "Their action had nothing to do with their politics; the only consideration was the health of the nation and the freedom of the profession." Dr. R. G. Gordon remarked that in relation to consultants and specialists Mr. Bevan had tried to split the profession. Many consultants and specialists found his hospitals proposal attractive. Other speakers observed subsequently that many consultants and specialists were already taking part in discussions on the constitution of Regional Boards.

It will be recalled that the Special Representative Meeting last May decided that a referendum of the medical profession should be taken at an appropriate time. After much discussion the following motion was put to the Meeting and carried:

That a referendum of the whole profession should be taken soon on the simple issue of whether negotiations on regulations with the Minister should take place or not, and that the Meeting recommends to the Council the desirability of the plebiscite including personal contact with each member of the profession as soon as this can be arranged.

It will be noted that the Resolution includes the two words "plebiscite" and "referendum," and doubt as to the exact meaning of these two words was expressed at the Meeting. It may, therefore, be appropriate here to give the relevant definitions from the *Shorter Oxford English Dictionary*: "Referendum" is defined as "The act, practice or principle (chiefly associated with the Swiss Constitution) of submitting the direct decision of a question at issue to the whole body of voters." "Plebiscite" defined as "A direct vote of the whole of the electors of a state to decide a question of public importance; also by extension, a public expression, with or without binding force, of the wishes or opinion of a community." It seems, therefore, that in the particular matter at issue the extended definition of "plebiscite" is the one which applies. If no serious challenge to the Government is offered by the House of Lords when the Bill passes to it we may expect the present amended Bill to become an Act in the early autumn. The Council of the B.M.A. now has an instruction from the Representative Body to take a plebiscite soon on the question whether or not the medical profession is to enter into negotiations with the Minister of Health on the regulations which will embody the terms and conditions of service in the Government's National Health scheme. Each doctor on the *Medical Register* will have to make up his own mind, and whichever way he

casts his vote he will be making a grave decision both for himself and for his colleagues. It is not a decision that can be made by a toss of the coin but only by a fully considered and dispassionate examination of the numerous personal and communal issues raised by Mr. Bevan's Bill. When the collective view of the whole profession is known then the Council of the B.M.A. and the Negotiating Committee will be in an unassailable position in relation to their conduct with the Minister of Health. If the profession decides that negotiations on regulations should be entered into, then it will reserve its decision on whether or not to enter the new Service until the details of the main regulations are known. If it decides not to negotiate on regulations, then a position will be reached in which a prolonged and bitter conflict will be waged between the present Government and a highly important section of the community without whose willing co-operation the Health Service Act will remain a "dead letter." The decision, we repeat, rests with the individual members of the profession.

CONSOLIDATION AND UNITY

There has been no Annual Meeting since 1939, and, though once more there was no Annual Meeting this year, there was a touch of ceremony in the introduction of a new President, Sir Hugh Lett, who succeeds a veteran in B.M.A. counsels, Mr. H. S. Souttar, who with the conclusion of his Presidential year completes the remarkable record of having been successively Deputy Chairman and Chairman of the R.B., Chairman of Council, and President of the Association. A demonstration of loyalty to the Association in another form was shown by the presence on the platform of representatives from Australia, South Africa, and New Zealand, and by the short addresses of comradeship and good wishes from representatives from India, Jamaica, Ceylon, Malta, and Assam. In particular we may welcome the desire of South Africa to maintain the friendly links that bind it to the parent body in spite of its formal grouping into a separate identity.

In his brief but cogent Presidential address, which appears in the opening pages of this week's *Journal*, Sir Hugh Lett brought into narrow focus all that our profession has gone through since September 3, 1939. He paid a much-deserved tribute to the research work of medical scientists which has played such a vital part in achieving victory over the enemy, and to the work done on the Home Front by the E.M.S., by the rank-and-file of the profession, by the medical officers of health, and by the Central and Local Medical War Committees. In the short time at his disposal Sir Hugh inevitably had to omit much that he might have said. This lends extra stress to what he has included, and we therefore welcome his thoughtful observations on the relationship between the Royal Colleges and the B.M.A. Sir Hugh recorded that in 1938 Dr. G. C. Anderson, then Secretary of the Association, was invited to serve as liaison officer between the Committee of Reference of the Royal Colleges and the Central Medical War Committee. In 1940 the B.M.A. invited the Royal Colleges to review with it the peacetime organization of the general medical and hospital services and secured their eventual co-operation in the work of the

Medical Planning Commission. This co-operation, along with that of other bodies, continued in the highly important deliberations of the Negotiating Committee, which is still in being and still has important functions to perform. Sir Hugh observed that these are critical days, and the need for co-operation in preserving the unity of the profession will in the coming months be greater than ever. "It is," he concluded, "only by working together, consolidating our profession, and making it as strong as possible that we can protect the sick and maintain the proud position of British Medicine, together with all those things tangible and intangible for which it stands."

FIBRIN FOAM AND FIBRIN FILMS

The fractionation of human plasma proteins, and the chemical and biological properties of its products, have been widely studied by workers in the department of physical chemistry of the Harvard Medical School.¹ A method has been elaborated there for the preparation of human fibrinogen and thrombin on a large scale. On a small scale Dickson Wright collected sheets of fibrin as early as 1940 and used them to line the cavities left after the removal of brain tumours. He described his experiences in a paper entitled "Blood Fibrin as a Styptic" at the twenty-eighth meeting of the Society of British Neurological Surgeons in Oxford on July 19, 1941. Fibrin may now be employed surgically as fibrin foam or as fibrin film, the latter taking the form of sheets, fibres, or seamless tubes. Ferry and Morrison² have also described a fibrinogen plastic which can be moulded under the action of heat and which may prove of value in ophthalmology and plastic surgery.

Fibrin foam is a spongy material which becomes an effective absorbable haemostatic when soaked in human thrombin solution. Ingraham and Bailey³ found it a valuable styptic in cranial surgery. Three bottles contain in sterile form the necessary materials—fibrin foam, dry thrombin, and physiological saline. At the time of operation the saline is added to the thrombin, and strips of fibrin foam, cut to a suitable size and shape, are placed in the resultant thrombin solution, which they rapidly absorb. Gauze is used to press the soaked foam gently against the bleeding brain surface, and the excess of moisture is removed by suction. Larger masses of foam may be needed to fill post-operative cavities, but the clotting process is required only at the interface between fibrin and tissue, and the central portion of such a mass may be removed before closure of the wound. The presence of fibrin during healing provokes virtually no foreign-body reaction and does not increase the size or density of the resultant scar. A large mass of fibrin may aggregate fewer foreign-body giant cells than a single linen suture. In the abdomen it does not stimulate peritoneal adhesions. Bailey, Ingraham, and their co-workers⁴ have employed fibrin foam successfully to arrest haemorrhage from the liver bed after cholecystectomy; from the cut surface of the liver after trauma, biopsy, and removal of a tumour; from pancreas or spleen after biopsy of these organs; from the prostatic cavity after prostatectomy; from tooth sockets after dental extractions; and from bleeding surfaces prepared for plastic procedures. It is effective in stopping bleeding from the surface of a lung separated from an adherent chest wall and from the walls of the cavity left after enucleation of a mediastinal

tumour. A thin sheet of fibrin foam applied to a bone-end after amputation readily controls haemorrhage from it and reduces the risk of haematoma formation in the stump. It is especially valuable when there is local haemorrhage during operations on haemophilic patients. Fibrin foam seems to be contra-indicated only in the case of bleeding from the pharynx. An anaesthetized patient may inhale fragments of the material, and these might produce plugging of the bronchi.

Fibrin film, in fine transparent sheets sterilized by glycerol or, more conveniently, by heat, is rather brittle in the dry form in which it is stored, but after immersion in saline for fifteen minutes and manual stretching to twice its original area it develops all the properties of a moist membrane. It has been applied by Ingraham, Bailey, and Cobb⁵ as a substitute for dura in 94 cranial operations and has produced no undesirable effects. Stimulating little fibrous tissue reaction, it serves as a neo-membrane to close operative or post-traumatic dural defects without the production of meningo-cerebral adhesions. A piece of film rather larger than the defect to be closed is insinuated under the cut edge of dura. The material has been highly praised for its value in the operative treatment of post-traumatic epilepsy.

Fibrin has also been applied to the repair of divided peripheral nerves. Seddon and Medawar⁶ described a method (fibrin suture) of maintaining the apposition of the trimmed nerve-ends by a fibrin clot, provided the gap between the ends was inconsiderable. Singer⁷ has elaborated this technique, using 2% fibrinogen as the adhesive material and enclosing the nerve-ends and the fibrinogen in a tube of fibrin film.

VIBRIONIC FOOD POISONING DUE TO MILK

A very unusual type of food poisoning, affecting the inmates of two institutions in Illinois, is described by Dr. A. J. Levy.⁸ The total number of cases was 357, of which 151 were admitted to hospital. The outbreak lasted 13 days. The duration of illness ranged from two days to two weeks, the commonest being 3-5 days. Among the prominent symptoms were fever to between 99 and 102 °F. (37.2 and 38.9 °C.), diarrhoea, and general prostration; the additional occurrence in many cases of nausea, vomiting, abdominal cramps, general malaise, and aching of the head and limbs suggested a diagnosis of intestinal influenza. Investigation narrowed down the probable cause to the milk supply. There were two sources of milk to the institutions: one, a home-produced pasteurized supply; the other, supposed to be pasteurized but delivered by a dairy that handled both raw and pasteurized milk in identical unlabelled containers. Illness was confined to consumers of the second supply and was probably due to the consumption of raw milk that had been carelessly substituted for pasteurized. As soon as boiling of the milk was introduced the outbreak ceased.

Bacteriological examination of the vomit and faeces of patients failed to reveal any of the usual causes of food poisoning or enteritis, and agglutination tests put up with sera from six convalescent patients against a wide variety of organisms yielded negative results. Smears from the faeces, however, showed the presence of vibrios in 31 out of 73 specimens, sometimes almost in pure culture. Though these organisms could not be grown from the faeces, they were isolated by blood culture from 13 out of 39 patients studied. The organisms resembled cholera vibrios morphologically but differed from them in other respects. They

¹ *J. clin. Invest.*, 1944, 23, July.

² *Ibid.*, 1944, 23, 566.

³ *J. Neurosurg.*, 1944, 1, 23.

⁴ *Surgery*, 1945, 18, 347.

⁵ *J. Amer. med. Ass.*, 1945, 122, 1035.

⁶ *Lancet*, 1942, 2, 57.

⁷ *J. Neurosurg.*, 1945, 2, 102.

⁸ *Yale J. Biol. Med.*, 1945, 13, 243.

grew in tryptose phosphate beef broth but not on any solid medium till after 30 subcultures, and then only very poorly. No sugars were fermented, and no indole was produced. These characters resemble those of *Vibrio fetus*, an organism isolated by McFadyean and Stockman⁹ in 1913 from the uterine exudate of aborting sheep, and even more closely those of *Vibrio jejuni*, an organism described by Jones and Little¹⁰ in 1931 as probably responsible for a diarrhoeal disease of cattle known as winter dysentery or black scours. Injection of rabbits and pigeons intravenously and intramuscularly was without effect; so also was feeding of cultures to kittens. However, intravenous injection of 3 ml. of a broth culture into a dog was followed in 24 hours by severe diarrhoea, which ended fatally; vibrios were seen in the liver and spleen on direct smear. Attempts to probe into the history of the animals on the farm from which the milk was derived were met with opposition on the part of the farmer, so that it was impossible to attribute the infection of the milk to illness among the animals. The circumstantial evidence incriminating the milk was, however, very strong, and the demonstration of vibrios in the patients' faeces and their cultivation from the blood leaves little doubt that these organisms were responsible for the outbreak.

SURGERY OF THE AORTA

Astley Cooper first performed ligation of the aorta in 1817, after much careful thought and animal experiment. Although his patient died after two days, the operation has been successfully performed since on at least two occasions. It has fallen to Crafoord,¹¹ of Stockholm, whose outstanding contributions to thoracic surgery are already well known, to perform successfully resection of the strictured aorta with restoration of continuity by direct end-to-end anastomosis for the relief of congenital coarctation. In February of this year, at the Royal College of Surgeons, he delivered a simple, even diffident, account of his dramatic operation.

Crafoord had already demonstrated in dogs that provided the blood supply to the brain was maintained (by anastomosis between the carotid and jugular vessels of another dog) the flow of blood to the other organs could remain suspended for as long as 25 minutes without signs of organic damage. On the strength of this, when operating for patent ductus arteriosus, he applied clamps so as to enable him to divide the duct and suture the aorta. In one patient the aorta was shut for 27 minutes, and no ill effect was noticed. In congenital coarctation a free collateral circulation already exists. Crafoord considered, therefore, that in such cases he might with safety keep the aorta closed for a much longer time while resecting the strictured portion. Two suitable patients presented themselves in 1944, a boy of 12 and a man of 27. Thoracotomy was performed to examine the feasibility of resection. In both cases it was found possible to mobilize the aorta, resect the stricture, and approximate two ends of equal size without tension, so as to allow end-to-end anastomosis. Both patients made a good recovery, and up to the present Crafoord has performed this operation nine times with only one death.

In these first two cases the blood-pressure in the upper and lower limbs returned to normal after the operation. This is important, for the main reason for correcting the aortic stricture is to relieve the hypertension in the head and upper limbs, which is the chief cause of death. The abnormality is fairly common. Maud Abbott, in her

classical work on congenital heart disease, found 142 instances in 1,000 cases of congenital cardiovascular defects. The average age at death in her series was 32, with extremes of 3 and 92 years. While it is true that occasional cases are seen late in adult life, it is generally accepted that most patients die young. If hypertension is detected in a young adult, aortic coarctation must be thought of, and sought for. In this way the possibility of surgical relief may be held out to more sufferers from the condition. Crafoord is to be congratulated on a brilliant contribution to cardiovascular surgery.

MEDICAL GEOGRAPHY

The relation of climate (and activities correlated with climate) and disease was one of the earliest topics of scientific inquiry; for us, Hippocrates was the pioneer. Medical geography was extensively studied by our great-grandparents and grandparents, but general medical interest in it has rather faded owing to increasing knowledge of biological and biochemical factors of diseases with well-defined geographical distributions. In a thoughtful essay Dr. Richard Upjohn Light¹ points out that geographical problems remain to be solved, that the new knowledge has not diminished their importance but increased our chance of solving them by eliminating, or defining, associated factors. He also notes that in this age, when "No place on earth is more than 60 hours from your airport" is almost a true statement, geographical knowledge of possibilities becomes practically important. The American Geographical Society has long felt the need for organized research in medical geography and organized a conference on its feasibility. This reprint includes an account of the conference, at which various opinions on methods were expressed, although no speaker questioned the importance of such an undertaking. Attention was given to cartographical considerations, especially by Dr. J. K. Wright, whose principal arguments are summarized. This pamphlet should interest many readers, particularly those in the Colonial and fighting Services.

SOYA BEAN: AN INDIAN REPORT

Report on Soya Bean, by the Soya Bean Subcommittee of the Nutritional Advisory Committee, Indian Research Fund Association, has been received from New Delhi in pamphlet form.² This report deals with investigations made in Indian laboratories on the nutritional value of the soya bean. The general conclusion drawn from these investigations is that although the bean contains more fat, minerals, vitamins, and available proteins than the native pulses eaten as food, it is not superior to these in growth-promoting qualities. It is superior to rice but inferior to milk in this respect, and it is also deficient in the essential amino-acids—cystine and methionine. In spite of these findings soya bean may prove a better food supplement than pulses for typical Indian diets, which are quantitatively inadequate and consist largely of cereals of poor nutritive value such as rice. The subcommittee initiating the investigations does not advocate the immediate extension of soya-bean production in India to replace native pulses in the diet. It realizes, however, that the bean is of considerable industrial importance in such countries as the United States as a source of fats, margarine, plastics, and cattle food, and that the part it might play in this direction in Indian industry and agriculture is worthy of investigation.

⁹ Report dep. Comm. Epizootic Abortion, Part III, London, 1913.

¹⁰ J. exp. Med., 1931, 53, 835, 845.

¹¹ J. Thorac. Surg., 1945, 14, 347.

¹ The Progress of Medical Geography. By Richard Upjohn Light. A Proposed Atlas of Diseases. Reprinted from the Geographical Review, Vol. XXXIV, No. 4, 1944. New York: American Geographical Society, 156th Street, Broadway, New York 32.

² Special Report I.R.F.A., No. 13, The Job Press, Cawnpore. (8 annas.)

SOME ASPECTS OF MILITARY OTOLARYNGOLOGY

BY

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years of war service as an otologist, of which 4½ years were spent abroad, have afforded ample time and material on which to base a review of some aspects of otolaryngology in the Army and to consider certain features which might be applied to advantage in future peacetime practice. An analysis of this material is being published elsewhere (Lumsden, 1946).

Chronic Suppurative Otitis Media

This has undoubtedly been the outstanding problem with which Army otologists have had to deal. During a period of months (October, 1943, to December, 1944) 59,368 outpatients were seen by otologists in the Middle East; 35,741 were new patients, and 19,314 (54%) of these were aural cases, a large proportion of which suffered from chronic otitis media (figures are not available). During the same period 8,263 ear, nose, and throat cases were admitted to hospital; of these 1,377 (15%) were suffering from this condition. Of all new outpatients attending one general hospital 19.4% were ear, nose, and throat cases.

At the outbreak of war, instructions regarding Army medical categorization in respect of chronic otitis media and deafness were found to be very meagre. In course of time more precise standards were laid down, and it came to be recognized that the correct management of these cases can save many man-power hours and relieve the Medical Services of much unnecessary work. But chronic otitis media apparently continued to be overlooked with great frequency.

While it has to be accepted that in time of war man-power requirements are such that all cases of chronic otitis media cannot be excluded from the Army, very many were found to be unable to stand up to service in the field, where the majority became unfit on account of an acute exacerbation or superadded otitis externa. This conclusion is the outcome of experience of cases from the Western Desert and also from the Syrian campaign, where a considerable part of the force fought over country which bore little or no resemblance to desert. On the other hand, they remained reasonably fit while employed on base duties, where living conditions are more normal and where adequate attention was available. In the Middle East it was eventually agreed that all cases of chronic otitis media should be "weeded out" of combatant units and sent to communication troops, that they should be regraded accordingly by an ear-nose-and-throat specialist and recommended for employment which facilitated their attendance for regular treatment at an established E.N.T. treatment centre (see below). Such cases could be up-graded or moved from each of such facilities only with the written approval of an ear-nose-and-throat specialist; and they were forbidden to swim. In spite of these provisions, it is my opinion that no man with chronic otitis media (or externa) should be required to serve in a hot climate if it can possibly be avoided.

It has been suggested that, in the Army, sufferers from chronic otitis media are prone to make the most of their disability. Such an attitude has been found to be exceptional, and it was not an everyday event for men to ask if it was not possible for them to be up-graded.

E.N.T. Treatment Centres

As Collins (1943) has already stated, it was suggested that aural treatment centres should be established in reception stations or medical inspection rooms at the larger base camps in the Middle East. This scheme was adopted, and I was associated with their formation and subsequently paid repeated visits to most of them. A few small items of equipment were supplied, including a forehead mirror. Suitable orderlies (of any medical category whenever possible) were given four to six weeks' intensive training in the ear-nose-and-throat departments of neighbouring hospitals. If considered proficient, they then

proceeded to work under the supervision of the medical officer in charge of the camp medical establishment, who maintained a close liaison with an otologist at a near-by hospital, where the cases were seen by him at intervals. The essential factor in the success of the scheme was that these orderlies were not transferred to other duties without exceptional reasons. They were proficient in the use of the forehead mirror, invariably showed keen interest in their work, and the treatment provided was of a high standard. As many as 70 cases have been in daily attendance by appointment, so that loss of working time was minimal. Medical officers quickly showed enthusiasm for the scheme, while patients frequently expressed their appreciation. Apart from other considerations, the number of ears which became quiescent or healed was impressive. Banham (1944) has shown what can be done by such measures in the appropriate types of case.

Chronic otitis media becomes a more difficult problem in the Army because, though the life is frequently healthier, living conditions and facilities for management are more difficult and the antisocial character of the complaint is probably more noticeable. The associated deafness must never be ignored when considering this condition.

Chronic Otitis Media in the Civilian Population

The adoption of a similar scheme in the future Health Service is suggested. Such treatment centres, in addition to school clinics, could be incorporated in health centres and factory clinics. *Special training for nurses undertaking this treatment would be a primary essential.*

The fundamental problem, however, remains that of prevention by ensuring adequate treatment of acute otitis media. Compulsory notification might do much to make the general public more "ear conscious."

Traumatic Affections

Accidental as well as battle injuries have formed a most important part of one's work in the Army. Cairns (1945) has drawn attention to the desirability of close collaboration between the neurosurgeon and the maxillo-facial, otorhinological, and ophthalmic surgeons. It is frequently considered that the otolaryngologist has little or no part to play in relation to traumatic affections, and several factors are responsible for this. But in such conditions as, for example, skull fractures involving the ear or paranasal sinuses he is often found to fill an important role (Lumsden and Fleming, 1944; Lumsden, 1945).

Summary

Problems concerning chronic suppurative otitis media in the Army are discussed and a scheme for the management of cases is described.

A similar scheme is suggested for the civilian population.

Attention is redirected to the role of the otolaryngologist in relation to traumatic affections.

I wish to acknowledge my indebtedness to Brig. Myles L. Formby, formerly Consulting Oto-rhino-laryngologist to the Army; Major-Gen. P. H. Mitchiner, C.B., C.B.E., T.D., Consulting Surgeon to M.E.F.; Major-Gen. W. C. Hartgill, O.B.E., M.C., formerly D.M.S., M.E.F.; and Major-Gen. J. C. A. Dowse, C.B.E., M.C., D.M.S., M.E.F.

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The Minister of Labour and National Service has given notice in the *London and Edinburgh Gazettes* that he proposes to make Special Regulations, regulating certain processes in the manufacture or decoration of pottery. The proposed Regulations would supplement the provisions of the existing Pottery Regulations, and in particular would prohibit the use of glazes other than "leadless" or "low solubility" glazes and restrict the use of ground or powdered flint or quartz in factories where the manufacture or decoration of pottery is carried on. They take the place of the previous draft Pottery (Health) Special Regulations published in February last, to which certain objections were made. The revised draft contains amendments designed to meet some of these objections, particularly in regard to the use of the process known as "dry mixing."

NATIONAL HEALTH SERVICE BILL

STATEMENT BY DR. H. GUY DAIN, CHAIRMAN
OF COUNCIL

In view of its importance, we print below in full the statement made by the Chairman of Council in the debate on the National Health Service Bill at the Annual Representative Meeting last week.

The discussion on this is reported in the Supplement.

Yesterday I moved the adoption of the preliminary sections of the Annual Report of Council, but I reserved until this morning any reference to the National Health Service Bill. I did this for the particular reason that before we discussed items in detail we should devote a little time to the consideration of the position as it is developing. The Bill has passed through its committee stage and report stage, and is due for third reading on Friday next. During these various stages we have seen minor modifications in its structure, but nothing to change the main principles on which it is based. It would be desirable to look at the way in which the Bill has emerged from these discussions. If we go back to our experience of three years ago, when we met Mr. Ernest Brown, we found that the Ministry had ideas for a whole-time service. By argument and negotiations and pointing out the disadvantages to the public of such a service we did get a certain way towards agreement both with Mr. Brown and with his successor, Mr. Willink. Then we had a General Election in July of last year and a new Government whose policy is nationalization.

The Government has proceeded to implement its idea in a number of forms. With regard to the Health Service, for a long time the Minister did not talk to us on that subject because he was busy with housing, and when we did eventually come into contact with him we found that he had practically adopted the framework of the Service as left by Mr. Willink and had added to it the principle of nationalization, which makes such an enormous difference to us. He has refused to negotiate, he has been willing to talk on anything else, but not on the principles on which the Bill is founded.

The principles that are introduced in the Bill are the State ownership of hospitals, the destruction of the goodwill of general practices, the determination to direct practitioners where they shall not go and prevent them from moving without permission, and their remuneration, in part at least, by salary. These are the steps by which it is proposed by the Government that the medical practitioner shall be taken under control in a State Service. None of those additions to the scheme will in any way improve the service to the patient. (Applause.) There is not one of them that is necessary to the efficiency of the Service. They serve no purpose except to carry out Socialist ideals. We should look closely to-day at the effects of those proposals. The first and perhaps the most obvious is the ownership of hospitals. Hospitals have not contested this matter in the way in which I should have thought they would be certain to do. On the part of neither local authority hospitals nor voluntary hospitals has there been a real understanding of the position. The first effect, so far as we are concerned, is that there can be no possibility of practice by consultants and specialists outside the new Service. The Minister will own all the hospitals. No consultant or specialist can practise without access to beds, but beds, both public and private, will be under the control of the Minister, who may at any moment decide whether they shall in fact continue to be public or private. Thus an important section of our profession will, for practical purposes, become servants of the State almost immediately, and their opportunities for independent practice will be infinitesimal.

As to the general practitioner, there are three respects in which he will be brought under control. He is not to be allowed to buy or sell practices—that is to say, he loses the goodwill of his practice and the power to transfer his practice when he wishes to leave the neighbourhood or to retire. The Minister says that he is prepared to compensate for the loss of such goodwill, and he has fixed a sum of £66 millions as being the value of the practices for compensation purposes. When we discussed that figure with him we made the specific

statement that we were not in any way implicated in the principle of forfeiture of goodwill. The Minister demanded these powers in order that he might be able to distribute practitioners. Sometimes the Minister's powers in this respect are discussed rather lightly. It is said that there is no active direction, and that the practitioner entering practice or desiring to change his area is merely told where he may not go. For this purpose he has to get the consent of two Committees and a central body. I would only remind you that this is an "easy" commencement of control. ("Hear, hear.")

We have said that the general practitioner in a national service should be employed by and responsible to the patient, and we are opposed to payment by any form of salary which means the transference of the practitioner's responsibility from the patient to the person who pays the bill. The Minister has appreciated that the principle of free choice by patients—a public matter in which he could not afford to offend—would be interfered with by a salaried service. He is not, therefore, proposing the distribution of patients, but he does propose to pay doctors in a certain proportion by salary, so that he will have a new form of control over the general practitioner. He has said that he does not think the medical profession are ripe to become salaried officers of the State or civil servants. I hope we are not. (Applause.)

We agree that many points in the Bill are excellent. Indeed, we had a part in fashioning them. But it will be seen that on the Report Stage the Minister has not conceded the right of every practitioner to come into the Service if he wishes—a right which was conceded to our predecessors in 1911 in the case of national health insurance. Nor has he conceded, what we should certainly require, the right of appeal from a decision of the Minister which would take the doctor out of the Service. (Applause.) We cannot possibly agree to a national Service covering all people and all doctors in which the last word as to whether a man may practise in the Service or—what amounts to the same thing—in his profession, will lie with the Minister of Health. (Loud applause.) Whatever else we may or may not do, I hope there will be no question as to our determination on that point.

It is interesting to see that in the progress of this Bill through the House of Commons the Minister has maintained the complete right to do everything himself. He is the complete and uncontrolled dictator. He will determine the constitution of every committee and council that is to be set up under the Act. He has not even allowed to escape from his power the election of the chairmen of those various bodies. It is allowed to none of them to have the sense, wisdom, or the opportunity to elect their own chairmen. Is it wise that we should let ourselves into a Service on those terms? (Loud cries of "No.") The Minister says that if he can do it all himself it will retain flexibility in the Service, and he opposes changes which will limit his powers in appointing committees or their chairmen and so put him into a "strait-jacket." But how can he know all the committees of the country and all the people who should be chairmen of them? Surely it is an indefensible position for a Minister to take, and I hope we shall not agree to it, because what it means is that appointments will be made on the advice of the civil servants, and we ourselves will be employed by and dictated to by the civil servants straightaway and our freedom in many respects will disappear.

We said, before the Bill itself appeared, that we considered that the Service should be built up on certain principles. We have laid down principles which establish the freedom of the public and of the profession. The Minister, of course, has the opportunity of hearing the sort of things that we say in public at meetings like this and at meetings in the areas, and his reply is that these doctors are delightful people, excellent at their job, but that when it comes to the field of organization and medical politics they are just foolish, putting forward principles and laying down opinions which are airy nonsense.

That is the position in which we stand with the Minister at this moment. We have adopted our principles, and what I have said is a fair statement of the value which the Minister attaches to them.

In May last we had a special meeting of this Body, and that meeting did four things: (1) it decided that there should be no control over doctors with regard to the areas in which they practise; (2) it decided against State ownership of

pitals; (3) it decided that doctors ought to retain the good- of their practices; and (4) it was against any modification the method of remuneration by capitation fee. The voting each of these four points was as follows: 214 to 2, 210 to 229 to 12, and 209 to 8. Those are substantial majorities which represent the opinion of this Body at that date.

Inevitable Conflict

Now we have come to the time when one side or the other has to give way. A conflict is inevitable. (Applause.) The Minister had the wisdom of the Government of South Africa and had called us into consultation as to the form which the new arrangement should take and had invited us to approve of it before it went to the House of Commons, we should find ourselves in a very different position day. If the Government of one of our Dominions can show it amount of sense, it is a pity that the Government of the other country cannot do the same. (Applause.) This is the time when we have to decide what action we shall take and what stage we shall take it. Do we stand by the decisions of the meeting made in May? (Loud cries of "Yes.") What is the result of this? The decisions that were made in May were in accordance with the instruction by this Body to the Council, and the Council has no authority to modify or alter them in any way until the Body itself alters them. It is impossible for the Council to have any part in the preparation of regulations until the Representative Body gives them a definite authority. The question has already arisen on the application of the Insurance Acts Committee for an increase in the capitation fee for insurance practitioners. They were met by the Minister himself with a statement that that matter could not be separated from the terms of service under the forthcoming Act, and he was not prepared to discuss the insurance capitation fee until the other matter had been discussed as well. He was thereupon told that the Representative Body was against any form of basic salary. He himself has stated his adherence to the principle of basic salary for every practitioner, and so we are precluded entirely from discussing terms of service under those conditions. That is the position which has arisen and which will arise more particularly in the next few months.

All this entails a consideration of the value of our statements and of the expressed opinion of the profession in carrying out what has been decided. The Minister has constantly said that we are a divided profession and that this has become a political question. Some of us are Socialists and some are not. It may be that those who are Socialists will be prepared to accept and work the scheme because it embodies the socialistic principle. But there are others of us who are not Socialists and who think that such a change would be a great disadvantage to the service which the public would get. They are not prepared to join in "on those conditions. (Applause.)

Where do we stand? This decision has to be made, not by the medical profession as a body or acting through the Council, but by each individual member of the profession. We have done what we can to make the position understood to the doctors in the various areas, and through the *British Medical Journal* we have endeavoured to keep doctors informed of the situation. But there comes a moment at which the doctors themselves must be asked what action they intend to take. The Council will act on their instructions and not without.

The first problem to arise is whether there should be any further negotiations at all unless the principles are conceded. We have it in mind, towards the autumn, to invite every practitioner on the *Medical Register* to say whether he wishes any negotiations to take place on the matter of regulations and the drawing up of the scheme or whether he wishes us not to take any steps in that regard, it being understood that the latter decision means a refusal to take part in the Service whatever form the regulations may take. We can get a straight question like that across to the profession, and I hope we can get a straight answer, and it is up to us to know exactly what is the opinion of the people who have sent representatives to this meeting. It is continually put to me that it may be that this Representative Body does not represent the profession. For my own part I am prepared to stand by the decisions of this

Body. We are not prepared to believe that the representatives come here and vote for things, as they did last May, for which they have no authority in their constituencies. But the effect of the influence of representatives in their own constituencies must not be lost sight of at the time this vote is taken.

Some have thought that members of the profession may be tempted by the offer of generous terms. I do not want to anticipate what will be told you by the Insurance Acts Committee later in this meeting as to the Minister's proposals concerning the increase in the capitation fee, but if those proposals are an earnest of the terms which are to be offered under the new Service they are certainly not generous. I think there may be some discussion as to the date on which the specific questions should be put and a Special Representative Meeting called. While it is true that we cannot foresee even now the precise form of the Act, which has yet to go through the House of Lords, it would be a great advantage to proceed on the assumption that no very material change is now likely, so that we may get the questions answered earlier. On the other hand, it might be wisest to wait until the Bill is finally passed before the question is put.

Some interesting things have happened recently. I listened to the broadcast a few nights ago by the Lord President of the Council, Mr. Herbert Morrison, when he gave an excellent address on democracy and the ambitions of the present Government. He said two things, however, which I am sure he could not have substantiated. He said that this Government was out for planning with liberty and order with freedom. That is just exactly where we ourselves stand, and if we look at the Lord President's speech concerning the Press a few days later we shall begin to wonder whether on the occasion of that broadcast he was not talking with his tongue in his cheek.

What is our position? The matter is entirely in our own hands. There are no other doctors but the doctors who are qualified. We are in the strongest possible position for ensuring that what we think is best for the public will be carried out. (Loud and long-sustained applause.)

ORDER OF ST. JOHN

The *London Gazette* has announced the following promotions in, and appointments to, the Venerable Order of the Hospital of St. John of Jerusalem:

As Knights: Major A. B. Cardew, M.C., Dr. T. H. Leggett. *As Commanders (Brothers):* Lieut.-Gen. T. O. Thompson, C.B., C.B.E., K.H.P., Lieut.-Col. R. W. M. Strain and C. G. Booker, Majors J. A. Mackenzie, and J. F. Hamilton, Drs. N. Jennings, N. Manson, W. P. Kennedy, and H. G. Ramsbottom. *As Commander (Sister):* Dr. Margaret E. Douglass. *As Officers (Brothers):* Col. T. D. Inch, C.B.E., M.C., Lieut.-Col. S. Le R. Spicer, Major P. Weiner, R.A.M.C., Capt. R. S. Harper, Surg. Lieut.-Col. H. R. L. Casolani, Col. J. Revans, M.B.E., and G. R. McRobert, C.I.E., I.M.S., Drs. N. S. B. Vinter, C. S. C. France, H. C. M. Williams, O.B.E., H. F. Hollis, K. E. Dowd, C. A. Gauthier, W. Bain, D. J. Nicol, M.C., T. W. A. Gray, S. H. Keshen, C. G. Roberts, L. A. Sigurdson, H. J. Porter, G. E. Dragan, and V. T. Camilleri. *As Officers (Sisters):* Drs. Gladys A. Danby, M.B.E., Gladys E. Wilkinsoo, Mary Rutledge, Daphne W. Dear, and Cecily Porter, and Miss Muriel J. L. Frazer. *As Associate Officer (Sister):* Major Barbara Stimson, R.A.M.C. *As Serving Brothers:* Col. A. C. Haddow, Lieut.-Col. E. J. Selby, O.B.E., Major A. K. Cosgrave, M.C., V.D., R.A.M.C., Majors J. Holmes, and R. A. P. Gray, Surg. Capt. C. C. Elliott, D.S.C., V.D., Drs. J. W. W. Baillie, G. N. Montgomery, T. M. Murphy, A. B. Davies, L. M. Maybury, W. Adams, G. E. P. Davis, G. E. Mullins, S. L. Smith, P. E. Malloch, V. S. Kaufman, W. A. Stos, E. R. G. Sheil, N. H. Skelton-Browne, F. N. Clark, D. Glen, J. M. Russell, H. S. Gabb, R. MacL. Thompson, E. M. Fingean, J. D. Gray, H. G. Parker, R. O. Davidson, B. M. Bennett, C. R. de C. Sadler, S. A. Hall, H. H. C. Fuller, J. C. Mead, G. K. MacNaughton, G. E. Kidd, W. R. Wright, J. G. Baldacchino, and G. C. Strathairn, and Messrs. K. G. W. Saunders, K. J. Gilchrist, T. J. Cobbe, and A. M. McMaster. *As Serving Sisters:* Drs. Ellen M. W. Shaw, Lilian I. McDonald, Teresa J. S. Iyer, M.B.E., Margaret M. Howe, and Lucretia H. H. Byrne.

Under the title of the Treacher Collins Prize Essay, the Council of the Ophthalmological Society of the United Kingdom has instituted a prize of £100, to be awarded triennially, for the best essay submitted upon a subject selected by the Council. The prize is open to qualified medical practitioners of any nationality, but the essay must be written in the English language. The subject for the next award is "Nutritional Eye Disease." The closing date for sending in essays for this award is Dec. 31, 1947. They should be submitted to the honorary secretary, Ophthalmological Society of the United Kingdom, 5, Racquet Court, Fleet Street, London, E.C.4, from whom also any further particulars can be obtained. No name should be on any essay, but a distinguishing pseudonym or quotation, which should also be upon a sealed envelope containing the candidate's name and address. This envelope should accompany the essay.

Nova et Vetera

EDINBURGH SURGEONS' HALL

The medical school at Surgeons' Hall, Edinburgh, traces its origin back to 1505 and may thus be said to be the oldest in Great Britain, but in its present form as the School of Medicine of the Royal Colleges of Surgeons and Physicians of Edinburgh it has now celebrated its fiftieth anniversary.

In 1839 James Syme, later Lister's father-in-law, urged that students should be allowed to take a certain number of terms at the extra-mural classes in qualifying for the Edinburgh University degree in medicine. The *Senatus Academicus* fought the idea but were finally overruled by the House of Lords in 1854. In 1884 the Privy Council was unsuccessfully petitioned to grant the extra-mural school a charter, and Miss Jex-Blake and her friends were on their toes to see that this would have compulsorily admitted women medical students; it was Dr. Peter D. Handyside who admitted women students to his anatomy lectures at Surgeons' Hall in 1870. However, an agreement was reached in 1895 between the extra-mural lecturers and the Royal Colleges setting up a governing body. This enabled the School of Medicine lecturers to receive and hold funds, which was important for the Carnegie Grants.

In 1913 an arrangement was made, further modified in 1917 and 1929, which fused the intra- and extra-mural clinical teaching, though many students at the university still take classes at Surgeons' Hall. More students at the school nowadays study for the triple qualification of the Scottish colleges.

The school's buildings in Nicolson Street are nearly 100 years old. A former student, who died in Australia, left some £50,000 towards the cost of a new building, but the war prevented its construction and the Goodenough Committee were thus able to make critical remarks about the accommodation, although no mention was made of the very excellent equipment in many of the departments.

Last year the school suffered a severe loss in the retirement of Dr. John Orr, lecturer since 1913 and Dean since 1924. His kindly character has left its imprint in the liberal atmosphere of the school, which causes many, particularly older people who are taking up medicine, to choose it. The present Dean is Mr. Norman Kemp, and Dr. Douglas Kerr has been appointed Director of Studies.

LAURENCE DOPSON.

DOCTORS IN THE LAW COURTS IN THE 13th AND 16th CENTURIES

Here is a rough translation of part of the Latin record on the *Curia Regis* Roll, Trinity Term, 14th year of King John (A.D. 1212), belonging to the County of Cornwall.

Osbert, the doctor, appealed Robert Bernard, who, he said, had spent the Sunday before mid-Lent with him, eating and drinking, and likewise the day after, on which day the said Robert sent to his wife that she should come to him on the following Monday. And on that said day his wife came together with his brother Thomas [who seems to have been in Holy Orders, as he is called *Clericus*] and two others and all these were with Osbert, eating and drinking, even unto the going down of the sun. And then Robert and the others nefariously and in the peace of the Lord King, took Gunnilda, Osbert's wife, and drew her out of the house and beat her with fists and knees so that they left her nearly dead; and then threw her over the hedge outside the orchard. They then took Osbert himself, drew him out of the house and beat him sorely. The assailants then entered the house and stole goods to the value of XX marks, including 11 gold rings, a silver-mounted cup, and a mazer likewise bound with silver. And this they did wickedly and in the King's peace, and Osbert offered to prove the robbery and the assault against Robert as the Court wished.

Robert, defending himself on the charges of breaking the King's peace, the robbery, felony and beatings, said that it was all a case of hatred and malice; that Osbert held a certain house of his for a term and that, as the term was up, he had entered into possession and made no robbery. He offered the King 3 marks that an inquisition might be held. And Osbert, asked whether he had raised the hue and cry, said that he had not, but had come to court to sue for his writ.

The result of the action does not seem to be recorded. One would suppose that Osbert and Gunnilda, after a day's debauch

and a good beating, would be in no condition to raise the hue and cry. As a tail-piece to this story the early Chancery Proceedings (1544-7) record an action brought by Richard We citizen and barber-surgeon of London, against Henry and Robert Savell, gents., Fellows of Lincoln's Inn, for enticing away 1 apprentice and for threatening to cut off his ears. High arbitrary folk they must have been, those Fellows of Lincoln's Inn. We are glad to think that the legal and surgical professions now located in that spot do not continue such evil practices.

The transcript of the Latin record was sent to me some years ago by my friend the late Mrs. Harvey Bloom.

R. R. J.

THE WOOLNER-DARWIN TUBERCLE

There are two busts of John Hunter in public places in London. The massive, romantic head by Alfred Gilbert, R.A. catches the eye from over the side-door of St. George's Hospital; but the bust in Leicester Square, where John Hunter had his town house, is less well known. It was carved by Thomas Woolner in 1874, the year that the square was opened to the public in which he was elected R.A. Sir Alfred Webb-Johnson later pointed out that this bust survived the Blitz only to be knocked about by hooligans, and that it ought to be restored; in the same speech he recalled Woolner's other claim to remembrance among medical men. Thomas Woolner had his first success in 1847 when he exhibited his statuette of Puck. It was admired by Tennyson and gained Woolner the friendship of Rossetti whom he joined in forming the Pre-Raphaelite Brotherhood for like Rossetti he was both poet and artist. But finding it impossible to make a living, he sailed for the Australian gold diggings in 1852; the farewell scene inspired Ford Madox Brown's famous and charming picture "The Last of England." In Australia he found portrait-sculpture more profitable than gold-mining, and came back to England two years later. He was a man of intellect and charm and moved in the most cultured society of mid-Victorian London. He set to work to portray the intellectual lions of the day. His bust of Tennyson established his name about 1857 and he later carved a head of Darwin. It was from him that Darwin heard of the tubercle of the auricle, one of the vestigial structures which became a clue in his argument for "the descent of man from pre-existing forms." The story is best told in Darwin's words:

"The celebrated sculptor Mr. Woolner," he wrote in the fifth chapter of *The Descent of Man*, 1871, page 22, "informs me of one little peculiarity in the external ear, which he has often observed both in men and women, and of which he perceived the full significance. His attention was first called to the subject whilst at work on his figure of Puck, to which he had given pointed ears. He was thus led to examine the ears of various monkeys, and subsequently more carefully those of man. The peculiarity consists in a little blunt point, projecting from the inwardly folded margin or helix. . . Now the meaning of these projections is not doubtful; but it may be thought that they offer too trifling a character to be worth notice. This thought, however, is as false as it is natural. Every character however slight must be the result of some definite cause, and if it occurs in many individuals, deserves consideration. It obviously consists of the extreme margin of the ear folded inwards; and this folding appears to be in some manner connected with the whole external ear being permanently pressed backward. In many monkeys which do not stand high in the order, as baboons and some species of macacus, the upper portion of the ear is slightly pointed and the margin is not at all folded inwards; but if the margin were thus to be folded, a slight point would necessarily project inwards and probably a little outwards. This could actually be observed in a specimen of the *Ateles beelzebuth* in the Zoological Gardens; and we may safely conclude that it is a similar structure—a vestige of formerly pointed ears—which occasionally reappears in man."

Darwin thus explicitly attributes the observation to Woolner but with the exception of Johnson Symington in his edition of *Quain's Anatomy*, who rightly refers to both Darwin and Woolner, almost all anatomists, English and foreign, call the structure "Darwin's tubercle," no doubt because he first described it in print. The Basle nomenclature termed *Tuberculum auriculæ Darwini*, but the Anatomical Society revised nomenclature of 1933 drops the eponym and calls it simply "tubercle of auricle." Symington reminds us that the tubercle is constant in the embryo of about the sixth month and occurred in about 30% of adult cases examined.

Reports of Societies

PENICILLIN INHALATIONS FOR LUNG INFECTIONS

At a meeting of the Section of Experimental Medicine and Therapeutics of the Royal Society of Medicine on July 11 the subject under discussion was penicillin inhalation for pulmonary infections.

Dr. J. H. HUMPHREY said that, like other workers, Dr. Joules had found that penicillin given intramuscularly was disappointing in the chronic cases, such as bronchiectasis and lung abscess, which made up a considerable proportion of the admissions to a county hospital. It was therefore decided to try some other method of approach. Patients willing to co-operate and presenting clinical examples of the various diseases were investigated. An estimation was made of the penicillin in their sputum. When penicillin had been given intramuscularly it could afterwards be detected in only 2 out of 26 samples of sputum from patients with chronic pulmonary disease.

Fortified by some American and other experience, they then gave penicillin by inhalation. Two types of inhaler were used, the Collison inhaler, which broke up the penicillin solution into very fine droplets, and the other the ordinary hand inhaler. Patients were asked to inhale, and afterwards—at intervals from two to eight or twelve hours—the sputum was examined. Relatively large concentrations of penicillin were found, and they were satisfied that this was a practicable method of administration. With the Collison inhaler it was found that a ten minutes' inhalation about 1.5 ml. of the solution could be nebulized. By giving four inhalations in the day, with a double dose at night, bacterial stasis was obtained over the twenty-four hours. Dr. Humphrey described the effect of inhaled penicillin on the various organisms. Diphtheroid bacilli and spirochaetes disappeared rapidly; others, such as staphylococci, *M. catarrhalis*, and occasionally fusiform bacilli, tended to persist. An examination of cases which came to necropsy showed that Gram-positive organisms persisted in the bronchioles long after they had disappeared from the sputum; therefore, even in the presence of negative sputum, treatment should be continued.

Clinical Indications

Dr. H. JOULES said that this treatment had been used extensively during the last nine months in the general wards. About 100 cases were treated by inhalation, and it had had a striking effect on the whole outlook of these patients in the winter and spring. The outstanding feature had been the elimination of coughing as a disturbing element in ward life. Previously the ward had "resembled a Cruft's dog show," but now serious coughing was confined mostly to patients with carcinoma of the lung and patients just beginning treatment. The general principle had been to give sulphonamide therapy at once when clinical examination showed pneumonic consolidation. When the initial examination suggested that it was mainly intra-bronchial aerosol penicillin was given from the outset. Sulphonamides had led to the rapid clearing up of the pneumonic process, but where there was a generalized bronchitis with some degree of spasm inhalation therapy had been of great value. It must not be supposed, however, that penicillin inhalation was the complete answer to the problem. Most Gram-negative organisms had resisted their efforts, and they awaited the coming of streptomycin or some such agent. Of 80 cases, all severe enough to be admitted to hospital, treated with penicillin inhalations, 46 had been much improved, 17 improved, and 17 not improved. Two cases of silicosis and bronchitis were not improved.

	Total Cases	Much Improved	Improved
Chronic bronchitis and spasm ..	20	15	5
Bronchiectasis ..	18	12	4
Respiratory infection with congenital heart failure ..	15	7	4
Pneumonia and generalized bronchitis ..	11	7	4
Lung abscess ..	5	3	0

He also related the experiences of a surgical colleague, Mr. L. Fatti, working at another hospital, who had used

penicillin inhalation in association with pneumonectomy and lobectomy. Without penicillin 13 cases out of 22 developed fistula; with penicillin in the pleural space, 5 out of 15 cases developed fistula, and with penicillin in the pleural space and inhalation, only 2 out of 18 cases developed fistula. The fistula rate in the three classes was thus 60, 33, and 11% respectively.

Dr. Joules spoke with some diffidence of the results of penicillin inhalation in cases of chronic tuberculosis with large amounts of sputum, but a considerable diminution in the amount of sputum had been obtained, and the patient's life had been made more comfortable. Penicillin inhalation had also been used pre-operatively for patients who had a tendency to bronchitis, but the series was too small and the bacteriological indications too indefinite to permit discussion as yet. On the whole, it was possible to give a guarded commendation of aerosol penicillin, but it was too soon to speak with confidence of the future lives of people with chronic pulmonary infections who had shown immediate improvement.

Dr. L. CAPPER said that experience at the London Chest Hospital confirmed Dr. Joules's remarks in general. A good deal of symptomatic improvement had been obtained with aerosol penicillin, but in many cases it was not the complete answer. He demonstrated a new penicillin inhaler which had been used at the London Chest Hospital for some months past. It was worked with an oxygen cylinder. Specimens of sputum collected on the following morning—some twelve hours after the last inhalation—had shown concentrations of penicillin reaching as high a level as 14 units per ml. The method had been used in suppurative pneumonitis, lung abscess, and carcinoma of the bronchus.

Dr. AVERY JONES asked whether any marked difference had been found in the results with the Collison and with the hand inhaler respectively. Dr. JOULES replied that the Collison had been used for the majority of the cases treated in the wards, whereas the other had been used for out-patients, and therefore no valid statistical comparison was possible.

ASSOCIATION OF UROLOGICAL SURGEONS

The British Association of Urological Surgeons met in London on June 27, 28, and 29. At the business meeting a memorandum on a urological service for the country was passed for submission to the Ministry of Health, through the Royal College of Surgeons. At the scientific session a discussion on "The Treatment of Benign Enlargement of the Prostate" was opened by the President, Mr. R. Ogier Ward, and continued throughout the morning. In the afternoon operations and demonstrations were given at seven London hospitals. A dinner, at which 82 members and guests were present, was held at the Royal College of Surgeons on the evening of June 28. The principal speaker was Sir Ernest Rock Carling, who complimented the Association on its memorandum putting urological requirements on a regional basis. It is proposed to hold the next annual meeting in Glasgow in 1947.

BIRMINGHAM UNITED HOSPITAL

In its eleventh annual report the Birmingham United Hospital, which includes the General Hospital founded in 1766 and the Queen Elizabeth Hospital at Edgbaston opened in 1938, welcomes back ten members of the medical staff after a long period of absence with the Forces, during which "they rendered most distinguished service in many parts of the world and achieved high rank and responsible office." Three members of the honorary staff have lately reached the retiring age—Prof. Seymour Barling, Prof. W. Gemmill, and Mr. Beatson Hird; and one other—Dr. R. H. Astbury—has retired for reasons of health; and the Board pays a high tribute to the services they have rendered. It has been decided to appoint to the staff three assistant physicians and five assistant surgeons, and in these appointments the new advisory committee, composed of the medical committee and representatives of the Medical Faculty of the University, is acting for the first time. The decision of Birmingham University to appoint full-time professors to the departments of medicine, surgery, midwifery and diseases of women, and paediatrics is welcomed. Much of the work of three of these professors will be carried out in the United Hospital. Financially the Board faces an uncertain future. Expenditure grows with new and extended services, and income shows no signs of expansion. "Devoted as the Board is to the voluntary principle . . . it must now be recognized that without some substantial increase in income the present full service given by the United Hospital cannot for long be continued."

Correspondence

Industrial Rehabilitation

SIR,—Further to the report of the B.M.A. Committee on Rehabilitation (*Supplement*, June 29, p. 187) you may be interested to have details of the industrial rehabilitation scheme now in operation at this factory.

A special rehabilitation machine shop or, as we prefer to call it, a Re-Training Shop, accommodating up to 40 persons, has been in operation here since April of this year. The shop is housed in a new building, and factors such as colour dynamics, lighting, and the local surrounding amenities have been the subject of special study. Here, through the medium of machine or bench work modified and adapted so as to secure the necessary movements, remedial exercises designed to assist recovery are prescribed for works accident and other cases under the direction of the company medical officer or the visiting orthopaedic surgeon. The shop is in charge of a whole-time rehabilitation superintendent, a trained engineer of some seniority within this organization and with an intimate knowledge of men and machines and of the many differing types of work done throughout this factory. Before taking up his duties the rehabilitation superintendent was given ample opportunity of studying the background of his work in its social, economic, and technical aspects. Working under the company medical officer, to whom he is responsible, his duties extend beyond the confines of the rehabilitation shop to fulfil what might fairly be described as those of an occupational therapist in the engineering sense with regard to placement of incapacitated persons within the factory generally. In this work he has the active co-operation of the personnel and employment managers. An assistant rehabilitation officer, selected on account of his personality and technical abilities as both teacher and demonstrator of machine shop practice in the apprentice school, is in immediate charge of the men working in the Re-Training Shop, and his services are available should the need arise for vocational training, for which provision is made within the framework of the scheme as a whole.

Although intended primarily for works accident cases, the rehabilitation shop also admits wounded ex-Service men and other employees injured while away from work if they are anxious to return, working in co-operation with the private doctor concerned and with outside hospital services and clinics. A considerable proportion of medical and psychological cases presenting difficulty in placement or as a result of prolonged absence from work constitute fully 50% of the cases dealt with, and the more difficult ones are admitted to the Re-Training Shop for graded work until such time as they can be satisfactorily accommodated elsewhere in the factory. In this connexion emphasis is placed on finding the "right job" rather than a "light job," and so far as aetiology is concerned our experience up to the present has tended to confirm the relative proportions of 25% surgical, 25% neurotic, and 50% medical cases mentioned in your leading article on rehabilitation on June 29.

While working in the Re-Training Shop the men are encouraged in a positive outlook towards recovery, and are directed to put a maximum effort short of fatigue into their work in return for a system of payment which is equivalent to their basic rates of pay plus 20% in lieu of bonus. Suitable work of a useful and productive nature is diverted from the factory and scheduled for the Re-Training Shop, and in comparison with production lines elsewhere in the factory where the group bonus system of payment is in operation efficiency rate is between 60 and 70%. In no sense is the Re-Training Shop regarded as a refuge for invalids, and the general morale of the men has remained consistently high. Since the shop was opened in April this year some 78 cases have passed through, of which 29% have been medical, 55% surgical, and 16% psychological.

Prejudice on the part of the injured workmen or lack of co-operation from others have been conspicuous by their absence, and it is becoming increasingly rare for accident patients to cease work while continuing under treatment at the factory or with the casualty or fracture clinic at the local hospital. In this respect the medical officer has the full co-operation of the private doctor. Plaster cases, if ambulant, are placed, wherever possible, at their usual work, or are found modified work within the factory, but failing this they are admitted to the Re-Training Shop.

The company medical officer works in close liaison with the casualty department and fracture clinic at the Luton and Dunstable Hospital, which is in charge of a full-time orthopaedic surgeon. Injured persons are asked to report back to the surgery on their return from hospital, and on the recommendation of the medical officer to the rehabilitation superintendent they are found suitable work wherever possible, thus maintaining continuity of treatment until recovery is complete. Ancillary to this service is a fully equipped physiotherapy department staffed by two whole-time mem-

bers of the Chartered Society of Physiotherapy, and here immediate treatment for works accident cases and after-treatment back to full work is provided for all those remaining at work. The orthopaedic surgeon attends the factory on one half-day a week and holds his follow-through clinic for injured and fracture cases in the physiotherapy department. The physiotherapist and rehabilitation superintendent attend this clinic as part of the rehabilitation team and accompany the visiting surgeon on his weekly round of the Re-Training Shop.

Cases requiring further investigation or x-ray examination or plaster changes at the fracture clinic, which is held in the local hospital, are collected together at the end of the week and, in company with the rehabilitation superintendent and the physiotherapist, are transported to and from hospital by coach at the company's expense. In this way close co-operation between surgeon and engineer is thereby secured and has a marked effect from the psychological point of view on all those undergoing treatment. It also has the advantage of saving much time and trouble which might otherwise have to be spent in an already overloaded outpatient department. A consulting plastic surgeon is also a member of the rehabilitation team and sees cases both at the hospital and in the factory in consultation with the orthopaedic surgeon and the company medical officer.

Some form of rehabilitation has long been practised at this factory where people injured at work or returning after prolonged illness have received special consideration on the recommendation of the medical officer through the active co-operation of foremen, managers, and the personnel department. This co-operation is none the less evident with the establishment of a comprehensive rehabilitation scheme, and I look forward with confidence to an ever-widening field for this very important advance in social medicine.

—I am, etc.,

A. R. THOMPSON,
Medical Officer.

Vauxhall Motors Ltd., Luton.

Drug Eruption after Sodium Pentothal

SIR,—With reference to drug eruptions due to sodium pentothal, mentioned by Dr. G. A. Grant Peterkin (July 13, p. 52), the following case report may be of interest.

Mr. H., aged 40, was admitted to this hospital under the care of Mr. W. Donald Bedford for a radical cure for bilateral inguinal hernia. The operation was carried out under pentothal and nitrous oxide. Thirty-six hours after operation an urticarial rash appeared on the patient's chest, face, and arms and a scarlatiniform rash on his hands. Post-operatively the patient had only had glucose drinks and some luminal. The luminal he had had before operation without any reaction, and it was supposed that this rash was due to the pentothal.

The urticaria settled down with calcium lactate injections, and five days after the appearance of the rash his hands started to peel. As in the case reported by Dr. Grant Peterkin, a patch test for pentothal was negative.—I am, etc.,

Hertford County Hospital.

M. D. WARREN.

SIR,—In his medical memorandum on "Post-operative Mania treated by Continuous Intravenous Pentothal" (June 22, p. 954), Dr. A. Robertson Kerr makes the remarkable statement that "little has been written about the action and effects of sodium pentothal, even as a short-acting anaesthetic."

R. Charles Adams, in his book *Intravenous Anaesthesia*, quotes 260 references in the chapter on pentothal, and, of course, there are many more publications which either were not referred to in the text, or have been published since the book went to press in 1944.—I am, etc.,

Accra.

G. M. WYANT.

Amnesia after Trilene

SIR,—Towards the end of "A short Survey of Trilene in General Practice" (July 6, p. 10), Drs. A. Barratt and S. H. B. Platts state that "An interesting and otherwise unencountered property of trilene has come to light. In rather more than 20% of cases complete amnesia followed its use." The italics are mine. They suggest that this figure might be raised by certain expedients. I notice that their bibliography does not refer to my article "Trichlorethylene and Midwifery" (*J. Obstet. and Gynaec. Brit. Emp.*, April, 1944), in which the following appears: "All patients were amnesic. Some had short retrograde amnesia and were bewildered at finding delivery completed, having no recollection of the application of the mask."

Incidentally, Drs. Barratt and Platts might find that the use of the simple cheap apparatus described by me would raise

r 20%. I hope to make a further communication regarding suitability of this apparatus for general practice midwifery in early date.—I am, etc.,
ackport.

WALTER CALVERT.

Statistics and Mathematics

SIR,—If Mr. P. J. Hilton and Dr. S. M. Hilton (July 20, 1946) used fewer technical terms and paid more attention to ordinary usage of words, they would be better equipped to instruct your "non-mathematical readers," among whom I hesitatingly rank myself. When your correspondents have a little more experience, they will realize that something more than a facility in the use of arithmetic and algebra is needed to justify the title of mathematician.

Dr. Rewell was confronted by an "event" which, on the hypothesis of "chance," would be a statistical rarity; he therefore entertained an alternative hypothesis. I have but a superficial knowledge of genetics and am humble-minded enough to believe that he was justified in reporting his observation so that statisticians might consider the alternative. Your correspondents attempt to show that Dr. Rewell claimed that *he* had statistically demonstrated the superiority of the alternative hypothesis. Is this done by italicizing the word "must" in a particular instance. We all use words in common speech a little loosely, as in your correspondents. They were not "constrained"—i.e., forced—to ask anybody any question; still less to apply wholly irrelevant extract from a paper of mine in a disparaging sense to Dr. Rewell.

I should think a "real" mathematician might connect two uses of algebra with the words, "We must conclude"; and might say to his wife at breakfast, "My dear, I must catch the 9.30 train"; and that the same word would be understood by any man to have a slightly different connotation in the two cases. Had I said in my letter, "I am afraid Mr. Hilton and Dr. Hilton are talking dreadful nonsense," I think they would have been wholly justified in accusing me of discourtesy. If they had said: (a) that I clearly did not understand what fear is and quoted an article on claustrophobia; (b) that nonsense, however irritating, simply could not excite dread; I, and your other readers, would have thought them merely silly.

The application of statistical methods to medical investigations has been the business and pleasure of my life for nearly 30 years and will continue to be its solace. I can remember with scornful contempt with which many of the leaders of our profession treated that sort of "mathematical trifling" long ago and rejoice in the change of attitude. Your correspondents perhaps underestimate the proportion of your readers who are familiar with the technique of biostatistics as they are. But agree that many of your readers are bored by technical jargon. Then, they find the author of what seems to them a modest and sensible annotation rudely pelted with jargon, they will not form a pleasant idea of the use of statistical methods or of the manners of statisticians.

That, Sir, is why I, rather officiously, defended a colleague who may well have thought he needed no defence.—I am, etc.,

MAJOR GREENWOOD.

Book Reviewing

SIR,—I was delighted to read Mr. H. Osmond Clarke's plea for signed reviews in your issue of July 20. The uninstructed may come fresh to the reading of a weekly medical journal might well imagine that half the paper is written by two or three industrious and omniscient gentlemen, sitting in an office and vigorously scribbling from Thursday morning to Tuesday night. Even the less ignorant would be surprised if they were made aware of the number and distinction of your anonymous contributors. The modern trend in journalism is rightly in favour of publicity; one of the last redoubts of anonymity to fall was the *Punch* book reviews, which are now signed by the initials of the writer, whose full name is later given in the index. It is possible that book reviews might be kinder to the authors if this practice was adopted in medical journals, though no one could accuse medical reviewers of consistent harshness or unfairness. Indeed, it would be as easy to make a case against them for excessive generosity.

It might be argued that literary reviewers have grown in charity as they have discarded their anonymity, but this decrease

in bookish ferocity is related rather to the increasing mildness of public manners in the last hundred years, particularly since the twentieth century has provided us with other outlets for our aggressive instincts. I have not observed that present-day reviewers lack the courage to state their opinions forcibly. I can recall a review of Rebecca West's which runs thus in my memory: "Mr. X.Y.Z. has written another novel. How long, O Lord, how long?" And the book of a distinguished lady novelist, entitled *This is the End*, which earned the laconic tribute from a literary knight that he hoped it was. From what I know of your modest contributors I should say that their reputations are sufficient to sustain their opinions, and their characters firm enough to defend them.

Away, then, Sir, with anonymity.—I am, etc.,

Derby.

DOUGLAS HUBBLE.

SIR,—Although, as an author. I have had nothing but most helpful criticism from your reviewers, I should like to support Mr. H. Osmond Clarke (July 20, p. 102) in his request that the reviews should be signed. A signed review carries authority, and is far more interesting to all readers than an anonymous review.

While on the subject of the review column, I have gained the impression that as much, or even more, space in your *Journal* is devoted to reviews of foreign books as of those emanating from the British Empire. Many of these foreign books are on subjects of little interest to the general reader, and on several occasions lately I have found that foreign surgical books that you have reviewed are unobtainable through the leading London medical libraries. I suggest that, if I am correct (and no doubt someone can be found to supply the statistical data), it would be a good rule to devote two-thirds of the available space to reviews of British books, and relegate some of the foreign works, particularly those on extremely specialized subjects, to the "Notes on Books" section.—I am, etc.,

London, W.1.

HAMILTON BAILEY.

SIR,—I was very interested to read the most instructive letter (July 20, p. 102) written by Mr. H. Osmond Clarke dealing with the subject of reviewing medical books. I would like to draw your readers' attention to another aspect.

I have carefully analysed all reviews since August 4, 1945, to the present date, July 20, 1946. In these fifty-one issues I have tabulated all reviews published. Pride of place always seems to go to the American publications, and on 26 occasions an American book has been given the first place under "Reviews" in your *Journal*. British books fall short with 22, while foreign publishers have had this honour on three occasions. Why over-emphasize American books and relegate British books to an inferior position?

Further, when an important new edition is published by British publishers the review is often relegated to the last section of reviews under "Notes on Books," and very often a most important book is dismissed in a few sentences, while anything that comes from either American or foreign sources, is given undue prominence. Should we encourage this inferiority complex or are British books deteriorating that we are afraid to give them the publicity they deserve? Is it not time that we started to sponsor our own wares, or at least see that British books are given a square deal and the brake put on in trying to flatter these American tomes?—I am, etc.,

Edinburgh.

E. A. McWHIRTER.

Paralytic Ileus

SIR,—While looking over some old copies of the *Journal* on my return to civilian life after four and a half years' service, I noticed in the correspondence columns (Feb., 1946) a discussion on post-operative ileus. In the methods suggested for the amelioration and prevention of this distressing complication I could find no mention of physiotherapy as a possible means of relief and prevention.

For reasons not far to seek, physiotherapy has never really been allowed its proper place in this country as a definite department in the practice of medicine and surgery. There has always appeared to be a tendency for the average practitioner to regard physiotherapy as the province of the "medical electrician" and the masseuse. In most hospitals I have been in, in England, the physiotherapeutic department is relegated

to the basement of the building in what, under other circumstances, would have been the cellars. This department, as a rule, has no specialized chief-of-staff, but is under the *aegis* of the radiologist, dermatologist, or orthopaedic surgeon, none of whom would appear to place much faith in this cuckoo in the nest. Prior to the war there appeared to be a tendency to relegate the so-called hospital chronics to this department as a sort of last resource, on the principle that if it did not do them any good it could not do them any harm. The illusion that the beneficial results of physiotherapy are solely of a psychological nature appears to be still present in many minds.

In America, however, physiotherapy has long since found its place in the armamentarium of the physician and surgeon. Post-operative, short-wave, infra-red irradiation of incisions in abdominal and pelvic surgery have proved of inestimable value, speedily banishing pain and promoting rapid healing. Miller (*Arch. phys. Ther.*, 1932, 13, 99) subjected cases, forty-eight hours after operation, to a 30-minute exposure, the point of intensity of I.R. being focused on the abdominal wound, which was denuded of dressings. This irradiation was followed by a general U.V. treatment administered to the body sectionally. He described the effect of I.R. on the tense, distended, and tender abdomen as spectacular. Patients who were writhing with pain went off to sleep before the 30-minute treatment had been completed. His splendid results with post-operative ileus convinced him that, if I.R. could relieve, it would prevent this, and his experience goes to prove that it does. The effect produced by I.R. on the static post-operative intestine is, at least in part, explained by its penetration, the production of heat in the tissues, and the dilatation of the blood vessels, bringing a greatly increased supply of fresh arterial blood to the part. Miller thought that it might further be explained on the basis of reflex action. The nerves arising from the spinal cord supplying the abdominal skin have also sympathetic branches which supply the abdominal viscera. Inflammatory conditions within the abdomen cause increased sensitivity to corresponding skin areas. Miller's contention was that the soothing action of the I.R. rays upon the nerves supplying the abdominal skin reflexly caused a relaxation of tension within the abdomen through the spinal sympathetic innervations. He admitted that this theory was, of course, speculative, but he believed it explained the action of I.R. upon the static bowel.

Another aspect of abdomino-pelvic operative cases subjected to routine post-operative I.R. therapy was that they very seldom had the common complication of retention of urine. Miller found, on comparing records, that those abdominal cases treated as described not only had relief from the greater part of the usual post-operative distress, but that they rested better, healed more quickly, gained strength more rapidly, and, as a consequence, spent approximately $3\frac{1}{2}$ days less in hospital than those cases not so treated.—I am, etc.,

London.

R. DOUGLAS HOWAT.

Rheumatic Fever

SIR,—In view of the opportunities for the study of rheumatic fever in the American and British Armed Forces, Dr. H. S. Barber's paper on "Rheumatic Fever in the R.A.F." (July 20, 1946) is of considerable interest. Unfortunately, as in so many other medical publications, the literature of the subject has been most superficially reviewed and quoted, but possible observations on the clinical condition of the patients is minimal, and various lines of investigation seem to have been left unexplored. It is very difficult to understand how rheumatic joints can be considered an allergic manifestation; as Dr. Barber obviously inclines to this belief, will he explain the response of the joints, the fever, the sweating, and the pain, to sodium salicylate, and does he regard the peculiar distinctive rheumatic pathology (the Aschoff body) as an allergic manifestation?

If this belief of allergy of rheumatic manifestations can advance our knowledge of rheumatism, either its aetiology or its treatment, I shall be content, but if the supposition does not help in diagnosis, prognosis, or treatment, why use the term? It seems to be suggested in this paper that the joint manifestations in poliomyelitis or tuberculosis are allergic; I suppose that Dr. Barber knows of the joint changes which occur after hemiplegia? Is this also an allergic manifestation? And what is the explanation of the fact that such joints do not respond to treatment with sodium salicylate?

This paper is disappointing in that there is no detailed account of treatment. There is no mention of E.S.R. rates and how these changed as convalescence went on. Nor are we given any information as to x-ray changes, although we are told that when there was a doubt the size and configuration of the heart were checked radiographically. How exciting it would be if any of those expected concertina-like expansions and contractions of the heart were actually encountered and recorded.

Acute rheumatism is a very difficult subject; many years of the closest possible observation with the best possible clinical investigation are essential, and papers which merely quote literature and mention a small number of cases will not advance knowledge.—I am, etc.,

Birmingham.

K. DOUGLAS WILKINSON.

Shock Treatment of Bronchial Asthma

SIR,—Bronchial asthma, like other allergic conditions, can be considered as an expression of parasympathetic irritation. In terms of immunology it is like anaphylaxis, a state short of immunity. Anaphylactic shock in experimental pathology may lead to complete immunity—if the animal survives. Similarly, shock in an allergic person may lead to longer or shorter immunity—if doctor and patient are prepared to take the risk involved. I had the good fortune not to have a fatality among the great number of allergic patients treated so far. Other specialists have been less fortunate. I remember, however, with some trepidation two very severe shock reactions observed by me in the early twenties when methods were less elaborate. One, a boy who developed lung oedema, fall of B.P., and collapse after injection of antitoxic diphtheria serum (an atopic type of allergy); the other, a young woman with hay-asthma and similar signs of shock after a strong injection of pollen extract.

Since then I have had, and still have, the opportunity to see a very great number of asthma patients, both in hospitals and in private practice. I think that everybody with similar experience will agree with me that the variety of causes leading to asthma is great, and of varying importance not only in different patients but also in the same individual at different periods of his life. By long experience I have come to the conclusion that by far the best results are obtained by a complete analysis of all relevant factors through a careful case history and complete investigation of each case, including allergic skin tests or other allergic tests.

Apart from the symptomatic treatment of the attack by stimulation of the sympathetic nervous system (adrenaline, etc.) or paralyzing of the parasympathetic (atropine, etc.), full immunization or lowering of the irritability of the parasympathetic is the aim, and may be obtained by specific or unspecific desensitization, ranging from a mild shock therapy by injection of the patient's own blood to a prolonged or quick desensitization with the specific allergens (hay-asthma). The doctor who deals with these conditions should always be aware of the dangers involved. He should also be aware of the fact that so far there is no royal road leading to success in all asthma cases. There is, however, hope that this may be achieved by intensified research in the not too distant future, and I can think of a number of ways which may ultimately lead to full understanding and full success.—I am, etc.,

London. W.1.

E. M. FRAENKEL.

The Hypochondriac's Treatment

SIR,—Dr. E. D. Granger (July 6, p. 27) has given his interpretation of Dr. Summerskill's phrase "in future no doctor need prostitute his service by pandering to hypochondriacs." May I be permitted to give mine?

The treatment of moderate degrees of neurosis should constitute an important part of the G.P.'s work—a part which could be of tremendous service to the patient, his relatives, and the community. He has intimate knowledge of the patient's emotional, domestic, and financial background, and this should enable him to advise the latter how to make the most of his life. Yet all too often this side of general practice is partially or wholly neglected. Why?

A.—In the case of the *neurotic private patient*, the reason is summed up in the words of the old doctor who said to his young

1 enthusiastic assistant: "For goodness' sake don't cure that man. I'm relying on her to educate my son." Few doctors will t their whole heart into the treatment of a patient when they ow that a successful result will mean a large slice off their income. 3.—The *panel neurotic*. Treatment of neurotics takes time and ience. Will a doctor spend an hour talking to a panel neurotic the morning surgery when he might be doing half a dozen rivate" visits? Some doctors may, but many will be tempted send him off with a "bottle of medicine" and a "neurasthenia ificate." (Panel patients who are coal merchants, grocers, or ultry-keepers come, of course, under class A. They are the *me de la crème* of any practice.)

How I should like to see an inquiry into some of these pink neurasthenia certificates"! No doubt there are many cases anxiety neurosis, due in part to overwork, which do respond a few weeks' rest. But there are a large number of other pes of neuroses for which the cure should be rehabilitation suitable work. In this type of case the best doctor is the ie who has the moral courage to refuse the pink certificate. Under a National Health Service, where one patient does not ffer in financial value from another, there should be no incen-re to postpone the cure of the private neurotic. Doctors can eerfully spend the necessary time on panel neurotics in the cure knowledge that the Government is looking after their ancial interests.—I am, etc.,

Rotherham.

ANNE M. TOMS.

Penicillin and Venereal Disease

SIR,—I have read with interest recent letters on the above bject and would like to add mention of a case of gonorrhoea rticularly resistant to penicillin.

The patient, a male aged 25 years, was admitted to hospital with purulent discharge of twenty-four hours' duration, and on micro-opical examination a diagnosis of gonorrhoea was established. A urse of three injections of 50,000 units of penicillin every four urs was given with a reduced fluid intake, and the discharge dis-appeared. However, forty-eight hours later it reappeared with no story of re-infection. A further similar course was administered id again the discharge disappeared, and a rectal examination owed no evidence of prostatic infection. The patient seemed uite fit and was discharged.

One week later the patient returned with a generalized papular ruption, joint pains, temp. 103° F. (39.4° C.), pulse 90, and marked alaise. A prostatic examination revealed a tender swollen area of ie upper pole of the left prostatic lobe; the seminal vesicles peared normal. The rash lasted only twenty-four hours and was garded as allergic, but the left wrist-joint, the proximal joint of ie right great toe, and the left sternoclavicular-joint became the at of an acute arthritis. It is interesting to note that though the ernoclavicular-joints are only affected in 2% of gonococcal arthritis, is very rare for these joints to be involved in any other form of rthritis. Again penicillin was administered and 250,000 units were ven in all. Frequent prostatic massage and pot. permang. irriga-ons were commenced. In three days the arthritis subsided and the lammation of the skin overlying the joints disappeared. After a urther two days the prostatic swelling and tenderness were abseni nd the urine remained clear in all three glasses. Blood taken at ie commencement of the arthritis gave a positive serological result.

I feel that this and many other cases I have had of recurrent ischarge, after the usually recommended total dose of 150,000 nits of penicillin, indicate that this amount may be inadequate nd perhaps ought to be as high as 250,000 units per course as dvocated in America.—I am, etc.,

L. GRANT DUFF,
R.A.F.V.R.

Istre.

Notification of Venereal Disease

SIR,—I was recently serving with about six hundred Royal arines in the vicinity of Newcastle, N.S.W., a large industrial own and the centre of the Australian steel trade. Over a eriod of six months I had no cases of venereal disease, except ne or two cases of gonorrhoea acquired by men on passage ut from the United Kingdom. The medical officer in charge f the Newcastle Hospital told me that he had only seen three rimary chancres in the past ten years, and that gonorrhoea was ractically non-existent in the town.

This condition had been achieved by compulsory treatment, nd penalties if the patient defaulted. He informed me that the enalties were never enforced, but were a useful threat. I feel hat if such a desirable state can be obtained by compulsory eatment there is no possible excuse for allowing our present ax methods to continue. It would be a very strange man,

whether he was a venerable dean or a bus conductor, who has not at some time or other run the risk of venereal infection, and I think it is about time the obvious course was taken with these diseases.—I am, etc.,

Fareham.

G. G. THYNE.

Psychology in the Child's Education

SIR,—Dr. D. W. Winnicott (June 29, p. 998) recommends regular visiting to ensure that small children in hospital retain their emotional contacts with their parents, which means in some measure, to use Dr. Winnicott's provocative phrase, "keeping them sad." Dr. J. A. McCluskie (July 13, p. 62) hazards that it is the initial separation that does the damage and advises against its repetition by frequent parental visits.

It is obvious that an issue of this kind will not be solved except through properly planned research, and Dr. McCluskie's call for controls is timely. Yet the evidence, such as it is, is very much against his view. The cases which I personally have seen have been of children who, between the ages of 1 and 5 years, have been in hospital for many months *unvisited*. Their most striking symptom has been habitual stealing, and their most important feature, psychopathologically, an impaired ability to make emotional relations with their parents and others. I have seen no child in the same mental condition who had spent the same number of months in hospital during these years and who had been regularly visited, though I have seen many in this condition who have had an experience similar to being in hospital *unvisited*—e.g., temporary placement in institutions or with foster-parents. The association between long separations in early childhood and later incapacity to form good personal relationships can be demonstrated both statistically and clinically.

Workers who had experience with children in residential nurseries during the war agree that the children who were easiest to manage were those who had good home ties and could look forward to regular visits. Those who became difficult were those whose mothers rarely or never visited and who felt, in consequence, deserted. They became either extremely demanding of the attention and affection of members of the staff or else apathetic. Many such children are now being referred to child guidance clinics in the London area for difficult behaviour and stealing.

I believe that an adequate survey would demonstrate unmis-takably that a proportion of children who are separated from their mothers for long periods in early childhood suffer some mental damage, much of which could be prevented by a system of regular weekly visits. That some children do not suffer in such circumstances is also highly probable. How big the proportions are and what other factors are operative remain problems for further research.—I am, etc.,

The Tavistock Clinic, London, W.1.

JOHN BOWLBY.

SIR,—It is regrettable that Dr. D. W. Winnicott (June 29, p. 998) should impute that the main suggestion in my letter (June 15, p. 930) is "to the effect that children should be taught as the Nazi children were taught, only taught citizenship." I only referred to the readiness with which children were indoctrinated with principles of racial superiority in order to indicate how responsive they are to any method of teaching. The emphasis was on *their responsiveness to teaching* and not on teaching by means of a totalitarian system, which clearly could only produce precocious and undesirable conditioned reflexes.

A satisfactory scheme for the education of children in their instinctive and emotional reactions would have to be worked out by educational experts, bearing in mind, as Dr. Stephen Krauss (June 29, p. 998) so rightly emphasizes, the various phases in the normal development of the child. In order to obtain satisfactory results, greater attention would have to be paid to emotional development and intellectual capacity than to age in the segregation of children into classes.

I entirely agree with Dr. Winnicott that "the real source of good citizenship is in the life of the child in his own home"—provided that the parents are stable, happy, and intelligent. Unfortunately, a substantial proportion of parents are just as unsuitable for their job as are many teachers. We cannot select parents as readily as we can choose teachers, and I accordingly suggested that psychological guidance should be initiated at school. By all means let us learn as much as we can from

children, as Dr. Winnicott suggests, which is tantamount to saying that we should learn all we can about instinctive behaviour and human nature. My plea is to guide children along such lines, but there is no reason why adults should not also be encouraged to accept guidance and training in psychology. Dr. Winnicott asks, "Why is it that when we start planning we so easily start on the wrong foot?" I suggest that it is better to start on the wrong foot than never to start walking at all. But are we starting on the wrong foot? Are not children the parents of to-morrow, and by instituting psychological guidance in schools would we not, in fact, be rendering future parents more suitable for their jobs, so that the chances of subsequent generations starting off on the right foot in the direction of good citizenship would be all the greater?

I cannot appreciate Dr. Michael Fordham's objection (July 13, p. 62) to doctors expressing their views regarding the school curriculum. He would like us to leave teachers to their own job. My letter does not suggest depriving them of their function. Doctors, with their greater opportunities of getting to know and understand people, are in a good position to suggest what is good for them. My plan to introduce psychology into the school curriculum surely cannot be regarded as a medical encroachment on the teacher's province. Dr. Fordham would appear to support the idea of careful selection of teachers in so far as he agrees that "it is useless to talk on the subject of behaviour unless they themselves are good citizens," and for some reason or other he has decided that "if they are good citizens it is only of secondary importance what they say to children."

It is not sufficient, in my opinion, for teachers to have stability, character, intelligence, aptitude, freedom from prejudices and rigid social, political, or religious attitudes. They must know what to say, when and how to say it. It is not the doctor's business to teach teachers, as Dr. Fordham stresses, but surely we can all make suggestions, pool our knowledge, learn from each other, plan for the future, and endeavour in every possible way to make the world a better place to live in.—I am, etc.,

London, W.1.

ELLIS STUNGO.

Socialism and the Pay-bed

SIR,—It is surprising that no one has so far replied to the points raised in the letter from Mr. J. B. Macalpine (June 22, p. 968). The insult to ordinary hospital patients implied in the view that large numbers of them are unfit for civilized company hardly needs an answer; but one hopes that no doctors really feel such contempt for these people. Incidentally, in my experience nurses who have worked in private wards have not always found their occupants to have that uniform selflessness and exquisite sensibility which Mr. Macalpine appears to associate with the ability to pay for separate accommodation.

The latter parts of the letter are not quite clear, but I am not aware of any evidence to support the view apparently held that the higher income groups have a superior genetic endowment. The highly coloured tone of these arguments hardly ports the claim made for our profession to act as biological vectors to the community.—I am, etc.,

S. S. ALEXANDER.

The Health Service Bill

SIR,—I was heartened to read Dr. Victor Russell's lucid letter (June 1, p. 846), as he says if the Government were genuinely desirous of improving the medical services, some well-tryed scheme on the lines of that used in New Zealand would be effective, without raising the issue of nationalization with all its associated administrative problems.

If this is applied, there is a free service in *all* branches of medicine for *all*; further, hospitals can retain their present status, but as every patient is a paying patient they need no longer be dependent on charity. Obviously, the better hospitals would be more popular, and a spirit of competition in providing the best hospital service would result; if the Government chose to build its own hospitals as well, this would provide added stimulus, and it would be interesting to see which proved to be the better of the two. If a sound counter-proposal like this could be presented to the lay public in simple language by the *B.M.J.* we should be in a position to reject the present dictated terms of the Minister *in toto*.

It is interesting that some months ago I was asked to address a meeting of airmen (almost all Socialist) on the Bill. At the end I was asked if the profession had any alternative to offer I had to admit that they had not, but described the outlines of the New Zealand scheme. At the end I asked the chairman to take a vote, just as a matter of curiosity, and over 90% were in favour of some such scheme being adopted in lieu of the present measures. Why has this scheme never been really publicized? Is it too simple for politicians to grasp? I have met a number of New Zealand laymen in the Forces, who say it works excellently.—I am, etc.,

Cyprus.

J. H. BERGIN,
Flight-Lieut. R.A.F.

Authority and Independent Thought

SIR,—In his Price Lecture on epilepsy (July 6, p. 1), Dr. Gordon Holmes deals with this disease in his usual masterly fashion. He traces the theories of its aetiology from the time of Hippocrates up to the present day, passing on the way through a period in our history which saw the foundation of Eton and Winchester, Oxford and Cambridge, and scores of universities on the Continent of Europe, and which, as an eminent churchman recently said, "we of the atomic age still have the impertinence to miscall the Dark Ages." Throughout this lecture there is a recurring thought that seems to dominate the whole picture—i.e., the idea of conflict between authority and independent thought. If by "authority" Dr. Holmes means the authority of the text-book which sets forth masses of facts copied from other books (and errors as well), assigning rarely, if ever, a reason to account for any fact, then one must agree that the student who contents himself with absorbing such information is certainly not stimulated to independent thinking. So, too, in days gone by, even in the "Not-so-dark Ages," those who slavishly followed the current superstitions whether they concerned the fermenting humours flowing in the blood stream or the supposedly malign deeds of "witches," and forbore to use their critical faculties did grave disservice to their fellow men. But let us not forget that the mere 100,000 "witches" burnt in Germany fade into insignificance beside the extermination of millions of Jews in the same country in this age of enlightenment.

Dr. Gordon Holmes apparently subscribes to the view that the Church has been the enemy of science, a view that is no so widely held as heretofore. If so, why did the Church found universities? They were bound to stimulate independent thought. The Church, it is true, will only accept incontrovertible facts as truth, and has always refrained from acclaiming new theories with uncritical enthusiasm. This has often led to misunderstanding and, inevitably, also to misrepresentation. "Science which brings man nearer to God," to use Pasteur's phrase, can never be in contradiction with the Christian faith. It was Pasteur also who said, "I see everywhere the inevitable expression of the Infinite in the world." Dr. Holmes is a renowned authority on the subject of nervous diseases, an authority that we all bow to, but when he forsakes this sphere and ventures out into the realms of "dogma" and "heresy," etc., he is much more vulnerable.—I am, etc.,

Belfast.

E. M. HICKEY.

Nutrition of Far East Internees

SIR,—In the report of the Nutritional Society's Conference (July 6, p. 22) I was interested to read Dr. Cicely Williams' reference to nocturnal diuresis amongst the Far East internees. Last year I met many internees in Hong Kong and Shanghai and this subject was always prominent in their impressions of internment life. I have seen no explanation in the *Journal*. The internees attributed the diuresis to rice. Subsequent observation of the Japanese seemed to substantiate this. During three and a half months in Japan I cannot remember going more than a few hundred yards without seeing someone micaturating in public. Is the urge behind this national characteristic attributable to their rice diet? If so, is it the water content or a specific diuretic? Perhaps some able mathematician will work out the number of people to be observed micaturating per mile in this country if such was the custom, and so confound the observation! The persistence of diuresis for a few weeks after liberation may be explained either by habit or, as in so many cases, continuing with rice.—I am, etc.,

Worcester.

C. ROMER.

Medical Notes in Parliament

HEALTH SERVICE BILL

REPORT STAGE—SECOND DAY

When the Debate was resumed on July 23, Mr. HOUSE moved amendment to Clause 33. He proposed to insert the words "others" after the words "medical practitioners" in the section that every Executive Council shall make as respects area arrangements with medical practitioners for the provision of personal medical services for all persons who wish to advantage of the arrangement. He said that nature-cure practitioners who reached a required standard of training and qualification should be recognized under the Bill. Such practitioners comprised naturopaths, osteopaths, and others. Patients should have the free and unfettered right to attend the practitioner of their own choice. Medical practice so far as it was based upon the application of medicines, drugs, and vaccines was undesirable. Mr. HOUSE referred to Mr. BEVAN's recent speech, and remarked that in consequence of it he had lost a week or more of the Committee stage of the Bill. He said he had seen Mr. BEVAN since with his little tins and pills and leets. There had been an inquiry into osteopathy by the use of Commons in 1935, but the inquiry board was committed to a large extent of medical representatives, and so was fair to start with. Furthermore, the osteopaths were not tidy and many of their witnesses conducted their case dishonestly.

Sir ERNEST GRAHAM-LITTLE said there had been a second inquiry in the House of Lords by a Select Committee. This was a very large number of sessions. In the middle of that inquiry the osteopaths threw in their hand and said they were not going further. Mr. EWART seconded the amendment and asserted that workers would not get the benefits of physiotherapy.

OSTEOPATHY AND ORTHODOXY

Mr. BEVAN said he thought that the heterodoxy of yesterday came the orthodoxy of to-day, and that the medical profession to-day practised many forms of therapy which it yesterday rejected. He did not intend to commit the indiscretion of forming a judgement on the relative merits of one form of therapy against another. The House was discussing an amendment which would place on the Executive Council in each area the obligation of providing whatever kind of medical attention any citizen might want. That was an impossible suggestion. The consequence would be that any policeman, Dick, or Harry would be able to prey upon the credulity of any citizen and could call upon the State to provide the money for that service. It was true that under the National Health Insurance Acts there was some provision, rarely exercised, for the subvention of a person who wished to have some form of medical treatment. That was difficult to administer, and if it were extended would be impossible to administer. Physiotherapy and occupational therapy were being extended and had been fostered by distinguished doctors.

Sir HENRY MORRIS-JONES said fine cures were achieved by nature-curers and osteopaths, but their failures were unknown and unsung. In many cases such treatments delayed orthodox treatment and resulted in a great loss of lives.

Sir ERNEST GRAHAM-LITTLE said that twenty years ago he had asked the House to institute an inquiry into the whole question of irregular practice. That inquiry was very necessary. Schools of naturopathy in this country were few and ill-equipped, and examinations were just puerile. Osteopathic schools were entirely confined to America. Sir Ernest recalled that Mr. Neville Chamberlain, then the Minister of Health, said he could not recognize examinations carried out in another country, and that when the osteopaths decided to follow courses of study approved as suitable for medical practice in this country there would be no difficulty in getting them recognized. Until an established scientific inquiry had been instituted there should be no recognition of any section of irregular practice. At present, quite properly, the irregular practitioner was not recognized. The amendment proposed by Mr. HOUSE was negatived.

Mr. TURTON moved an amendment dealing with the issue of medical certificates. Mr. BEVAN said that at present the issue of certificates was limited to those connected with insurance work. The Bill extended this. Further certificates would be issued for the purpose of any enactment under which certificates were required. That extended the obligation of the doctor. To suggest that a person should be entitled to receive a certificate from a doctor whenever and for whatever he required it was going too far. To widen the obligation further would meet

with resistance from the profession. The amendment was withdrawn.

DIRECTION AND DISTRIBUTION

On Clause 34 Mr. J. S. C. REID moved to leave out the greater part of the Clause. He said it was proper that the House should come to a decision on this and subsequent Clauses which had alarming possibilities for the independence and freedom of the profession. He proposed to exclude from Clause 34 the words which limited the right of doctors to go on the list in an area with those who were in practice in that area before the appointed day. By his amendment any doctor would be entitled to go on any list in any part of the country where he offered his services, provided he was not personally objectionable. In committee it had appeared that the basis of these Clauses was the Government opinion that there was something evil about the purchase and sale of goodwill, and that the Clause controlling the movement of doctors was a necessary consequence of the abolition of the doctor's right to sell his goodwill. Mr. BEVAN had not made a case that control of the movement of doctors was necessary. The strict limitation of movement proposed in the Clause was uncalled for even in to-day's circumstances. When this Bill came into operation with 100% of the population available for capitation fees, of whom he estimated about 90% would come into the scheme, there would be little difficulty in getting doctors to go to what were now difficult areas. The problem could be cured without any of the restrictions proposed by Mr. BEVAN. There was no justification for this jurisdiction being conferred upon the Medical Practices Committee. When a vacancy occurred existing partners were not allowed to choose a practitioner they wished to come into their partnership. The question was to be remitted to the Local Medical Committee. He did not think this was for the good of the profession or for the good of the country. It was quite clear that the Minister wanted to dictate to the doctors.

Mr. BEVAN said: "Certainly not!" The buying and selling of practices was repugnant to the Government. That was the first principle, and another was that Parliament should seek to bring about an equitable distribution of a general practitioner service. These principles necessarily implied that Parliament must set up machinery for the distribution of general practitioners. The doctors would normally be consulted on the filling of a vacancy, and thus they would have a greater privilege than the members of any other profession. Then the Executive Council would make the appointment and the Medical Practices Committee would confirm it. Mr. REID's amendment would wreck the whole Bill.

Sir HENRY MORRIS-JONES said Mr. BEVAN was taking away from the doctors a right which they had now and they had never asked for that right to be taken away. Mr. BEVAN said Sir Henry was right, but the doctors were not yet in sole control of the country. It was Parliament which had decided that the country was going to have a public health service, and therefore it must construct the principles which made that service practicable. Mr. REID had suggested that the doctors should have the right to enter the public service at their own will in any part of the country, claiming something which no other profession had. If doctors were allowed to go anywhere the scheme would be impossible to implement because the Ministry would never know where the doctors were going until they had gone. He did not say that if the doctors did not enter the public service they should be under restraint. They could put up their plates wherever they liked, but if they wished to receive remuneration from the public service one condition was that the doctor should not serve where his services were not required. This was a negative control over distribution.

Mr. HENRY STRAUSS did not believe it to be in the public interest that any district could say: "There are enough doctors here." The doctors in the barred district would be freed from all stimulus to efficiency. Mr. LINSTED pointed out that so long as a man was not going as a doctor but only as an assistant this clause did not apply. He suggested that as assistants were exempt from the Clause the case for direction in order to secure a proper distribution of medical practitioners was not proved. Mr. WILLING supported the amendment, and after further discussion it was rejected by 277 to 128.

SALE OF PRACTICES

Mr. REID moved to leave out Clause 35 prohibiting the sale of medical practices. He said that Conservatives did not agree that there was any intrinsic reason for abolishing the sale of goodwill. The House had not been told of any practical benefit which that change would achieve. If Parliament did desire to stop the sale of goodwill they did not need so complicated and so oppressive a clause as Clause 35. It would be easy to draft a clause which would provide that there should be no

direct sale, and that other transactions which could be proved to be a cloak for payments which were really payments for goodwill would be illegal on being so proved and would be subject to penalties. The deliberate offender could be caught with a simple clause because intent could be proved against him, but under the present Clause thousands of innocent transactions would be impeded and probably there would be only half-a-dozen prosecutions in the end. For the sake of one or two people scattered over England a doctor or his widow could not sell his house to another doctor or make any partnership agreement with another doctor or take on another doctor as an assistant without going to the Medical Practices Committee under subsection 10.

Mr. BEVAN pointed out that subsection 10 had been put in as a protection because he was of opinion that many arguments previously advanced by Mr. Reid were sound. The State had set aside £66,000,000, which the medical profession agreed was extremely generous, and the State was therefore entitled to take precautions to ensure that any doctor did not get the benefit twice. The original Clause was drawn very tightly but had been amended in committee, and the doctor now had to obtain from the Medical Practices Committee, mainly a professional body consisting of his colleagues, a certificate that a transaction was reasonable. That was a defence against any action being taken. In a later amendment Mr. Bevan said he introduced the word "knowingly" to make clear that there must be awareness of the offence before it had been committed. In all the circumstances every kind of protection had been given in this matter.

After further discussion Mr. Reid's amendment was defeated by 305 to 110. On the Motion of Mr. KEY consequential and drafting amendments were made in the same Clause including the insertion of the word "knowingly," as promised by Mr. Bevan, and a provision that the sale of a partnership to an assistant shall be deemed to have been effected at the time when the remuneration was fixed.

DISQUALIFICATION OF PRACTITIONERS

On Clause 42 Mr. REID moved, where the Clause provides for inquiry into cases where it is represented that the continued inclusion of a person in a list would be prejudicial to the efficiency of the service, to add the words: "By reason of his failure properly to provide the services which he has undertaken." In committee the Minister had said that the local executive would decide whether a man was a bad influence. Mr. Reid contended that the local executive had to decide nothing of the kind. It had to decide whether a man had fallen short in certain specific respects. Under the form of words in the Bill it would be possible for a doctor to be dismissed by the Minister merely because the Minister thought he was a bad influence without anything having been proved. Mr. Bevan had gone on to say that the Government could not admit that the Courts should interpret whether the doctor had been in fact a good servant of the people. Mr. Reid remarked that this was a more authoritarian approach than the public was accustomed to in this country.

Mr. BEVAN asked what was wrong with the words "bad servant" and "bad influence"? Before the doctor could be removed something had to be proved against him. It was not enough for the Minister to dislike his voice or his politics. Something had to be proved which made him, in respect of his being a doctor, a bad public servant. The doctor might not be tending his patients properly although he might be a good doctor. All kinds of reasons might make him a bad servant on to employ and the Tribunal must take them into account. They must always be concrete and particular reasons. It was for the General Medical Council to pass judgment upon a doctor as a doctor, but when a doctor was a servant of the National Health Service and fell short of what was required in rendering certain services, he was not a proper servant and was liable to be removed. The amendment was withdrawn.

THE RIGHT OF APPEAL

Mr. BEVAN moved to insert in the same Clause the words: "(4) An appeal shall lie to the Minister from any direction of the Tribunal under the last foregoing subsection and the Minister may confirm or revoke that direction." Mr. Bevan recalled that in committee the words "appeal to the Minister" in the case of a dismissal of a doctor had been deleted and that a proposal to substitute an appeal to "a High Court judge" had not been substituted. He said this was a matter of importance. The Minister and the doctor, or rather the Executive Council and the doctor, were in some respects in the relationship of employee and employer, and it would be perfectly proper if the employer could dismiss the employee without any redress. But it had seemed to him that it would be difficult if not impossible for doctors who were removed from the service to obtain a livelihood outside, and that special

protection should be given to the individual against any possibility of injustice. Mr. Bevan said that by his own plan he interposed a tribunal between himself and the Local Executive Council, which might for one reason or another be prejudiced. The Chairman of the Tribunal would be a local person appointed by the Lord Chancellor but not a dentist or doctor. If the Tribunal decided that the Local Executive was correct in its decision, the doctor had a further appeal to the Minister, who would then institute an inquiry. He could appeal on one of three grounds. First, that the procedure laid down for his trial had not been carried out; second, that the Tribunal had exceeded its powers; third, that the principle of natural justice had been violated. Conservative members suggested that instead of the doctor appealing to the Minister he should have the right to appeal to a judge of the High Court. This would put the judiciary in a queer relationship with the legislature. How could a judge of the High Court decide better than the Executive Council whether a doctor had been an efficient servant? The qualitative significance of facts in the health service was a matter which only those who knew the service could judge. Supposing that a doctor appealed to the High Court judge against a decision of the Tribunal and the High Court judge decided that the man was restored to the list and then a week afterwards a child died in circumstances clearly pointing to negligence by the doctor, a question were put in the House of Commons to the Minister of Health, the Minister's reply would be: "I did not appoint the doctor: it was the High Court judge." That would be a ridiculous situation.

Dr. MORGAN said he would have to vote against the Government or abstain from voting on this issue if it went to Division. The aggrieved person should have the right of appealing to a higher court. He would be better to go before an experienced judge accustomed to weighing evidence. Mr. WILLINK said the issue was one of first-class importance and there ought to be an appeal to a court of law.

The House rejected the proposed amendment by 296 to 12. It then accepted an amendment proposed by Mr. KEY which would give a doctor a right of appeal to the Minister for the removal of disqualification. On Clause 47, on the decision of disputes, the House agreed to an amendment proposed by Mr. KEY removing from the Clause provision for the appointment of a person to act on behalf of the Minister. Mr. Bevan explained that this was in fulfilment of a promise made in committee.

HOSPITAL MANAGEMENT COMMITTEES

On the Third Schedule Mr. WILLINK moved to insert a provision that a hospital management committee should have power to co-opt not more than three persons to be members of the committee. He said that as the Bill stood these committees were entirely nominated by the Regional Hospital Board. Mr. BEVAN said he could not accept the amendment, which had already been considered in committee. The amendment was withdrawn and the committee agreed to an amendment proposed by Mr. KEY providing that no member or officer of any body or committee named in the Schedule should be debarred from being elected a member of the House of Commons. Minor amendments were made in the Fourth and Fifth Schedules and the remaining Schedules. The Report stage was thus completed and the Bill was set down to be read a third time.

Third Reading

Mr. KEY on July 26 moved the Third Reading of the National Health Service Bill. He said the fully developed services which would be provided under the Bill would give early and adequate attention to the onset of diseases, the results of accidents, and the effects of increased age. Since the Bill received a Second Reading, no major change had been made in it. Some might think that another method of distribution of practitioners was preferable to what was adopted in the Bill, but when the things had been adequately considered the will of the majority must prevail, and the duty of all was to co-operate in making the service a success. He was convinced that doctors, nurses, doctored, hospital governors and municipal councils, Ministers of Health representatives and health workers would come together to work out the details of this great service. For regional boards, management committees, and house committees, the Bill widened and extended the opportunities for voluntary service in management and control of hospital institutions. By extending to these boards and committees the power to accept gifts and hold endowments it encouraged local voluntary efforts. By guaranteeing maintenance of the institutions and provision from public funds of money for normal day-to-day expenses, it set free voluntary contributions for purposes likely to appeal to private donors. He denied that the Bill mutilated the structure of local government. He remarked that all appointments to the bodies which would

arry out the Minister's powers were to be made after consultations with the organizations concerned. In the general practitioner service only one change had been made: the Minister's control, to a negative extent, in the distribution of doctors through the Medical Practices Committee. No power of a new kind in this department had been conferred on the Minister by the Bill. His powers were of a kind which had been enjoyed for over thirty years by Ministers in relation to benefits under the National Health Insurance scheme. He denied that the Bill appropriated trust funds and benefactions in contempt of the wishes of donors and subscribers. The charge that the Bill undermined the freedom and independence of the medical profession was perversion *par excellence*. Every doctor was free to enter this service or not as he chose. If he entered he was free to take or reject patients. If he entered he was free—an astounding thing to many—to accept private patients if he wished. But if he entered the service he did so on the understanding that he accepted and observed the essential conditions of the service which he joined. Had the freedom of the medical practitioner in a municipal or voluntary hospital been undermined because he accepted a salaried appointment in the hospital concerned? No body of public or of private employees ever had the same freedom as the medical profession would have under the Bill. The chairman of the Medical Practices Committee, which was the general practitioner's real employer, must be a doctor, and six out of eight of the members must be doctors as well, five being actively engaged in practice. Misrepresentation could sink to no lower depth than to say that this undermined the freedom and independence of the profession. The case for the Bill was proved up to the hilt.

REJECTION MOVED

Mr. Linstead moved that:

This House, while welcoming a comprehensive health service, declines to give a Third Reading to a Bill which discourages voluntary effort and association; mutilates the structure of local government; dangerously increases Ministerial power and patronage; appropriates trust funds and benefactions in contempt of the wishes of donors and subscribers; and undermines the freedom and independence of the medical profession to the detriment of the nation.

He said the Bill would provide a dull, uniform, unimaginative, and pedestrian health service. Lack of co-ordination would not be removed by the Bill. Half-a-dozen Government Departments would still be responsible for types of health service and local service divorced from one another. There would be health centre services where three or four authorities would meet in the same building. The Bill did not use the circumstances of local growth but uprooted the present system, gathered it into the centre, and then artificially devolved it outward. There was maximum control of the professions, with every inducement to compel medical practitioners to come into the scheme. A bribe of £66,000,000 of the taxpayers' money was being used to sweeten the Bill for the medical profession. There was excessive concentration of power and patronage in the hands of the Minister. Mr. Key had pointed out that nomination would be exercised by the Minister after consultation with appropriate organizations. But these organizations would be selected by the Minister, and their chairmen, in many cases, would be selected by the Minister alone without consultation with anybody. There would be an administrative bottleneck in Whitehall. The Bill would kill the voluntary hospitals, and would prevent people giving local voluntary service because it would amalgamate hospital committees into committees managing thousand-bed units. The Government would place hospitals under remote control by regional boards, many of them 100 miles away from some of the hospitals they administered. Provisions in the Bill would put the medical profession in chains. Prohibition of the sale of medical practice removed an honourable inducement to give increased and better service. The Bill interfered with the rights of doctors to choose their partners. It deprived a practitioner who stayed outside the scheme of access to hospital beds. It supplanted by new tribunals the professional disciplinary tribunals which had looked after the discipline of the great profession for a century. In the course of a few years a free profession would cease to exist and the country would have reached the goal welcome to Labour M.P.s—a salaried medical service.

Cmdr. Maitland seconded the amendment.

UTILITY MEDICINE IN UTILITY HOSPITALS

Mr. Eccles said his father, grandfather, and great-grandfather all qualified at St. Bartholomew's Hospital and Lord Dawson of Penn had been his father-in-law. If Lord Dawson had lived two more years the House would be debating a better Bill. The essence of the controversy between the medical supporters and opponents of the Bill was the doctor's responsibility. The Bill laid down that the doctor should be responsible

both to his patient and to the State. Mr. Bevan had never appreciated the consequences of his solution to this dilemma of responsibility. The Bill took away the single duty to the patient. Doctors he had known would have protested strongly against the doctrine of utility medicine in utility hospitals. Patients had confidence in a hospital because all doctors, whether general practitioners or specialists, learned their medicine under men who had imbibed the tradition of undivided responsibility of the independent doctor to his patient. The Minister recognized the value of this tradition by the treatment which he gave to the teaching hospitals.

Mr. BEVAN asked Mr. Eccles to say in what part of the Bill the Minister or any of the Boards interfered with the professional conduct of the doctor toward his patient. Mr. ECCLES replied that throughout the Bill the doctor was responsible to agencies set up by the Minister. Mr. BEVAN said Mr. Eccles was wrong.

Dr. STEPHEN TAYLOR said the real danger about the Bill was that it gave the doctors too much freedom. There was a danger that Parliament might impose a medical dictatorship. Medical efficiency was not all it should be in many parts of the country. Medical qualifications were not difficult to obtain if one had the money and could stay the course. At the bottom, one third of the medical profession was pretty low and he believed that a special form of inspection might help efficiency. The B.M.A. would cut off its nose to spite its face if it did not come in when this Bill became law.

Mr. HEATHCOTE AMORY said the Bill, throughout, seemed to regard doctors as a body of men who, given the opportunity, would abuse their positions.

Mrs. RIDEALGH asked whether the Minister would help doctors who would be in difficulties during the transitional period. She had been told there were 500 affected.

A PRACTICAL DIFFICULTY

Sir E. GRAHAM-LITTLE said there was a practical difficulty about the Bill. Good authorities estimated that if the Bill was put into operation at least three times as many doctors would be wanted as were now available. The present strength of the medical profession in practice was about 52,000. Nearly the whole of that total were now members of the B.M.A. The resolutions of that Association were surely important for the Minister to consider. All the discussions in the medical press and at meetings pointed to a great disinclination to accept service under the Bill. The doctors would not strike. That was a ludicrous suggestion. Most would say: "We do not want to work under a State service and we shall continue to work as we are now." As a member of the medical staff of a great teaching hospital he said it was wrong to suggest that the hospital system had failed to give a general service to all classes of the community, except, possibly, the middle-class. The acid test of the efficiency of a hospital was medical research. For 400 years the voluntary hospital and what was now called the municipal hospital had existed side by side, but the voluntary hospital had done the research. Mr. Willink, in his White Paper of 1944, had claimed the direction of doctors, but finally repudiated that power. It was in no way repudiated by Mr. Bevan. How many of the 50,000 active practitioners would join the service? Not more than half were likely to join the service, but the Minister needed 150,000. Various efforts had been made by the Government of Australia to introduce a State medical service, but they had uniformly failed. The N.H.I. Act of 1911 started under a handicap and had never been the success it might have been had there been greater circumspection in the approach to the profession. A greater circumspection in approach was needed now. There was no possibility of 100,000 doctors being trained in time for the appointed day under the Bill. The Dominions' offices were overwhelmed by applications from demobilized young doctors to go away from this country. To South Africa 100 of the younger doctors were emigrating, to Australia 150, and the figures for Canada and New Zealand were similar.

Sir Henry MORRIS-JONES said Mr. Bevan could not complain of an obstructive opposition to the Bill. Mr. Bevan and Mr. Key had in this Bill achieved a Socialist programme and were carrying through a great measure of nationalization. The doctors in the service became servants of the State, and for the first time people would be precluded from earning a living in places where they wished to earn it.

Mr. SOMERVILLE HASTINGS congratulated Mr. Bevan on a great Bill. It would provide, for the first time, a possibility of complete union between the preventive and the curative services. For the first time there would be a unified hospital service under the Minister. It had been noted in Committee that Mr. Bevan inclined to give more power to the hospital management committees and less to the regional hospital boards. Mr. Hastings warned him of the danger of this. The

use of beds must not be left entirely to the hospital management committees, nor should the higher appointments be so left. In statistics a uniform method of recording would be advantageous.

Dr. MORGAN said the bulk of the doctors, if they could be rid of the political prejudice from the other side, would work the Bill.

Mr. WILLINK said all parties were committed to sweeping changes in the sphere of public health. No reference had been made during the debate to the appointed day being April 1, 1948. That was at least a year, and probably two years, later than Labour M.P.s had thought a National Health Service would come into operation. But for the increased difficulties which the Minister had put upon his Department and on local authorities by his scheme, the Bill could have come into operation at least nine months earlier than it would do. He wished to bring to Mr. Bevan's attention the obscurity of the law relating to mental health as it emerged from the Bill.

It was, Mr. Willink remarked, one of the features of this Bill that mental health was brought, as it should always have been, within the sphere of the general health service, but the law with regard to mental health as it emerged from the Bill was lamentably obscure. He hoped the Minister would make rapid progress in clearing this field.

Mr. Willink said that since the Second Reading the position of the Central Health Services Council had been improved and that the individual hospital had been made a legal person with power to receive money and other property. The ridiculous remoteness of the Medical Practices Committee had been mitigated by a promise that in substance the doctors of the district would make the effective decisions on the succession to practices. The oppressive provisions of Clause 35 had been substantially improved. But the Bill still enabled extraordinary things to be done, and the Conservative Opposition objected to it because it discouraged voluntary effort and association. Every voluntary hospital was being taken over by the State and the Bill contained a provision enabling any future medical institution which might be set up to be taken over by the Minister. There was no security for any medical curative institution. Money given for the benefit of a locality or of a particular hospital would on April 2, 1948, become the property of the Minister of Health, to be put wherever he liked. The Minister would control the Hospital Endowment Fund. Local government was mutilated by removal of responsibility for any form of hospitals and by separation, on an unexplained basis, of the hospital service from the clinic service. The Minister prided himself on creating an entirely new hospital service. Was this the time for the Government to take on itself that extraordinary function? The Minister was taking power to direct the management of every place in the country where a citizen could obtain hospital care and even of the teaching hospitals. The Minister would redistribute £32,000,000 of charitable funds over England and Wales and did not even propose to bring his scheme before the House. There was no limit on what the Minister did with the money belonging to the voluntary hospitals. The Minister's unjustified insistence on a basic salary for every doctor was a first instalment of what Mr. Key had admitted to be inconsistent with people choosing the doctor they wanted. There was direct and indirect pressure in the Bill upon the medical profession to enter the service and insecurity for all who came in because of the absence of any appeal from a tribunal two-thirds lay, save to the Minister. Partnerships were threatened. Partners were no longer to be

THE MINISTER'S REPLY

Mr. BEVAN said he had a light task in replying. He rejoiced at the measure before the House was entirely different from the one on which Mr. Willink had laboured, which was unpalatable and unpopular. If Parliament entered into a contract with the citizens, collected from them a contribution, and in return gave a certain service, how could the contract be carried out if it was operated through an independent and self-motivating body? In regard to hospitals, Mr. Bevan asked how he could guarantee that the citizen in one part of the country would get the same service as a citizen in another part if the instrument to give that service was an independent, autonomous body. Every single instrument of the Bill must be an agent of the Minister. It was then necessary to ensure that the service did not become too centralized. Therefore the scheme provided for Regional Boards, management committees and house committees. The only voluntary part of the hospital system destroyed by the Bill was the necessity to sell flags and collect money—the indignity of having to collect money by private charity. The reason behind the bitterness of members opposite was that the Bill took away from them one of their chief sources of social and political patronage. It was notorious that first-class surgeons, gynaecologists, and general practitioners had from time to time to desert the practice of their

profession in order to seduce millionaires to provide money for teaching medicine. A number of people sat in the House of Lords in consequence of their benefactions. It was established in the medical profession that one of the chief qualifications of some of the ornaments of the profession was that they were able to attract money for the hospitals from rich individuals. The only aspect of the voluntary system which the Bill destroyed was one deeply repugnant to a civilized society, that the care of its sick should be dependent on the benefactions of well-to-do persons.

Voluntary work would be more efficient in future because it would be emancipated from financial considerations. In the hospital scheme of the future the patient, instead of receiving incompetent treatment in a small hospital, was taken to another hospital where he got specialist treatment and the endowment of the local hospital followed the patient. The Opposition had put down an amendment to the Third Reading to inhibit the medical profession. He was astonished that the leaders of the doctors had identified themselves in a spirit of partisanship with the Conservative Party. The spokesmen of some elements of the medical profession had become the most reactionary politicians in Great Britain. He deplored the medical profession being involved in these discussions and in this controversy. The medical profession, as a whole, would work this scheme wholeheartedly. In a recent plebiscite of the medical profession they decided by a majority in favour of the abolition of the sale and purchase of practices. Why should the young doctor have to seek the assistance of a usurper before he could practise? Why should the medical profession be placed in the toils of usury on the excuse that by doing so a competitive spirit was maintained in medicine? What was wanted was not a competitive but an emulative spirit. Effectively to man the medical profession it was necessary to derive doctors from lower income groups than hitherto. Therefore it was essential to start them off in a proper fashion. In no part of the administration of the Bill had the Minister of Health, or any other authority, the slightest control over the professional conduct of the doctor. Under the scheme doctors were not State servants. They were in contract with a body over which they themselves had considerable influence. They were not in contract with the Regional Boards or with the Minister. Doctors would have more protection under the scheme than they had at present. Under the scheme they had appeals to the Tribunal. They were the most protected profession in the country. He remarked that he had no time to describe the positive merits of the Bill. The Government hoped now to leave controversy behind and to get the co-operation of the medical profession and of all health workers because without that co-operation the scheme was bound to fail. "Now that we are reaching the conclusion let us hope that the echoes of controversy will die down, and that what will reach our ears will not be the declamations of partisans but the whispers and piteous appeals of sick people all over the country, of the weak and distressed who are reaching out their hands to this House of Commons to give them succour and assistance in their difficulties. I believe that eventually it is that small voice that will be heard and will be the most influential and not the raucous declamations of controversialism."

The amendment proposed by Mr. Linstead was then rejected by 261 to 113 and the Bill was read a third time.

Need for Sanatoria

Dr. SEGAL asked on July 18 whether Mr. Bevan knew of the increasing shortage of sanatorium accommodation, and whether he would take joint action with the responsible authorities to retain some of the existing E.M.S. hospitals for conversion into sanatoria.

Mr. BEVAN replied that the crucial factor was not shortage of accommodation but the dearth of nurses and other hospital workers, which precluded the staffing of sufficient additional beds. Every effort was being made to remedy this.

Inspectors for Experiments on Animals.—Asked on July 11 about the appointment of inspectors for investigating experiments by vivisection, Mr. EDE said he would be glad to consider candidates with veterinary qualifications, but medical qualifications were essential in an inspector, and it was rare to find a candidate qualified in both professions. Concerning the recent case at Oxford—which, he believed was still *sub judice*—the premises had been visited the previous month by a Home Office inspector before the outbreak of disemper which was mentioned in the proceedings.

Notes in Brief

Work in connexion with accommodation and amenities for domestic staffs of hospitals has not been singled out for a particular priority. As in other classes of case, priority may be granted where the work is of particular urgency, and licences may also be given for less urgent work that can be undertaken with labour and materials not required for priority work.

The Ministry of Health Standing Committee on Medical and Nutritional Problems includes the following. *Ministry of Health*.—Mr. Wilson Jameson, Dr. W. A. Lethem, Dr. H. E. Magee, Dr. D. M. Taylor. *Ministry of Food*.—Lord Horder. *Ministry of Education*.—Mr. J. Aislon Glover. *Medical Research Council*.—Sir Edward Mellanby, Prof. S. J. Cowell, Dr. B. S. Platt. *Department of Health for Scotland*.—Sir Andrew Davidson. *Ministry of Fuel and Power*.—Mr. S. W. Fisher. *Ministry of Labour and National Service*.—Mr. E. R. A. Merewether.

The Pneumoconiosis Research Unit of the Medical Research Council has opened a clinic at the hospital at Llandough for the study of certified cases to determine the possibilities of direct treatment. Similar investigations are being made among tin miners in Cornwall, including the possibilities of treatment by the inhalation of finely powdered aluminium. A clinical study of working miners in selected mines in South Wales, in relation to dust and other environmental conditions, is about to start.

According to returns from the local authorities concerned, 66% of the child population up to age 15 were immunized against diphtheria in Manchester at Dec. 31, 1945, 49% in Ashton-under-Lyne, and 52% in Oldham.

Except where considerations of health or safety make such a course undesirable all paraplegic pensioners will, in future, be eligible for the supply and repair of a motor invalid tricycle at State expense.

The Services

Major-Gen. J. C. A. Dowse, C.B., C.B.E., M.C., late R.A.M.C., has been appointed Honorary Physician to the King in succession to Col. (Temp. Brig.) H. A. Sandiford, M.C., late R.A.M.C., retired, and Major-Gen. E. A. Sutton, C.B.E., M.C., late R.A.M.C., has been appointed Honorary Surgeon to the King in succession to Major-Gen. G. A. Blake, C.B., late R.A.M.C., retired.

Surg. Cmdr. H. L. Cleave, R.N., has been appointed O.B.E. (Military Division) and Surg. Lieut.-Cmdr. J. C. Wyatt, R.N., and Surg. Lieut. C. A. Jackson, R.N.V.R., have been appointed M.B.E. (Military Division) for outstanding services while prisoners of war in the Far East.

Surg. Cmdr. V. F. Walsh, R.N., and Temp. Surg. Lieut. D. R. Syred, R.N.V.R., have been mentioned in dispatches, and Surg. Lieut.-Cmdr. D. N. Ryalls, R.N.V.R., has been mentioned in dispatches posthumously for good services while prisoners of war in the Far East.

Majors S. M. Banfill, J. N. B. Crawford, and J. A. G. Reid, R.C.A.M.C., have been appointed M.B.E. (Military Division), and Major G. C. Gray, R.C.A.M.C., has been mentioned in dispatches, in recognition of gallant and distinguished services while prisoners of war in the Far East.

Capt. C. T. Robertson, R.C.A.M.C., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services while a prisoner of war.

Medical News

Arrangements have been made to hold the next congress of the International Surgical Society in London from Sept. 14 to 20, 1947. The president will be Dr. Leopold Mayer of Brussels, and the general secretary of the society is Dr. L. Dejardin of Brussels. An interesting programme is being prepared. Local arrangements will be in the hands of a British committee of which Prof. G. Grey Turner is chairman, and Mr. H. W. S. Wright (9, Weymouth Street, Portland Place, W.1) the honorary secretary.

On the recommendation of the honorary managing committee of the Bureau of Hygiene and Tropical Diseases, the Secretary of State for the Colonies has confirmed the appointment of Dr. Charles Wilcocks as director of the Bureau with effect from April 1, 1946, and has appointed Dr. H. J. O'D. Burke-Gaffney to be assistant director with effect from July 16, 1946. Dr. J. F. Corson, who, since July, 1943, had given his help as acting assistant director of the Bureau, retired on June 30.

The Fellowships offered by the Commonwealth Fund of New York to British graduates for tenure in American universities have now been resumed after interruption by the war. The committee of award have made the following appointments in medicine for 1946-7: A. H. Cruickshank, M.D., to Johns Hopkins University; A. M. McKelvie, M.B., Ch.B., to the Mayo Clinic.

A site is being sought in London by the Save the Children Fund for a memorial to children of all countries who lost their lives during the war.

Sir Comyns Berkeley, F.R.C.P., F.R.C.S., F.R.C.O.G., who died on Jan. 27, left £123,659, the residue of which goes to Gonville and Caius College, Cambridge, for the provision of medical fellowships.

Universities and Colleges

UNIVERSITY OF LONDON

Westminster Hospital Medical School

Lord Woolton will deliver the Inaugural Address at the opening of the new academic session in the Sir Edward Meyerstein Lecture Theatre of the School on Monday, Oct. 7, at 3 p.m.

An entrance scholarship examination in anatomy and physiology will be held on Sept. 11 and 12. Applications for further particulars must reach the secretary, Westminster Hospital Medical School, 17, Horseferry Road, S.W.1, by Aug. 16.

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY.—P. H. Beamish, F. G. Callus, M. C. Connell, M. A. Egan, M. A. FitzGerald, E. H. Hansoo, F. L. McKelvie, M. Mandelstam, Gwenllian B. Morgan, B. Navid, J. F. Nicholl, E. J. Richardson, W. V. Taylor, B. C. H. Ward. *Part I*: L. Charney, M. G. E. Shakkankiri, K. N. Tankariwala.

UNIVERSITY OF BIRMINGHAM

The following appointments to full-time Clinical Chairs of Medicine, Surgery, Obstetrics and Gynaecology, and Paediatrics and Child Health are announced:

Chair of Medicine: W. M. Arnott, M.D., F.R.C.P.Ed. *Chair of Surgery*: F. A. R. Stammers, C.B.E., F.R.C.S. *Chair of Obstetrics and Gynaecology*: Hilda N. Lloyd, F.R.C.S., F.R.C.O.G. *Chair of Paediatrics and Child Health*: J. M. Smellie, M.D., F.R.C.P.

UNIVERSITY OF EDINBURGH

At a Graduation Ceremony held on July 24 the following medical degrees and diplomas were conferred:

M.D.—A. El Shaked, J. Innes, R. J. G. Ratcliffe, J. S. Robson, D. C. Ross, W. D. Willart.

Ch.M.—J. S. Smellie (gold medal), R. Strang.
M.B., Ch.B.—Grace Barker, Patricia M. Barraclough, Elizabeth L. Batchelor, Margaret R. Bate, F. A. Beale, Fiona M. Bennett, H. L. Binnie, W. L. Blackett, W. J. O. Box, Mary M. M. Boyd, E. R. Brooks, J. R. Brotherton, J. Brown, Pamela J. Brown (née Rickwood), S. P. Bruce, Mary C. Buchanan, Katharine A. Burn-Murdoch, J. Burton, A. Cameron, W. W. Campbell, I. W. Clark, Barbara E. Clayton, D. C. Cockburn, Jole L'E. K. de Lingen, A. C. Douglas, D. Duncan, J. A. Ewing, R. M. Foster, A. D. B. Fotheringham, R. Frater, E. N. S. Fry, K. G. Gadd, W. R. Galloway, Constance A. Gibbs (née Mitchell), R. A. F. Gilbert, J. M. Gill, R. Gillott, Philippa A. Glyn, A. Goldberg, R. H. Gosling, Jessie E. J. Grainger, E. R. Gunn, Sheila I. Haldane, K. C. R. Halliday, T. L. Henderson, J. S. Holden, R. Houston, Moira B. Hughes, Elizabeth S. Humble, R. C. Humphreys, Morag L. Insley (née Henderson), A. S. Ireland, G. Irvine, A. B. Jamieson, D. A. L. Jones, J. D. Kerr, Alison B. King, Isabella Kingan, Charlotte M. M. Kirkcaldie, L. C. S. Knight, R. R. Lam, S. G. E. Lavery, Rosemary W. Lawrence, Isabel J. K. Ledger, Mary K. Lethem, J. C. Lewis, K. A. Lim, P. D. Livingstone, Helenor F. Lochhead, J. A. Loraine, Ethel M. J. Loudon, A. C. McDougall, Margaret M. MacDougall, W. A. MacDougall, P. C. MacGillivray, R. C. MacGillivray, D. M. MacKay, I. G. MacKenzie, D. L. MacKinnon, J. MacLean, A. McNah, R. C. Macnair, Betty Mallace, Dilys Mannars, T. S. Martin, K. W. Matheson, Katherine-Alice Mercer, J. D. C. Millar, F. R. D. Moett, R. W. Murray, Irene M. J. Monaghan, Isabel S. Mowat, Elspeth M. Orr, O. E. Owen, J. R. Page, H. L. Park, E. L. Rawson, A. Reid, D. Reid, Myrtle V. Richards, B. Ruehner, W. R. St. Clair, Kathleen G. Scott, Anne K. I. Sellers, W. L. Sewell, Helen M. Shearer (née Lenman), C. G. Sim, D. A. Sime, D. C. Simpson, K. Sinclair, G. M. M. Smibert, L. S. Smith, J. F. Sommerville, A. R. Sommer, J. O. Taubman, Emily D. J. Todd, C. H. M. Walker, C. H. Wheatley, Rachel B. White, J. W. Whittick, A. J. Williams, C. E. Williams, A. T. Wilson, J. T. Wright, D. Yuille, Monica M. Zealley.
B.Sc. (Department of Pure Science)—Mary C. Buchanan, M.B., Ch.B.

DIPLOMA IN PSYCHIATRY.—J. B. Methven.
DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—W. Bain, J. A. P. Bouton, G. Buchanan, C. W. F. MacKay, J. P. Mehrotra, K. D. Moynagh, W. O. Petrie, J. M. Smith.

POLISH SCHOOL OF MEDICINE AT EDINBURGH

M.D.—K. Durkacz, L. Kulczycki, Magdalena K. Munk, R. Rejthar, O. Rymaszewski, T. J. Szczesniak, H. Wójcicki.
M.B., Ch.B.—A. Bobak, W. Galecki, K. Getta, Z. Giedrys, E. Gruhsztajn, W. Kacmarek, A. Kuroski, T. Lahajek, Z. Liskowicz, Z. Milewski, Liwia Mitis, K. Sztabert, L. Wachala, A. Wlozczewski.

The following scholarships, bursaries, prizes, etc., were awarded to the Faculty of Medicine: *Cameron Prize in Practical Therapeutics*: A. Szeot-Györgyi, M.D., Ph.D., professor of medical and organic chemistry in the University of Szeged, Hungary, in recognition of his distinguished contributions to the knowledge of vitamin C. *Entles Scholarship and Leslie Medal and Scottish Association for Medical Education of Women Prize*: Rachel B. White. *Chiene Medal in Surgery*: J. S. Smellie. *Mouat Scholarship in the Practice of Physics*: Royal Victoria Hospital Tuberculosis Trust Medal, and *Thomson Memorial Medal in Child Life and Health*: J. A. Loraine. *Stark Scholarship in Clinical Medicine*: R. F. Robertson. *Buchanan Scholarship in Midwifery and Gynaecology*: Mary M. M. Boyd. *James Scott Scholarship in Midwifery and Gynaecology*: R. C. MacGillivray. *Vans Dunlop Scholarship in Materio Medica and Medicine*: J. A. Loraine. *Prox. acc.*: R. F. Robertson. *Vans Dunlop Scholarship in Pathology and Surgery*: H. A. F. Dudley. *Dorothy Gilpin Memorial Prize, Annandale Medal in Clinical Surgery*, and *Lawson Gifford Prize in Obstetrics and Gynaecology*: Barbara E. Clayton. *Beane Prize in Anatomy and Surgery*: W. R. St. Clair. *Prox. acc.*: Barbara E. Clayton. *Keith Memorial Prize in Systemic Surgery and Pathology*: Margaret Stirling. *Colonel Thomas Biggam Memorial Medal and Prize in Pathology*: Rosemary H. M. Davie. *Lewis Cameron Undergraduate Prize in Bacteriology*: D. S. M'Lauren. *Cunningham Memorial Medal and Prize in Anatomy and Senior John Aitken Corliffe Bursary in Anatomy and Physiology*: W. F. Coulson. *Junior John Aitken Corliffe Bursary*

Anatomy and Physiology: M. T. Lambie and (b) *Physics and Chemistry*: Anne T. Lambie.

¹ *In absentia.* ² Highly commended for thesis. ³ Commended for thesis.

UNIVERSITY OF GLASGOW

the King has approved the appointment of Robert Aim Lennie, M.D., F.R.F.P.S., F.R.C.O.G., senior obstetric surgeon in the Glasgow Royal Maternity and Women's Hospital and gynaecologist at the Victoria Infirmary, Glasgow, to the Regius Chair of Midwifery at the University of Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a quarterly meeting of the College, held on July 16, the resident, Dr. D. M. Lyon, intimated that the following had accepted the Honorary Fellowship of the College:

Major-Gen. Sir Alexander Gordon Biggam, K.B.E., C.B., M.D.Ed., R.C.P.Lond., Sir Henry Hallett Dale, O.M., G.B.E., M.D.Camb., R.S., F.R.C.P.Lond., Neil Hamilton Fairley, C.B.E., M.D.Melb., R.S., F.R.C.P.Lond., Sir Alexander Fleming, M.B.Lond., F.R.S., R.C.P.Lond., Sir John Fraser, Bt., K.C.V.O., M.C., M.D., R.C.S.Ed., The Rt. Hon. Lord Moran, M.C., M.D.Lond., R.C.P.Lond., Major-Gen. Sir Percy Stanley Tomlinson, K.B.E., B., D.S.O., F.R.C.P.Lond.

Dr. Ronald Haxton Girdwood (Edinburgh), Dr. Angus Henry Campbell (Redhill), and Dr. Stanley Galbraith Graham (Glasgow) were introduced and took their seats as Fellows of the College.

Major William Happer, I.M.S., f.B.E. (Edinburgh), Gordon Douglas (Edinburgh), and Mr Andrew Davidson (Edinburgh) were elected Fellows of the College.

SCOTTISH CONJOINT BOARD

The following candidates, having passed the final Examinations, have been granted the diploma of L.R.C.P.Ed., L.R.C.S.Ed., R.F.P.&S.Glasg.:

E. A. Barrett, W. R. Brown, W. S. Brown, Mary G. Buchanan,
Duncan, A. S. Dunn, Margaret W. Gerrard, R. F. Gray,
Lamond, G. A. Lawrenson, Julia I. Leitch, G. C. Mackie,
Catherine H. Mair, H. M. Mann, Jeannette B. Morrison, N. A.
Oppenheim, A. C. Pole, J. L. Quartey-VanderPuije, J. N. Rankin,
W. T. Richardson, H. K. Rose, Agnes W. M. Scott, Kirsty F.
Temple, W. P. Thomson, J. Watson, A. J. Williams.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a general fall in the incidence of infectious diseases, and notably of measles 543, scarlet fever 152, acute pneumonia 62, and dysentery 26. The only disease with an increased incidence was whooping-cough 23.

The fall in measles was most marked in Essex 168, Surrey 87, Middlesex 86, and Kent 82. A small general decline in scarlet fever occurred throughout the country. The largest local variations in whooping-cough were a fall of 67 in Yorkshire West Riding and a rise of 49 in Lancashire. Notifications of diphtheria were 13 fewer than in the preceding week; the largest changes were a decrease of 14 in Cheshire and a rise of 11 in Essex. Only 61 cases of dysentery were notified—the smallest weekly total for almost four years; London had 11 and London 10 cases.

Further case of acute poliomyelitis, making 6 in all, has been reported from the Potters Bar area of Middlesex. At Exeter, North Devon, 16 cases of paratyphoid have been notified in the past few weeks.

In Scotland the notifications of infectious diseases decreased. There were falls in measles 77, scarlet fever 39, acute primary pneumonia 28, dysentery 25, diphtheria 22, and cerebrospinal fever 13. The fall in measles was in the western area, while in Edinburgh the cases increased from 133 to 165.

In Eire little change occurred in the incidence of notifiable diseases. Enteritis and diarrhoea rose by 8 to a total of 64, of which 58 were notified in Dublin C.B.

In Northern Ireland ice-cream caused an outbreak of 9 cases of diphtheria, of a virulent type, in Derry.

Week Ending July 20

The notifications of infectious diseases during the week in England and Wales included: scarlet fever 936, whooping-cough 2,474, diphtheria 247, measles 3,783, acute pneumonia 380, cerebrospinal fever 49, dysentery 60, acute poliomyelitis 10, paratyphoid 20, typhoid 6.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 13.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London); (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	33	4	17	—	1	52	4	20	—	5
Deaths	—	—	1	—	—	—	—	—	—	—
Diphtheria	277	30	71	34	15	422	24	86	71	5
Deaths	2	—	1	—	—	7	—	1	—	—
Dysentery	61	10	23	—	—	206	47	47	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	5	—	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	30	3	1	—	—	30	4	3
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	39	4	9	64	3	34	3	4	68	1
Deaths	—	—	—	12	—	—	—	—	14	—
Measles*	3,981	630	267	54	5	4,075	207	46	33	—
Deaths	2	—	—	—	—	3	—	2	—	—
Ophthalmia neonatorum	69	2	11	—	—	51	4	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	17	—	1 (B)	1 (B)	—	9	—	2 (B)	—	—
Deaths	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	416	29	4	1	1	387	23	9	5	3
Deaths (from influenza)†	5	1	1	1	—	8	2	—	—	—
Pneumonia, primary	—	—	127	12	—	—	—	131	14	—
Deaths	—	26	9	6	—	—	17	10	5	—
Polio-encephalitis, acute	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomylitis, acute	12	—	—	4	—	12	4	1	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	15	—	—	—	4	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	149	9	6	—	1	123	4	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	845	72	112	21	23	1,303	74	153	21	37
Deaths	—	—	—	—	—	1	—	—	—	1
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	6	—	5	6	—	10	2	2	5	1
Deaths	1	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,270	148	28	36	14	1,098	69	14	51	8
Deaths	12	2	2	—	—	4	—	—	—	—
Deaths (0-1 year)	334	52	56	35	10	286	23	28	29	11
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births)	4,003	604	514	181	103	3,815	561	482	197	92
Annual death rate (per 1,000 persons living)	—	—	11.3	11.6	—	—	—	10.9	12.7	—
Live births	8,546	1,316	987	338	228	6,892	792	822	426	205
Annual rate per 1,000 persons living	—	—	19.9	21.7	—	—	—	16.4	27.5	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

†Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Treatment of Amenorrhoea

Q.—*A healthy woman aged 24 has had amenorrhoea since the birth of her first baby in May, 1945. Delivery was normal, but low forceps were applied late in the second stage. Breast-feeding was continued for ten months. Post-natal examination revealed a rather small anteverted uterus. Chest skiagrams are normal; the urine contains no sugar or albumin. What causes the amenorrhoea? What is the appropriate oestrogen therapy, its dosage; and what are its rationale and the chances of success?*

A.—Although longer than average, the period of amenorrhoea cannot yet be regarded as outside the physiological limits—particularly as lactation was rather protracted. There is something to be said for waiting a little longer before resorting to hormone therapy, although general measures—tonics, open-air life, and vitamin E—might be tried. If menstruation does not commence in the near future complete investigation is indicated, but the cause is most likely to be a failure of gonadotrophic function of the pituitary following pregnancy and lactation. In the past this sort of case was diagnosed as hyperinvolution of the uterus, the implication being that the fault was in the uterus itself. It is now recognized that the uterine atrophy is only secondary to failure of ovarian function, which in turn is due to a pituitary fault.

Oestrogens act on the uterus, and by their use it should be possible to restore it to its normal size and possibly initiate "withdrawal haemorrhage." A suitable dose would be hexoestrol 1.0 mg., or dienoestrol 0.3 mg., thrice daily by mouth for three weeks followed by an interval of two weeks. Two or three courses may be given, but not more. Any effect is likely to be temporary, and the uterus will atrophy again when treatment is suspended. However, there is a chance that the endocrine cycle is merely in a state of "suspended animation" the oestrogen therapy may be enough to reawaken it to permanent activity. If it does not, the appropriate treatment is with gonadotrophin, but even this is only replacement therapy at a higher level.

Varicose Ulcers

Q.—*What is the treatment of varicose ulcers? Has penicillin been tried, and with what success?*

A.—Varicose ulcers are essentially stagnation phenomena due to incompetence of the valves in the superficial veins of the lower limbs. They are commonest in the lower third of the leg: on the inner side of the limb when the internal saphenous vein is involved, and on the outer side when the external saphenous vein is affected. In treatment one must recognize the importance of this gravitational reflux, and, although ulcers and the surroundings may become infected, this is usually of secondary importance. Healing may be obtained by many methods which overcome this gravitational reflux of blood. Absolute rest in bed with the limb elevated will invariably secure rapid healing in the absence of serious bone involvement, and almost irrespective of the nature of the local applications. Recurrence, however, is likely unless the incompetent veins are either controlled by elastic stockings or obliterated by means of injections or operation. In some cases healing may be obtained by one of the various types of compression

bandage, but this is not likely to be permanent, unless the veins are subsequently controlled by one of the foregoing methods. If permanent healing is to be secured in cases of long-standing ulceration, with a good pigmented scar free from tenderness and oedema, then almost all cases must be submitted to operation, as incompetent thigh veins are invariably present. Since the role of infection in varicose ulcers is relatively unimportant, it would appear on *a priori* grounds that penicillin or chemotherapy is likely to be of little use, and this is borne out by clinical experience. These may reduce infection but will not cure varicose ulcers. On the other hand, if the gravitational factor is overcome the ulcers will heal almost irrespective of the local application.

Dengue and Sandfly Fevers

Q.—*What is the aetiology of the sandfly and dengue group of fevers, and what is their relation to the so-called "short-term" and "long-term" fevers common in tropical and subtropical zones?*

A.—Although having features in common, sandfly and dengue fevers appear from cross-immunity tests to be due to separate and distinct viruses. "Short-term" and "long-term" fevers obviously include a group of ill-defined conditions, and it is therefore possible that an individual example, especially of the former, may be one of sandfly or dengue fever.

Raisins for Enuresis

Q.—*A handful of raisins at bedtime for nocturnal enuresis has, in my experience, worked well. Is there any scientific basis for this?*

A.—There appears to be no scientific basis for the use of raisins to cure nocturnal enuresis.

Chyluria Tropica

Q.—*A patient aged 27 has occasional brief chyluria following a two-year tour in West Africa. What is the prognosis? What are the chances of his developing elephantiasis of legs or scrotum?*

A.—Repeated or persistent attacks of severe chyluria may lead to debility, while the overt nature of chyluria may give rise to depression or an anxiety state. Secondary features, such as bleeding, urinary obstruction from coagula, and infection of the urinary tract, may also complicate the prognosis of chyluria. Transient or mild attacks, however, need not influence life or in themselves worsen the prognosis of filariasis, nor is chyluria especially associated with the development of elephantiasis of the legs or scrotum.

Glandular Fever

Q.—*A man of 30 had glandular fever a year ago in the Middle East, and has since had recurrences at intervals of three or four months. What are the prognosis and treatment?*

A.—Recurrences of glandular fever are extremely unusual, although a few instances have been reported. Nevertheless the diagnosis must be questioned if the haematological and serological changes are not characteristic. In the absence of clinical data it is not possible to suggest an alternative diagnosis, but other causes of recurrent lymphadenitis must be sought, and excision of an enlarged lymph node for histological examination considered. If the diagnosis of glandular fever is unassailable the ultimate prognosis is good. There is no specific treatment; but if the same group of lymph nodes is affected in each attack radiotherapy might be given a trial. It has proved effective in certain indolent cases (Kahlstorf, A., *Strahlentherapie*, 1935, 54, 459).

Malaria Prevention

Q.—*In which districts of North Africa is malaria rife? What is the most recent preventive medicinal measure, and the dosage?*

A.—Malaria occurs throughout North Africa. Control measures have greatly reduced the incidence in densely populated areas, but villages, if near permanent water collections, are liable to endemic malaria, or to epidemic malaria when climatic conditions are favourable. The disease tends to be seasonal, being absent or rare in the dry season

and showing its highest incidence in years of heavy rain. The best preventive medicinal measure available is mepacrine, 100 mg. daily, to be continued for two months subsequent to the last possible exposure to infection. This treatment causes yellow staining of the skin. Paludrine, which in field trials has proved to be more valuable, is not yet available. When obtainable the dose will probably be 100 mg. once or twice weekly.

Foreign Body in Stomach

Q.—A child of 3 swallowed a Kirby grip, and a radiograph shows it lying in the stomach. Is operation indicated?

A.—There is no need for operation so long as the grip is causing no symptoms. In time it should pass through the pylorus and travel along the rest of the alimentary tract. There is no fixed time for the safe residence of a foreign body in the stomach, and the surgeon must be guided by the likelihood of its causing symptoms. If attacks of pain, possibly due to the presence of the grip, should occur, then it would be wise to explore the abdomen, but a skiagram to determine the exact position of the foreign body should be taken immediately before the exploration.

INCOME TAX

Premiums for Sickness Insurances

N. M. asks whether premiums for sickness insurance can be treated as expenses or relief obtained in any other way.

.* The answer is in the negative; but sums received from such policies are not regarded as liable to income tax, unless they are receivable for such a long period as to become taxable as "annual payments."

Car Expenses

H. W. runs two cars and has deducted for income tax purposes one half of the whole running expenses. No replacement cost or depreciation has been claimed.

.* Unless the agreement with the local Revenue office was that one-half of the running costs would cover all the allowances due, there seems to have been no reason why in the past H. W. should not have deducted either one-half the full depreciation allowance or one-half actual replacement costs. (The "initial" allowance was not then in existence.) We advise him to lodge a claim for one-half the depreciation—calculated on both cars—for the past six years, or for such shorter period as may be justified by the facts. When the cars are sold a "balancing allowance" or a "balancing charge" will be applicable according to whether the sale price is less than or exceeds the cost price of the particular car less the aggregate depreciation allowances on that car. The cars will have to be dealt with separately, but if sold in the same year only the net amount will affect the liability.

Assistant: Car Expenses

W. E. is entitled to deduct his car expenses from his salary as an assistant in general practice. In February, 1946, he sold his car for £350 and bought another for £600. Can he claim the cost of replacement (£600—£350=£250) as an expense?

.* It is assumed that W. E. has not had depreciation allowances in respect of the old car. On that assumption the answer is, Yes—as an expense of the year 1945-6. If the new car represents an improvement on the old car (in the condition it was in when acquired), that part of the £600 attributable to improvement is a capital expense and is not deductible. We suggest, however, that in the long run it may be preferable to claim the usual allowances instead of the cost of replacement. On that basis no allowance would be due for 1945-6, but for 1946-7 W. E. can claim an initial allowance—i.e., 20% of £600=£120 and depreciation allowance—i.e., 25% of £600=£150, total £270. The depreciation allowance will be claimable for future years at the rate of 25% on the written-down value.

First Year in Partnership

P. J. will be acting as locum tenent up to Sept. 30, 1946, as from which date he will go into partnership. Car expenses will be borne by the individual partners. He is informed that from Oct. 1, 1946, to Sept. 30, 1947, he will be assessed on the current earnings for his personal income tax return. If so can the balance of the 20% initial allowance and the 25% depreciation allowance on a car bought in August, 1945, be allowed in his 1945-6 assessment?

.* Partnerships are dealt with as units for income tax assessment purposes. If P. J. is to be assessed for the year to Sept. 30, 1947, on the current year's basis it is presumably because the new firm has elected to be so assessed—which is not usual when the previous year's basis would carry a charge for the salary of an assistant or locum tenent. The "depreciation" allowance can be spread over

the year, but we are doubtful whether that would apply to the new "initial allowance." If, however, it is wholly set against the earnings for the six months to Sept. 30, 1946, the result is apparent the same over the whole financial year 1946-7. The cost of buying instruments can be allowed, but only as regards replacements; no requisitions represent an outlay of capital.

LETTERS, NOTES, ETC.

Protein Hydrolysate for Peptic Ulcer

Dr. D. McANALLY (Herts Pharmaceuticals, Ltd.) writes: I should like to make one or two comments on the answer (July 6, p. 3) to the question "Is protein hydrolysate useful in the treatment of selected cases of duodenal ulcer?" In the first place, this question is still *sub judice*; it is now being thoroughly investigated in this country, with controls, and the results of the investigation will probably be available in six months' to one year's time. I have personal knowledge of cases of peptic ulcer which have done extremely well on oral protein hydrolysates, but I should be the first to agree that carefully controlled clinical trial in this very important question is necessary. At the moment we simply do not know whether protein digestion is impaired in duodenal ulcer or not. From my own evidence, the most common and successful uses of oral protein hydrolysates are in peptic ulcer and convalescence, but the clearest clinical indication for their use is in those relatively few conditions where protein digestion is impaired—e.g., some cases of pancreatic disease. In the case of peptic ulcer it must be remembered that amino acids are amphoteric and therefore have considerable buffering power against gastric acidity, and also they supply an immediately available source of nitrogen to help in the healing of the ulcer. This, to my mind, is very important, as the diet of peptic ulcer patients is sometimes deficient in nitrogen, and healing of any ulcer is not to be expected under these circumstances. Where the power of absorption is impaired, giving amino acids will obviously not help, but where the ingestion or digestion of proteins is deficient, then oral protein hydrolysate therapy may very well be of benefit.

Intravenous Technique

Dr. D. S. JONES (Llanelli) writes: May I draw attention to two factors concerning intravenous technique? First, can the manufacturers provide more syringes with peripheral and fewer with central nozzles? Practically all manoeuvres can be carried out equally well with the former as with the latter. On the other hand, it is essential for a perfect intravenous technique to have a peripheral nozzle. Furthermore, local infiltration is facilitated by the use of this type of syringe. Secondly, I make a plea for the adoption of the smaller hypodermic No. 24 s.w.g. needles for intravenous work, the advantages being that it is easier to puncture a vein, haematomata are rare, it is less painful for the patient, and an invisible vein can be sought with the minimum of trauma. An additional advantage of the small needle is that the injection must be made at a moderately slow rate, which is a "safety valve" in certain cases—e.g., pento:hal and uroselectan.

Effects of Sweets on Teeth

Dr. ALEXANDER LIVINGSTON, L.D.S. (Southampton), writes: With further reference to Dr. H. E. Magee's Milroy lecture, and Miss Dorothy M. Richardson's note (June 29, p. 1010): for some four years, 1936-9 (when chocolate became unobtainable in quantity), I always ate chocolate before going to sleep, that is, in bed, and left a little undissolved against my pendant right upper molars. By 1940 the third molar had developed a cheek-surface cavity, and was extracted as unsavable. Three weeks ago the second molar broke down while eating bread-and-butter, with crust admittedly. It, too, is doomed to extraction; it is a typical, slowly progressing, and absolutely "hollow" tooth.

A Possible Sanatorium

Dr. E. VIPONT BROWN (Carnforth) writes: After many years I have at last heard from a dear friend of mine, Dr. Mitterstiller, Hotting, Sonnerstr., 4, Innsbruck. In his letter he says: "In the neighbourhood of Innsbruck, about 1,400 m. high up in the mountains, there has been erected a large building for training the soldiers in skiing. Naturally it is not finished and practically ownerless. The place would be suitable for a sanatorium like that of Rollier's in Leysin in Switzerland. Do you think that an association of medical men in England would be interested in erecting there such a sanatorium for surgical tuberculosis?" I am now far too old (83) to take any active interest in such a scheme, but I thought it might be well to publish the suggestion in your columns. Some who are acquainted with the glorious mountains round Innsbruck may feel attracted to the idea.

Health Service Bill

Dr. J. A. Balck-Foote (Andover) writes: I regret that in my letter (July 27, p. 138) I used the word "affected" in para. 1 twice, leading to possible misunderstanding. On the second occasion it should be replaced by "weakened."

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 3 1946

BRITISH MEDICAL ASSOCIATION ANNUAL REPRESENTATIVE MEETING, LONDON, 1946

The Annual Representative Meeting opened in the Great Hall of M.A. House, Tavistock Square, London, on Tuesday, July 23, and was continued on succeeding days. Dr. J. B. MILLER, shopbriggs, Lanarkshire, presided, with Dr. E. A. Gregg, London, in the vice-chair. They were supported by Mr. H. S. Souttar, President, Dr. H. Guy Dain, Chairman of Council, Mr. J. W. Bone, Treasurer, and the officials of the Association. The number of representatives attending was about 300, including 20 from overseas constituencies and apart from members of Council who were not acting as representatives. About 200 motions and amendments were on the agenda. It was agreed that those relating to the National Health Service should be taken as the first business on the second day.

FIRST DAY

Tuesday, July 23

The meeting assembled at 2 p.m., following a Council meeting in the morning.

The late Sir Kaye Le Fleming

The CHAIRMAN, in opening the meeting, said: We have to mourn the sudden death of Sir Kaye Le Fleming. This is not an occasion on which to dilate on his many services to the Association. Suffice it to say that he was Chairman of the Panel Conference for three years, Chairman of the Representative Body for three years, and Chairman of Council for five years. During all that period he was busily engaged in the active practice of his profession in a country district, involving a strain which must have affected even his powerful physique. He was dignified in his bearing, impartial in his judgments, and wise in his counsel. He well qualifies to join the great line of past leaders of the profession, and his name will go down as one of the greatest statesmen the B.M.A. has ever had. The meeting will wish to express its grief at his passing, and to have its sympathy conveyed to his widow.

The members of the Representative Body stood for a few moments in silence.

Greetings from South Africa

Prof. J. F. BROCK, Professor of Medicine, University of Cape Town, and Chairman of the Negotiating Committee of the Medical Association of South Africa, brought the greetings of that Association. He said that the South African Association had recently spread its wings and flown out of the nest, but it was not proposing to fly very far away. As in this country so in South Africa, they were facing revolutionary changes, but in South Africa they had been more fortunate in the way the Government had introduced its legislation. The Government had taken one of the members of the Association and made him Chairman of the Health Services Commission, and that Commission having produced a report to which the majority of the medical members subscribed, the Government accepted the report and proceeded to make the chairman the Minister for Health. (Laughter and applause.) They had therefore in South Africa a Minister for Health who was a member of their own profession and Association, and they had been very fortunate in building up by that means a real spirit of team work in the introduction of the new health services scheme. They had their difficulties with the provincial administrations, but so far their negotiations with the Government had been very happy indeed. (Applause.)

Agenda of Representative Meetings

Following upon a matter raised by the Winchester Division at the Special Representative Meeting in May concerning the procedure of the Representative Body, the Agenda Committee presented a report examining the possibilities of reducing the number of motions and amendments so as to ensure that the whole of the agenda received adequate consideration. One method suggested was to make use of larger local groupings of the Association as a filter between the Divisions and the Central Agenda Committee, so that Divisions would be required to refer their motions in the first instance to Branch Councils or grouped Branch Councils. It was considered that in practice this would prove rather cumbersome and would require considerable time to function. Another method would be for the Agenda Committee to prepare appropriate omnibus motions to cover the intention of similar motions submitted by several Divisions. These omnibus motions, however, would have to be conveyed to the Divisions concerned, and any dissenting Division would have the right of submitting an amendment, so that the method would be protracted and possibly would result in no saving. To give the Agenda Committee absolute discretion to compile omnibus resolutions and exclude those of the Divisions concerned without reference to them was considered too drastic and dictatorial. The committee recommended that no action be taken at present to modify the procedure, but that the plan of starring certain resolutions should be given a further trial. A further recommendation was that two members elected by the Representative Body be added to the Agenda Committee.

Dr. W. D. KEYWORTH (Winchester) and Mr. ERIC STEELER (Marylebone), whose Divisions had raised the question at a previous meeting, expressed themselves satisfied. Dr. C. E. DAWSON (Derby) said that it did not seem as if much progress had been made; the congestion of business would continue. The only remedy was some curtailment of the length of speeches.

The recommendations of the Agenda Committee were agreed to.

ANNUAL REPORT OF COUNCIL

Preliminary

The meeting then turned to the examination of the Annual and Supplementary Reports of Council, published in the *Supplements* of April 20 and June 22.

The CHAIRMAN OF COUNCIL (Dr. Dain), who was received with cheers, said that their old friend and highly valued servant of the Association, Mr. H. S. Souttar, had found himself unable to accept nomination for another year as President, and they could not let an opportunity pass without an expression from the Representative Body of its friendship and esteem for him personally and its appreciation of his services. (Loud applause.)

Dr. Dain went on to say that the Association was getting its staff into working order. The Council had appointed two new Assistant Secretaries, Dr. Claxton and Lieut.-Col. Stevenson, and a new Scottish Secretary, Dr. Walker, each of whom he introduced to the meeting.

Another matter which came into this part of the Council's report concerned the work of the Medical Curriculum Committee under Prof. Cohen of Liverpool. He thought its report

would be found so valuable when it appeared that it should properly be labelled "Report on Medical Education." It would be one of the most useful documents ever issued on the education of the medical practitioner.

On the question of international relations the Council had taken the view that the Association should give a lead in bringing together the medical associations of the various countries, and an international conference would be held in that building in September with a view to promoting an international body for the exchange of information, the promotion of closer ties, and the encouragement of better international relations generally. The Council that morning had also agreed to set aside the sum of £1,000 for the purpose of enabling B.M.A. lecturers—some of the best-known experts in their subjects—to visit Continental countries and give lectures to their medical colleagues in those countries.

President, 1946-7

A recommendation of Council—

That Sir Hugh Lett, Bart, C.B.E., D.C.L., F.R.C.S., be elected President of the Association, 1946-47—

was carried unanimously. It was stated that Sir Hugh Lett would be introduced to the meeting on the following day.

"A Charter for Health"

Dr. NOY SCOTT (Plymouth), while commending the excellence of a *Charter for Health*, issued by the Association, complained of its high price (6s.), which was likely to interfere with the wide publication which it deserved. The Association could well afford to subsidize this book, and so ensure its circulation at a considerably reduced price.

Dr. R. W. COCKSHUT (Hendon) said that 5,000 were printed, and all had not been sold. To subsidize a publication like this might involve a large expense, but the Council had had it in mind, if it was successful, to publish it in something like a "Penguin" edition.

The suggestion from Plymouth was referred to Council.

Assistance for Ex-Service Practitioners

Dr. J. A. GORSKY (Westminster and Holborn) moved:

That this meeting considers that steps should be taken to cause the appropriate authority to be empowered to give some assistance to practitioners leaving the Services to acquire premises which may be used as surgeries.

Many practitioners had lost their surgeries owing to enemy action, and the burden on the practitioner returning to his practice must often be very heavy.

Dr. S. LAURIE SMITH (Blackpool) said that if the Association was going to give the ex-Service men the opportunities they ought to have, this motion should be supported.

The CHAIRMAN OF COUNCIL said that there were no special privileges for doctors in the matter of housing, but the Association did help as far as it could in any individual cases which were brought to its notice. The matter was constantly under consideration, and he was prepared on behalf of the Council to accept the motion.

he motion was referred to Council.

General Practice

Dr. S. WAND (Chairman of the General Practice Committee), in presenting this section of the report, said that his committee had dealt with many matters referred to it by the last A.R.M. The capitation fee for treatment of firemen had been settled for the time being; the remuneration of surgeons under the Factories Acts had been taken up, and they were proposing to present certain rates to the Government department concerned; civilian practitioners' fees had been raised; the resolution of last year on night calls had enabled them to get some improvement in the hours for which the night fee was payable, and evidence had been given to the appropriate body on fees for medical witnesses. During the last session joint committees with the pharmacists and with the nurses had been working, and the Ship Surgeons Subcommittee had been restarted. The Industrial Medical Officers Subcommittee had become a fully established committee of the Association. It had done most admirable work during the past year under the chairmanship of Dr. Vaughan Jones.

Fees for Life Insurance Examinations

Dr. WAND said that there was a recommendation in his report before the meeting that the agreement reached with the Offices Association in 1919 with regard to fees for medical examination for life assurance should be terminated. That recommendation was tabled they had been in conversation with the Life Offices Association, and negotiations were proceeding; he hoped it would be possible to report to next A.R.M. a satisfactory increase in the fees payable, as a measure of standardization. To pass the recommendation at the moment would be to leave a gap, and accordingly proposed to move it in the form that the Council be empowered to terminate the agreement at the appropriate time when it was possible to negotiate a new agreement.

Dr. HUNTER (Plymouth) said that his Division had put down an amendment to a recommendation which he understood Dr. Wand would not now move, but which suggested a smaller fee for a "modified examination." He felt that "modified examination" was very hard to define, if it existed. When a patient went into the consulting-room it was difficult to lay down any conditions which did not involve a thorough examination. He hoped that the committee would bear this in mind in its negotiations with the Life Offices, that if a modified fee was accepted it would be only for a report which did not involve examination, but only on previous knowledge of the patient.

Dr. WAND said that in discussions with the Life Offices Association he found that they used different types of tables for different types of insurance—full actuarial tables for higher amounts and different tables for the smaller amounts and for these different tables they required different kinds of information.

The motion empowering the Council to terminate the agreement at an appropriate time was carried.

Dr. P. INWALD (City of London) moved:

That this meeting recommends that when a doctor is requested by an insurance company or a solicitor to be present at the examination of his patient by another doctor for the purpose of assessing a claim arising out of the patient's injury or illness the fee payable should be not less than £2 2s.

Dr. WAND said that he was prepared to accept this as a reference to Council so that the position might be explored and any necessary action taken.

This course was agreed to.

Private Practice under a 100% National Health Service

Dr. WAND next moved formally on behalf of the Council that the conclusions reached by the Council on the safeguarding of private practice under a 100% National Health Service be approved. The conclusions were:

1. That the principle of collective responsibility obtaining under the present N.H.S. scheme should not hold in the new service.

2. A general practitioner who contracts to give service under the National Health Service should be entitled as a right to accept patients as private patients. He should be entitled to treat privately any person who is not on his own list or that of any partner or assistant, whether on the list of another doctor or not. Where a practitioner has accepted a patient as a public service patient he shall be precluded from charging fees for any service he renders to that patient as a general practitioner.

3. A practitioner should be free to give such certificates, prescriptions, orders, or reports to his private patients as would secure for them any of the statutory benefits under the National Health Service.

4. Except in an emergency a general practitioner should not be required to treat as a public service patient any person: (a) not on his list; (b) who resides outside the area of his practice (as agreed by the local executive council).

5. A general practitioner should have the right to refuse to accept any person as a public service patient without giving reasons. Similarly, a patient should have the right, without giving reasons, to ask for the withdrawal of his name from a practitioner's list. A general practitioner should be entitled to ask for the removal of a patient from his list, without giving reasons, but should give or continue treatment for a limited period until the patient is accepted by or is allocated to another practitioner. The interval for change of doctor (other than by consent) should be as short as possible.

6. Where a public service patient on a doctor's list desires to be treated privately by that doctor, the patient should be required, before being accepted as a private patient, to give due notice of the withdrawal of his name from the doctor's list.

7. A member of a partnership who elects to remain outside the service should not treat as a private patient any patient on the list of another partner in the firm. He should be regarded as

leputy in these circumstances; but this should not preclude him from treating as private patients those seeking his advice as a consultant or specialist.

8. Public general practice should be held to mean the treatment by the practitioner of persons on his list at the place appointed or the purpose—i.e., the health centre, the doctor's surgery, or the patient's home—but where public practice is conducted from the health centre private practice should be conducted at some place other than the health centre.

9. A patient should not be required to give official notification of his intention to obtain his general practitioner service privately. The doctor may obtain for his own use such evidence as he thinks desirable.

Dr. HOWIE WOOD (Isle of Wight) moved an amendment to delete the words in para. 2 "of any partner or" and substitute the words "of his," thus making a practitioner entitled to treat privately a patient who was on his partner's list. He said that in his area they had not, generally speaking, combined practices which were taken sometimes by one member of the partnership and sometimes by another. Their practices were separate practices, and when a patient who was on the list of one member of the partnership wished to consult another partner, or own doctor being available at the time, a fee was charged to that patient by the partner whom she consulted. There was no question of this being done when the second practitioner was acting as deputy for his partner. He wished to limit the practice to cases in which the patient's own doctor was available, but the patient for her own reasons wished to consult the other partner. Under the recommendation as Dr. Wand had moved it it appeared that a certain amount of private work otherwise available to doctors in partnership would be lost to them.

Dr. WAND said that in considering any scheme for private practice they must have in mind something that would work and would be fair and honourable. Was the Isle of Wight suggestion honourable?

Dr. HOWIE WOOD replied that it seemed to him, listening to Dr. Wand, that the only way to avert the loss to private practice would be dissolution of the partnership. If the practitioners were not in partnership no one would suggest that there was anything dishonourable in charging a fee to a patient who was not on the list of the partner.

The Isle of Wight amendment was lost.

Dr. C. MACKIE (Worcester) moved to amend para. 4 of the recommendation by making it read: "Except in an emergency or while the patient is temporarily resident away from home a general practitioner should not be required to treat," etc., and to make the paragraph end with the words "as agreed with the local executive council," instead of "by the local executive council." They expected the Executive Council to discuss with every individual practitioner questions relating to the area of his practice, the doctor specifying the district he would practise in, as he did to-day under National Health Insurance.

Dr. WAND said it was evident that temporary residents would have to be dealt with under the Act and not under regulations. So far as the second part of the motion was concerned he was prepared to accept it. He thought there must be agreement with to get agreement by.

The first part of the Worcester amendment was lost, and the second part agreed to.

Private Patients and Health Centres

Dr. MACKIE further moved to amend para. 8 to provide that it should be open to a practitioner to conduct private practice at a Health Centre or elsewhere at his own discretion. His Division put forward this amendment in a spirit of inquiry. In his Division there were many rural and semirural practices, and in many parts of the county a practice or partnership had to do all kinds of jobs—midwifery, surgery, public health work—and to doctor the squire as well as the ploughman. There could be no question of turning down work because it was troublesome, dirty, or unprofitable. Everything had to be tackled—gipsies, hop-pickers, private patients—and the National Health Service practice would have to be tackled also. When his Division discussed the Council's report it occurred to them with considerable dismay that they would be required to see their public patients at the Health Centre and their private patients at home, and how could they possibly find time to do double surgery duty? Was it possible to do three or four

surgeries and then embark on visits round fifty miles of countryside? They came to the conclusion that there would be a gross and uncalled-for waste of time which would interfere with the giving of their best to public and private patients alike. What was the opinion of the meeting about two separate establishments? Many a young man, faced with the demand for two establishments for his practice, would not be encouraged to practise privately. Why should not private patients have the technical facilities of the Health Centre and if necessary pay for them? What was good enough for public patients was good enough for private, and vice versa.

Dr. D. J. MORRISON (Edinburgh) spoke to the same effect. He did not see why a private patient should be denied the benefit of going to the Health Centre.

Dr. WAND said that he had a good deal of sympathy with this amendment. After all, if Health Centres were set up it seemed unreasonable to expect the private patient to put up with something less in the way of equipment than the public patient. But was it going to be possible for the private and the public patient to attend the Health Centre in the same circumstances, one paying and the other not, when 100% of the population were entitled to the service? Nevertheless, the whole problem was in the melting-pot, and he, frankly, wanted to see a good deal more discussion on this point. If the meeting was willing he would take the matter back to his committee, and they would have another look at it.

The amendment was agreed to as a reference to Council.

The Private Patient's Drugs and Appliances

Dr. R. W. COCKSHUT (Hendon) moved:

That the patient who elects to obtain medical advice privately shall not be required to pay for drugs and appliances.

The Minister had promised on many occasions that people would be able to take this service in whole or in part, but he had refused to separate the medical from the pharmaceutical service. In the Bill as amended in committee (Clause 38) it was laid down that—

"It shall be the duty of every Executive Council . . . to make as respects their area arrangements for the supply as from the appointed day, whether at a health centre or otherwise, of proper and sufficient drugs and medicines and prescribed appliances to all persons in the area who are receiving general medical services."

This meant that patients would be able to get medicine and appliances free only if they were receiving service as public patients. Every private patient would be required to pay for his drugs and appliances—his penicillin, his insulin, his artificial limbs, and so on. The Minister admitted that a man might wish to have another opinion and might go to another doctor in the service and pay him for that consultation, but he would expect that patient then to transfer to the list of the doctor whom he had consulted. He had further said that only those patients who did not come on to the list of any doctor might be treated as private patients. If the patient, in addition to paying privately for advice, had also to pay for the expensive things used to-day, private practice would disappear. His impression was that the Minister did not intend that there should be any private practice.

Mr. C. E. BEARE (Reigate) supported the amendment.

Dr. WAND said that Dr. Cockshut was evidently aware of the administrative difficulties. If the meeting regarded the difficulties as insuperable they would vote against this amendment; if not insuperable they would vote for it.

The amendment was carried. This concluded the discussion on the Council's concrete proposals for safeguarding private general practice, and these, as amended, were approved.

The Maintenance of Private Practice

Dr. H. S. PASMORE (Kensington) moved to request the Council to give urgent consideration to the methods by which private practice may be maintained in future. It was the obvious intention of the Minister to suppress private practice as far as possible. He quoted his speech on the second reading on April 30, when he said: "The whole purpose of the scheme is to provide free treatment with no fee-paying at all." They were all anxious to know how private practice could be maintained in the future. At the moment they had free State education, but private schools were flourishing. The Labour Government, however, would not allow such a thing to repeat itself in the planning of

the health service. One way in which private practice would have a better chance of being maintained would be the taking of more vigorous steps to reinstate demobilized practitioners in practice and to help young doctors into practice, so that these people would not be "on the market," so to speak, when the scheme came into force in 1948.

The motion was carried.

Mr. C. E. BEARE (Reigate) moved:

That, in agreement with the decisions reached at the S.R.M. in May, 1946, this meeting considers that it is essential that the financial and administrative arrangements should be such that neither doctor nor patient is penalized if he chooses to remain outside the service.

One thing of which he was very much afraid was that if a man stayed outside he would not be admitted to look after his patient in hospital.

Dr. J. B. W. ROWE (Harrow), in supporting the motion, said that if patients were not given grants in aid they were likely to be penalized.

The motion was carried.

Supplementary Clothing Coupons

Dr. ROWE (Harrow) moved:

That the Council be instructed to press the Board of Trade to take such action as will improve the supply of operating gowns, surgeons' coats, and overalls, so that an issue of supplementary clothing coupons can be made with which to obtain these articles.

His Division felt that the Council had approached this problem from the wrong end. Further steps should be taken. The Board of Trade should be pressed to have these things made. If this state of affairs went on they would soon be operating in frock coats and going back to the pre-Listerian era.

Dr. WAND said he understood that some form of announcement was to be made by the Ministry in the near future on the question of surgeons' gowns. The Council was doing what it could to press on with this matter.

Dr. W. D. STEEL (Bromsgrove) thought that it would strengthen the hands of the Council to have a vote at that meeting. The profession was finding things very difficult. What about the danger to the woman in labour if the obstetrician—a general practitioner, he hoped—was not able to provide himself with a sterilized gown?

The motion was carried unanimously.

Doctors' Cars

Dr. JOHN YOUNG (Lothians) moved that the Minister of War Transport be approached with a view to enabling doctors to receive priority in the delivery of new cars. The majority of them were suffering from delay in getting needed replacements.

Dr. WAND said that the Ministry of War Transport had nothing now to do with the distribution of cars: it was a matter entirely in the hands of distributors, some of whom were playing the game, and so were some of the agents; and at the head office they were doing all they possibly could. But it was useless to pass the resolution.

The resolution was withdrawn.

Scale of Fees for Admiralty Surgeons

Dr. H. F. HISCOCKS (South Essex) moved:

That the Council be asked to take action in order that the scale of fees paid to Admiralty surgeons and agents be revised in order to conform with the revised fees now paid by the Service Departments to civilian medical practitioners in accordance with para. 42 of Council's Report.

This motion affected a relatively small number of practitioners, and his Division felt that the position of Admiralty surgeons and agents ran the risk of being overlooked altogether. Fees had been raised in most departments of medical practice, but Admiralty surgeons and agents still got only 3s. for a consultation (including medicine), 4s. 3d. for a visit (also including any treatment required), while for the responsible task of visiting a sailor in his own home and reporting to the Lords Commissioners of the Admiralty on his condition the agent was rewarded with 3s. 6d. This was a disgrace to the profession and a state of affairs which should not be allowed to continue a day longer than was necessary. A letter was sent to the Medical Director-General on Feb. 25, and a little later a reply was received to the effect that the question of modifying the

fees of Admiralty surgeons and agents was still under consideration, and it was hoped that a decision would be forthcoming at an early date. That hope had not been fulfilled. The in this respect was justifying its title, "the silent Service."

Dr. WAND said that the Admiralty had been told about twice recently, and there had been no reply. The Council would continue to act energetically in this matter. He thought this was the only field with which the General Practice Committee had had to deal in which it had not been able to any increase so far. The explanation was the tardiness of Government Departments.

The motion was carried.

Telephone Facilities for Doctors

Dr. P. N. CUTNER (Westminster and Holborn) urged representations should be made to the Postmaster-General that the telephone service should provide facilities for exchange for taking messages during such times as a doctor might notify that his telephone would be unattended. Was a telephone service be possible for doctors only? Dr. CARTER (Bournemouth) said that some such arrangement would be of great value not only to doctors but to their patients. Dr. WAND said that a bureau of this kind was established in Birmingham before the war and was very efficient. Was the intention to extend the service as and when considered permitted.

The motion was carried.

A motion by Hendon asking the Council to take steps to secure an increase of the visiting fee and the abolition of the overriding quarterly maximum paid by the Post Office to medical officers for attendance on postal employees living in the district of their employment was accepted.

The Working of the Coroners Acts

Dr. R. FORBES (Hendon) moved:

That the Council be invited to review and submit a report on the working of the Coroners Acts since their introduction, to draw special attention to the difficulties attendant upon pathological examinations, fees payable to medical practitioners as witnesses, and other difficulties experienced by the profession in carrying out the statutory and other directions of the coroner.

Hendon was of opinion that the time was ripe for a consideration of the working of the Coroners Acts. It was certain amendments so that the relationships between medical practitioners and coroners might be improved. The official coroner carried many important and responsible duties which brought him into contact with members of the public at serious and critical moments. A change of procedure would be desirable whereby the coroner would be restricted largely to his primary duty of finding the cause of death, and prevented from embarking, as he often did, upon criticism of the treatment given to the deceased before his death. Doctors had been the subject of adverse criticism in the coroner's court on matters which seemed wholly irrelevant to a decision as to the cause of death. Many practitioners were asked to provide reports for coroners without being adequately prepared for such reports. Post-mortem examinations were frequently conducted without the practitioner who was or might be concerned being informed that the examination was taking place. Wider facilities should be made available to pathologists for the conduct of their work. The conditions under which pathologists were required to carry out their work were appalling and the fees unsatisfactory. The fees payable for provision of a medical report and for attendance at a coroner's court as a witness were defined in the Act itself, and could be changed only by the introduction of a new measure. Practitioners who worked in hospitals and found themselves subject to extraneous directions by the coroner, who sought to lay down certain rules which he required to have observed concerning the death of people some days after admission to hospital or after operation, were deserving of sympathy.

Dr. D. M. THOMSON (Dartford) urged that general practitioners should be allowed to carry out their own post-mortem work. It should not be done by some one pathologist appointed by the coroner.

Dr. W. B. A. LEWIS (Shropshire) said that as a general practitioner part-time coroner he had much sympathy with the motion. In his experience he had asked general practitioners to perform post-mortem examinations; some had not liked

l these were allowed to refuse. On one occasion he asked general practitioner to carry out a post-mortem examination, and he reported that he could not find the cause of death, and asked the speaker to make an examination, which he did, and could not find out the cause of death either. It seemed ridiculous to expect this very specialized branch of work to be carried out by the general practitioner. There were cases in which the cause of death was so obscure that it was nonsense to expect the general practitioner to express an opinion. It might not be generally known that a practitioner might claim a fee of half a guinea if, at the coroner's request, he gave an opinion as to the cause of death. The fee for a post-mortem was two guineas, and with attendance at inquest three guineas, with mileage. He agreed that this was quite inadequate remuneration for a trained pathologist. He did not believe that an inquiry instituted by the Council would lead to any result. The position could be altered only by legislation.

In 1936 there was an inquiry into the matter, but no legislation followed, and the coroner was left *in statu quo*.

Dr. WAND said that conditions varied in different parts of the country. He would like to accept the Hendon motion on condition that Dr. Forbes, who knew more about the problem than most people, wrote a memorandum for the guidance of the Council.

Dr. FORBES said that it was true that conditions did vary, and there were coroners and coroners; nevertheless, the time had come ripe for a procedure of this kind to be taken.

The motion was carried.

SPECIAL PRACTICE

Mr. A. H. BURGESS, chairman of the Special Practice Committee, introduced the sections of the report under this heading.

Dr. H. M. BIRD (West Suffolk), on the question of the status of the Consultants and Specialists Group Committee, moved that local meetings of consultant and specialist groups should be open to all such consultants and specialists, whether whole or part-time. It had been the practice in the past in certain local meetings to debar consultants and specialists who were also general practitioners from attending.

Mr. BURGESS said that the practice varied. In Manchester all consultants and specialists were invited to the meeting, though only whole-time consultants were entitled to vote. There were now some ten Group Committees in the Association, each representing some special type of practice, and the eleventh was in process of formation. Recently the Consultants and Specialists Group Committee resolved that those representing all types of consultant and specialist practice should be granted the right of approach to the Council direct rather than indirectly through the Special Practice Committee, and the Council's view was that the best way of dealing with the situation was to constitute a new committee and make it a standing committee.

The West Suffolk motion was carried as a reference to Council.

Part-time Consultants and Specialists

Dr. HOWIE WOOD said that the Isle of Wight, whilst approving para. 51 of the report, relating to part-time consultants and specialists, moved a resolution requesting the Council to take the action which was urged by the last Annual Representative Meeting in order to allay the present widespread apprehension—namely, to inform part-time consultants and specialists on hospital staffs that steps were being taken to safeguard their position and future employment. He apologized for returning to this thorny subject. He thanked the Council for the well-documented statement which had been furnished in the report, but he wished to remind the Council that the Representative Body had expressed the view that the position and future employment of part-time consultants and specialists on hospital staffs should be safeguarded, and that the Council should take measures to achieve this result. There was representation of part-time specialists, which was a good thing, but the Council was also asked to furnish a statement of what was being done at the present time to safeguard the interests of these people. The Council seemed to shy from this position like a startled horse.

Mr. A. S. GOUGH (West Hertfordshire) said that the Council had taken this matter quite seriously. The new Group Committee gave part-time consultants a definite position. In future

they all stood as one group. The fact that they were part-time meant no differentiation in the eyes of the committee. The part-time consultant and specialist had not been defined, and could not be, but they were asked to elect him in their areas to represent his category.

Mr. C. E. BEARE (Reigate), in supporting the motion, said that the tendency of the National Health Service would be to divide them into common-or-garden general practitioners—general sorters—and specialists. It was important to encourage the part-time specialist.

Dr. H. W. BOWYER (Bolton) said that in his town there were 14 honorary part-time specialists—general practitioners—out of a total personnel of 42, and these had 60,000 patients out of a population of 170,000. More than a third of the members of the profession and more than a third of the population were affected by this position. These honoraries wanted to know whether they were eligible for compensation for their general practice if they elected at hospital the consultant side.

Dr. W. D. STEEL (Worcester and Bromsgrove) said that in his town they were anxious that the interests of the part-time consultant should be properly watched. How were the five part-time consultants and specialists to be chosen for the Consultants and Specialists Committee out of the enormous number of such persons?

The CHAIRMAN OF COUNCIL said that part-time consultants were being given representation on the Consultants and Specialists Committee. But what Dr. Howie Wood was really asking was their position in the new service, and that was what no one could say at the moment. The terms and conditions in the new service were not known. The Council understood the position of the part-time men and was prepared to look after it properly when the question arose.

Mr. BURGESS said that every suggestion concerning the part-time men had received consideration and, if approved, had been passed on to the Council.

Dr. HOWIE WOOD thanked the Chairman of Council for his statement. There was widespread apprehension that the Government intended to abolish the part-time consultant, and that they would be given the option of either becoming whole-time consultants or general practitioners. His motion implied no reflection on the Council.

The Isle of Wight motion was carried.

Consultants and Specialists and the National Health Service

Dr. R. S. P. BEGG (Harrow) drew attention to one of the proposed safeguards for consultants and specialists which the Negotiating Committee had been asked to consider—namely, "Consultants should be available under the scheme for domiciliary work only within the district they serve"—and proposed to add, "unless the consultant himself wishes to call in another consultant from outside the district." It should be the privilege of the visiting consultant to call in any other consultant, whether outside his district or not, for the benefit of the patient.

Mr. BURGESS said that he was willing to accept as a reference to Council a motion in the sense that Harrow wanted. The decision as to the boundaries of areas did not remain with them, it was a matter of regulation.

The Harrow motion was carried as a reference to Council.

Free Choice of Consultant

Dr. W. D. STEEL (Worcester and Bromsgrove) proposed to add certain words to another of these "safeguarding" clauses—namely, the one which said there should be freedom of choice of consultant within prescribed limits. The words he proposed to add were, "but in the case of ambulant or movable patients there should be complete freedom of choice of consultant." At present a general practitioner had the right to refer his patient to any consultant he wished. Under the new arrangement it would appear that the general practitioner would be tied to the consultants available in the region where the patient lived. The patient might desire for various reasons to have a consultation with a specialist outside the region, or he might move his residence while under treatment. It should be possible for regulations to be made that where the patient could be moved he should have free choice of consultant.

Dr. G. P. WILLIAMS (Cardarvon and Anglesey) said that another aspect arose in what he might call under-specialized areas such as his own in North Wales. In a sparsely populated

district there was special need for defending the freedom to send the patient outside the district. Wales was likely to become one region, and it was feared in North Wales that the result might be to cut them off from their fruitful contact with Liverpool. Obviously, for geographical reasons, they could not send their patients from North Wales to South. Mr. Bevan had said that a plan would be worked out for Wales which would command universal approval. "But my fellow-countryman's idea of universal approval may not be ours."

Dr. R. G. GORDON (Bath) supported the motion on behalf of spas and health resorts where people were sent for special treatment.

Mr. BURGESS accepted this on behalf of Council for further consideration by the Negotiating Committee. He thought that if it could be arranged it would be a very good thing.

The motion was carried.

Examination of Pensioners referred to Specialists

Dr. J. WILKIE (Lancaster) moved the reference back of the first part of para. 53 of the Annual Report, relating to the approval of a revised scale of fees to be paid by the Ministry of Pensions for cases referred to specialists. He had never been able to understand on what basis sessional payments were assessed. Was it on a time or a case basis? What was a whole session and what a part session? He could not understand the differentiation in payments. If payment was on an item basis, each comparable item must be paid at the same rate. In recent years there had been a deplorable tendency to pay 10s. 6d. for one examination and two guineas for eight. That happened in the case of examinations for the Ministry of Labour and for fire watching. If a tapering scale was approved it would be a dangerous precedent because Mr. Bevan would be led to believe that they were ready to accept it for the general practitioner.

Mr. BURGESS said that these were not sessional fees but fees per case; but he was willing to take the passage back for reconsideration.

This was agreed to.

The "Open Door"

Dr. H. M. BIRD (West Suffolk), with reference to para. 57 of the Annual Report, concerning access to ancillary departments of hospitals, moved:

That experience having shown that the advantage of the policy of the "open door" outweighs the disadvantages, it should be adopted as a uniform system throughout the country.

The principle of giving full facilities for pathological and radiological investigations and for services like physiotherapy to every general practitioner in the country without the intermediary of the out-patient department was very important. This method of the "open door" was adopted in West Suffolk 25 years ago, and they had had no reason to regret the decision. It had given the general practitioner an opportunity of treating his cases intelligently. He had been able, at his own direct request, to get any investigations he wanted done. It had saved the out-patient department from being flooded out, and it saved the patient a long and tedious wait.

r. TALBOT ROGERS (Bromley) said that in Kent during the few years they had had a committee which combined representatives of the voluntary hospitals and of the county council for the purpose of planning a hospital service. In its report it advocated an "open door" policy. A pathologist of a voluntary hospital objected to one observation in the report, and said that in his view only certain simple investigations, such as blood count or sedimentation rate, should be available to general practitioners, and that pathological investigations in general should be carried out by those familiar with the indications for their employment and with the interpretation of their clinical significance. He was happy to say that that opinion was rejected by the committee, and rejected most emphatically by the medical officer of health, whose experience was that there was no abuse of the facilities by general practitioners.

Dr. W. GUNN (Greenwich and Deptford) did not consider the "open door" policy wise or safe. The increasing flood of work it would bring to the ancillary departments would lead to a situation where opinions would be given by technicians, not checked by specialists at all. He did not doubt the

competence of the general practitioner to interpret the report but he was afraid he might not get the proper facts.

Dr. F. M. ROSE (Preston) said that there was a tendency for specialists to be very jealous of their own particular domain. He came from an area where these facilities were fully available and were used wisely. There had been no breakdown and the matter had worked very satisfactorily. But he knew of another area in Lancashire—Stockport—where these facilities were not available and the doctors there had many difficulties.

Dr. W. E. DORNAN (Sheffield) said that for 20 years the "open door" had been available in the radiological department to any practitioner in his city. This was not abused by the general practitioners concerned. In Sheffield also pathological facilities and physiotherapy arrangements were available.

Dr. J. A. IRELAND (Shropshire) said that he could never accept the implication that the general practitioner was unfit to send anyone to the special department unless the patient passed through the "usual channels." The "open door" should be strongly supported.

Dr. R. O. EADES (East Suffolk) said that the mover of the amendment, his colleague of West Suffolk, and himself in East, were in areas where these facilities were available, and there had been no difficulties. The pathological services during the war were supplied by the E.M.S.

Dr. C. M. STEVENSON (Cambridge) said that the "open door" was not in operation in his town, and he was at a distinct disadvantage in endeavouring, for example, to get an x-ray report. Dr. H. J. COCHRAN (Burton-on-Trent) said that surely the technician would in nearly all cases perform the necessary tests. The interpretation of the test would be done by the doctor and the consultant. Dr. H. S. PASMORE (Kensington) thought that the "open door" method should be supported if only to save the time of their patients. Dr. HUNTER (Plymouth) said that the radiologist and the pathologist were consultants. They should not be regarded as "machine minders." The general practitioner was entitled to their opinion direct without the intermediary of hospital staff.

Mr. BURGESS explained that this question was brought to the Special Practice Committee by the Consultants and Specialists Group, who felt strongly that if the "open door" policy was widely adopted it would lead to such overcrowding of the special departments as to make them almost unworkable. The matter was referred to the Group Committees. The radiologists were equally divided; the pathologists were definitely in favour of the "open door." The matter was then referred to the Insurance Acts and General Practice Committees, and the "open door" was strongly favoured by both. The Council was advised to favour its adoption as an experiment. He was not prepared to recommend it as a uniform system throughout the country, though he thought it should be given a trial in certain areas.

The West Suffolk motion calling for the "open door" as a uniform system throughout the country was carried.

Post-mortem Facilities

Dr. I. G. INNES (East Yorkshire), on para. 129 of the report concerning inadequacy of facilities for post-mortem examinations in many parts of the country, asked the meeting to express disagreement with the principle that the decision as to who is a competent medical practitioner to perform post-mortem examinations should rest with the coroner. He said that morbid anatomy was not a subject which a general practitioner could be expected to carry with him throughout life. If a general practitioner had a certificate that he was qualified to do post-mortem examinations the coroner should use him, but in general the pathologist was the proper person. The choice of doctor to carry out post-mortem examinations should not rest with coroners, at any rate not with lay coroners.

Dr. W. B. A. LEWIS (Shropshire) agreed that the proper person to carry out a post-mortem examination was a qualified pathologist. Post-mortem facilities in many places were extremely poor. There were places where post-mortem examinations were made in which it would be unseemly to perform an examination on a diseased cow. Dr. R. FORBES (Hendon) pointed out that the East Yorkshire motion failed to state who should make the decision. Many would like to see a panel of suitable practitioners set up in particular areas.

ut to pass an amendment of this kind would be of no value. he coroner was an officer who stood intermediately between the public and the medical profession, and he seemed the most appropriate person to select the individual to carry out the post-mortem examination when the cause of death was unknown.

Dr. INNES said that the coroner should not use the ordinary practitioner but should choose one who was qualified by his knowledge of morbid anatomy.

It was moved, and agreed, to pass to the next business.

The meeting adjourned at 6 p.m.

SECOND DAY

Wednesday, July 24

The representatives reassembled at 10 a.m., with Dr. J. B. MILLER again in the chair.

ORGANIZATION

In introducing the report of Council under "Organization," Dr. J. A. PRIDHAM, chairman of the Organization Committee, spoke with great appreciation of the work of Dr. J. C. Matthews, its predecessor in the chair, which he had occupied for 13 years. Dr. Matthews was still a member of the committee, and they had the great benefit of his advice.

The membership of the Association continued to grow; in 1944 there were 52,507 subscribing members, which was a record. In 1911, that other year of crisis, the membership was 25,000.

Expenses of Representatives

Dr. VAUGHAN JONES (Leeds) moved that representatives, members of Council, and members of standing committees and other Council committees should be paid a subsistence allowance of one guinea a day or part of day on which they attended a meeting. This subject was reported on by Council in 1944, when it was decided against paying subsistence allowances, but in raising the matter again he suggested that the cost would not be prohibitive. The guinea would cover only expenses, not loss sustained by absence from practice, and it would not detract from the dignity of being a representative or member. Representatives attending the Panel Conference were paid subsistence.

Dr. P. W. MATHEW (Eastbourne) suggested that the payment would place a large strain on central funds, and that the expenses should be defrayed by the Divisions out of local funds by means of a levy. This had been done during the last two years by his Division. Dr. R. WILLAN (Oldham) supported the Leeds motion. Non-payment of a subsistence allowance reacted unfavourably on the availability of younger members of the profession as representatives. The Association prided itself on being a democratic body, but that was not entirely the feeling in the constituencies, where younger members felt themselves to be inadequately represented. He was against a local levy, because this was a matter affecting not the Divisions but the whole Association. Dr. J. GRIFFITH JONES (North Glamorgan and Brecknock) said that the ability to bear the expense of coming to town was often a criterion in the selection of representatives. Mr. C. E. BEARE (Reigate) thought it would be an unwise procedure for representatives to be subsidized by a central fund, but there might be a local fund on which it would be optional for representatives to draw.

Dr. PRIDHAM was in favour of a voluntary payment by Divisions. For 114 years the Association had been built up and its prestige increased as a result of the voluntary work done on its behalf. It was a pity if everybody wanted to receive financial recompense for everything they did. It was an honour and privilege to represent the Division, and it was not all give and no take, for it brought one in contact with one's fellows, and one went back with increased knowledge and possibly increased prestige.

A proposal to meet the expenses by a local levy was rejected, 84 voting in favour and 98 against.

The TREASURER (Dr. Bone) said that the effect of the Leeds motion would be to add £1,100 to the expenditure on a Representative Meeting, and the cost of Council and standing committees would be increased by £4,000. He reminded the meet-

ing of the heavy commitments of the Association in connexion with the National Health Service Bill, the post-war programme, the increase of staff, the schemes for regional development, and the establishment of a medical abstracting service. He suggested that the subject be referred to Council for examination and report by a committee with a view to an accurate estimate of cost.

The Treasurer's proposal to refer the matter to Council was adopted.

A motion by South-West Essex that all nominations of candidates for elections to seats on committees voted upon at the Representative Meeting should be published three weeks prior to the meeting so as to avoid a "blind vote" was lost. Dr. PRIDHAM suggested that this would favour the older men and prejudice the younger, who after making the acquaintance of the Representative Body were sometimes elected there and then on to committees.

Affiliation with South Africa

Dr. PRIDHAM brought forward for approval a scheme of affiliation with the Medical Association of South Africa. He reminded the meeting that at the request of the Federal Council in South Africa the Council in June, 1945, gave notice to terminate the agreement entered into in 1927 under which the Branches of the Association in South Africa acted as a corporate group of Branches within the Association. The problems in South Africa were different from those in some of the other Dominions, and it became obvious that the Medical Association of South Africa would have to move in this direction, and no exception was taken to it on the part of the B.M.A. The agreement came to an end on December 31, and from that date the Medical Association of South Africa achieved independence and self-government. A strong desire was expressed on the part of the Federal Council, however, for close relationship between the two bodies, to be effected by affiliation. The Council thereupon submitted to the Federal Council proposals for affiliation based to a large extent on the Canadian model, but introducing a proposal that there should be created a new class of membership under which membership of the Association affiliated to the B.M.A. would *ipso facto* constitute affiliation membership of the B.M.A. The affiliated member would be under no liability as regards subscriptions to the B.M.A.; he would be accorded the privileges of an ordinary member of the Association (other than the supply of the *British Medical Journal* and the right to vote at meetings of local units)—in other words, he would be entitled to attend meetings of local units of the B.M.A. in the area where he was temporarily resident, to attend the annual scientific meetings, to use the Association's house and library, and to have the help of the central staff in professional matters.

The Federal Council in South Africa had accepted in their entirety the Council's proposals for affiliation, and had suggested—and the Council here had agreed—that unattached members should not have the right to form a Branch of the B.M.A. within an area in which the Medical Association of South Africa operated, and, *vice versa*, that there should be some form of liaison between the two bodies, such as the nomination of a representative of the affiliated body to the Dominions Committee, and the appointment by the Central Council of an "observer" at meetings of the Federal Council in South Africa. The Federal Council in its letter had stated, "I can assure you that there is a keen desire to keep up a link with the 'parent body,' as your Association has been affectionately known, and the large number of our members who have retained their subscription to the *British Medical Journal* is a token of this desire." Dr. Pridham added that he was proud to be able to present the articles of affiliation between the friendly Medical Association in one of the great Dominions and the B.M.A.

Prof. J. F. BROCK of Cape Town, chairman of the Negotiating Committee in South Africa, said that he would convey to South Africa on his return the cordial spirit in which these proposals had been accepted. There was no question about the sincerity of the desire in South Africa for close affiliation with the B.M.A. The proposal for the "break-away" came in the early years of the war, but was generally disapproved at that stage in spite of the fact that it had to come sooner or

later. They did not wish it to take place during the war, and the issue was shelved until the war was over. It was the sincere desire of the Medical Association of South Africa to do all it could to create and maintain close links with the parent body. (Applause.)

The CHAIRMAN OF COUNCIL, as representing the practitioners in this country, welcomed the Medical Association of South Africa as a sister association. The B.M.A. had, or had had, Branches in every Dominion and Colony, and as some of these reached "dominion status" the parent was only too willing to see them achieve a friendly independence. He added that the B.M.A. had a membership in South Africa, before the "break-away," of 2,400. These ceased to be members on December 31, but 900 had taken out membership again in the B.M.A. while retaining, of course, membership of the Medical Association of South Africa. The membership figure of 52,500 just quoted by Dr. Pridham was computed after this loss of 2,400 and gain of 900. They welcomed South Africa as a grown-up daughter.

The recommendations of Council on this matter were approved.

Regional Organization

Dr. J. HALLAM (North Staffordshire) moved that in view of the possibility of the National Health Service Bill in its final form being unacceptable to the profession, the Council should take further steps towards decentralization of the Association by the provision of local organizers, either medical or lay, on a regional basis. He was casting no reflection on Headquarters, but it had been felt that Headquarters was overburdened with work. A committee set up some time ago to consider Association machinery had accepted the idea of decentralization and discussed ways and means, but little further progress could be made because in the existing situation the right men were not available. Since then the situation had changed materially, and his Division felt that the matter had become one of urgency. Whether they liked it or not, they had to face the fact that there was a considerable amount of apathy, and the apathetic sections of the profession were those, unfortunately, by whom they might have to stand or fall. Some attempt should be made to get these people into the fold as active members. A central organizer should be installed in each region. To expect the work to be done by the members of Council representing the various grouped areas was unreasonable—it was a full-time job.

Dr. A. V. RUSSELL (South Staffordshire) associated his Division with the motion. Mr. LAWRENCE ABEL (Marylebone) moved an amendment to omit the word "decentralization" and, instead of asking for medical or lay organizers, to ask for organizers, preferably medical. Mr. ERIC STEELER (Marylebone) seconded.

Dr. F. E. GOULD (Birmingham) pointed out that regionalization was already the policy of the Association and was under discussion by the Organization Committee. Dr. E. B. SMITH (Nottinghamshire) supported the proposal for regional secretaries. Dr. PRIDHAM said that a year ago a scheme was brought forward, but at the last moment was turned down, certain objections to it being pointed out. The matter was well in the mind of the Organization Committee and of the Council. A great deal could be done by group organization.

The SECRETARY (Dr. Charles Hill), at the request of the Chairman, made a statement on the present position at Headquarters. It was decided some time ago to increase the medical staff at Headquarters by two medical assistant secretaries, and with that increased staff to allot a certain proportion of the time of the whole of the six medical secretaries to regional activities. It would be possible from the end of September to begin the actual work. The plan proposed, which would be developed in the light of experience, was that the country should be divided into five regions, and that to each region an assistant secretary should be allocated. His or her task would be in the first instance, through conference with Division secretaries, to become acquainted with the secretaries' problems, to be available to address meetings in the Divisions, to stimulate inactive Divisions, and generally to be of service to Division secretaries and executives. Admittedly at the outset the position was one of compromise. The central staff would divide their time between the head office and the regions, but in the light of experience and within the limits of the available time

the services of the members of the central staff would be available to all the regions on a basis of allocation of one assistant secretary to each region. It was hoped to arrange from the outset for regular and quite lengthy visits by the respective secretaries to the regions under their care.

Dr. HALLAM said that his was a "gingering" resolution. It was no use having secretaries trained who would be of use in two years' time; the next eighteen months was the critical period. Nor were six secretaries and five regions sufficient; his Division's suggestion was ten. What was wanted was someone on the ground permanently.

The South Staffordshire motion was carried in the following form:

That in view of the possibility of the National Health Service Bill in its final form being unacceptable to the profession, this meeting is of opinion that the Council should take further steps to arrange for local organizers, preferably medical, on a regional basis.

THE NATIONAL HEALTH SERVICE BILL

At this point, by previous arrangement, the business under "National Health Service" was taken.

Dr. N. E. WATERFIELD proposed that for this business the Representative Body should go *in camera*. The motion, however, was resisted by the CHAIRMAN OF COUNCIL, who declared that there was nothing they had to say which could not be said in public and to the public.

By a very large majority it was decided that the debate should take place in public.

Chairman of Council's Statement

The CHAIRMAN OF COUNCIL prefaced the debate with a lengthy statement, which is printed in full in this week's *Journal* at page 168.

Discussion

Dr. D. C. BARRON (Sheffield) said that he agreed entirely with what the Chairman of Council had said. He thought it would not be quite fair to have a referendum of the whole of the members before some further guidance was given by the Representative Body. The feeling in his Division was that without such guidance they would be apt to get from many members no reply at all.

Dr. R. W. COCKSHUT (Hendon) said that if there were representatives in that assembly who did not agree with what the Chairman of Council had just said that was the time at which they should get up and say so. It was no use applauding Dr. Dain and at the same time harbouring reservations in their mind and saying something different in the Divisions. Mr. Bevan was a charming and brilliant man, strongly convinced concerning the ends he had in view, though perhaps not careful enough of the means whereby he gained them. He was no village tyrant, but a big man on a big errand, and if the profession was going to stand in his way, as the speaker hoped it would, it meant a very grave decision. Mr. Bevan would stick to his guns; they must stick to theirs.

Dr. J. C. ARTHUR (Gateshead) said that this matter looked as if it was going to come to a fight. In winning a fight one of the most important things was timing. Up to the present there had been no fight at all; only an exchange of diplomatic preliminaries. So far as the general practitioner was concerned, the time to fight was when he was required to sign on for this Service. What they had to concentrate on was being ready for the fight at the right time. He believed that practically the whole profession was agreed as to the rightness of the principles they had laid down, but a certain number of men would like to know more before committing themselves to an out-and-out fight. When this Bill became law the whole profession should be asked, "Do you wish us to go on and negotiate terms of service without prejudice to acceptance, or do you regard the whole thing as so unacceptable that nothing at all should be done about it?" If the latter view prevailed they must start very soon to marshal their forces. But if the majority of the profession desired that terms of service be negotiated, it would be possible to negotiate them and then present the profession with the complete picture and ask its decision.

Dr. S. F. L. DAHNE (Reading) said that the meeting should back Dr. Dain and the Council absolutely. The choice was a very simple one—between good and evil.

Flouting the Law

Dr. G. P. WILLIAMS (Carnarvon and Anglesey) said that the ill was very nearly law, and he did not think any section of the community should flout the law, however much they might object to it. There should also be taken into consideration what was at stake for the average general practitioner if he refused to work the Act. To the younger men, with no great margin of solvency, the issue was extremely important. They would lose their panel fees, which were a standby, and would have to exist for an indefinite time on the private fees which they might earn while opposing what had become the law of the land. He was second to none in his objection to many parts of the Bill, but once it was law they could not afford deliberately to oppose it, any more than the master bakers could oppose bread rationing. What mattered to 99% of general practitioners in this country was whether they were going to make a living wage.

Dr. W. S. MACDONALD (Leeds) said that once more he had the temerity to put an opposite view to that of the Chairman of Council. Dr. Dain had said that what they were considering was the progress of medicine and the welfare of the patient. But that was also the professed objective of the Government, so why was it impossible to play together in the same team? The profession had a real responsibility to the public, and he suggested that the main difficulties of the Negotiating Committee in meeting the Minister were not due to the fact that the Minister was himself somewhat difficult to negotiate with. The Minister represented the Government, and the Government was supported by a Parliament recently elected by the public, of which the profession was only a section. If they were going to over-emphasize the difficulties which they as a profession had with the Government, inevitably they would come into greater difficulty, and the result would not be to the credit of the profession.

Mr. C. E. BEARE (Reigate) said that it was not a question of flouting the law. They were given the option of coming into the Service or standing out, and if they did the latter they were not flouting the law.

Dr. J. A. BROWN (Birmingham) said that some misconstruction might be put upon one thing that Dr. Dain had said. He had said that those who were Socialists and voted for the present Government would agree to work the Act, while those not Socialists would not. He was sure Dr. Dain had no intention of making this a political issue. Their action had nothing to do with their politics; the only consideration was the health of the nation and the freedom of the profession.

Dr. H. S. PASMORE (Kensington) said that the recent Special Representative Meeting arrived at clear-cut decisions, and he did not know why they were discussing this matter at all. None of their principles had been accepted by Parliament. The fight, therefore, was on. The medical profession was one of the bodies of relatively free men left in this country. Let them keep the right to carry the torch of freedom through these difficult years.

At this point Dr. J. A. BROWN again proposed, and Dr. COCKSHUT seconded, that the meeting go *in camera*, but Dr. DAIN urged that the discussion continue in public. This was a national matter of great importance and they had nothing to hide. Dr. E. A. GREGG thought it would be most unwise, having gone so far, to declare that now they wanted to talk privately. It would give the impression that they were afraid of something, and they were afraid of nothing. If there were some in the hall who wanted to say something contrary to what had been said it would be cowardly if they did not say it. Dr. S. WAND supported the proposal to go into committee to discuss some domestic matters arising out of the resolution before the meeting.

The meeting again decided that the discussion should continue in public.

Dr. R. G. GORDON (Bath) said that there were two points which he would like Dr. Dain to make perfectly clear. His own Division was of opinion that a referendum should be taken soon. The principles already established must be taken together, especially three of them relating to general practitioners—namely, those referring to the buying and selling of practices, to direction, and to salary. These hung together.

It must be made perfectly clear that in objecting to Government action in these respects they were not letting down their patients, that they were still going to serve their patients, and that the patients themselves would suffer if their principles were weakened. In relation to consultants and specialists Mr. Bevan had tried to split the profession, and many consultants and specialists found the hospital service terms somewhat attractive. The question of ownership of hospitals was regarded by many people as not entirely a medical matter. Were they going to include in those principles which hung together this further question of the ownership of hospitals, which was bound up with the question of entrance into the Service of consultants and specialists?

Mr. R. SCOTT STEVENSON (Gibraltar) said that the question to be put to the profession was a simple one, needing a clear-cut answer. It was not a case for another elaborate questionnaire. He begged the meeting to abide by the results of a referendum, which should be taken as soon as possible.

Dr. H. H. GOODMAN (Newcastle-upon-Tyne) said that Dr. Dain had mentioned four points; he would have liked him to add two more: that both doctors and patients who remained outside the public service should not be penalized, and that there should be no penal clauses of a criminal kind in the Bill. He thought that the lead should be given now and not later. The Bill would be implemented very insidiously, and a good many doctors would be caught up quickly in the maelstrom. The Council had its full instructions at the recent S.R.M. Dr. F. ROBINSON (Swindon) said that the talk about flouting the law was a red herring drawn across the track.

Negotiations: A Query

Dr. E. A. GREGG said that the question had been agitating the minds of some of them as to whether the right time to make their decision was now or later on, when the whole picture could be seen and regulations were made under the new Act. He could not help feeling that the more they looked into the possibility of entering into negotiations regarding regulations the more completely would they realize that to do so would mean that they were beginning to work the Act. (Hear, hear.) They did enter into negotiations with the Ministry on what should be considered the capital value of their practices, and he had heard remarks that the doctors were treated generously. No such term was used at the time; an attempt was made to estimate what was the value of their practices, and perhaps they had been unwise to allow themselves to be led even into that. This was the moment of decision, but they must bear in mind that if they made the decision in one way it was going to mean something comparable to what Mr. Churchill promised when he took office early in the war—blood and tears and toil and sweat. In a word it would mean sacrifice, and it was for each of them to see that he shared in bearing the sacrifice of all.

The CHAIRMAN OF COUNCIL said that he had come to the conclusion that they had been wrong in entering into negotiations on the sum to be taken as compensation for loss of goodwill in practices. They had said quite plainly that they did not approve the principle of surrender of goodwill, but they could not get away from the implications of such negotiation, and when they were asked in the same way, without prejudice, to discuss the question of remuneration, he declared at once that it could not be done without involving them in undesirable implications. To discuss regulations "without prejudice" would be a fatal mistake. He was satisfied that if they allowed themselves to go into such negotiations on detail they would be giving way on their principles.

A good deal had been said about opposing the law. They were a profession of free individuals at the moment. They saw no reason why a State health service should not be still free for them to enter or not according to their own particular method of earning their living or their train of thought. He saw no sense in making the point that they might be opposing the law.

As to the suggestion that they should try to agree with the Minister, the Minister refused to play. The Minister said that there was "nothing doing" on principles. This Bill was a skeleton, to be carefully covered by regulations, so that its deformities were not at first revealed. To vary the figure,

it was a fence within which they would be invited to work, but from which it would be difficult to escape—very nice to work in, until one wanted to get out. The Minister had said that he proposed to set up regional boards forthwith. In his view the profession should take no part in the setting up of regional bodies until the Minister had conceded their principles.

Referendum or Plebiscite

Dr. E. W. GOODWIN (Leicestershire and Rutland) moved to recommend to the Council the desirability of circulating a referendum to each consultant and general practitioner when the time is deemed opportune.

"The referendum should seek to ascertain whether the individual is willing to accept or not to accept service under the terms of the new health service. In addition it should point out that should the individual's reply be to decline service then such refusal should not be effective unless at least 75% of the replies are against accepting service. This figure of 75% should apply to the area of each individual Branch and also to the total number of Divisions or Branches in the Association."

Dr. Goodwin said that if members were willing to sell their practices to the Government on the Government's terms and conditions, to work in a Health Centre owned, staffed and equipped by the local authority, to be paid partly by basic salary and partly by capitation fee, to go cap in hand to a committee for permission to leave one place of practice for another—in a word, if they were willing to become an impersonal cog in a bureaucratic machine—they would have no hesitation in accepting service under the new Act. But if they detested all these things, but were forced by stern necessity to make an adequate living, what were they to do and what was the alternative? The first essential was the unity of the profession. It was with a view to ascertaining the true feeling of practitioners that the second part of the motion was inserted, so that the fear of consequences and possibility of duress could not operate.

Dr. A. BROWN (Cambridge and Huntingdon) moved as an amendment:

That a referendum of the whole profession should be taken now on the simple issue whether negotiations with the Minister on regulations should take place or not.

He did not think they had any right to say what was the opinion of the majority of the members on this matter. He agreed that they should have at least 75% of the members unanimously in favour of refusing service before they asked anybody to refuse service. Dr. C. M. STEVENSON (Cambridge) thought that there must be two referendums—the first on the question whether or not to negotiate, and the second, to be taken next summer or autumn, on the question of acceptance or refusal of service. Dr. R. O. EADES (East Suffolk) said that there was hurry in this matter. The Minister was not slow. In his own area the Minister had already got a skeleton advisory board. Dr. A. G. HOLMAN (East Norfolk) supported the amendment. The time was ripe for a referendum to the profession.

The CHAIRMAN pointed out that at the recent Special Representative Meeting a resolution was carried that there should be a referendum. The only question now was as to its date and character.

Dr. LAURIE SMITH (Blackpool) could not agree that the referendum should be in two parts. His constituents felt that to send out a referendum to all practitioners in the country before they had received from the other side of the table any idea of how they were going to be remunerated was folly.

Dr. TALBOT ROGERS (Bromley) supported the idea of a plebiscite, but said that it should be taken after due consideration of what it was they wanted to ask their colleagues and after making quite certain that they realized the full implications of their answer. A number of them said they had not got the full picture. Admittedly there were some good things in the Bill, and a few good things had been added in the committee stage, thanks to their conversations with the Minister. It was quite possible that during the regulations stage they might get the Minister to listen to their experience, so that they might play quite a big part in the framing of workable regulations which would not penalize the profession. When the whole picture of the regulations was worked out the feeling of the profession could be tested. This matter

should not be entered upon hastily. A Special Representative Meeting should be called to decide whether to have a plebiscite and what should be its terms.

Two Referendums?

Dr. ROSS (East Hertfordshire) agreed with a previous speaker that there must be two referendums. Practitioners had a year and a half in front of them before they decided what individually they should do. Dr. H. B. MUIR (Fife) said that among certain of the senior members in his Division he found a "Spens Committee narcosis" and "compensation jitters." Some of them said that while they stood by the principles they were afraid that for financial reasons they would be forced to accept service. Dr. HELME (Guildford) also felt that in all probability there should be two referendums—one taken immediately on the principle whether discussion regarding the formulation of regulations should take place and another later on to find out exactly what action might be determined on a measure which would then be law.

Mr. LAWRENCE ABEL (Marylebone) said that the Minister had at an early stage declared that there would be no negotiations. Dr. Dain had given them a fighting speech; he had reminded them of the main principles which were laid down on the last occasion. What, then, did they care for regulations? They would be only further fetters to bind them. To discuss now by referendum or plebiscite whether they should or should not enter into conversations with the Minister on something they were not going to accept at all was ridiculous. They had to distinguish between two lines of action—going further with a Minister who would not negotiate, and, alternatively turning the whole thing down. These regulations would be started in the autumn, and there would not be time to act on a plebiscite then.

Dr. F. GRAY (Wandsworth) supported the Cambridge and Huntingdon amendment except for the word "now" ("referendum . . . should be taken now"). The proper time to take this referendum was as soon as possible after the Bill became an Act, and this for two reasons. The Bill had still to go through the House of Lords, and while he would not raise any false hopes as to what might happen there, it would be impolitic to assume in advance that there would be no further amendments. They wanted this referendum to go on to a profession which would fully understand the issues and implications involved, and if they waited a short time—until approximately, the beginning of November—they would have an opportunity of bringing home to every member of the profession the importance of the issues and the seriousness of the decision which he was asked to take. The question to which they must have an answer was "Do you, or do you not, accept the main structure of this Bill?" Mr. C. E. BEARE (Reigate) considered that it was most important to take a plebiscite now to get full support for their principles. Dr. J. A. IRELAND (Shrewsbury) said that if they went on to discuss the question of regulations they would have accepted the Bill as it stood and would be committed indefinitely.

Timing of the Referendum

The CHAIRMAN OF COUNCIL said the problem was that of timing and the nature of the question to be asked. He suggested that it would be wiser to leave the timing to the Council to decide. They must discover from the members of the profession whether a sufficient number of them would be prepared to refuse service on the principles, or not to take service until the principles had been conceded by the Government. The question must be asked in such a form that a practitioner could say whether, because of the principles which had been adopted, there should be no negotiations on regulations, but those who said that must be prepared to act on it and to undertake that whatever regulations emerged they would still not be able to accept service because of the form of the Bill. It was essential to know before very long how their members stood with regard to the first question of adherence to the principles. As to the time, he thought the Council should be left to choose it—in the course of another six or eight weeks.

Dr. A. BROWN, the mover of the Cambridge amendment, said he was prepared to leave it to the Council as to when the referendum was taken, but it must be soon.

The CHAIRMAN OF COUNCIL: How are we to interpret the word "now" in the Cambridge amendment?

Dr. BROWN (the mover): "Soon."

The amendment:

That a referendum of the whole profession shall be taken soon on the simple issue whether negotiations on regulations with the Minister should take place or not

as carried. On its being put as a substantive motion, Mr. LAWRENCE ABEL (Marylebone) moved as a further amendment:

That this meeting recommends to the Council the desirability of the plebiscite including personal contact with each member of the profession as soon as this can be arranged.

He said that at first sight this looked as if Dr. Hill had got to knock on the front door of 50,000 doctors. But this work might be allocated among local "disciples." Mass meetings are less satisfactory; only 50% of the profession turned up, and that was the half already interested. Ten or fifteen men in each Division could surely be found who would undertake to contact every practitioner. The question was not one as to whether "twelve-and-six was going up to fifteen hoh," it was a question of sticking to principles. Dr. Dain wanted to know the date when the question should be asked, and the form of the question. Of course there must be no coercion, but each man must be made to feel that he was in the body of the profession and that his decision was important. The date should be fixed before the Minister started to form his regional boards; indeed, he was forming them already, and some of the "quislings" were already in office. The manner of the contact must be personal. A good deal of it could be done "at the back of the hall when Dr. Hill has done his stuff in twenty different districts on twenty consecutive days." (Laughter.) Let them give National Health Insurance the go-by for a year or eighteen months and go back to private practice. It would do the young men a power of good to go back to private practice and not to be able to rely on the Government cheque.

Mr. Abel's amendment was put to the vote and carried, 126 voting in favour and 71 against.

A REPRESENTATIVE: Is it humanly possible to carry out this amendment?

The DEPUTY CHAIRMAN (temporarily presiding): The actual thing that has been passed is the amendment, not the speech in support of it. (Laughter.)

When Mr. Abel's amendment was about to be put as a substantive motion, as a continuation of the Cambridge amendment "That a referendum of the whole profession be taken on the simple issue," etc., however, Mr. ABEL himself objected. He said that he was in a complete muddle over this. He did not know that his amendment was to be dovetailed into the Cambridge proposition. He thought they had better start again. His amendment was not to the Cambridge amendment, but to the original motion by Leicestershire and Rutland. The meeting had supported Dr. Dain in his plea for adherence to the principles, but now it was in danger of discussing regulations, which would imply acceptance of the Bill. He wished to withdraw his amendment.

The DEPUTY CHAIRMAN said that Mr. Abel was in the unique position of opposing an amendment which he had himself proposed and had succeeded in getting carried, but he was not out of order.

Mr. ABEL said that there had been a misunderstanding, and he asked the meeting to reject his amendment as the substantive motion.

The SECRETARY, who was asked to clarify the position, said that the meeting began with the consideration of the Leicestershire and Rutland motion. That motion was amended by Cambridge and Huntingdon, that a referendum of the whole profession should be taken soon on the simple issue whether negotiations on regulations should take place or not. On the substantive motion a second amendment was then moved by Mr. Abel which, on the interpretation of the Chair, amplified but did not remove the Cambridge amendment. Therefore, on the substantive motion the issue before the meeting was whether it approved the Leicestershire and Rutland motion as amplified by Cambridge and as further amplified by Mr. Abel's amendment. If the meeting accepted the view of Mr. Abel that his amendment destroyed the Cambridge amendment, it would reject the substantive motion now before the meeting.

If it desired Mr. Abel's amendment to be an amplification of the motion by Leicestershire and Rutland as amended by Cambridge, then it would vote in favour of the substantive motion.

The substantive motion was put to the meeting in the following form:

That a referendum of the whole profession should be taken soon on the simple issue of whether negotiations on regulations with the Minister should take place or not, and that the meeting recommends to the Council the desirability of the plebiscite including personal contact with each member of the profession as soon as this can be arranged.

This was carried.

Dr. G. F. BURNELL (Cornwall) desired to move a rider that the acceptance of an appointment to a regional board now should be regarded as the act of a "quisling," and the profession should be notified of this decision, but this was met by a motion to proceed to the next business, which was carried.

Suggested Covenant

Dr. F. ROBINSON (Swindon) moved that a suitable covenant should be drawn up by the Association and signed by all medical men as a guarantee of unity. He said that it would be impossible to build up any service unless the traditions of a free profession were behind it. His proposal would make it possible to deal with those people who were not prepared to stand by their principles. After a man had put his name to such a covenant he could be held to it by his Division. The covenant should emphasize loyalty to the Association, and it should be worked by the local secretaries. It would have no time factor, and it would be more binding than a referendum.

The CHAIRMAN OF COUNCIL said that he hoped this would be withdrawn. ("Hear, hear.") They did not want to harness to any kind of promise people who could not make up their minds. They wanted people with conviction. The proposer seemed to assume that an enormous number of people were waverers, ready to promise something and then not standing to it. He hoped that the next stage when the answer to the referendum was available might be left to the Council.

The motion was withdrawn.

Alternative Schemes

Dr. W. GUNN (Greenwich and Deptford) had a motion regretting that no reference was made to an alternative scheme for the treatment of patients in the event of the National Health Service Bill proving unacceptable, and suggesting that a list of practitioners be compiled who would undertake to refuse service provided a sufficient number gave a similar undertaking. This motion was before the recent Special Representative Meeting and referred to Council. He did not know what the Council had done about it. The second part of the motion was inspired by a feeling among some members of the Division that certain members would feel more confidence in standing out if they knew that their fellows were standing with them.

Dr. A. V. RUSSELL (South Staffordshire) asked that the following words might be added to the motion: "and that a brief and concise outline of an alternative service be prepared and issued to the press and public, together with a statement of those points in the National Health Service Bill to which the B.M.A. is unalterably opposed." It was not beyond the wit of man to devise a scheme. They had as a basis their own publications—the General Medical Service for the Nation in 1938 and the interim report of the Medical Planning Commission in 1942.

The CHAIRMAN OF COUNCIL said that the Council had not omitted to consider this matter, but on a certain scheme being put to Panel Committees there was no unanimity. Obviously this must be a short-term policy. Any deadlock would not continue indefinitely. To a great extent the ordinary methods of private practice might bridge the interval.

The motion was lost.

(Dr. MILLER at this point returned to the Chair.)

The Safeguarding of Private Practice

Dr. O. C. CARTER (Bournemouth) moved:

That for the safeguarding of private practice, whether general or special, an essential is the preservation of independent private

nursing institutions apart from the hospitals, and there should be no power vested in the Minister under a National Health Service Act to acquire such institutions without the consent of the owners, nor power to prevent the establishment of such institutions.

He said that this was a simple and straight-cut motion, and although it was the only one appearing on the agenda on the safeguarding of private practice, that in no way detracted from its great importance. On the previous day representatives had shown in a definite way that they considered that the preservation of private practice was of great importance. It was important in the interest of the progress of medicine, of the patients, and of the National Health Service itself. Private practice, like any other form of practice, had to be both domiciliary and institutional, and for a very long time there would not be sufficient pay-wards attached to hospitals to accommodate all those patients who wished to be treated privately. Furthermore, there would always be a certain number of patients who would wish to be treated in homes separate from the big institutions. They all agreed that there were a few bad private nursing homes, and the sooner they were shut the better. Indeed, local authorities had power at the present moment to shut homes that did not come up to the requisite standard. But the great majority were satisfactory and well run. It was those homes which would give specialists the added opportunity of practising privately, and would give general practitioners who were not in touch with hospitals the opportunity of treating their own patients when they were too acutely ill to be attended in their own homes. It was unlikely that the Minister would wish to take over many of these homes. This particular issue was raised on the committee stage, and the Minister said that the powers were necessary but would be exercised very rarely indeed. Here lay, however, a big danger. There were large private nursing homes which had been designed, built, and equipped as first-class private hospitals, where there was every modern facility for up-to-date treatment, and owing to the lack of general hospital accommodation the Minister, in looking round for additional premises, might find these institutions a very tempting bait. They were anxious that the "rare occasions" to which the Minister referred should not be reserved for the acquisition of these special homes.

Mr. DICKSON WRIGHT (Marylebone), in supporting the motion, said that nothing was so good for anybody as competition. The competition of these private institutions would be a valuable corrective to the Minister. It should be remembered that if he took over a nursing home it did not necessarily mean that it would be continued as a nursing home. He might make it a health centre or anything he chose.

The motion was carried.

A number of other motions were on the paper concerning terms and conditions under the new National Health Service. Dr. J. A. MACDONNELL (West Middlesex) moved, and Mr. B. HOLDEN (Macclesfield) seconded:

That in view of the decision of this meeting to await the result of a referendum on the question of whether or not negotiations with the Minister should take place on the questions of regulations, as most of these motions deal with regulations it is a waste of time for this meeting to discuss them.

This was carried, and the agenda under "National Health Service" was thereupon completed.

PUBLIC HEALTH

Dr. J. FENTON, chairman of the Public Health Committee, introduced the section of the Annual Report under "Public Health."

Remuneration for Part-time Employment by Local Authorities

He first moved, as a recommendation of Council, the substitution for the existing scales of new scales for the remuneration by local authorities of medical practitioners employed by them on a part-time basis. The new scales were set out at length in the Annual Report of Council (*Supplement*, April 20, p. 94). Dr. Fenton explained that the existing scale was issued in 1943, and he indicated the increases, in some cases considerable, in others modest, in the scale now proposed to replace it. The new scale had been approved by the Council, but it had not been discussed and negotiated with the associations of local

authorities. The 1943 scale was quite inadequate, and this represented a satisfactory improvement.

Mr. C. E. BEARE (Reigate) said that the fee for consultant and specialist sessions of two hours' duration was five guineas, which it seemed to him was insufficient. During such a session two major operations might be performed. He thought there should be a fee per operation.

A Brighton amendment expressing dissatisfaction with the scale was not carried.

Dr. I. G. INNES (East Yorkshire) had an amendment regretting the continued chaotic state of the scales of remuneration for practitioners on an item-of-service basis. He gave examples of the various anomalies. Dr. FENTON said that this was not a criticism of the new table but of another range of fees. A good deal of unification was, in fact, achieved in the new scale.

The amendment was lost.

An amendment by Hendon called for a fee of 5s. per injection for immunization at a doctor's surgery, and of 7s. 6d. a visit to the child's home for this purpose. The fees proposed in the scale were 3s. 6d. and 6s., respectively, the latter plus mileage. Dr. FENTON said that there was very little difference, and it would be a pity to disturb this carefully worked out scale for so small a thing.

This amendment also was negatived.

Salaries in the Public Health Service

Dr. FENTON, in moving approval of the formula agreed upon concerning salaries in the public health service (set out in paras. 58-62 of the Annual Report), said that this matter arose from an instruction given at last year's A.R.M. The Askwith agreement terminated on March 31, and it would take a considerable time before a further agreement was negotiated. In the meantime the Council had endeavoured to secure an interim percentage increase in remuneration equal to 30 per cent on salaries of under £1,000, and 20 per cent on salaries of over £1,000. At a conference with associations of local authorities they were offered a 30 per cent. increase on salaries of £700 and under, 20 per cent. on salaries of between £700 and £1,000, and 10 per cent. on salaries of over £1,000. They had accepted this because, although it was not what they asked, it did bring relief to the people about whose position they were most concerned. The acceptance of this interim arrangement had been without prejudice.

Dr. H. M. TURNER (Sheffield) moved to express dissatisfaction with the result of the negotiations on the interim revision. The lines on which these negotiations were conducted should not serve as a precedent. There was no reason why the approach should not have been made much earlier. The conference itself was badly arranged, for a small delegation representing the B.M.A. was confronted by almost a mass meeting of associations of local authorities, so that the B.M.A. was placed in the position of a suppliant deputation asking for an improved wage from employers. Again, from a psychological point of view, it was wrong that the delegation should have been led by a full-time officer of a local authority. He was casting no reflections upon Dr. Fenton, whom they all liked and admired, but there was plenty of other talent on the Council, and some man who was not and never had been in an employed position to a local authority should have led the delegation. The proposals originally put forward by the delegation were too complex. They embodied the principle of differentiation of percentage increase according to salary, a principle never accepted by the profession, although established by the Treasury. The delegation should have asked for a flat percentage increase, and any negotiation should have taken place merely on the figure. The outcome of the negotiations was a most complex schedule, operating hardly upon senior clinical officers. The senior clinical officer of specialist status who might have the highest qualifications, and who pre-war was paid £1,250, was not entitled to any increase under this award. Dr. Turner went on to say that the B.M.A. had never taken a proper interest in and care over negotiations of salaries for whole-time clinical officers, such as these officers were entitled to expect from the Association, and it was felt at the present time, when more important negotiations were pending, that it would be well for the Council to overhaul its negotiating machinery both in its actual form and in its less tangible aspects, so that there should be no repetition of this type of negotiation.

f negotiations in future were conducted in the same spineless manner the outlook was a little bit bleak.

Dr. J. HALLAM (North Staffordshire) agreed with the Sheffield criticisms. It appeared that the only people to benefit from these interim scales were those who were not able to meet their financial commitments. His Division, of course, had every sympathy with these men, but it seemed a little bit hard that no arrangement had been made in connexion with the others. He was informed that at a meeting of county medical officers of health it was ascertained that, out of 22 present, only 2 benefited in any way from these interim awards.

Dr. SMITH (Lanark) hoped that steps would be taken to make similar scales applicable to Scotland. Dr. H. B. MUIR (Fife) said that no doubt the committee had made the best of a bad job, but it was a pity, especially at the present time, that the committee accepted interim proposals which would prejudice the negotiations for a final agreement. Dr. COOKE (Derby) also expressed dissatisfaction with the scale. He hoped that pressure would be applied to obtain an early agreement on new "Askwith" scales. It had been stated that this interim agreement would continue for two years, which was a long time for an inadequate award. Could not the introduction of the new scale be accelerated?

Dr. FENTON replied that, with the settlement of these proposals, steps would be taken to secure their application to Scotland. The Sheffield representative had made his criticisms in a pleasant way, but they were not all justifiable criticisms. He had objected to the methods of approach. Last March they approached the Minister of Health with regard to the interim awards, and he called a local authorities' conference. It was difficult to see what objection there could be to that. It was said that the Association's delegation was a small one of six or seven, whilst there were 40 or 50 on the other side. That was true, but it was an advantage to have representatives of all local authority associations present. Every association of local authorities had accepted the agreement. Another objection was that it was unfortunate that the delegation should have been led by a whole-time medical officer of health (himself); but as a matter of fact the delegation was led by Dr. Dain, and in the public health service they were very grateful that he should have come and lent it prestige. It was also said that the negotiation was "spineless." Dr. Hill was there and took part in it, and none of them thought it spineless. If they were not satisfied with the result, they got the best they could.

The Sheffield amendment was lost, and the appropriate section of the Annual Report was approved.

National Maternity Service

Dr. FENTON next moved approval of the part of the report which recounted the meetings with the Royal College of Obstetricians and Gynaecologists concerning the conflict between that body and the Association over the practice of midwifery by the general practitioner. It had been the policy of the committee to secure that there should be no new criterion whereby general practitioners might be prevented from entering the midwifery service.

Dr. R. FORBES (Hendon) moved:

That the Council be instructed to oppose the introduction of new criteria of qualification sponsored by the Royal College of Obstetricians and Gynaecologists or the Ministry of Health, which would have the effect of precluding any competent general practitioner from engaging in the practice of midwifery among public or private patients, if and when he so desires.

It was felt by Hendon that the Council had failed to give further support to the proposition that was accepted by the Representative Body last year, and it was desirable that they should say it again, and in definite terms. They were conscious that if the criteria such as were foreshadowed by the Royal College were adopted and applied, even if only to a section of the profession engaged in the public service, it would not be long before they were made of more general application. It was essential to retain all that had been gained by simple admission to the *Medical Register*, and the introduction of new criteria must be resisted.

Dr. G. PRIESTMAN (Bradford) moved to reaffirm the resolution of the A.R.M., 1945, pledging the Representative Body to resist the introduction of any new criteria of qualification in

midwifery that would, if officially recognized, deprive any registered medical practitioner of the right to practise midwifery in a national service, and to add the following rider:

That this meeting considers it irrational that a student should be instructed and qualified to practise in midwifery, and subsequently be refused permission to practise that subject without further instruction following qualification.

The recommendations of the Royal College cut into the whole idea of the relationship of the family doctor to his patient. In the proposed general practitioner hospitals there should be a number of beds set aside for maternity purposes. They would be under the direction of an obstetric specialist, but the visiting general practitioner could conduct the cases.

Dr. Priestman agreed to withdraw his amendment in favour of that of Hendon, and the amendment moved by Dr. Forbes was carried unanimously. A further amendment by Greenwich and Deptford was carried, expressing the opinion that for the purpose of the future health service any general practitioner who desired to undertake obstetrics should undertake to remain efficient in midwifery.

Fees for Antenatal Examinations

Dr. W. LIVINGSTONE (North Staffordshire) moved: "That in the opinion of this meeting the fee payable by a local authority for a full antenatal examination and report should be two guineas." This might seem a big increase on 12s. 6d., but there was the question of consistency. In an earlier recommendation the Council had taken the view that two guineas was a reasonable fee to charge an insurance company for a complete examination and report, and yet they were prepared to accept 12s. 6d. from a local authority for a similar examination and report, plus vaginal examination and pelvic measurement. The responsibility entailed was greater than that which the doctor accepted when he examined a person for insurance. If the antenatal examination was not done properly then the health or life of the mother or child might be put in jeopardy. If the profession was prepared to work at uneconomic fees the Minister of Health, in making the regulations for any future service, would take them at their own valuation.

Dr. FENTON pointed out that the meeting had already adopted a scale of salaries which conflicted with what was being urged by North Staffordshire. The real danger of asking for a fee of two guineas for one antenatal examination was that local authorities would ask doctors to give them a session of two hours for three guineas.

The motion was lost.

Fees for Attendance at Confinements

Dr. LIVINGSTONE further moved that the minimum fee for attending a full confinement under local authority arrangements should be five guineas. In North Staffordshire the local authority paid a general practitioner three guineas for a confinement. If eight visits were paid after the baby was born, and assessing each visit modestly at 5s., one was left with the handsome sum of 23s. for attendance from the time the practitioner was first called until after the baby had been born, the placenta delivered, and one was perfectly certain that all immediate danger was past. This might entail three or four visits to the patient's house; it might mean two or three hours spent there, possibly during the night. What other members of a profession would get up in the middle of the night and do two or three hours' work and accept 23s. for it? Would a lawyer do it when hurriedly summoned to take depositions? Each of these confinements was, presumably, an abnormal case. The midwife was not permitted to call in a doctor unless she felt that some abnormality was present, and this meant that the doctor was acting as a specialist, and for this he received 23s.

Dr. FENTON suggested that as the motion, if it was made effective, would require an alteration of the regulations, it should be sent to the Council for necessary action. The motion was carried.

The Safety of Milk

Dr. HOWIE WOOD (Isle of Wight) moved:

That this meeting is of opinion that legislation should require that all milk sold to the public should be either pasteurized or from tubercle-free herds.

Last year the meeting passed a resolution that all milk sold to school-children should be safe milk. The resolution was borne aloft on the powerful pinions of Mr. Lawrence Abel and disappeared into the blue, and what eventually came down was something rather different. The Representative Body found itself in the position of having nailed its flag to the mast of pasteurization. Good as pasteurization was, it was even better to give school-children in particular and the public in general milk from tubercle-free herds. His own Division was an agricultural community, and on the island the agriculturists had made successful efforts in the breeding of such herds. They thought it in the national interest that such breeding should be encouraged, and they were anxious lest any decision by that meeting should mean the encouragement of the production of dirty milk rather than that herds should be bred tubercle-free. School-children in his area were receiving milk which, on the admission of the public health committee, contained living tubercle bacilli. This was absolutely wrong, and a thing which should be stopped without delay. The Ministry of Health had given the opinion that milk should be either heat-treated or tuberculin-tested. The purpose of this motion was to ensure that milk be either pasteurized or from tubercle-free herds.

Mr. LAWRENCE ABEL (Marylebone) moved to insert after pasteurized "the words "or boiled," and at the end of the motion to add the words "and that this should be emphasized immediately to the Minister as a matter of urgent national importance." Appeals like this had been made for many years. He had seen several of his friends in the profession lose their children from tuberculous meningitis—doctors who had not taken the trouble to see that the milk was boiled. Figures were given showing the incidence of bone and joint tuberculosis. To whom could they appeal? Appeals, largely unavailing, had been made to the Minister and to parents. It had occurred to him that an appeal might be made to the children themselves, and he had jotted down a variant on nursery rhymes:

Little Miss Muffett, sat on a tuffet,
Eating her curds and whey,
But the milk was not pure, and was too like a sewer,
And carried Miss Muffett away.

Hey diddle-diddle! The cat and the fiddle,
The cow was full of T.B.,
The milk which was given took our children to heaven,
Although we appealed to A.B.

And, finally, the following:

Listen, Mr. Bevan,
T.B. leads to heaven,
Kids are getting fewer,
Give us milk that's pure.

(Laughter and applause.)

Dr. COVE-SMITH seconded the Marylebone amendment.

Dr. SMITH (Lanark) said that he had spent some 25 years in the treatment of non-pulmonary tuberculosis. In the pre-war years, of all the cases he treated which were typed, roughly 20% were bovine; during the war years this figure rose to 31.8% per cent, and this was due to milk. The cities of Glasgow and Edinburgh some years ago, after the medical officers of health had paid a visit to the United States, endeavoured to put through a Bill to make all milk entering those cities pasteurized, as in New York, Montreal, and Quebec. He added that in his area they had as many tubercle-free herds as in any other, but even so he would not allow unpasteurized milk to be given to children. There was no argument against pasteurization. Any vitamins lost in the process could easily be replaced. It was startling that owing to the fact that much milk in this country was unsafe the soldiers of our Allies during the war could not be fed with British milk.

Dr. O. C. CARTER (Bournemouth) did not feel that the rearing of tubercle-free herds was an alternative to pasteurization. Milk carried other diseases besides tuberculosis. Abortus fever in his part of the world was not uncommon. He reminded the meeting of the typhoid fever epidemic in Bournemouth some years ago, which was due to contaminated milk, and as a result of which 120 people lost their lives.

Dr. J. M. GIBSON (Huddersfield) said that as a medical officer of health he was very keen that they should have milk free

from tubercle for supply not only to children but to adults. In his experience even milk from a tubercle-free herd could not be guaranteed to be free from tubercle. The cows in such herds, as in other herds, were constantly changing, and it did happen now and then that milk from tubercle-free herds contained tubercle bacilli. With regard to the suggestion to include boiled milk as an alternative, he hoped the meeting would disapprove and would insist on pasteurization, which ensured the only safe and reliable milk.

Dr. J. B. W. ROWE (Harrow) referred to erroneous public statements to the effect that there was no need to pasteurize milk, and appealed to the Press to publicize the insistence of the Representative Body on the vital importance of a safe milk.

Dr. HOWIE WOOD said that from the point of view of palatability a glass of fresh milk was, of course, much to be preferred to a glass of heat-treated milk, so that it was much easier to get children to take the former, and incidentally the vitamin-content was not impaired in any way. A lot of drivel was talked about raw milk. If the milk was collected in a proper milking machine and fed direct into bottles, after cooking, being absolutely untouched by hand, it was as safe as and far more palatable than any of the heat-treated milk.

The amendment moved by Mr. Lawrence Abel to the Isle of Wight motion was put and carried.

Dr. J. M. GIBSON then moved a further amendment to leave out the words "or boiled." It would be a great mistake to countenance the sale of boiled milk to the public. Boiling changed the whole character of milk and spoiled it entirely and it opened the door to careless people to heat the milk again and again to prevent it from going sour.

Dr. A. SMITH said that it would not be advantageous to have milk boiled if one were certain of efficient pasteurization, but in many areas efficient pasteurization was not carried out, and until there were sufficient large pasteurization plants some such expedient must remain.

Mr. ABEL said that he was told it would take several years before pasteurization plant would be available; nor was transport available to take the milk in bulk and get it pasteurized. To get tubercle-free herds would be a matter of twenty years. Dr. GIBSON could not agree that to secure general pasteurization of milk would take an undue time.

The amendment to leave out the words "or boiled" was carried.

After some further discussion on a form of words which would represent the feeling of the meeting the CHAIRMAN of COUNCIL suggested the following:

"Ideally all milk should be obtained from disease-free herds under the best hygienic conditions. In the meantime all milk should be pasteurized, or, where efficient pasteurization is not available, boiled; and this should be emphasized immediately to the Minister as a matter of urgent national importance."

This was seconded by Mr. ABEL and put to the meeting and carried unanimously.

PUBLIC RELATIONS

The CHAIRMAN of COUNCIL, in introducing the report under "Public Relations," said that the relationship of the Association and the Press had greatly improved, and the Association views were now set out much more fully and regularly than they used to be. He congratulated the Public Relations Officers in the Divisions on what they had done in making their position in regard to the National Health Service proposals better understood by their respective publics.

Dr. ALICE GILBY (Westminster and Holborn) had an amendment declaring that relations with the Press were still not entirely satisfactory. The Press had appeared to concentrate on two of the main aspects of the Bill—namely, hospital problems and specialist problems—but had largely ignored the unfavourable provisions concerning general practice.

Dr. DAIN said that he fully agreed that, while in general their relations with the Press were good, they might be better, and he was willing to accept the motion as an indication that the Public Relations Committee still had work to do.

This part of the report was approved, and the meeting adjourned at 6.30 p.m.

THIRD DAY

Thursday, July 25

The meeting was resumed at 10 a.m.

MISCELLANEOUS MOTIONS BY DIVISIONS AND BRANCHES

In conformity with a previous resolution, miscellaneous motions by Divisions and Branches not appertaining to the Annual Report were taken as first business.

Study Groups

Dr. Ross (East Herts) moved:

That this meeting instructs the Council to advise every Division to establish, where not already in existence, one or more local study groups, in order to secure the wider discussion of medico-political problems, to ensure a more intimate sharing of views, and to attract the active co-operation of more medical men and women in the formation of policy.

He said that now that it had been decided to take a referendum of the profession it was most important that the profession should be as fully informed as possible on the present position, and study groups would be most valuable. Participation in study groups would also foster greater interest in the work of the Divisions, and there would be more informed discussion at Divisional meetings.

The motion was carried.

Compensation for Doctors who are War Casualties

Dr. A. C. E. BREACH (Bromley) moved:

That in the event of the goodwill of practices being acquired by the State and of compensation being paid, the practices of those doctors who were killed or disabled by enemy action during the war should rank for compensation on the basis of the 1939 income in those cases where the goodwill has not already been sold.

He said that their concern was the problem of the doctor who had been killed or disabled as a result of enemy action and the compensation of his heirs for the loss of the value of his practice. This was a case which threw a strong obligation on the rest of them. It was not a matter of charity in any sense at all. What had happened to these practices was that they had been dissolved among the other practitioners in the neighbourhood, who had thus acquired, more or less involuntarily, an asset, and it was up to them to pay for that asset as an ordinary transaction. A fairly typical case was a doctor aged 45 who entered the Services at the outset of the war and whose practice was more or less protected by his colleagues while he was away. After two or three years he was killed, and as that happened in 1942 it was quite impossible to sell the practice at that time; and in spite of the efforts of his neighbours the practice became disintegrated. Therefore at the end of the war there was nothing left to sell, and his heirs were deprived of an asset to which they had a right to look forward.

There were three possible methods of meeting the situation. One was by a levy amongst the profession, but this would have to be voluntary and would be subject to the objections which applied to all voluntary levies. The second was some sort of local arrangement, but it was extremely difficult to assess how much of that practice had been distributed among the neighbouring doctors and how much had disintegrated into a wider field. The third possibility was that when the National Health Service scheme came into being, with its compensation clauses, those clauses would offer a simple way of dealing with the problem of the doctor who did not return. A fair way of treating the situation would be for the practice of the late doctor to be assessed for compensation exactly as if that doctor were living—that is to say, on the basis of the 1939 figures—and the compensation should be payable to his heirs.

The motion was carried.

Postgraduate Study for General Practitioners

Dr. G. DE SWIET (Paddington) moved:

That this meeting wishes to emphasize the crying need of general practitioners for postgraduate study to keep abreast of the rapid advances in diagnosis and treatment; all the more so as the opportunities were few and far between during the war.

He said it was true that the new Bill made provision for postgraduate study, but it was not known how long this would take to organize, and something ought to be done now. It was realized, however, that owing to the scarcity of accommodation for medical students there would be very little room for those taking postgraduate courses. In London the Public Medical Service, jointly with the London Panel Committee, had arranged some very useful courses notwithstanding wartime difficulties, but it was felt that this was only a drop in the ocean and that something on a national scale would have to be done. They looked to the B.M.A. for help in this matter.

Dr. DOUGLAS BOYD (Belfast) moved as an addendum to the Paddington resolution:

That refresher courses should be made available for general practitioners at recognized teaching hospitals, and that they should be facilitated and encouraged to attend them.

He said that general practitioners had found great difficulties in their way in keeping in touch with the work of the teaching hospitals and with the recent advances in medicine. The teaching hospitals should do everything in their power to facilitate refresher courses. In Northern Ireland a great deal had been done to encourage practitioners to attend such courses, and it was very pleasant for the consultant to meet the general practitioner within the teaching hospital and show him some of the work.

The Paddington motion with the Belfast addendum was carried.

Alien Practitioners

Dr. W. E. DORNAN (Sheffield) moved:

That alien medical practitioners who have served as such in the British or Allied Forces and who are now unable to return to their native country should be allowed to practise in the United Kingdom provided they conform with such regulations as may be required under the Medical Registration Acts.

He said that it was his unfortunate duty to propose this motion. He did not know what it meant, and he was quite sure that his Division did not mean what the motion said. He would like it referred to Council.

Dr. DE SWIET (Paddington) supported the motion. "It was a very serious business for the people concerned. But if the motion was carried as it stood it would not really alter the present position. At the present moment any alien practitioner who conformed with the regulations could practise in this country. If it was really desired to do something to help these unfortunate people something new must be done, and the motion should stop with the words "United Kingdom."

Dr. A. BROWN (Cambridge and Huntingdon) desired to delete the words "as such," because there were a number of alien practitioners who had not served as medical officers in the British and Allied Forces but had served in other capacities.

The CHAIRMAN OF COUNCIL hoped that the meeting would not pass this motion in the form of a definite instruction but would refer it to Council. This was a very large problem with a great number of facets. Aliens who were allowed to serve in the Forces were not on the *Register*. He asked that this should be referred to Council for consideration and necessary action.

It was agreed that this should be done.

Suggested Special Bread Rations for Doctors

Dr. HOWIE WOOD (Isle of Wight) moved:

That doctors and nurses, owing to their long irregular hours and seven-day week, should be placed in a category which receives higher bread rations than sedentary workers.

He said that most of those present at that meeting would have a natural diffidence in proposing that doctors should receive larger rations than other members of the community. He was rather surprised to learn, however, at his Divisional meeting that the proposal set out in this motion originated with the wife of one of their members, and in the course of the discussion it transpired that several wives of doctors had suggested to their husbands that they would have the utmost difficulty in making the proposed bread ration serve. Many doctors in rural areas were accustomed to take sandwiches when visiting country surgeries. A doctor who worked for a ten- or eleven-hour day was likely to be more physically fatigued and more in need of extra rations than some labourers

after an eight-hour day. The nurses, too, had a special claim for an increase in their ration. Certain classes of nurses had already been granted an addition, but this did not apply to district nurses, whose conditions of service closely approximated to those of doctors.

Dr. C. M. STEVENSON (Cambridge) hoped the meeting would decisively reject this proposal. The doctor's work was hard, but it was not heavy manual work, and the physiologists told them that mental work did not call for extra calories. Such a motion would alienate public sympathy.

The motion was lost.

The Continuance of Rationing

Dr. J. BOYD (Belfast) moved:

That this meeting protests against any proposal to make rationing a permanent feature of post-war British policy and will protest against any form of discriminative rationing for political party purposes.

He said that there were quite a number of disquieting facts in connexion with the present scheme for bread rationing. About a fortnight ago in a neutral country he had sat down to an excellent meal, with abundance of food, and that particular country at the beginning of the war was in debt to Great Britain; now the shoe was on the other foot. Was there actually to-day a genuine shortage of wheat? In America there was more wheat than in pre-war years. Dr. Boyd added that, quite personally, he felt that the substance of this motion did not really concern the present meeting, but his Division was anxious that it should be moved.

The CHAIRMAN said that Dr. Boyd had condemned himself out of his own mouth. This motion was not the business of the meeting.

The motion was withdrawn.

Medical Education

Dr. I. G. INNES (East Yorkshire) moved:

That this meeting suggests to the appropriate authorities that, in order to expedite the qualification of medical practitioners, the method adopted during the late war of shortening holidays and inserting an extra term in the academic year should be continued.

He said he thought that the wartime procedure of making use of vacations for extra medical education should be continued.

The CHAIRMAN OF COUNCIL said that he hoped the meeting would not lightheartedly enter into the problem of the education of the medical man in this simple and easy way. They would be most unwise to accept the shortening of the curriculum by such a method as this. A Report on the curriculum by an influential Committee of the Association would shortly be forthcoming, and he hoped that the meeting would not express any opinion in advance of the Report.

It was agreed to proceed with the next business.

OVERSEA BRANCHES

The CHAIRMAN, before the section of the Report under "Over-sea Branches" was brought forward, said that public memories were proverbially short, but that meeting at least would remember with gratitude how their members over-seas rallied in 1939 to the support of this country. The medical profession was no less prominent in that connexion—possibly rather more—than other bodies of the community. While they could not say that peace reigned on earth, they could at least say that there was peace over the great waters, and for the first time in seven years their oversea representatives had been able to attend the Representative Meeting with some degree of comfort. He invited them to address the meeting briefly.

Before the oversea representatives spoke Dr. J. L. GILKS, Chairman of the Dominions Committee, referred to some of the work of the year. He said that perhaps the most noteworthy event had been the compensation offered to temporary members of the Government service serving in the Forces who had been interned by the Japanese. Originally very meagre terms were offered to these unfortunate officers, but as a result of representations these had been considerably modified in the officers' favour.

Dr. A. S. MANNADI NAYAR (South Indian and Madras Branch) said that his College in Madras had the privilege of sending

out to military service more than 100 men and women doctors. They gained valuable experience and had been happy in discharge of their duties to King and country. As to what would be the position of the Branches of the B.M.A. in India when the new political changes came about he could not say, but he hoped that there would always be good will and understanding between medical men and women in this country and in India.

Dr. L. A. MOODY brought the greetings of the Jama Branch and pledged its loyalty. They were proud to be connected with this great Association. As President-elect of the Branch he felt that he had gained a great deal from coming that meeting.

Prof. W. A. E. KARUNARATNE said that his Branch in Ceylon considered it a great honour to have one of its representatives at that meeting and offered its greetings and good wishes to the parent body.

Mr. V. G. GRIFFITHS brought greetings from Malta, where they were watching with the greatest interest and sympathy the fight which the Association was putting up. They did so for several reasons, one being that a certain number of Malta doctors would come to practise in this country, and, another because legislation in this country was likely presently to be repeated in a modified form in Malta. They recognized that the British doctors were putting up a fight on principle.

Dr. A. L. LOMAS (New Zealand) said that there was a strong bond of feeling between New Zealand and this country. New Zealand they referred to this country as "home." They had gone through their teething troubles in New Zealand in connexion with the nationalization of medical services—other people might call them "Labour pains." (Laughter.) At a later date it was contemplated that something in the nature of a State salaried medical service would be introduced in New Zealand.

Dr. C. FORTUNE (Western Australia) also conveyed very cordial greetings from his Branch. The Federal Council of Australia had been very wise in sending to this country Dr. Hunter as an observer. As part of the British Empire they looked forward to greater contact with Great Britain in postgraduate education and other matters.

Dr. F. J. BOOTH spoke for Queensland, saying that the doctors there were following with deep interest and sympathy the medico-political crisis through which they were passing in Great Britain. In Queensland they had had a Labour Government for many years, and the profession had experienced difficulties; but on the whole they had weathered the storm.

Dr. C. G. TERRELL (Surma Valley and Chittagong) mentioned that he was last at the Annual Representative Meeting at Belfast in 1937. He gave an account of the position in Assam during the war. The medical profession had to endure a great amount of strain connected with the refugee problem and also with the military projects to meet the threatened invasion, so that the Branch had been unable to function to anything like the same extent as in years gone by. A real attempt was now being made to get things going again. There was an increasing membership of Indian practitioners. He hoped that on a future occasion the oversea functions at Representative Meetings would be revived.

Dr. J. G. HUNTER, finally, conveyed a message of good will and fellowship from the New South Wales Branch and also from the Federal Council of Australia. That meeting afforded the opportunity of making and strengthening personal contact between members over-seas and members and officials at home. He had come over from Australia as an observer to see the reactions of British doctors to the measure which the Government was putting through Parliament, and his colleagues in Australia were delighted to know that this issue was being fought on general principles of professional freedom and not on terms and conditions. That had been their own attitude in their relations with the Government in Australia.

The section of the Report under "Oversea Branches" was approved.

HOSPITALS

"General Practitioner" Hospitals

Mr. R. L. NEWELL, chairman of the Hospitals Committee, introduced the report on General Practitioner Hospitals, which formed Appendix I to the Annual Report of Council (Supplement, April 20, p. 101).

Mr. R. W. GRAHAM-CAMPBELL (Trowbridge) moved:

That this meeting views with concern the implications of para. 5 of the Report¹; and urges the Council to modify the policy herein outlined, and to assist rather than discourage the further development of general practitioner hospitals in small provincial towns.

He said that this paragraph seemed to contemplate an actual down-grading of general practitioner hospitals nearly the level of the old cottage hospitals, places where no major work could be undertaken. The report gave an excellent plan for a utility type of general practitioner hospital, but little was proposed for the preservation and development of small general hospitals, which was what the Council was asked to consider. In the part of the country from which he came there were no big towns, and over an area of 150-180 square miles there were twelve small hospitals, linked by a joint committee of hospital staffs. From the medical point of view these hospitals were regarded not as separate entities but as satellites of the parent hospital in Bath. He believed that these small hospitals did serve a useful purpose in relieving the big centres of a large amount of surgical work, and he asked that the equipment and scope of work of these hospitals should not be diminished.

Dr. J. KERR (Hyde) said that formerly the great hospitals were places where the sick poor received the care and comfort which their more fortunate neighbours were able to command at their own homes; to-day these same hospitals were places where the bulk of the people received the most expert diagnosis and treatment. Specialists and consultants gained much of their skill and wisdom from association with these hospitals. If the family doctor on his part was to retain his skill and wisdom he had equal need of such facilities. In any comprehensive health scheme it would be necessary to establish hospitals well equipped in all towns and villages according to their needs. Every general practitioner should be attached to one of these hospitals. In his own county of Cheshire the small hospitals were exceedingly well conducted.

Dr. N. E. WATERFIELD (Kingston) said that in this report what were envisaged were not the already existing cottage hospitals staffed by all the practitioners in the area, but the setting up of a new type of hospital or the assignment of wards in an existing hospital where practitioners could attend cases which under other social conditions they would attend in the patients' homes.

Mr. A. GREEN (Guildford) said that it would be a loss if the general practitioner hospitals were not considerably expanded so that men going into practice were able to practise as they thought best. The trend of specialism was becoming rather exaggerated. There was a tendency in some hospitals to regard each department as distinctly separate, and the patient as a whole in some instances was inclined to be forgotten.

Dr. HOWIE WOOD (Isle of Wight) said that Dr. Waterfield had not entirely succeeded in allaying the apprehensions of some of them with regard to para. 15, and there was a fear that it might be interpreted outside that meeting, particularly in Government circles, as an excuse for limiting severely the field of the cottage hospital.

Dr. A. MORRISON (Darlington) said that these small general practitioner hospitals were an innovation and were distinct from existing local hospitals. He felt that they were a good thing and should be supported.

Dr. W. S. MACDONALD (Leeds) said that the real difficulty behind the Trowbridge amendment did not concern the general practitioner hospitals so much as the smaller general hospitals, which did not come within this report.

Mr. NEWELL hoped that the meeting would not accept the Trowbridge amendment. Para. 15 had been very carefully worded, and he did not think it discouraged the development of these hospitals; it was aimed merely at discouraging work being done at those hospitals which was better carried out elsewhere.

The Trowbridge amendment was lost.

Mr. NEWELL accepted amendments by Reigate and North Staffordshire, the former declaring that no measure should be taken to limit the freedom of judgment and action of a

practitioner, and the latter that the Association should demand the provision of general practitioner hospitals in any health service scheme.

Dr. G. DE SWIET (Paddington) moved: "That this meeting welcomes the Minister's sympathetic attitude towards closer co-operation between the general practitioners and the hospitals." He quoted some remarks of Mr. Bevan in the Standing Committee in which he had said that he was prepared to make a concession in the case of a general practitioner hospital. Mr. Bevan had said:

"I am prepared to make a concession in the case of general practitioner hospitals. There are instances all over the country where a person who is chronically ill goes into hospital because he or she cannot get treatment at home. It may be that they suffer from something which does not require specialist treatment, but treatment by a general practitioner. I want to make it clear that the general practitioner should give that kind of treatment in a general practitioner hospital. I propose to consider whether it is necessary to put down an amendment to make that clear."

Again, in Clause 48 of the Bill the Minister was prepared to admit the general practitioner to hospital in the capacity of postgraduate student.

Dr. W. GUNN (Greenwich and Deptford) asked the meeting to reject this motion, on the ground that any expression of sympathy with the Minister was likely to be interpreted as weakness.

Mr. NEWELL said that he would prefer the omission of the reference to the Minister's sympathetic attitude; it should merely say that the meeting welcomed closer co-operation between the general practitioner and hospitals.

The Paddington motion was lost.

A motion by Worcester and Bromsgrove commending the Council on its report and trusting that this matter would be kept very much in mind was carried. The mover, Dr. STEEL, said that administrative difficulties ought to be overcome and not allowed to sabotage an excellent scheme.

General Practitioners and Hospital Maternity Cases

Dr. J. C. ARTHUR (Gateshead) moved:

That in any hospital area it is essential that facilities should be afforded general practitioners, either in general practitioner or other hospitals, to attend their own maternity cases, privately or otherwise.

He said that there was no doubt that they would get general practitioner hospitals, though the building problem might delay them. His own experience of building was that five Ministries had to be approached, three different licences obtained, as well as the permission of the local council, and then one had to find, somewhere, a builder. The attitude of the obstetricians in this matter of general practitioners and maternity cases was difficult to understand; it was "trade unionism run mad." The obstetricians appeared to have little confidence in the instruction which they themselves gave to medical students or in the ability of those students to profit by it. The obstetricians must be got to see reason. It was most essential that when these hospitals were established general practitioners should have facilities for carrying out their midwifery in them.

Mr. NEWELL said that they had, of course, suggested that maternity beds should be provided at these general practitioner hospitals, and when they were built such provisions would have to be made. But it need not be laid down as an invariable rule, because there might be adequate maternity accommodation near by.

The Gateshead motion was carried. Two motions by Belfast were also agreed to, one declaring that the confidential nature of clinical records in these hospitals must be maintained, and the other that every hospital must have a committee representative of all the attached practitioners, with adequate representation of the committee on the board of management.

The report on "General Practitioner" hospitals was then approved.

Hospital Administration

Mr. NEWELL next moved the adoption of the Council's statement on hospital administration. This, which appeared in the Supplementary Report, was as follows:

¹Para. 15 states that the general practitioner hospital should not in general include in its work the routine performance of major surgical operations, and that the improvement of ambulance services should increasingly permit of serious operations being carried out in more suitable surroundings.

1. The chief officer of a Regional Hospital-Board should be a medical practitioner with experience of hospital work.

2. The administrative head of a large hospital or group of small hospitals should ordinarily be a medical practitioner, designated medical superintendent.

3. The medical superintendent should have full responsibility for the general administration of the hospital, specialized functions such as accountancy being delegated to the appropriate lay heads of departments. He should exercise his medical functions in consultation with the medical staff committee.

4. The medical superintendent should, where possible, take an active part in the clinical work of the hospital, but should have no clinical control of patients in the medical care of other members of the senior medical staff.

5. In every hospital there should be a medical staff committee, which should be composed of all members of the medical staff in charge of beds or departments and all other senior members of departmental staffs, together with representatives of the junior medical staff and the medical auxiliary staff. The medical staff committee should appoint its own chairman.

6. The functions of the medical staff committee should include consideration of all matters affecting the treatment or comfort of patients.

7. The medical staff committee should nominate representatives to serve as members of the Hospital Management Committee, and all matters submitted to the latter committee on behalf of the medical staff should first be considered and agreed upon by the medical staff committee.

8. There should be established also a nursing staff committee of which the matron should be convenor but not necessarily chairman. The membership of this committee should include ward sisters and representatives of the other nursing staff.

9. The nursing staff committee should be entitled to nominate two representatives to serve as members of the Hospital Management Committee.

In doing so he made a comment on para. 2. The word "ordinarily" had been inserted because there were a large number of lay superintendents who were doing excellent work, and there was no wish to offend that large body. Often the medical staff had more "say" in the policy of a hospital when there was a lay superintendent.

Lay or Medical Superintendents

Mr. DONALD WATSON (Bradford) urged that the phrasing of para. 2 be altered from "The administrative head . . . should ordinarily be a medical practitioner," to "should not necessarily be a medical practitioner." If a medical practitioner desired to become an administrator he should not, of course, be precluded, but in his opinion lay administration was better.

Mr. LAWRENCE ABEL (Marylebone) agreed with the last speaker. There were a number of hospitals, especially municipal, which did not wish to have a medical superintendent. The hospital or group of hospitals should be left the right to make its choice in this respect. The superintendent should be the servant of the medical committee, not in any way director.

The CHAIRMAN OF COUNCIL deprecated any alteration of the words of this paragraph, which had been carefully chosen. If the words were changed they would be made to suggest a preference for a lay administrator. He agreed that many voluntary hospitals were very well managed indeed by lay superintendents, but in fact such lay superintendents were already in a superintending position, their position approximated more closely to that of secretary.

Dr. R. G. COOKE (Derby) hoped that the original statement as put forward by Council would be supported. Lay bodies were making great efforts to obtain as big a place as they could in the administration of the new service and in hospitals. If there was no need for a medical administrator in a hospital why should there be a medical administrator in any branch of the service? Why have a medical administrator in the region if it could all be carried out in lay hands?

Col. A. H. PROCTOR (Naval and Military Committee) said that a medical staff committee might to some extent be an intermediary, but on the whole the authority given to a lay superintendent would make him practically *gauleiter* of the hospital. He thought that a more sympathetic interpretation might be expected from a medical superintendent. A lay superintendent would not have the same outlook, would not be prepared to depart from the strict letter of the regulations when necessary, and, moreover, would not have the same backing of the medical committee.

Mr. NEWELL said that he was anxious that nothing in statement should offend the large body of lay superintendents who had given such valuable service.

Mr. DONALD WATSON said that his argument was based on an experience of voluntary hospitals over many years, which had made him feel that lay administration controlled the medical board was a good thing.

An amendment—"That the administrative head of a large hospital or group of small hospitals should not necessarily be a medical practitioner"—was lost, and the statement of Council was approved.

The Chronic Sick

Dr. F. R. STURRIDGE (Willesden) moved:

That this meeting is of opinion that inadequate provision is present made for the treatment and care of the elderly infirm, and instructs the Council to set up a committee to investigate the whole subject and report.

He said that the first part of this motion would be generally agreed. The Council had suggested that all general hospitals should accept, where practicable, a certain percentage of chronic sick cases. The difficulty was in the words "where practicable" because it was just not practicable under present hospital conditions. His Division felt that the position was so serious the Council should be urged to set up a committee to investigate and report. In one county administrative area of 1 million population there were in public institutions 1,000 in-patients of the elderly and infirm class, and 500 of whom were awaiting admission, and another 400 were in the ordinary hospitals of the district awaiting admission to public institutions. Thus the total number waiting was slightly in excess of the number already in, meaning that the beds for such patients should be doubled. In one hospital 30 to 40% of the admissions were people over 65. The solution might lie in general practitioner hospital and in home helps. One of the pathetic things about the situation was that in some of the hospitals these old people were handed over to newly qualified members of the staff, who were not really capable of looking after the elderly. These patients required a great deal of sympathy and largely of a psychological kind. He thought that home treatment should be developed a great deal more.

Dr. W. D. STEEL (Worcester and Bromsgrove) said that none of these persons were not necessarily ill but were incapable of looking after themselves properly in their own homes. They were looked after by their relatives, but economic circumstances militated against that arrangement. There was nothing for many of them at the present moment but to go to a public assistance institution, still known to them as the workhouse. What was wanted was the provision of homes for these people—residential flats with gardens—entirely at the expense of the State.

The motion was supported by Dr. J. C. YOUNG (Belfast), Dr. H. B. MUIR (Fife), Dr. D. J. MORRISON (Edinburgh) associated his Division with the motion. Nothing was so saddening, he said, as the plight of the aged and infirm. One remedy would be to provide in the new housing a communal kitchen with facilities for sending out meals for these old people, and an arrangement to afford them domestic help. At present elderly people had to go to hospital simply because they were not equal to attending to their own domestic affairs. Dr. ALICE GILBY (Westminster and Holborn), in supporting the motion, suggested that in London assistance should be given to the Invalids Kitchen Society.

Dr. G. MACFARLANE (Lanarkshire) said that in his opinion chronic sick people should be passed through a centre of which those who required general hospital treatment could be sent to hospital. As a member of the Medical Curriculum Committee of the B.M.A. he had urged that medical students should be taught the treatment of the chronic sick, with which so much of their future practice would be concerned. A committee was set up to study this problem it might be a subcommittee of the Hospitals Committee, to which some people specially interested in other than the medical aspect might be co-opted. It was a problem which had its social and economic as well as its medical side. Dr. F. M. R. (Preston) said that with an ageing population the balance was shifting towards the wrong end so that this question of chronic sick was becoming increasingly important. Home surgeons and nurses should be specially instructed in

atment and nursing of these patients. Dr. ELSIE WARREN (Bensington) suggested that means be sought for obtaining priority for these people in the allocation of flats.

The CHAIRMAN OF COUNCIL accepted the suggestion that a committee should be appointed to consider this matter, which was of such great public interest. Anything which the Association could do to bring about better conditions for these old people would be done.

Dr. NOY SCOTT (Plymouth) urged that, to meet the problem of caring for the chronic sick, more active steps should be taken to attract women to nursing and to domestic work. The Luffield Trust reserved its bitterest comments for these cases of the chronic sick. This was not so much a question of ricks and mortar as of personnel. The accommodation was available, but not the nursing staff. Dr. J. A. GORSKY (Westminster and Holborn) also urged that energetic steps be taken to meet the deficiency of nursing and domestic hospital staff as a contribution to the solution of this problem.

All the motions on this subject were accepted.

Rehabilitation

Dr. J. A. L. VAUGHAN JONES, vice-chairman of the Rehabilitation Committee, brought forward the report of Council under his heading. He said that the work was fully recorded in the special *Supplement* of June 29. The factual summary given here might not be quite complete, but it was sufficient to show the extent of the existing facilities. In the final section on "planned rehabilitation" an attempt had been made to show all the factors which went to a complete rehabilitation service, and the necessity for team work in the widest sense of the word. He paid a tribute to Dr. Donald Hunter for his able chairmanship of the committee.

The CHAIRMAN commented upon the importance of this committee, and said that they were indebted to Dr. Vaughan Jones for his succinct presentation of its work.

The report under this heading was approved with applause.

NATIONAL HEALTH INSURANCE

Spens Committee Report

Dr. E. A. GREGG, chairman of the Insurance Acts Committee, moved:

That the Representative Body welcomes and approves the majority report of the Interdepartmental Committee on the Remuneration of General Practitioners.

It was of the greatest importance that the profession should make it clear that it accepted and approved the general findings of the Spens Committee report—a report which would be of the utmost value to the profession. ("Hear, hear.")

Dr. J. A. BROWN (Birmingham), a member of the Spens Committee, drew attention to certain points in the report. One recommendation stated that additional remuneration should be given in areas which proved so unattractive as not to draw an adequate supply of practitioners. He was of opinion that the inadequacy in numbers of practitioners in certain areas was largely due to the miserable capitation fee paid under National Health Insurance. If adequate remuneration were given, with some additional remuneration in certain thickly populated industrial areas, the so-called "unattractive" areas would cease to exist, and there would not be the slightest need for any "direction," either negative or positive. ("Hear, hear.") Then the Spens Committee had the greatest sympathy with the position of the men in the Highlands and Islands. They had been fearfully underpaid, and had done their job with a devotion to duty second to none in any part of the country. The Spens Committee had further said that general practice was the foundation on which all else was built, and had emphasized the need for adequate recruitment in quantity and quality. In that connexion all the members of the Spens Committee were very much aware of the possibility of a falling off in recruitment if the general practitioner was not adequately paid for his services, and if there was not sufficient attraction to men in the profession to go into general practice. He did not want the medical profession to get into the state in which the nursing profession had already got, but unless steps were taken to pay the general practitioner adequately for his services he saw a very real risk to the medical service of this country. ("Hear, hear.")

The motion was carried unanimously.

The Insurance Capitation Fee

Dr. GREGG, on behalf of the Insurance Acts Committee, gave the Representative Meeting an account of the recent approach of the committee to the Minister of Health concerning an increase in the capitation fee. The outcome of three meetings had been that the Minister now proposed to make an increase of 2s. in the fee as from January 1, 1946, the fee thus being increased to 12s. 6d. He repeated the account of the conversations which he had given to the committee three days before, and which was reported in the *Supplement* of July 27 (p. 31), together with the resolutions of the committee, the first of which welcomed the Minister's acceptance of the majority report of the Spens Committee and his recognition of the inadequacy of the capitation fee, but stated that the proposed increase was gravely inadequate, while the second declared that the committee was prepared to recommend acceptance of an interim capitation fee of 15s., to be retrospective to January, but added that if the Minister preferred the committee would be willing that the Spens Committee should be asked to state the implications of its majority report in relation to the current capitation fee, on the understanding that both the Minister and the committee accepted, in advance, the Spens Committee findings.

Dr. Gregg explained to the meeting, as he had already explained at greater length to the committee, that the Minister had wished to associate the application with discussions concerning the remuneration of general practitioners in any proposed future service, but it had been pointed out to the Minister that they represented the Insurance Acts Committee, the executive of the Panel Conference, and that it was not within their province to embark, even if they wished to do so, on discussions of the character he desired. Moreover, certain decisions already taken, such as the determination of the Representative Body not to accept the method of basic salary, precluded such discussions. It was also pointed out that there had so far been no indication from the Minister that he accepted the recommendations of the Spens Committee. Since those conversations a letter had been received from the Ministry (published in full in the *Supplement* of July 27), in which, *inter alia*, it was stated that the Minister fully accepted the substance of the recommendations of the Spens Committee. In support of the committee's view that it was a proper thing for the Spens Committee to consider the implications of its report in relation to the current insurance capitation fee, the Ministry's letter of May 17, 1944, from which the appointment of the Spens Committee originated, had been quoted to the Minister, showing that the committee had good grounds for their suggestion, the Ministry itself having recognized the necessity for an independent inquiry.

The announcement of the figure to which the Minister proposed to increase the capitation fee was greeted by the Representative Body with cries of "Shame!"

The CHAIRMAN said that Dr. Gregg had made a statement of great clarity and comprehensiveness. He suggested that no discussion should take place at that meeting, but that approval should be expressed of the action of the Insurance Acts Committee.

The approval was expressed unanimously.

Regional Medical Service

Dr. J. W. MCCARTHY (Hendon) moved:

That the Representative Body is strongly opposed to the introduction of any machinery whereby the Regional Medical Officer may refer a patient to a specialist for a second opinion without affording the patient's own doctor an opportunity of selecting the consultant and effecting the necessary arrangements.

One had only to read what was said in the Council's report (para. 48) on the exchanges which had taken place with the Ministry on the Ministry's attitude in cases where an insured person was referred to a divisional medical officer for an independent medical examination, and a tuberculous condition was diagnosed, to get some idea of the working of the minds of the Ministry, and what might be expected if the profession came completely under its control. It was surely only courtesy to allow the patient's doctor to select the consultant and make the arrangements. To most people that would seem reasonable, and to those working the service essential.

Dr. W. GUNN (Greenwich and Deptford) supported Hendon. He felt that anything which was likely to encroach upon the individual freedom of the doctor or to interfere with the relationship between doctor and patient ought to be resisted strongly.

Dr. A. W. GARDNER (Brighton) said that it was not only a question of courtesy but of medical ethics. Dr. W. JOPE (Lanarkshire) said that once more he was compelled to ask that Scotland, where they had a different relation to their regional medical officers, should be excepted from this amendment. Dr. N. E. WATERFIELD agreed that this was a matter of ethics. It was the privilege of the practitioner in charge of the case to choose the consultant to whom the patient was to be sent, and he hoped they would insist on that rule being observed even by regional medical officers.

Dr. GREGG said that he welcomed these expressions. This was a matter not only of courtesy and medical ethics but of ordinary wisdom. The course which the Ministry was taking in this respect was likely to discourage the good practitioner and to confirm the indifferent.

The amendment was carried.

Science Activities

Mr. ZACHARY COPE, chairman of the Science Committee, presented the report under "Science." He referred to the good work done by the library, which it was intended to develop. The Association had taken part in the Central Medical Library Bureau of the Royal Society of Medicine, designed to assist in the rehabilitation of the Continental medical libraries. The other scientific activities, relating to prizes, scholarships, lectures, and films, were sufficiently set out in the report.

The report was approved.

MEDICAL SERVICES UNDER THE EDUCATION ACT

Mr. R. L. NEWELL presented the part of the report concerning the development of medical services for the purpose of the Education Act, 1944.

Mr. C. G. SCHURR (Brighton) moved as an amendment:

That this Representative Meeting is dissatisfied with the payments for in-patient treatment of children under the Education Act, and presses the Council to draw up an equitable scale of remuneration.

His Division was far from satisfied with the result of the negotiations on in-patient treatment as set out in Circular 102. A careful and often tedious investigation had to be carried out by the physician or an operation by the surgeon. Surely these services alone were worth more than the 21s. per child which the Minister was prepared to recognize as payment to the hospital for distribution among the visiting medical staff. Negotiations were going on between the local education authorities and the hospitals with a view to the hospitals taking over the treatment of school-children under the terms of the Circular, with the termination of existing arrangements. Up and down the country thousands of general practitioners were watching these preliminary skirmishes, being aware of their repercussions on future events.

Mr. C. E. BEARE (Reigate), in supporting the amendment, said that as regards sessional fees for consulting physicians or surgeons undertaking out-patient treatment, the Ministry had laid down a fee not exceeding three guineas for a session of two hours. But already that meeting had decided that the sessional fees for consultants and specialists employed part-time by local authorities should be at the rate of five guineas.

Mr. NEWELL said that there was some degree of urgency about producing this report because various local authorities were making their own arrangements. The Ministry had met them in many respects and they got what they thought was quite a good interim arrangement, but they had made it quite clear that the figures would have to be reviewed after the revised scales for doctors employed part-time by local authorities (discussed on the previous day) had been considered and approved. The whole subject would have to come up for revision, but it was quite good for an interim arrangement.

The Brighton amendment was carried.

"BRITISH MEDICAL JOURNAL"

Dr. O. C. CARTER (chairman of the Journal Committee) presented the report under "British Medical Journal." He said that the first year's activity since the cessation of hostilities had been completed, and he could report to the Representative Body that never before had the *Journal* been in so sound a position both scientifically and financially. During the whole period of the war the *Journal* appeared regularly week by week in spite of phenomenal difficulties of production. It was a fine achievement which reflected the greatest possible credit upon the Editor and all who worked with him. It might have been thought that twelve months after the end of the war their difficulties would have disappeared. That was not so. It was true that staffing troubles had been considerably eased, and in this connexion he wished to say how pleased they were to see back amongst them the Assistant Editor Dr. Harvey Flaek, after a long period of war service (Applause.) But they were still faced with the difficult problem of acute shortage of paper, and with the increased circulation of the *Journal* this became more and more severe for the ration was not based on present-day circulation but on pre-war consumption. In 1939 the circulation was 42,000; last year it went up to 51,000, and the latest figure was 58,000. Therefore the problem of having to deal with rival claims for *Journal* space was no small one. But the present *Journal* of 68 pages was a very fair and well balanced production. The standard of articles had been maintained at a very high level. He had heard it said that some of these articles were not of immediate interest to general practitioners. But the function of the *Journal* was to see that all that was best in British medicine appeared between its covers; and bearing in mind the fact that the *Journal* had to cater for every type of practitioner, and that to a large extent the standing and reputation of the profession was sustained by the tone and temper of the *Journal* and the excellence of its matter, he thought it would be generally agreed that it had very ably fulfilled its role (Applause.) Before the war little was heard abroad of British medicine, but now it was looked to for a lead, and, as far as the *Journal* could give it, such looking would not be vain.

At the same time the needs of the busy general practitioner had not been forgotten. "Any Questions?" was started by the man who did not have a great deal of leisure for reading and this feature had proved enormously popular. Its answer to current problems which confronted doctors all over the world was becoming a weekly guide to medicine. On the medical political side there had been more activity than ever. Many leading articles on medico-political matters had appeared. The *Supplement* had contained the report of the Spens Committee and much other matter of immediate interest and concern. The debates on the National Health Service Bill had been fully reported. To make medico-political reading more attractive change had been made from treble column to double column and the size of type increased.

New Ventures

They were now (Dr. Carter continued) embarking on new features which were going to absorb a very considerable expenditure. During the last few years the number of speciality journals had increased, and now they had planned an Abstracting Service of the world's medical literature. Before the war abstracting service functioned in Germany; this had now ceased and it was intended that this new organization should fill the void thus created. Although, in the first instance, the intention was to provide information for the British medical practitioner it was equally planned as a contribution to world medical literature. It was proposed to publish two journals, one to be called *Abstracts of World Medicine* and the other *Abstracts of World Surgery, Obstetrics, and Gynaecology*. In June, 1944 he convened an informal conference on medical abstracting the outcome of which was a unanimous agreement that a comprehensive medical abstracting service in English was desirable. After nine months of spade work a scheme was placed before the Council and approved. This new venture would be the direct responsibility of the Editor of the *Journal* but additional staff, both medical and non-medical, had been

aged, and they had been extremely fortunate in securing Editor of the *Abstracts* Dr. G. W. M. Findlay, who had been connected for many years with the scientific work of the Ilkome Research Institution. They felt that they had got the finest possible man for the job; he would have very able assistants.

The Editorship of the "British Medical Journal"

Dr. Carter closed by referring with very great regret to the pending retirement of their distinguished Editor of the *Journal*, Dr. N. G. Horner. Dr. Horner had occupied the editorial chair since 1928, and for eleven years previous to that he was Assistant Editor. He had filled the position with great distinction and ability, and they all hoped that in the near future of his retirement he would find renewed health and strength. The speaker suggested that from that meeting an expression of appreciation should be sent to Dr. Horner. The meeting signified by acclamation its desire that this should be done.

It was with the greatest possible pleasure (Dr. Carter continued) that the Council had appointed Dr. Hugh Clegg Editor of the *Journal* as from January 1, 1947. (Applause.) Dr. Clegg had been for many years Deputy Editor. It was largely owing

to Dr. Clegg's initiative that the various quarterly special *Journals* had been established. These *Journals* attracted into the work of the Association medical men and women of high academic status who were not interested in medical politics but who by coming into the Association gave it added strength and completed its unity. It was also on Dr. Clegg's inspiration that the abstracting service had come into being. Without his help and advice and hard work during the last nine months the scheme would not have matured, and the credit for such a scheme would have gone to some body other than the Association.

Dr. J. A. BROWN (Birmingham) moved a resolution to press for a further supply of paper for the immediate publication of the selection of "Any Questions?" This was seconded by Dr. A. BEAUCHAMP. Dr. CARTER explained that the Association had been met rather handsomely in the matter of paper for *Abstracts*, and it would be difficult to go again immediately to the Ministry of Supply for more paper for another purpose; but if the request could remain in the hands of the Council to be used at a suitable opportunity as expressing the view of the Representative Body he would accept it on the Council's behalf.

The motion was agreed to on that understanding.

Dr. G. DE SWIET (Paddington) urged that there should be more authoritative regular articles on recent advances in the treatment of disease. While they appreciated the value of the more scientific articles, they were not quite what the busy practitioner wanted to read.

Dr. CARTER said that the *Journal* could not be made wholly of general practitioner interest. It was necessary to plan the space for all the various interests represented in the profession. But he hoped the time might not be distant when they could accept and put into practice the intention of the Paddington proposal; he could not accept it forthwith as an instruction.

The Paddington proposal was adopted, and the report under *Journal* was approved.

MEDICAL ETHICS

Dr. N. E. WATERFIELD, chairman of the Central Ethical Committee, presented the report under "Medical Ethics." He referred briefly to the arrangements made with the British Dental Association concerning selection of anaesthetists.

"Important Notice" Appointments

Dr. R. FORBES (Hendon) moved:

That the Representative Body is of opinion (1) that the Central Ethical Committee should have the exclusive power and duty to initiate action against any member who accepts an appointment that was the subject of an "Important Notice" at the time of its acceptance; (2) that the acceptance of a prohibited appointment shall be construed as prima facie evidence of an ethical offence justifying expulsion from the Association; (3) that the member concerned shall be afforded full opportunity to offer explanations to the Central Ethical Committee for his action or to present in argument any extenuating circumstances that appear to him to

apply to the case; further that the Council be requested to regard such action by the Central Ethical Committee as separate and apart from the investigations that are conducted under the existing Ethical Rules, and (4) that in respect of this new power vesting in the Central Ethical Committee, the Council be requested to prepare a report thereon together with the rules of procedure for presentation to the next meeting of the Representative Body.

As a member of the Ethical Committee he had been conscious of various difficulties which arose when action had to be initiated locally with respect to some member who had offended against the declared policy of the Association. He felt that it was necessary to improve the machinery for dealing with those who accepted prohibited appointments. It might be found that appointments were offered under terms and conditions which were wholly unacceptable to the profession, and it was all the more necessary that the machinery for dealing quickly and adequately with any offending member should work smoothly and efficiently. It usually fell to the local secretary to carry out the procedure, with the assistance of the central office, but that duty was so exacting and responsible that it might well be carried out centrally. The mere fact of acceptance of such appointments should be taken as prima facie evidence of the fault on the part of the member concerned, and the onus of proving failure to observe the policy of the Association should not rest solely with the Association. The person who had presumably offended should be required to satisfy the investigating ethical committee that he had not deliberately broken the Association's rules. He should, of course, be given every opportunity of appearing before the investigating committee. In conclusion Dr. Forbes asked for general approval only of these suggestions and that the Council should make a report on the subject.

Dr. A. V. RUSSELL (South Staffordshire) moved as an amendment that to subsection (2) of the Hendon resolution should be added the words—

"and that similar action be taken against any member who accepts an invitation to serve on any administrative or advisory body set up under the new National Health Service until such time as the majority opinion of the profession is known."

This was an ethical point of the utmost importance. Refusal to insert such words would convey an impression that the Representative Meeting was in favour of, or indifferent to, the acceptance by members of the Ministry's invitation.

Dr. FORBES hoped that the meeting would not accept this amendment. The motion by Hendon would by implication include all appointments which were inserted in the "Important Notices" column of the *Journal*. If the Ethical Committee considered that a particular appointment or series of appointments was worthy of insertion in that column it would appear there in due course. It would be impolitic and undesirable to go so far as to compass within this motion the terms and conditions of some new service not yet available. He had in mind something much more limited and more constructive than the South Staffordshire amendment.

Dr. J. A. PRIDHAM (Dorset) said that he was not quite happy about the Hendon amendment. The Central Ethical Committee was asking for the transference to itself exclusively of this duty of initiating action. Why take it away from a Division which might be quite capable of dealing with the matter? Moreover, it seemed to be assumed that the practitioner was guilty before he was heard. The onus of proof was on the practitioner to prove his innocence instead of, as in British courts, on the prosecution to prove the guilt of an alleged offender.

Appointments under National Health Service Act

Dr. A. V. RUSSELL at this point proposed the suspension of standing orders in order to admit of the South Staffordshire amendment being put forward as a separate motion. This was seconded by Dr. N. J. COCHRAN (Burton-on-Trent).

A three-fourths majority was required for such suspension, but this was not obtained, 83 voting in favour and 32 against. The South Staffordshire proposal continued to be discussed as an amendment to the Hendon motion.

Dr. J. C. ARTHUR (Gateshead) said that they had to take the facts of the situation as they found them, and having regard to all the facts he thought the amendment a most dangerous one. The meeting was being asked virtually to reopen all the contentious matters which it had considered on the previous

day. If the Minister set out to appoint Regional Boards and it should happen that the profession cared to work on Regional Boards, what sort of people did they want to go on them? They wanted people whom they could trust. In any case he begged the meeting not to tie itself down rigidly without adequate consideration.

Dr. T. M. ROSE (Preston) hoped that the meeting would have nothing to do with this amendment. "If you wish to destroy the influence of the Association and to fill these posts with quislings, then let the amendment be carried."

Mr. C. E. BEARE (Reigate) supported the amendment. "We cannot run the risk of people joining these boards now."

Dr. F. GRAY (Wandsworth) said that the meeting on the previous day had taken certain decisions and was now faced with the possibility of those decisions being got round and made useless. If members were allowed to take up these appointments on one pretext or another the position would be given away completely.

Dr. R. W. COCKSHUT (Hendon) said that they looked with disfavour on any person accepting office in certain circumstances. One representative, who had already left the meeting, had said that he expected to be invited to be a member of a regional body and he was going to accept. If the amendment were passed in its present form as an amendment to the Hendon motion it would mean that any man who accepted office would be put through the disciplinary machinery of the Association. But the Representative Body should express the opinion that no man should accept office on any of these committees. As the issue now appeared more clearly before the meeting, he suggested that another motion for the suspension of standing orders be taken, again with a view to the South Staffordshire amendment being taken as a separate motion.

The motion to suspend standing orders was then put a second time and received the necessary majority. There voted: in favour, 91; against, 23.

Dr. COCKSHUT then proposed and Mr. LAWRENCE ABEL seconded:

That in the view of this Representative Meeting no registered medical practitioner should accept membership of any committee or board established under the National Health Service Act until the results of the forthcoming plebiscite are available.

This was carried by a large majority.

Dr. WATERFIELD, on the Hendon motion, said that it meant a change of policy of the Association, limiting considerably the autonomy of Divisions, and although he was very much in sympathy with it he thought the only action the meeting could take was to refer it to Council for consideration and bring the matter forward at the next A.R.M.

Dr. FORBES said that the motion would merely record the opinion of the meeting. He saw no need to adopt the device of referring it to Council.

The Hendon motion was carried.

NAVAL AND MILITARY

Col. A. H. PROCTOR, chairman of the Naval and Military Committee, introduced the part of the report headed "Naval Military." He mentioned one or two additional items. New rates of pay had been introduced in the Army and all services now received the same rates of pay for corresponding rank. The new rates of pay were a considerable advance on the old. New rates of retired pay for officers recently retired had been introduced. Short service commissions were being offered to specialists.

Dr. J. A. GORSKY (Westminster and Holborn) moved: "That the meeting does not regard the release from the Services as satisfactory, and considers that establishments are overstaffed." He gave several instances of alleged excess. At an R.A.F. station in Shropshire, with about 2,500 personnel, there was a hospital of 186 beds. A few weeks ago it had just over 50 patients, and it was by no means certain that all the 50 were hospital cases. At this station there were 10 R.A.F. doctors.

Dr. G. DE SWIET (Paddington) supported the motion.

Col. PROCTOR said that the motion raised difficult questions. In every case where alleged overstaffing of hospitals had been brought forward the Army had been ready to investigate the

case. But in dealing with these complaints of overstaf certain factors had to be taken into account. There was, example, the question of fairness to the men serving over-s The present method of demobilization by taking into acco both length of service and age was the fairest. If it was clai that because a man was not fit to go over-seas he sho therefore be demobilized it would lead them down a slip slope.

The Westminster and Holborn motion was carried.

FINANCE

The TREASURER (Dr. Bone), in presenting the financial st ment, said that the assets of the Association were in an exce ingly flourishing condition. The Headquarters building taken into the accounts at £360,000, but it was probably w twice that. Investments represented something like £120, Subscriptions had reached a maximum figure, and the ince generally was satisfactory. He commented on the very succ ful financial aspect of the *Journal*. It was quite certain t the revenue of the Association would increase substanti again during the present year. He wished to remind rep sentatives, however, of the Association's heavy commitme These included:

- The necessary expenditure over the National Health Service Regional activities.
- The increase (to six) of the number of medical secretaries.
- The abstracting service.
- The fostering of international relationships.
- Building commitments. (These amounted to £70,000.)
- Extension of the library, with its sacrifice of outside rentals.

It was evident, therefore, that the funds of the Associati built up so well during these six "idle" years, should not wasted. (Applause.)

Dr. JANET AITKEN presented the report under "Medi Benevolence," which showed that a sum of £7,160 received during 1945 by the Charities Trust Fund, an incre of nearly £300 on the sum received in 1944.

Dr. GREGG presented the report under "Protection Practices" and called attention to the appendix to Supplementary Report of Council, published in *Supplement* of June 22.

SCOTLAND AND WALES

Dr. G. MACFEAT presented the report under "Scotland," drew attention to what was stated in the report about working of the Maternity Services (Scotland) Act, and a mentioned that a National Health Service Bill for Scotla would probably come before Parliament in October.

Dr. H. R. FREDERICK, chairman of the Welsh Committee, presenting the report under "Wales," said that this was first time for many years that the Welsh Committee had be able to submit a report. The committee had considered position of the hospital services in the Principality in relati to the administrative proposals of the Health Service B The result of its deliberations was set out in the report.

ELECTIONS

During the course of the meeting the following electi results were announced:

Chairman of Representative Body: Dr. J. B. Miller (no conte)
Deputy Chairman: Dr. E. A. Gregg (no contest).

Twelve members of Council elected by grouped representati (the figures denote the groups) (1) Dr. Vaughan Jones, (2) Mr. R. Newell, (3) Mr. A. S. Gough, (4) Dr. S. Wand, (5) Dr. H. Frederick, (6) Mr. Dickson Wright, (7) Dr. R. W. Cockshut, Dr. O. C. Carter, (9) Dr. A. Talbot Rogers, (10) Mr. I. Sims Hall, (11) Dr. W. D. Frew, (12) Dr. J. M. Hunter. (Contest only Group (9).)

Eight members of Council elected by the representatives acti together: Mr. Lawrence Abel, Dr. J. C. Arthur, Mr. A. H. Burge Dr. W. E. Dornan, Dr. R. Forbes, Dr. Peter Macdonald, Dr. Smith Pool, Dr. W. D. Steel.

Representative of Royal Naval Medical Service on Council (Council's recommendation): Surgeon Rear-Admiral W. H. Edg

On the proposition of Dr. I. G. Innes a hearty vote of than was accorded to the Chairman and Deputy Chairman, and th meeting terminated at 4 p.m.

BRITISH MEDICAL ASSOCIATION

114th Annual General Meeting

The 114th Annual General Meeting of the British Medical Association was held in the Great Hall of B.M.A. House, London, on Wednesday, July 24, 1946. Mr. H. S. Souttar, retiring President, occupied the Chair at the beginning of the meeting. The notice of meeting was read by the Secretary, and the minutes of the previous Annual General Meeting, published in the *Supplement* of August 11, 1945, were confirmed.

Induction of New President

Mr. Souttar then inducted into the Chair as President, 1946-7, Sir Hugh Lett, Bart., C.B.E., D.C.L., F.R.C.S., and invested him with the presidential badge of office. In doing so he described Sir Hugh Lett as his old teacher and colleague, a former President of the Royal College of Surgeons, Master of the Society of Apothecaries, and President of the Hunterian Society, and still Hon. Secretary of the King Edward Fund. Sir Hugh Lett had behind him a great experience of public service carried on in so quiet and unobtrusive a manner that it had not attracted the attention it really deserved. The Association was fortunate in having him as President.

Sir Hugh Lett said that he was deeply conscious of the honour done to him—an honour enhanced by the fact that he had been installed by his old friend and colleague Mr. Souttar, with whom he had worked in so many places over so many years, always with great advantage from his counsel.

Presentation of Stewart Prize

The President then presented the Stewart Prize, established for the recognition and promotion of research into the origin, spread, and prevention of epidemic disease, consisting of a certificate and a cheque for £50. There were two recipients—namely, Prof. Major Greenwood of the London School of Hygiene and Tropical Medicine, in recognition of his outstanding contributions, over a period of many years, to the science of epidemiology and vital statistics, and Dr. W. N. Pickles, of Aysgarth, Yorkshire, for his researches in the field of epidemiology which provided a close determination of the range of the incubation period of epidemic catarrhal jaundice and threw light upon epidemic myalgia (Bornholm disease), and was a model for research workers in general medical practice.

In presenting the prize to Prof. Greenwood the President said that it was impossible to over-emphasize the need there was for this valuable work. Under Prof. Greenwood's guidance statistics could no longer be accused of being able to prove anything. He had brought order out of chaos. To Dr. Pickles he said that it was with special pleasure that the Association had decided to award this prize to him because of all that he had done whilst engaged in a busy practice extending over a wide area of the dales of Yorkshire. It reminded one of the great work of Sir James Mackenzie on cardiac disease, carried out whilst he, too, was in the middle of a busy practice.

President's Address

The President then delivered a short address from the Chair. The address is printed in the opening pages of the *Journal*.

Appointment of Auditors

On the motion of Dr. R. Cove Smith it was agreed: That Messrs. Price, Waterhouse and Co. be and they are hereby appointed auditors of the British Medical Association until the next Annual General Meeting at a remuneration of 300 guineas.

Vote of Thanks to Past President

The Chairman of Council (Dr. H. G. Dain) moved: That the hearty thanks of the Annual General Meeting of the Association be given to the retiring President for his services as President, 1945-6. He said that when, on the death of Lord Dawson, they were confronted with the need for electing another President, they had no difficulty in turning to Mr. Souttar. He had served the Association in many capacities. He had been both Chairman of Council and Chairman of the Representative Body, and it was a fitting crown on his work that he should be elected President. The motion was carried with acclamation.

Mr. Souttar said that it was a very rare distinction to have held all these great offices, but it was a memory that would remain with him for ever that he had worked in such a happy brotherhood.

HEARD AT HEADQUARTERS

The New President

Sir Hugh Lett, Bart., who was elected President of the Association at the beginning of the Annual Representative Meeting, is the eleventh Fellow of the Royal College of Surgeons of England to take that position during the present century. During the same period there have also been three presidents who were Fellows of the Royal College of Surgeons of Edinburgh. In the earlier part of the Association's history few surgeons were numbered among its presidents—only three in the first twenty-five years. Sir Hugh Lett is a former President of the Royal College, a past Master of the Society of Apothecaries, and he has been President of the Sections of Surgery and of Urology of the Royal Society of Medicine and of the Hunterian Society. He is himself the son of a medical man, and he married the daughter of Sir Buckston Browne. In many ways Sir Hugh Lett has been helpful to the Association in recent difficult years, and his election to the presidency will be heartily welcomed.

South African Affiliation

Proposals for affiliation with the Medical Association of South Africa have been considered by the Representative Body. Although the agreement entered into nearly twenty years ago has come to an end and the Medical Association of South Africa has achieved independence and self-government, there has been a strong desire for an affiliation relationship, similar to that obtaining between the B.M.A. and the Canadian Medical Association. One difference which is proposed, however, is that in South Africa there should be created a new class of membership whereby a member of the South African body may become an affiliated member of the B.M.A., not paying subscriptions, but entitled to attend (without voting) meetings of local units, as well as the annual scientific meetings, and to use the house and library, and have the help of the central staff. In accepting the proposals for affiliation the Federal Council in South Africa has assured the "parent body," as it calls it, of its keen desire to maintain this link of friendship and mutual understanding. A large number of South African members have retained their subscription to the *British Medical Journal*.

Cold Efficiency

Mr. Bevan's memorable utterance about expiring in the warm sympathy (and implied inefficiency) of the small voluntary hospital comes to mind in connexion with a case, particulars of which have been sent by one of the Division secretaries to the local M.P. A man had a 40% disability pension awarded him for what was said to be osteo-arthritis of the spine. He had been discharged from a military hospital where, according to his statement, no x-ray films were taken, but he had been given exercises and electrical treatment, which only aggravated the pain, and later he was put in a spinal jacket. The Division secretary who relates the incident took the man into the voluntary hospital in his small town, and as a result of x-ray examination it was found that his real trouble was spondylo-lithesis. He was referred to the large voluntary hospital in the county town, where the diagnosis was confirmed, and where they were perfectly ready to take in the man and to operate. But the local regional officer of the Ministry of Pensions had to be informed, with the result that the hospital arrangement was cancelled, and the man was admitted to a Ministry of Pensions hospital. Here again x-ray examination confirmed the diagnosis. Arrangements were made for operation, even down to shaving and preparing the skin, when the medical officer interviewed the patient on his bed and told him that it had been discovered that the disease for which they were to operate was not the disease for which he was in receipt of a disability pension, and therefore the matter must wait until the question had been settled. The man was sent home, where, at the time of telling, he had been for a fortnight, unable to work and suffering a certain amount of pain.

Correspondence

Demobilized Doctors

SIR.—Dr. C. G. Jones (July 13, p. 66) and "Ex-Service Assistant" (*Supplement*, July 13, p. 12) have certainly ventilated the views of many "Returning Doctors." After five or six years' comradeship among our colleagues in the Services, we come back to an England of pretty speeches and prosy pamphlets.

We were told that the country was crying out for doctors, yet I, and several of my contemporaries demobilized in January and February, have not yet found a job. I have applied for over a dozen assistantships, with only one reply (to say the post had been filled), and one registrarship, to which I have not yet had a reply, three months after the closing date.

I have been offered some half-dozen practices at the reasonable enough premium of one to one-and-a-half years' purchase, but with the proviso that the house must be sold with the practice. The house is useful, for our days of bivouacking are, I trust, over, but the price asked has invariably been 30-40% above current prices, and about 300% above pre-war prices. The vast majority of us, a year ago, would have had no truck with Mr. Bevan's "negative direction"; but better that, at a living wage, than the economic direction of our established fellows.

We ask no favours for doing our duty to the fighting man, indeed we are proud to have been of service, but let us have at least a chance to start again.—I am, etc.,

"UNEMPLOYED EX-SERVICEMAN."

Medical Unemployment

SIR.—I was rejected in 1939 for service in the armed Forces. During the war years I did four assistantships, and as everyone knows we were short of medical practitioners in general practice during that period. Last January 31 I was replaced by a returning partner from H.M. Forces. Since then I have failed to obtain work. Six months' enforced idleness. I have written the B.M.A., the Minister of Health, all the medical agencies, and roughly 600 letters in reply to announcements in the *British Medical Journal*. From these letters I have received less than 30 replies from courteous medical practitioners. We are at the moment employing somewhere about 1,000 alien doctors in this country. Is this the reward for working many many hard years of war work?—I am, etc.,

Treharris, Glam.

G. L. E. THOMAS.

Delayed Release of Specialists

SIR.—I would like to write a few words of encouragement to Service specialists and R.A.F. medical officers, who now fill these pages with their laments. Everyone, I am sure, sympathizes with the specialists in their delayed demobilization, but I hope they will remember that when their day does come, their war service will be of more account in getting jobs than that of their humbler colleagues. Many of these joined in the early days without even taking their M.B.s, let alone waiting for higher qualifications. Many of them have been on real active service in small ships, parachute regiments, invasion craft, and the like. To them the specialist's life and rank seemed a most desirable way of spending the war.

The mortality rate of surgeon-lieutenants, for example, in the dark period of the war was considerably higher than that of their better qualified contemporaries or companions in arms in the R.A.F. medical service. Let the psychiatric specialist rejoice that it was other people's nerves he dealt with so efficiently, and the specialist delight in the fact that it is more pleasant and intellectually satisfying to write an article on the treatment of large numbers of compound fractures, or immersion feet, than to be a mere participant. A few months' delay in demobilization that puts him level with the combatant officer is surely not too high a price to pay for these advantages.—I am, etc.,

EX-SERVICE MEDICAL OFFICER.

Association Notices

Meetings of Branches and Divisions

BATH DIVISION

A well-attended meeting was held on July 17 with Dr. G. STEVEN in the chair. The first item taken was the report of a subcommittee appointed to meet the medical officer of health to discuss the implementation of the Education Act, 1944. It was agreed that in view of the Ministry of Education's Circular No. 1946, it was impossible for a local authority to pay for the treatment of school children by their family doctor, but it was decided that the local authority medical officer when referring patients to their own doctor should state that "The education authority cannot be responsible for the payment of fees for the treatment of your child by Dr. —." Inside the envelope would be a form on which the local authority medical officer would enter a provisional diagnosis and other notes, and it was hoped that on the reverse of the form would be room for a reply from the doctor, who could get 5s. for each report.

The meeting then discussed the position of ex-service medical officers and passed the following resolution: "That the Council of the Association be informed of the alarm felt by this Division concerning the position of practitioners and specialists returning from service with the Forces with particular reference to the continued employment of aliens in paid appointments."

POSTGRADUATE NEWS

The Fellowship of Medicine announces that there will be a week-end course in chronic rheumatism at Royal National Hospital for Rheumatic Diseases, Bath (in association with the University of Bristol) on Friday afternoon, and all Saturday and Sunday, August 23, 24, and 25.

APPOINTMENTS

BEHRMAN, SIMON, M.R.C.S., M.R.C.P., Honorary Neurologist, Queen Mary Hospital for the East End, Stratford.

CARDIFF ROYAL INFIRMARY.—Honorary appointments. Assistant Surgeon Ear, Nose, and Throat Department, H. A. Thomas, F.R.C.S.Ed., Assistant Physician specializing in Neurology, J. D. Spillane, M.D., Assistant Physician (General Medicine), B. Evans, M.D., Assistant Surgeon specializing in Urology, R. A. Moss, F.R.C.S., Surgeon in charge of Fracture and Orthopaedic Department, D. Evans, F.R.C.S.Ed., Dermatologist, G. A. Hodgson, D.M.

CLARK, J. M. P., F.R.C.S., Honorary Assistant Orthopaedic Surgeon General Infirmary at Leeds.

COOPER, H. ASTLEY, M.D., M.R.C.P., D.P.M., Senior Physician, Rush Hospital, Wickford, Essex.

MIDDLESEX HOSPITAL, W.—Assistant Physicians: A. Wilcox, M.D., M.R.C. Assistant Surgeon: C. J. B. Murray, M.S., F.R.C.S., Assistant Orthopaedic Surgeon: P. H. Newman, F.R.C.S., Anaesthetist: O. P. Dinick, M.B.S., D.A.

PAYTON, C. G., M.D., D.P.H., Medical Officer of Health and School Medical Officer, etc., County Borough of Northampton.

ST. GEORGE'S HOSPITAL, S.W.—Assistant Physicians: M. T. A. Hun, M.D., M.R.C.P., J. F. Dow, M.R.C.P., Assistant Neurologist: Denis Williams, M.D., F.R.C.P., Assistant Surgeons: A. M. H. Siddons, M.Chir., F.R.C. Rodney Smith, M.S., F.R.C.S., Director of Pathology (whole-time post), T. Crawford, M.D.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Honorary appointments. Physician, K. M. Robertson, M.D., Orthopaedic Surgeon, H. H. Langston, F.R.C.S., Ophthalmic Surgeon, E. Zorab, M.B., B.D.O.M.S., Dermatologist, F. J. Egar, L.R.C.P.S.I., Assistant Physician, H. K. Meller, M.R.C.P., P. G. Todd, M.D., Assistant Surgeon, L. Richardson, F.R.C.S., Assistant Anaesthetist, H. Oakley White, M.R.C.L.R.C.P.

UNIVERSITY OF LONDON: INSTITUTE OF CHILD HEALTH.—Assistants to Professor of Child Health: R. S. Illingworth, M.D., D.C.H., R. E. Bonhag, M.B., B.Chir., M.R.C.P., Part-time Lecturer in Genetics: J. A. Frazer, D.Sc., M.D., M.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS

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BIRTHS

BRADFORD.—On July 13, 1946, at 10, Victoria Park, Liverpool, 15, to Mr. (née Roberts), and Dr. W. E. Gerald Bradford, a daughter.

LISTER.—On July 18, 1946, at 549, Alexandra Parade, Glasgow, to Mr. M.A., and James A. Lister, M.B., a daughter—Jean Graeme.

SMITH.—On July 22, 1946, at 18, Colin Gardens, N.W.9, to Betty (Gilbert), wife of Brian J. Douglas Smith, M.B., B.S.Lond., a son—Nicholas.

MARRIAGES

COLQUHOUN-MEYER.—On July 3, 1946, at Kuala Lumpur, Malaya, Squ Ldr. John Colquhoun, R.A.F.V.R., of Nottingham, to Emelia Meyer, Voorburg, Holland.

DUGUID-BARRY.—On July 6, 1946, at Wallasey, Cheshire, John Duguid, M.B., Ch.B. (Major, R.A.M.C.), to Aileen Mary Barry, M.B., Ch.B.

DEATH

GEMMILL.—On July 28, 1946, at 27, Woodbourne Road, Edgbaston, Birmingham, William Gemmill, M.A., M.B., Ch.M., F.R.C.S., Professor of Surgery Birmingham University, dearly loved husband of Janet Gemmill.

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MALE INFERTILITY*

BY

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ough it has been known for centuries that the unfruitfulness of some marriages is due to a fault in the male rather than the female partner, only within the last few years has male fertility received the attention it merits. Even now its importance is not always appreciated by members of our profession, let alone the public. Some men, particularly of hospital class, refuse any sort of investigation, and for reasons which are now well known—ignorance, embarrassment, religious scruples, fear of loss of male prestige, etc. It is not rare for the wife to object to her husband being examined, either because she is afraid of the effect that knowledge of his infertility may have on their relationship, or because she believes that male infertility cannot be treated successfully and she prefers to live in hope rather than know the truth. Some doctors explain their omission to test the husband on the ground that the discovery of the infertility will have a bad psychological effect and create unhappiness. There may be grounds for this view in the isolated case, but in general it seems an excuse rather than an adequate reason. Great care is necessary in disclosing the cause of their infertility to any couple, and even then it must be admitted that unforeseen reactions disturbing the harmony of marriage sometimes occur. What is said to the couple will vary with individual cases, and prognosis should err on the side of optimism. Often it is best not to tell the whole truth, particularly to men afflicted with impotence, lest their self-confidence be further weakened.

For the purpose of this paper a series of 512 consecutive cases of sterility seen in private practice and personally investigated have been analysed. Also, for comparison, an analysis of 283 consecutive cases seen over a short period in hospital practice is also included. The findings are those of routine clinical practice and do not in any way represent the results of a special investigation. The majority of the cases were dealt with during the war years, when laboratory and x-ray facilities were limited and when many husbands were away from home for longer or shorter periods. All the cases were investigated not less than one year before this review, and the post-natal history is known in all except 67. An honest attempt was made to examine the husband in every case except those in which the wife had symptoms additional to the sterility and investigation of the latter became incidental to the treatment of the cause of the former. Of the 512 private cases only 491 were investigated, and out of these some sort of assessment of the husband's fertility was made in 320. In the hospital series the husband's fertility was assessed in 115 of the 252 cases investigated.

The first question which arises, and one which is always being asked, is, "How often is the male partner responsible for infertility marriage?"

It is difficult if not impossible to give a concise answer to this—or, indeed, to form any exact estimate, and for the following reasons:

1. Fertility, either of the individual man or woman or of a marriage, is a matter of relativity. Comparatively few people are absolutely sterile or fully fertile. All intermediate grades of fertility occur in either sex, and the fruitfulness of a marriage is dependent on the summation of the fertility of the two partners. If there is no absolute bar to conception on either side, low fertility in one partner may be cancelled out by high fertility in the other.

2. In a large proportion of cases infertility results not from one but from several factors, which may be distributed between the two partners. The average number of such factors per case is variously assessed as between 2.23 and 4.75 (Hamblen, 1945). Thus, for example, the wife may have a cervical erosion and a uterine retroflexion, whilst the husband's production of spermatozoa may be subnormal as regards both number and quality. Who is to say which factor is the most important or indeed which partner is chiefly to blame? Scientifically, therefore, a statement of the cause of childlessness in any marriage should consist in a listing of all the infertility factors present. Treatment should aim at the elimination of as many of the infertility factors as possible.

3. The assessment of male fertility is in itself difficult.

(a) *Procreation Test.*—Perhaps the best test is whether a man can procreate children, and there are many cases in which it is known that the husband has had a child by another woman or by the wife. Sterility following one or more pregnancies is common, and in such cases there is a natural tendency to exonerate the husband from blame—on the ground that he has proved his fertility. If a man has been responsible for several pregnancies then it is reasonably certain that his fertility is within normal limits unless circumstances which might have affected it have arisen since the last pregnancy. If, however, he has been responsible for only one pregnancy, it is by no means proof that his fertility is up to average standards, and it is not difficult to produce many cases showing that, although a man has procreated once, his fertility is so low that the chances of his repeating the performance are remote. In this series there were 181 women complaining of infertility after one or more pregnancies, although 10 must be excluded because the man responsible for the pregnancy was not the husband. It will be seen from Table I that when the wife had had one abortion 11 out of the 25 husbands tested had impaired fertility—in one case azoospermia on two tests. When the women had had one child 13 out of 33 husbands were proved at fault. It should be kept in mind, however, that the husband was tested in only about one-third of the cases. In many of the others some gross abnormality, such as occluded or damaged tubes, was found in the wife, and the chances are that the husband in those cases was normal. Nevertheless, comparable figures are published in the literature (Lane-Roberts *et al.*, 1939). There are several explanations for such findings. Sometimes the husband has had an illness or injury since the date of the previous pregnancies: in two of these cases mumps had occurred, but in

*An abridged form of papers presented to the Liverpool Medical Institution on March 1, 1945, and the Birkenhead Medical Society March 8, 1946.

only one of them was there a history of orchitis. Sometimes spermatogenesis fails or deteriorates without any apparent reason at a comparatively early age. The usual explanation, however, appears to be that the husband had always been subfertile and the occurrence of the one pregnancy with no subsequent ones depended entirely on the laws of chance.

TABLE I.—*Relative Infertility*

Total no. of cases	181
No. of cases in which present husband was not the father ..	10
Husband not tested	6
" proved normal	2
" proved to have azoospermia	2
No. in present series	171

	No.	Husband Examined	No. with Male Fault
One abortion only	50	25	11 (a)
One child only	83	33	13 (b)
More than one pregnancy ..	34	6	0
Ectopic pregnancy only	4	1	0
Total	171	65	24

(a) One case showed azoospermia to two tests.

(b) Intercurrent disease (mumps) in two cases.

(b) *Clinical Examination.*—Routine examination of the male, from both the standpoint of general health and the conditions of the sex organs, is clearly required—as are the details of the past history of any disease which might have affected genital function. Knowledge of the sex life of the individual, frequency of coitus, etc., is also helpful. However, physical examination of the male is of strictly limited value: if the findings are positive—e.g., atrophied testes—then they are significant, but if the findings are negative no conclusion is possible. In this series only about one-quarter of the husbands were interviewed and examined, and only five of these belonged to the hospital class. The remainder were not seen either because they refused or because they were not available for reasons of national service. However, the wives were always questioned as to the age, occupation, general health, and previous illness of their partners. The relationship between the clinical findings and male fertility as assessed by semen analysis is shown in Table II. The

TABLE II.—*Clinical Features as Compared with Semen Analysis*

Cases					
A. Husband not examined physically, but no significant history obtained via wife					
Semen normal					147 cases
Gross infertility					43 "
Minor infertility					51 "
No semen test					289 "
B. Husband examined or history of significant ill-health obtained via wife					
					208

Findings on Clinical Examination	No. of Cases	Normal Semen	Gross Infert.	Minor Infert.	Semen not Tested
Normal genitalia { No significant history ..	132	95	10	16	11
{ Impotence ..	14	1	1	2	10
{ History of a mild mumps ..	1	—	1	—	—
{ History of G.C. ..	5	2	2	—	1
Bilateral testicular atrophy or hypoplasia. (Various causes: impotence as well in 2 cases)	26	2	17	3	4
Unilateral testicular atrophy or hypoplasia	7	1	3	3	—
Varicocele without testicular atrophy	7	2	2	3	—
Phimosis	1	1	—	—	—
Not examined { History of orchitis ..	1	—	—	—	1
{ History of G.C. ..	3	1	2	—	—
{ History of adult mumps ..	4	2	1	—	1
{ History of syphilis ..	1	—	—	—	1
{ Age over 60 ..	2	1	—	—	1
{ History of severe general disease—e.g. phthisis ..	4	—	1	3	—

figures here bear out the general contention that genital abnormalities recognizable on routine examination nearly always mean impaired fertility, but they also show that of 132 men who had a good past history and apparently normal genitalia 26 had lowered fertility, often of serious degree.

(c) *Semen Analysis.*—Male fertility is mainly assessed by semen analysis. Semenology is now occupying the attention of a good many research workers in several countries, and it may ultimately be found that an exhaustive examination of the various characteristics of both fluid and cellular contents is necessary before any conclusion can be drawn in any given case. At present, and for practical purposes, the least information that is required about any specimen

concerns particulars as to the volume of the fluid, the number, spermatozoa, their motility, their survival capacity, and morphology. In assessing any one specimen all these features should be considered in relation to each other rather than separately. Examination of a single specimen in any one case is probably sufficient, since semen does show spontaneous variations, particularly in some individuals. In this series examinations were carried on semen collected by masturbation into a glass container transported at atmospheric temperature. The test was usually repeated when the findings were abnormal.

The interpretation of semen analysis demands some critical of what is normal or at least within normal range, and difficulty arises. Reference to this will be made later, but criteria used in connexion with these cases have been: (a) Volume of fluid was accepted as abnormal only if it was repeatedly less than 0.5 ml., or if the sperm density was low, making the total population of the specimen less than millions. (b) Number of spermatozoa. With the above exception, no count above 30 millions per ml. was accepted outside the range of average fertility. (c) Motility. W. specimens were suitable for motility examinations, asthenozoospermia was diagnosed only if there were less than 40% motile at the end of six to eight hours. (d) Morphology. Semen not regarded as subfertile unless more than 50% of spermatozoa were found malformed. The observations confirm those of others—namely, that the greatest number of morphological faults are mostly seen when the sperm count is low; partly for convenience, and partly because experience goes to show that sperm density is the most important single criterion. The findings are classified under the headings of number, spermatozoa rather than according to their morphology. With the sperm count was found to be 10 million per ml. or less it was taken to mean serious impairment of fertility. All other types of seminal faults are classified as indicating moderate impairment only.

Of the total of 743 infertile marriages investigated, semen analysis was carried out in 424. In 108 cases, however, the details are not available, because the pathologist of one hospital, although indicating significant departures from the normal when they were encountered, otherwise reported the number, motility, and morphology of spermatozoa as being "within normal limits." This was accepted at the time, but it is not satisfactory, and it may have resulted in the omission of some cases of impairment of fertility. Another 5 tests were carried out elsewhere, and the results could be obtained only through the wife, who described them as being reported to her as "not satisfactory." It is to be regretted that with few exceptions it was impossible to take steps to distinguish between seminal abnormalities due to faulty spermatogenesis and those due to an obstruction in the path of exit of the spermatozoa.

The findings are set out in Table III, from which it will be seen that in the private series the husband alone was at fault

TABLE III

Private series	Total no.	512
	No. investigated	491
Hospital series	Total no.	283
	No. investigated	252

Main Causes of Infertility	Private Series		Hospital Series	
	No.	%	No.	%
Fault in wife (husband normal)	152	31.0	46	18.2
Fault in wife (husband's fertility not investigated)	139	28.3	107	42.4
Fault in husband (wife normal)	72	16.7	30	11.5
Fault in husband (wife not investigated)	10	—	19	7.5
Fault in both husband and wife	52	10.6	—	—
No cause for infertility found	66	13.4	50	19.8
Both partners investigated	27	—	11	—
Only wife investigated	32	6.5	30	11.9
Only husband investigated	7	—	9	—
Total no. of husbands investigated	320	(Semen test in 309) (41.1%)	115	(Semen test in 111) (42.6%)
No. with lowered fertility	134	—	49	—

in about 16.7% of cases and that both partners were more or less equally at fault in about another 10.6%. It should be noted, however, that in the 28% in which an infertility factor (frequently a minor one such as acute antelexion of the cervix) was found in the woman the man was not tested. Furthermore

another 6.5% in which the husband's fertility was not assessed no abnormality at all was found in the wife, and in many of these it is highly probable that the husband, if he had been available, would have been found infertile. In some of these cases this is almost certain because there was suggestive evidence by way of past illnesses, or the wife was fertile to other men, etc. It seems fair to conclude that there is an important male infertility in about one-third of the cases, although in about one-third of these the wife too has some impairment of fertility. The findings in the hospital series are not so informative because a smaller proportion of husbands were investigated. So in only about 19% was a male fault found. There is little doubt that this figure would be much higher if more complete inquiry had been possible. This contention is borne out by the fact that in both series 40% of the husbands examined were found to be subfertile. These figures are confirmed by nearly all recent writers. Thus Siegler (1945) found a male fault in 47.9% of cases (combined with a female fault in 22.3%). Mazer and Israel (1941) say that at least 40% of husbands of infertile marriages can be shown to be at fault. Hamblen (1945) says that absolute sterility is due to male causes in 40-45% of cases—although he adds that fertility-reducing factors are present in over 90% of husbands of infertile partnerships. Sharman (1944) found that 31.6% of husbands tested had subnormal seminal fluid.

Fifteen per cent. of the marriages in this country (Registrar-General's Statistical Review, 1938) and in America are childless: involuntary sterility is present in not less than 10% of marriages, and is now mostly reckoned as occurring in one of every eight or nine couples (Hamblen, 1945). If we accept the conservative figure of 10% and admit that in not less than one in three infertile marriages the husband is wholly, or in large measure, responsible, then we can conclude that at least one in every 30 men who marry is either sterile or has considerably impaired fertility. That means that in England and Wales (the 1939 and 1940 figures) something like 15,000 to 16,000 subfertile men get married every year. These figures are so impressive, and child-bearing means so much to the happiness of the average woman, that there is something to be said not only for premarital physical examination of the man but for routine semen analysis. However, if premarital semen analysis is carried out it must be done efficiently and the results interpreted with caution. In this series are men of extremely low fertility who had previously been pronounced fully fertile on the finding of a few motile spermatozoa in a hanging-drop preparation. There are others in whom no fault was discovered who had elsewhere been diagnosed as infertile because spermatozoa in a condom specimen had been found amotile—a finding which is almost the rule.

Types of Male Infertility

The details of the types of male infertility in the 183 cases are set out in Table IV. Some would not include cases of

TABLE IV.—Details of 183 Cases of Male Infertility

Impotence (semen normal in 2; not examined in 11)	13
Phimosis preventing coitus (semen normal)	1
Faults in semen (impotence as well in 3 cases)	169
1. Low sperm density, etc.	137
Persistent azoospermia	38
Intermittent azoospermia	4
2 million or less per ml.	26
3-10 million per ml. (impotence in 1)	26
11-20 million per ml. (impotence in 2)	26
21-30 million per ml.	29
2. Low volume alone	2
3. Low volume with total sperm population less than 50 millions	3
4. More than 50% abnormalities	12
With asthenozoospermia	3
Without proved asthenozoospermia	5
With low volume	1
5. Necrozoospermia or asthenozoospermia	10
6. Semen "unsatisfactory"—probably azoospermia	5

impotence, but it should be pointed out that no such cases are included in this series except when the desire for children was the chief concern of both husband and wife. Impotence in varying degrees is probably more common than is generally supposed. In order that the balance of the series be not disturbed, apareunia due to conditions such as vaginismus is included under faults in the wife, but again only when sterility was the chief complaint. Thirty-eight men had azoospermia and another

four submitted specimens necessitates masturbation. Its best indication and at other times extreme, from some condition, organic or with 46 men with a sperm count—impotence—which interferes make up a total of 88 cases of serious—excellent treatment, Impotence of a child

Impotence is more often due to psychological disturbance than to any physical disability or endocrine upset. There was only one example of obvious endocrine disorder, and that pituitary infantilism. Nevertheless, in three out of the 16 cases (and the semen was examined in only five cases) there was definite evidence of defective spermatogenesis. In one case fertility was grossly subnormal and testicular atrophy following mumps was present. Even in these cases, however, there was a psychological factor which was probably important in the causation of the impotence. As a rule it was easy to elucidate the reasons for the men's inhibition: guilt over masturbation; a wrong outlook on sex resulting from misguided instruction from parents and others; religious zeal; an abnormal respect for the opposite sex; underlying desire not to have children—all were encountered. Some men could be described as effeminate or undersexed, but, contrary to the suggestion of Lane-Roberts *et al.* (1939), it was not only the latter who complained of the type of impotence in which erection and penetration are achieved but ejaculation never takes place. In one of the cases the husband developed secondary impotence because the wife wrongly accused him of sterility. The treatment of these cases consisted essentially in talks and discussions with the object of sorting out the underlying cause of the inhibition, explaining it, and giving instruction on sex matters. The wife was interviewed separately and instructed in the attitude she should adopt, the need for sympathetic encouragement and patience on her part being stressed. The wife was not always helpful, however, and any good she may have achieved was sometimes undone by an outburst which revealed her exasperation at the repeated failure of her husband's attempts. Testosterone, usually by the sublingual route, was also employed, but in the main proved ineffective. Even when it appeared to help it may well have been because the man was impressed by the idea of taking a glandular preparation.

The results of treatment of this series were as follows. Two men refused to co-operate or have any form of treatment. That leaves 14 who were treated both by interview and by discussion, and sometimes by testosterone—mainly administered by mouth. In five cases the ultimate effect is unknown. Of the other nine, three showed little improvement, while six were cured—four to the extent of proving their fertility by impregnating their wives. In one of the latter cases, however, the pregnancy resulted from artificial insemination and was ectopic in site.

Causes of Defects in Production or Delivery of Spermatozoa

1. *Mumps*.—Mumps occurring after puberty is always a potential menace to testicular function, at least so far as the production of spermatozoa is concerned. Ten men gave a history of having had this disease after the age of 14, but in one the seminal fluid was not examined. Of the nine examined six had either azoospermia or extreme oligozoospermia and teratozoospermia. Only two men are recorded as having a count within normal limits, and both of these were only 14 at the time they had mumps, and did not suffer from orchitis. One proved fertile. The remaining man had atrophy of one testis, and although the number of spermatozoa was low he achieved one pregnancy in seven years.

2. *Cryptorchidism*.—Late or non-descent of the testes is well known to affect spermatogenetic function adversely, probably because of the slightly higher temperature within the abdominal cavity. All four of the patients with bilateral cryptorchidism or giving a history of operation for such had azoospermia or extreme oligozoospermia. There were two other men in whom only one testis was undescended. The descent of the other may have been late, but details of this could not be obtained. Both showed moderate impairment of fertility. None of these six men has had children. Unless there has been operative treatment, or unless the testes have remained permanently above the scrotum, it is usually impossible to obtain from patients any information as to the age of descent. It may be that spon-

only one of them was there a history of spermatogenesis fails or deteriorates at a comparatively early age. The cause is to be that the husband has a history of the one pregnant woman, and on the laws of

These men showed azoospermia or oligospermia. The semen was normal in three. In another the fluid, and they probably had a child (subsequent to the gonorrhoea) by a woman. (b) *Syphilis*.—Only one man gave a history of syphilis, but he was not examined. Nevertheless he had a child. This case was interesting because the wife had had three husbands, each of whom had children by other women. Yet when she was examined no cause for infertility could be discovered.

4. *Varicocele*.—Nine men were found to have varicocele of significant size, and in two of these the testes were either hypoplastic or atrophied. It is impossible to say, however, whether the varicocele followed atrophy or whether it was primary and interfered with full development. In only two of these men was normal seminal fluid found; evidence of low fertility was present in all the others. Although no definite conclusion as to cause and effect is possible in these cases there seems little doubt that varicocele can interfere with testicular function—presumably by altering the temperature of the scrotum or the blood supply to the testis.

5. *Hormone Imbalance*.—When azoospermia or oligospermia is present there is often no obvious cause for it and the testes feel normal. On section it is said that the tubular apparatus shows areas of focal degeneration but that the interstitial tissue is unaffected (Hamblen, 1945), and this observation is supported by the fact that the man rarely shows signs of testicular hormone deficiency. The usual manifestations of pituitary disorder are not seen, and it is suggested that the fault is primarily in the testes, or, at any rate, that there is no deficiency in the gonadotrophic stimulus from the pituitary. Hypothyroidism appears to play some part at times, although there is little reason to suppose it has any direct action on the testis (Allen, 1939). One of the patients in this series with moderate impairment of fertility might have been regarded as showing a mild form of the dystrophia adiposa genitalis syndrome, and one as approaching giantism. A third was a typical case of pituitary infantilism, but he was impotent and no semen could be obtained for examination. In all the others physical development and secondary sex characteristics were within normal range. Basal metabolic rate estimations were not carried out.

6. *Sundry Causes*.—In isolated cases the following factors which might have affected spermatogenesis were encountered: a series of serious illnesses in childhood (1 case); orchitis following influenza (1 case); repeated exposure to x rays (1 case); history of bilateral hernia operation (2 cases); systemic disease such as malaria and phthisis (4 cases). One man had atrophy of one testis following injury, but produced good quality semen and subsequently had a child. There were no cases in which over-indulgence in coitus appeared to play any part—nor is there much evidence to support the view that it ever does lead to infertility. On the contrary, there were some cases in which the absence of children was at least partly explained by the infrequency of coitus.

7. *Causes Unknown*.—In about half the cases no cause was apparent, and this is the experience of most observers. In such, many possible aetiological factors have been postulated.

(a) *Nutritional Deficiencies in Childhood and Adolescence*.—As a result mainly of experiments on rats it has been suggested that inanition in general, and vitamin A, vitamin B₁, and vitamin E deficiencies in particular, lead to failure of spermatogenesis. Nevertheless there is little evidence to show that infertility in man is the result of a deficient diet, and the idea is not supported by the fact that errors in spermatogenesis are just as common in the middle and upper classes as in the more poorly fed lower classes, if not more common.

(b) *Heredity and Constitutional Factors*.—These may play some part in male fertility. They do in animals, and it has been shown that certain human families have a tendency to "die out." There is certainly, among patients, a widespread belief in inherited or familial infertility. Two sets of brothers, both suffering from azoospermia without obvious cause, were encountered in this series.

(c) *Occupation, Environment, etc.*—It has been stated that defective testicular function is more common in those of higher intelligence, or among brain workers, than in manual workers. It would probably be difficult to prove this, because, although the reproduction rate is higher in the labouring classes, this is almost certainly mainly the result of contraception practised in the higher grades of society. Nevertheless, there may be some truth in this idea, and clinical experience does give the impression that non-manual workers—those with responsibilities and anxieties—tend to be less fertile. The very nature of their work, usually necessitating long hours indoors and deprivation of sunlight and physical exercise, probably plays a part, as does the pace of modern life and the general stress and strain—nervous rather than physical. One of the conditions of modern life which may lower male fertility is the habit of taking frequent hot baths. The susceptibility of the testes and spermatozoa to even a moderate amount of heat is now generally accepted. Another consideration of interest, and possibly importance, is the failure of spermatogenesis which occurs with age. Many men remain fertile until advanced years, but in others testicular function seems to fail at a comparatively early age without any apparent ill-health to account for it. In one man, only 37 years of age, the sperm count gradually fell from 85 million to 17 million per ml. during the course of two years.

Finally, it should be kept in mind that in some cases of azoospermia and oligospermia in which the testes appear normal the lesion is an obstructive one in the epididymis, and not necessarily gonococcal in origin. A history of fleeting and mild non-specific epididymitis was elicited on close inquiry in two cases.

Treatment of Faulty Spermatogenesis

In the absence of an obvious cause the treatment of faulty production of spermatozoa is for the most part empirical. Attention to general health and habits, hours of work and recreation, etc., is always important, but, apart from this, some form of hormone therapy is usually advised. Many favour thyroid, but it was not used in this series, and serum gonadotrophin was the treatment of choice. This was given by intramuscular injections of 1,000 i.u., either twice weekly for three months or, in a few cases, daily for 10 days, and repeated after an interval. Vitamin E was given at the same time—although it is doubtful whether this is of any value, because experimental evidence goes to show that the effect of vitamin E deprivation on the testes cannot be reversed. The details of treatment and the results are known in 14 cases. Three of these 14 men have since produced children, and in one case the man, who was shown on two tests to have azoospermia, impregnated his wife almost immediately after the course of treatment was completed—and that after eight years of sterility. The sequence of events made it look as though the treatment was concerned in the pregnancy, but it is more likely to have been a coincidence. Comparison of the semen findings before and after treatment is of some interest, and the details are given in Table V. Case 11 is the one just referred to, and it is to be noted that semen examined nine months after the conclusion of the treatment (i.e., at the time of the birth of the child) again showed what almost amounts to azoospermia. Only two spermatozoa were found after prolonged search of wet and stained preparations of the centrifuged deposit. Opinions vary as to whether treatment with gonadotrophin does in fact improve spermatogenesis, but, with the exception of cases 4, 5, 10, and 11, the findings recorded in Table V seem to indicate that the quality of the semen improves after treatment and that it deteriorates again when treatment is suspended. These results, although suggestive, are not conclusive, and the possibility of spontaneous variations in the semen cannot be excluded.

Although there is some evidence to show that small amounts of testosterone may improve sperm production, it can be stated that, in general, the effect, at any rate of large amounts of testosterone, is a depressant one. Testosterone was not used in the treatment of any of these cases, and when it was given for impotence care was taken in the matter of dosage, particularly when the man was known to have defective spermatogenesis in addition to impotence.

Treatment of Obstructive Lesions in Male Genital Tract.—The appropriate treatment of a mechanical obstruction of the

epididymis or vas is some form of short-circuit operation. None of the cases in this series was so treated, and, judging from the literature, the operation is difficult and the results on the whole unsatisfactory. An alternative line of treatment which at first sight appears hopeful is to obtain spermatozoa by testicular puncture and to inject them into the vagina. This, however, is not satisfactory, because the spermatozoa as they leave the testis are immature and incapable of fertilization. They become fully matured only during their two-weeks journey through the epididymis and vas. And so it is stated (Halbrecht, 1944) that there is but one reported case of successful insemination with material taken from the testis.

Investigation and Treatment of the Wife.—If the wife should not be subjected to the investigation and treatment of infertility until the husband's fertility has been assessed, then equally there is much to be said for not subjecting the husband to treatment until there are good grounds for believing that the wife is reasonably fertile. Thus, in this series, 14 husbands with defective spermatogenesis had wives whose tubes were damaged (completely obstructed in 3 and partially obstructed—including unilateral occlusion—in 11). It may be added that

grounds—it usually necessitates masturbation. Its best indication is when the man suffers from some condition, organic or functional—e.g., hypospadias or impotence—which interferes with the act of coitus. For impotence it is excellent treatment, for the knowledge that he is fertile and the father of a child goes a long way towards restoring the man's confidence and self-esteem. Also, once pregnancy is achieved the necessity for coitus becomes less vital, and both husband and wife can then approach it in a more natural and spontaneous way. The only difficulty is that so many impotent men find it impossible to provide the specimen for insemination. When they can, and when the semen is of good quality, the results are good. If, however, artificial insemination is employed with the object of mitigating the effect of defective spermatogenesis the results are poor. This procedure is also indicated when the woman has some condition of the vagina or cervix which impedes the entrance of spermatozoa into the uterus. It has also been used empirically when no cause for infertility is found in either partner.

The results depend mainly on the indications for which it is employed. In two recent publications successes are reported

TABLE V.—*Seminal Findings Before and After Treatment with Serum Gonadotrophin*

No.	Before Treatment		After Treatment	
	1st Test	2nd Test	Immediately After Treatment	Later
1	2.1 ml. 3 millions; nearly all abnormal		3.6 ml. 22 millions; 50% abnormal	
2	1.8 ml. Too few to count; 0% motile, 100% abnormal		3 ml. 10 millions; occasional ooe motile at 1 hour, 100% abnormal	
3	1.1 ml. 160,000; 0% motile		1 ml. 2 millions; 0% motile at 3 hours, 90% abnormal	
4	5 ml. 50 millions; 100% motile, 10% abnormal	5 ml. 9½ millions; 28% abnormal	After further treatment : 0.8 ml. 39 millions; 36% motile, 65% abnormal	1 child
5	1 ml. 17½ millions; 45% abnormal		4.1 ml. 74 millions; 80% motile, 40% abnormal	
6	1.8 ml. 12½ millions; 1% motile, 80% abnormal		2.75 ml. 19 millions; 80% motile, 50% abnormal	
7	4.2 ml. 5 millions; 10% motile, 95% abnormal		1.8 ml. 25 millions; 14% motile, 50% abnormal	
8	1 ml. 1 million; 100% abnormal	1 ml. 2 millions; 100% abnormal	6.2 ml. 20 millions; 30% motile, 64% abnormal	
9	2 ml. 10 millions; 33% motile, 20% abnormal	3.25 ml. 9 millions; 90% motile, 20% abnormal	1.9 ml. 52 millions; 0% motile, 40% abnormal	0.5 ml. 12 millions; 10% motile, 65% abnormal
10	2 ml. 4 millions; 0% motile, 90% abnormal. (History of G.C. infection)		3 ml. 83 millions; 90% motile, 40% abnormal	3 ml. 26 millions; 60% motile, 60% abnormal
11	2 ml. Azoospermia	1.4 ml. Azoospermia	1.2 ml. Azoospermia	1.8 ml. Only two spermatozoa found in whole specimen
12	3.1 ml. Too few to count; 0% motile, all abnormal		3 ml. 48 millions; 55% motile, 23% abnormal	5.2 ml. 24 millions; 25% motile, 25% abnormal
13	5 ml. 15 millions; 30% motile, 10% abnormal	3.2 ml. Too few to count; 100% abnormal	4 ml. 36 millions; 0% motile, 16% abnormal	
14	2 ml. 20 millions; 20% abnormal		1 child (no further test)	

The numbers of spermatozoa apply to those contained in 1 ml. of fluid.

Motility estimates made at 6 to 8 hours after collection except where otherwise stated.

when azoospermia occurs in association with obstructed tubes the underlying fault is nearly always gonorrhoea in both partners. Four other men who had azoospermia were married to women who had either permanent amenorrhoea and were not ovulating, or menstruated and ovulated very infrequently.

If the husband has only moderate impairment of fertility then the correction of infertility factors in the wife (e.g., replacement of retroversion, dilatation of the cervix, or cauterization of the cervix to make it less hostile, etc.) should be carried out. If the number of normal spermatozoa in the fluid is small and cannot be improved, then it may still be possible to facilitate conception by taking all possible steps to give them every chance of entering the uterus undamaged. In other words, if the fertility of the husband is low it may to some extent be cancelled out by improving the fertility of the wife. In six cases where the husband was considered to be at fault pregnancy followed immediately after dilatation of the cervix or some simple form of treatment applied to the wife, the husband remaining untreated.

Artificial Insemination, Using the Husband's Semen.—The artificial implantation of the semen of the husband into the vagina, cervical canal, or uterus of the woman is by no means a new procedure, and according to Halbrecht (1944) was successfully carried out by John Hunter and Marion Sims. There can be little objection to it save on aesthetic and religious

in two out of 28 cases, and nine out of 30 cases, respectively (Halbrecht, 1944; Barton *et al.*, 1945). This form of treatment was employed in six cases in this series. Two women have had children as a result, and a third had an ectopic pregnancy. In all three cases the inseminations were carried out by the husband—after instruction in the technique. In the case of ectopic pregnancy the insemination cannot be blamed, because the wife had pelvic adhesions with damaged tubes—although this was not realized at the time. The indications in these three cases were a hostile cervix, wide variations in the quality of the semen with possible cervical hostility, and impotence. In the other three cases one woman had damaged tubes (undiagnosed) and suffered an exacerbation of salpingitis after intracervical insemination; one had had the cervix torn off during a difficult labour; while in the third the man had grossly impaired spermatogenesis. However, in none of these three unsuccessful cases were inseminations carried out over a longer period than two menstrual cycles.

Summary of Results.—In addition to four of the 13 men suffering from impotence alone, 26 of the 169 men found to have seminal faults have been responsible for at least one pregnancy since their investigation and the treatment of either themselves or their wives, or both. In nine cases the occurrence of pregnancy immediately after treatment has seemed to indicate a connexion between the two. Any more definite statement seems

unjustifiable, and, bearing in mind how large a part is played by chance in the occurrence of pregnancy, it is perhaps wiser to make no claims for any "cures."

Foetal Abnormalities and Defective Semen.—It has sometimes been urged that male infertility should not be treated, nor should a man with semen of poor quality be encouraged to have a child, because of the possibility of the ovum being fertilized with a faulty spermatozoon, resulting in a malformed child or one deficient in some way. Nevertheless, a relationship between defects in the child and defects in the semen has not yet been established, and Lane-Roberts *et al.* (1939) report negative findings in this respect. In this series only one woman had a malformed child—and that before investigation of infertility—and the seminal fluid of the husband was of reasonably good quality. There are also reports in the literature which indicate that the incidence of abortion is higher when the man's fertility is low. The figures in Table VI are perhaps in keeping with this suggestion, but they certainly do not permit any definite conclusion to be drawn.

Assessment of the Value of Criteria of Male Infertility

In the assessment of male infertility arbitrary standards for the various characters of the semen have to be adopted. It remains to be asked how much value can be placed on these standards when applied to the individual case. Table VI shows

TABLE VI.—Table showing Fertility Before and After Treatment in those Cases Subjected to Semen Analysis

Seminal Findings	No. of Cases	No. of Cases not Followed Up	No. of Cases with Absolute Sterility in Wife	No. with Preg. Before Test	No. with Preg. After Test and Treatment	No. with Preg. both Before and After Test
"Normal"	108	20	17	4	35 (3)	4 (1)
Over 100 million sperms per ml.	65	12	9	12 (5)	11 (3)	4
61-100 million sperms per ml.	49	9	6	8 (4)	10 (1)	2
51-60 million sperms per ml.	15	1	4	2 (1)	2	(2 ect.)
41-50 million sperms per ml.	13	4	—	2	2	—
31-40 million sperms per ml.	5	1	—	2 (2)	—	—
21-30 million sperms per ml.	29	4	4	5 (3)	5	1
11-20 million sperms per ml.	20	2	1	3 (2)	4 (1)	—
10 million sperms per ml.	26	2	1	4	2	—
million and under sperms	20	2	1	2 (a)	2	—
er ml.						
rying between azoospermia	4	—	—	—	1	—
and extreme oligozoospermia						
ersistent azoospermia	38	5	—	1 (1)	1 (b)	—
Low volume and total sperm	3	1	—	—	1	—
population less than 50						
millions						
Low volume alone	2	—	—	—	1	—
More than 50% sperms abnor-	12	3	1	2 (1)	3 (1)	1 (1)
mal. Count more than						
30 million per ml.						
Necrozoospermia and astheno-	10	—	—	4 (1)	2	1
zoospermia as main fault						
Semen "unsatisfactory";	5	1	—	—	—	—
? azoospermia						

(a) Both had mumps after birth of child—orchitis in one.

(b) Azoospermia to two tests. Further test after pregnancy revealed only two spermatozoa. Pregnancy followed immediately after treatment.

The figures in brackets indicate the number of patients who had had abortions only. These are also included in the figure preceding the brackets.
ect. = ectopic pregnancy.

how many men, classified according to their semen analysis, have proved themselves capable of procreation, either before or after the test. In general the results show that a high proportion of men with a sperm density of over 60 million per ml. are fertile, but it is surprising that 11 men with a sperm count between 21 and 30 millions and eight men with a count between 11 and 20 millions were responsible for pregnancies in their wives. In eight of these 19 cases, however, the pregnancy occurred before the test, and it is possible that spermatogenesis had subsequently deteriorated. Of the 11 whose wives conceived after the test only one had gonadotrophic hormone therapy, and in none was a later rise in sperm count demonstrated. Six men with a count of 3 to 10 millions also had children—four before investigation and two afterwards—again without any proof of improvement in spermatogenesis.

Of 62 men suffering from azoospermia or oligozoospermia to the extent of not more than 2 million per ml., three had impregnated their wives before the time of the test. This again

is perhaps of little significance, since conditions may have changed between the time of the pregnancy and the time of the test; they certainly had in one case, for the husband had had mumps with orchitis. However, four men were responsible for children after the test, and the details are important enough to state.

(1) Azoospermia to two tests. Treatment with gonadotrophin was given, and the wife immediately conceived. The semen was examined again nine months after conception; only two amotile spermatozoa were found in the whole specimen.

(2) Repeated seminal analysis over several years gave such bad results (details unobtainable) that artificial insemination with donated semen had been previously carried out. A child resulted, and eight months later the wife was surprised to find herself pregnant again, the husband undoubtedly being the father. Semen was examined four times soon after the husband had proved his fertility. Azoospermia was found on two occasions, very few spermatozoa on one occasion, and 3 million per ml. at the fourth test. No morphologically abnormal spermatozoa were ever found.

(3) and (4) Both were men with counts of less than 2 million per ml.; neither received treatment, yet both had children.

Another man had azoospermia and testicular atrophy following mumps. He and his wife were both killed during an air raid, but it is stated by friends that she was pregnant at the time. In the absence of further evidence, however, this statement cannot be accepted.

There are several published reports of pregnancy resulting from semen containing only 2 million spermatozoa (see Lane-Roberts *et al.*, 1939; Hamblen, 1945), so in this respect these findings are not remarkable; but pregnancy under such circumstances is not common, and when it does occur it is usually found that of the few spermatozoa present in the semen the majority are well formed. Azoospermia (to two tests) is, however, so often regarded as evidence of absolute sterility that the two cases quoted above deserve emphasis. The most likely explanation is that in these cases the men suffered from some mechanical obstruction in the epididymis or vas rather than defective spermatogenesis, and that the obstruction was not quite complete, so a batch of healthy spermatozoa occasionally leaked through. One man did have a history of mild epididymitis, not of gonococcal origin.

Table VI seems to indicate that so far as sperm density is concerned the standard for reasonable fertility should not be placed too high—and certainly not higher than 30 million per ml. Indeed, unless other unsatisfactory features are present there is much to be said for not diagnosing serious impairment of fertility providing the count is not higher than 10 millions. It should be noted, too, that of 12 cases in which the significant finding was a high percentage of morphological abnormalities, without reduction of the sperm population below 30 million per ml., pregnancy occurred in six. Also, seven out of ten men credited with necrozoospermia or asthenozoospermia were responsible for at least one pregnancy. It would look as though these features alone are not of great significance and that the number of spermatozoa is the best indication of fertility. This statement, however, should be qualified, because pregnancy seems a reasonable possibility if the oligozoospermia is not associated with morphological abnormalities. If a poor semen does not always mean that a man is sterile, then neither does a semen with good characters inevitably mean that he is fertile. This latter is difficult to prove, but the circumstances of some cases provide suggestive evidence—for instance, Seymour (1939) records an extraordinary case in which a man's semen containing 94 million apparently normal spermatozoa per ml. was used to inseminate 16 healthy women and none of them conceived. Yet all the women became pregnant when another donor was used, and so did the wife of the first man. These facts do not mean that male infertility is less prevalent than has previously been stated, but rather that simple seminal analysis as carried out at present is not always an accurate guide. They bring to light the necessity for further inquiry into the characteristics of fluid and cellular constituents of semen and their relationship to fertility. Above all, they serve to emphasize the difficulty in prognosis in any given case. This difficulty is likely to remain even after the most exhaustive seminal studies, and a freak or random pregnancy may result when the chances as assessed scientifically are infinitesimal. Great caution is therefore required in assessing the outlook in

any given case; indeed, it would seem that it is practically impossible to say that a man, or for that matter a woman, is sterile until he or she has died without issue.

For the majority of semen examinations I am indebted to Dr. C. V. Harrison and his staff in the Department of Pathology in the University of Liverpool, who at all times, and often at great inconvenience to themselves, co-operated willingly and gave valuable help.

Summary

From an analysis of 491 private cases and 252 hospital cases it is estimated that not less than one-third of the husbands of infertile marriages have impaired fertility. Of the husbands examined by semen analysis 40% showed evidence of subfertility.

Figures are given to show that responsibility for one pregnancy is unreliable evidence of a man's fertility.

The types of male infertility encountered in 183 cases are set out and some account given of their causes, their treatment, and its results. Of these men thirty have since been responsible for at least one pregnancy.

The results are given of semen analysis before and after treatment with serum gonadotrophin in 14 cases.

The criteria used in the assessment of the findings on simple semen analysis are examined, and attention is drawn to the need for caution in the interpretation of the results and in giving a prognosis in any one case.

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TREATMENT OF CARCINOMA OF THE PROSTATE BY PERURETHRAL RESECTION AND STILBOESTROL*

BY

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This paper deals with a personal series of 30 consecutive cases of late carcinoma of the prostate admitted to Withington Hospital during the past four years. These cases share certain points in common. All showed definite extracapsular spread—either locally, in the form of fixation or extension, or generally, as radiological bone secondaries. Perurethral resection was carried out in every case. In those associated with a major degree of urinary retention the routine treatment was early and adequate resection, followed by the administration of stilboestrol. In those with metastatic symptoms, in the absence of urinary symptoms, the resection was limited, and constituted a biopsy only. The diagnosis of malignancy was confirmed beyond doubt by microscopical examination; pathological grading according to Muir's (1934) classification was established in each case. The importance of microscopical examination is well illustrated by one case in which enucleation had been performed for occult carcinoma in 1940, followed two and a half years later by a suprapubic cystostomy for recurrent obstruction. A perurethral resection carried out in an attempt to close the suprapubic cystostomy removed 15 g. of tissue which showed the presence of a squamous carcinoma, arising from squamous metaplasia of glandular epithelium, and thus made clear the cause of stilboestrol failure. This series does not include any case of occult carcinoma—i.e., an early focus of malignancy, first detected by microscopical examination after enucleation.

The initial symptoms in four cases were due to spinal metastases. Three of these patients were bedridden because of pain for periods of three months, two months, and five weeks respectively before admission. In the fourth case the metastases had produced a compression paraplegia up to D 10 of three months' duration. The remaining cases were admitted with acute retention (9), chronic retention type 1 [Cox, 1945] (7), prostatic dysuria (8), and permanent suprapubic cystostomy (2). Three patients in the prostatic dysuria group suffered from sciatic pain. Four cases had previous suprapubic "prostatectomy" performed—two for occult cancer, the symptoms recurring in two and a half and four years, and two for clinically diagnosed cancer, the symptoms recurring in three and eleven months respectively. The data for all the cases are given in the accompanying Table.

Results of Treatment

1. *Perurethral Resection*.—Normal micturition was restored in every case except one—a patient, weighing 22 st. (140 kg.), in whom the external sphincter was unfortunately damaged, producing stress incontinence during the day, nocturnal micturition being normal. No case has yet returned with symptoms of local recurrence, though one returned with a vesical stone and cystitis. This patient failed to attend the follow-up clinic and therefore did not continue with stilboestrol. In this series, which includes five patients over 80, there was one post-operative death, occurring in a patient aged 84. The highest blood urea figures in the chronic retention group were 206 and 103 mg. per 100 ml., occurring in patients aged 83 and 84 respectively. After decompression, controlled by means of intravesical pressure readings, the blood urea figures returned to normal and the patients were successfully resected. Out of the 20 cases in which the urine was personally examined in the follow-up clinic, 3 were definitely infected, 2 had mild infection, and in 15 the urine was crystal-clear.

2. *Stilboestrol*.—The most obvious effect of stilboestrol therapy is unquestionably the dramatic and rapid relief of metastatic or sciatic pain. There has as yet been no failure to produce complete initial relief from this pain. The three patients bedridden with spinal metastases were relieved of pain in four days and out of bed in seven. Initial bone secondaries, where present, have on the whole shown a slow but steady increase in extent. Only one case without initial bone secondaries has so far developed them. The inference from this with regard to early treatment is clear. The majority of cases have shown a varying degree of prostatic softening after some weeks' treatment. The result of stilboestrol in restoring for two and a half years the power of walking to the patient bedridden with compression paraplegia and a complete subarachnoid block is worth a more detailed account. In this patient a left adrenalectomy was carried out in a last attempt to reduce the androgen level.

Case 7.—Aged 45. Admitted to another hospital in August, 1942, with compression paraplegia up to D 10, retention of urine, and incontinence of faeces (preceding nine months' history in which the patient was intermittently off work because of lumbar pain). Notes state: "Left leg, complete flaccid paralysis; right leg, practically complete flaccid paralysis. Sensory loss to pin-prick and cotton-wool up to D 10. Skiagram: Secondary deposits in D 10, ilium, and sacrum. Cerebrospinal fluid: Xanthochromia with massive coagulation; protein, 2.5%; globulin opalescence (Pandy); W.R. negative. Primary lesion was considered to be in the prostate as a result of rectal examination. Patient regained voluntary control of micturition 10 days after admission, on tidal irrigation. Course of deep x rays given, with no improvement." Admitted here November, 1942, with three months' paraplegia. Diagnosis confirmed by resection; case graded Muir Type 2. Stilboestrol 5 mg. daily by intramuscular injection, with 1 mg. three times daily by mouth. Three months later the patient was able to stand by himself. Left epididymo-orchitis developed after resection. Left testis, under combined influence of inflammation and stilboestrol, disappeared. Right testis normal. Improvement continued until the patient could walk two miles with the aid of one stick, and he returned to work. Stilboestrol was continued after discharge in doses of 30 mg. daily (10 mg. thrice daily). Softening of his prostate took place, so that on rectal examination there was no definite evidence of carcinoma. Fit until April, 1945, when he was readmitted with ten days' history of lumbar and sacral pain, increasing in severity until it confined him to bed. Skiagrams showed "secondary deposits in D 5, 10, and 12, and L 1 and 2." Acid serum phosphatase, 2.7 units per 100 ml. Relief of pain by

* A paper read before the Manchester Surgical Society, November, 1945.

changing to dienoestrol 30 mg. daily—i.e., by increasing the dose to the equivalent of 90 mg. of stilboestrol daily. Discharged and returned to work. Readmitted August, 1945, with severe cervical and cranial pain. Skiagram: "Secondary deposits in cervical spine and skull." August 17: acid serum phosphatase, 4.5 units per 100 ml. August 18: orchidectomy. August 28: acid serum phosphatase, 6.4 units. Sept. 6: acid serum phosphatase, 7.5 units. No symptomatic improvement and no reduction in acid serum phosphatase followed orchidectomy, the explanation being provided by microscopical examination of the testis, which showed marked degeneration. Androgen estimation of the urine showed 6.2 mg. 17-ketosteroids in 24 hours. On Sept. 7 I removed the left adrenal in an attempt to obtain a further reduction in androgen. The patient survived the operation for a few hours only.

Many patients while on stilboestrol appear to be unaffected by the existence of spinal metastases. One patient, active for his age (76), has had secondaries in the lumbar spine and pelvis for two years and additional secondaries in the skull for the last nine months. A second patient, admitted bedridden with

Increasing experience with the cold punch and its pin-point coagulation of individual bleeding-points imposes no such handicap.

Three methods exist for the relief of malignant prostatic retention—perurethral resection, suprapubic resection, and suprapubic cystostomy. The object of perurethral resection in this series has been to remove as much malignant tissue as possible down to the prostatic capsule and, where necessary, from all four quadrants. No attempt has been made to "gutter" or "channel" the prostate, except in those cases where the extremely poor condition of the patient has imposed this limited resection or where the operation has been in the nature of a biopsy on a small prostate without urinary symptoms.

The certain and easy identification of the anatomical boundaries—the prostatic capsule and verumontanum—by the perurethral route, and the inability to identify the same structures by the suprapubic route, ensure a larger removal of growth by

Analysis of Cases

Case No.	Age	Initial Acid Serum Phosphatase (K.A. Units)	Perurethral Resection		Path. Grading (Muir Group)	Initial Bone Metastases	Survival Period
			Date	Weight (g.)			
1	82	4.1	Nov., 1941	10	2	Neg.	4 yrs.
2	74	—	Mar., 1942	8	1	"	3 yrs. 2 mths.; died hemiplegia
3	74	—	May, 1942	17	2	Early in pelvis	1 yr. 8 mths.; died at home. ? cause
4	56	—	July, 1942	8	3	Neg.	3 mths.; died metastases
5	73	1.2	Sept., 1942	14	2	"	1 yr. 11 mths.; died pyelonephritis (vesical calculus)
6	75	42.0	Oct., 1942	4	2	Early in pelvis. —→ Neg.	3 yrs. 1 mth.
7	45	2.1	Dec., 1942	6	2	Dorsal, lumbar spine, and pelvis	2 yrs. 9 mths.; died metastases
8	49	2.8	June, 1943	8	2	Neg.	2 yrs. 5 mths.
9	57	0.8	Mar., 1943	5	2	Dorsal spine and pelvis + +	2 yrs. 8 mths.
10	63	0.6	April, 1943	31	2	Neg.	2 yrs. 7 mths.
11	83	1.1	June, 1943	11	1	Lumbar spine and pelvis + +	2 yrs. 5 mths.
12	84	2.1	June, 1943	27	3	Lumbar spine and pelvis	6 mths.; died senility (? metastases)
13	75	0.5	July, 1943	15	3	Neg.	3 mths.; died pyelonephritis; recto-vesical fistula
14	66	3.8	July, 1943	11	1	Squamous carcinoma	2 yrs. 4 mths.
15	74	1.3	Aug., 1943	9.5	1	"	2 yrs.; died uraemia; occlusion both ureters
16	84	1.8	Sept., 1943	10	2	"	Post-operative death; pyelonephritis
17	58	2.7	Feb., 1943	5	3	Cervical, dorsal, lumbar spine, and pelvis + +	Home against advice; presumed dead
18	76	10.1	Sept., 1943	12	2	Pelvis and lumbar spine + +	2 yrs. 2 mths.
19	62	2.0	Nov., 1943	4	3	Dorsal, lumbar spine, pelvis, and femoral heads + +	2 mths.; died congestive heart failure
20	68	2.6	Nov., 1943	10	2	Dorsal, lumbar spine, and pelvis	8 mths.; died after operation for cancer of colon
21	67	2.2	Feb., 1944	18	1	Neg.	1 yr. 9 mths.
22	65	4.6	Feb., 1944	10	1	"	1 yr. 9 mths.
23	74	6.4	Feb., 1944	2	1	Fibrous	10 mths.; died motor accident
24	57	2.6	Mar., 1944	8.5	3	Early in pelvis	1 yr.; died metastases
25	69	5.4	May, 1944	4	2	Neg.	1 yr. 6 mths.
26	71	8.8	Feb., 1945	22	1	Lumbar spine, pelvis, and parietal bones	9 mths.
27	82	2.0	April, 1945	9	2	Neg.	5 mths.; died hemiplegia
28	67	5.2	Aug., 1945	12	2	? In dorsal spine	3 mths.
29	63	58.0	May, 1945	1.2	2	Early in pelvis	4 mths.; died metastases
30	71	9.3	Sept., 1945	6	2	Pelvis and lumbar spine	2 mths.

The acid serum phosphatase estimations in Cases 7 and 17 were made shortly after stilboestrol therapy was started. Case 4 returned one month after discharge with rapidly extending spinal metastases and was first given stilboestrol after readmission. The ages are those at the time of resection. Those patients not written up as dead in the last column are fit for their respective ages.

secondaries in the spine and pelvis, has been back to work for two years. His skiagram now shows further involvement of the spine and secondaries in the skull. He is symptom-free, is active, and has gained in weight.

The following are observations based on the experience of this series.

Perurethral Resection

Two instruments are in common use for perurethral prostatic resection—the McCarthy diathermy loop and the Gershom-Thompson cold punch. The instrument used in this series was the cold punch. The choice of instrument is, I believe, more than one of personal preference. The change over from the diathermy loop to the cold punch followed a skilful demonstration of the latter by Wardill at Newcastle, with a standard of efficiency and a quality of results not attainable with the diathermy loop. The diathermy loop, with its mass coagulation, must leave behind a slough proportionate in size to the amount of tissue removed. Increasing experience with perurethral resection brings with it increasing ability to resect larger prostates and therefore the certainty of leaving behind larger sloughs. This either exposes the patient to the dangers of sepsis or, by excluding these larger prostates, limits the surgeon in his selection of cases. But if the full benefit of the perurethral route is to be obtained large prostates must be fully resected.

the perurethral than by the suprapubic route. If boundaries cannot be identified with certainty surgical excision must stop short to avoid damage to them. Suprapubic resection therefore becomes, in the type of carcinoma under discussion, a disproportionately severe method of removing less tissue, with a diminished chance of restoring normal micturition or an increased likelihood of a return of symptoms. Caulk (1937), in advocating perurethral resection, wrote: "I see little reason for palliative suprapubic cystostomy for the obstruction of cancer of the prostate. I have been shocked to read of its advocacy in many articles and in discussing the subject with many surgeons."

As an alternative method to early and adequate resection in the treatment of urinary retention suprapubic cystostomy followed by stilboestrol has been advocated. Suprapubic cystostomy, however, is associated with a mortality rate estimated at from 15 to 25%. Perurethral resection is in my opinion a more certain, safe, and rapid method of restoring normal micturition.

Pathology

The treated case of carcinoma must constantly be viewed against the background of the untreated case, the life history of which is mainly determined by its degree of pathological malignancy. The pathological grading of the resected material

therefore becomes an essential preliminary step. As sections of carcinoma of the prostate show a well-known variation in appearance in different parts of the same tumour, the tissue examined must be adequate in amount and vary in position. The tissue removed by a full perurethral resection—in this series in amounts up to 31 g.—fulfils both these requirements. Pathological grading according to Muir's classification was carried out in every case.

This classification is into three groups according to the tendency of the growth to form prostatic tubules. In group 1 tubule formation is a prominent feature, mitotic figures being absent. This group represented 25% of 48 cases examined by Muir. In group 3 the bulk of the tumour is undifferentiated, being composed of masses of spheroidal cells with little or no attempt at tubule formation. This group represented 25%. The remaining 50% were placed in group 2, and represented intermediate pathological types. In Muir's series post-mortem examination of 24 patients dying from cancer of the prostate revealed metastases in all of group 3 (6 out of 6), most of group 2 (12 out of 14), and one of group 1 (1 out of 4). Furthermore, the survival periods obtained in group 1 were rather more than double those in group 3. Group 2, while occupying a position intermediate between 1 and 3, shows a closer approximation to group 3 with regard to survival periods and bone metastases.

In support of this established connexion between survival periods and pathological grading, Barnes (1942) considers "it is probable that the survival period in a patient can be more accurately prognosticated from the degree of malignancy discovered than from any other source of information." The data from this short series provide evidence in further support of this view. Of 7 patients placed in group 1, only two had initial bone secondaries. In one of these there was no increase and in the other slight increase in the extent of bone secondaries during treatment. None of the other patients subsequently developed bone secondaries. Two patients have died—one from malignant occlusion of both ureters, surviving a period of two years after resection, the other from hemiplegia three years and two months after resection. The remainder are alive and well.

Case 2, Group 1.—Aged 74. Admitted with retention of urine July and December, 1938. On first admission diagnosed as probable carcinoma on rectal examination. On both these occasions retention relieved by urethral catheterization. Readmitted January, 1942, with a third attack of retention. Blood urea, 86 mg. per 100 ml. Routine decompression and perurethral resection. No stilboestrol given at any time. Micturition completely normal until death from hemiplegia in May, 1945. Acid serum phosphatase, 0.6 unit per 100 ml. No bone secondaries. On rectal examination no change in prostate, which remained large, hard, nodular, and fixed.

As illustrating the correlation between clinical progress and pathological grading, this case is of especial interest. The patient, without any hormone therapy, lived three years and two months after resection for a pathologically proved carcinoma and an additional preceding three and a half years with a clinically diagnosed carcinoma, finally dying of an unassociated disease at the age of 77.

Very dissimilar is the clinical picture of the five cases in group 3. One, originally free from bone secondaries, was readmitted with bone secondaries one month after discharge. These rapidly increased, leading to a fatal termination. The remaining four cases all had initial bone secondaries—massive in two, marked in one, and early in one. This last case developed a fatal increase in secondaries within 12 months:

Case 24.—Prostate hard, irregular, and fixed. Skiagram: "Early secondary deposits in right ischium." Acid serum phosphatase, 2.6 units. Routine decompression and perurethral resection. Stilboestrol 30 mg. daily by mouth. Three months later urine clear, micturition normal, nocturnal frequency 0-1. Small residual mass on rectal examination. Stilboestrol reduced to 5 mg. daily. Five months later patient developed two severe attacks of lumbar pain radiating down both legs. Skiagram: "Further sclerosis in pelvis and spine." Acid serum phosphatase, 30 units. Urine clear, micturition normal. Stilboestrol increased to 30 mg. daily. This reduced acid serum phosphatase to 0.9 unit, with cessation of attacks of pain. Patient did not again attend clinic. Letter from doctor states that he went steadily downhill, became confined to bed because of pain in hip—unrelieved by stilboestrol—weakness, and breathlessness, and died three months after his last attendance.

The advantages of pathological grading are very clear: (1) First and foremost it provides, especially in groups 1 and 3, an approximate survival period for each case. A lack of this

knowledge may render fallacious any attempt to interpret, in terms of survival periods, the benefit of oestrogen therapy or, indeed, any other therapy. The enthusiasm of the stilboestrol era should not be permitted to mask pathological principles. (2) Therapeutic requirements should be affected by a knowledge of the pathological grading. Group 3 cases certainly require maximum treatment. (3) In only one case did bone secondaries develop after resection with such rapidity as to incriminate the operation as a possible cause. Pathological grading showed this case to belong to group 3. The malignant dissemination was therefore attributed to the high degree of malignancy rather than to operative trauma.

Acid Serum Phosphatase

The value of this test is largely dependent on the existence of a well-defined line dividing the normal from the abnormal figures, and the incidence in any series of raised acid serum phosphatase figures depends on the level at which this line is drawn. The upper limit of normal in this country is usually accepted as 2.5 King-Armstrong units per 100 ml. Huggins *et al.* (Huggins and Hodges, 1941; Huggins, Scott, and Hodges, 1941) give the upper limit of normal as approximately 4 units (3.25 ± 1.37), and have found that figures of 10 or over are diagnostic of carcinoma with secondaries. No case of a false positive has been recorded in his series, the word "positive" being taken to refer to a figure of 10 or over. Advanced Paget's disease constitutes the only exception; in this, however, there is an extremely high level of alkaline phosphatase as opposed to the very moderate elevation found in carcinoma of the prostate. A rational estimation based on these figures would classify acid serum phosphatase estimations into three groups—those below 4 units per 100 ml. as normal, those between 4 and 10 as suspicious, and those at or over 10 as diagnostic of carcinoma with secondaries. The data provided in the preceding table show that this series strongly supports this classification. Using the reading of 2.5 units as the upper limit of normal, five patients had acid serum phosphatase estimations above this figure and yet were found to have no initial bone secondaries; nor were secondaries subsequently discovered on repeated examination over an adequate period of time. The practice of recording the acid serum phosphatase estimation to the first decimal place and sometimes even to the second gives to the test a degree of accuracy which in its clinical application it has not been found to possess. This practice may well be discarded.

Of the 12 patients with radiological bone secondaries in whom initial acid serum phosphatase estimations were made, six showed a normal reading (0.8, 1.1, 2.1, 2.0, 2.6, 2.6 units), three a diagnostic rise (4.2, 10.1, and 58 units), and three a suspicious rise (8.8, 5.2, and 9.3 units). False negatives (carcinoma with bone secondaries and a low acid serum phosphatase) are known to occur, but the incidence of them in 50% of cases is sufficient to limit the value of the test and to discredit the value of all normal readings. It is only raised acid serum phosphatase estimations that are of value. One case previously described, with spinal metastases and on stilboestrol 30 mg. daily, developed severe root pains without any increase in the acid serum phosphatase. Another case, also on stilboestrol 30 mg. daily, developed for the first time definite bone secondaries in the lumbar spine and pelvis with no rise in the acid serum phosphatase. These experiences show how fallacious the practice, frequently advocated, may be of relying on the acid serum phosphatase estimation for the control of stilboestrol dosage. With regard to the association between acid serum phosphatase and pathological grading, the three high initial figures were obtained in group 2. It has been suggested that the presence of a raised acid serum phosphatase indicates a serious prognosis. It is rather the failure to reduce such a raised figure, or the progressive and substantial rise of any figure, on an adequate stilboestrol dosage that constitutes a serious prognostic sign. The following case—the only one in which there was failure to reduce a raised acid serum phosphatase—illustrates this point.

Case 29.—Suprapubic resection elsewhere for clinically diagnosed carcinoma of the prostate, 31/1/44. Acid serum phosphatase, 3.2 units. No radiological secondaries. Triphenylchloroethylene given. Readmitted 21/12/44 with dysuria, incontinence, and residual urine 15 oz. (425 ml.). Dienocetol 20 mg. daily for four months with no improvement. 20/2/45: A.S.P. 26 units per 100 ml. Admitted

here 24/5/45: A.S.P., 58 units. Skiagram: "Irregular sclerosis left pelvis; maybe early secondaries. Nil in skull, dorsal or lumbar spine." Inguinal glands enlarged. Perurethral resection, 24/5/45, removing small obstructing nodule near external sphincter, proved on section to be malignant. Residual urine reduced to 1/2 oz. (14 ml.), with complete relief of urinary symptoms. Given 30 mg. dienoestrol daily. A.S.P. (alternate days), 65, 76, 88, 105, 72 units. Home against advice. Returned three weeks later with liver hard and enlarged to umbilicus; inguinal glands larger; A.S.P., 80 units. Bilateral orchidectomy, 8/8/45. A.S.P. still 80 units (28/8/45), with no clinical improvement. Home against advice and died two days later.

Oestrogen Therapy

1. *Dosage*.—"The correct dosage of an endocrine preparation is not a subject for generalization but rather for individualization" (Cameron, 1945). The truth of this statement is shown by at least two case histories. In Case 24 (Muir 3, previously described) the development of sciatic pain, raised acid serum phosphatase, and spinal metastases followed the reduction of stilboestrol from 30 mg. daily to 5 mg. daily. Reverting to the original dose of 30 mg. daily relieved the pain and lowered the acid serum phosphatase to normal. This case also illustrates the disastrous results that may follow continuing treatment on a lowered maintenance dose—a practice often advocated—even when the dose is reduced at a time when the malignant process appears, both clinically and pathologically, to be under control. In the second case severe lumbo-sacral and sciatic pain, intense enough to confine the patient to bed, was completely relieved by changing from stilboestrol 30 mg. daily to dienoestrol 30 mg. daily. (Dienoestrol is stated to be three times as active oestrogenically as stilboestrol.) In the first case 30 mg. of stilboestrol daily proved to be an adequate dose; in the second case it was inadequate.

These cases demonstrate clearly that an apparent stilboestrol failure may be due to an actual error in dosage. The impression gained from the literature, especially American, is that the dosage of stilboestrol administered has been too low. One author states that he found castration alone more effective than oestrogen alone. The explanation of this anomaly he himself provides by stating that the dose of stilboestrol given was "one or more milligrams daily." I believe the dose of stilboestrol should be large, that it should never be lowered in group 3 cases, that it is wiser not to lower it in group 2, and that it is safe, subject to the results of repeated examinations, to lower it in group 1. My practice in the later cases of this series has been to begin treatment on 30 mg. stilboestrol daily.

2. *Cardiac Complications*.—Four patients have developed cardiac complications while on stilboestrol. This has been accepted as a disquieting incidence, although in this advanced age group the association of degenerative changes with any form of treatment may be more apparent than real. In three cases acute congestive heart failure developed—in the first after three weeks on stilboestrol 20 mg. daily by mouth, in the second after six weeks on stilboestrol 5 mg. daily by intramuscular injection, in the third after two years on 15 mg. daily for the first year and 10 mg. daily for the second. Two cases had extensive spinal metastases, and in one of these definite evidence of myocardial degeneration was present before stilboestrol was started. The third case, a patient weighing 22 st. (140 kg.), also had signs of initial myocardial degeneration. The connexion between stilboestrol therapy and cardiac complications was, at any rate, beyond dispute in the fourth case. This patient, an intelligent man under close observation in the follow-up clinic, while on stilboestrol 10 mg. daily developed pain across the front of the lower chest on exertion, increasing in intensity until, after a period of three months, it was induced in a severe form by such mild exertion as getting out of bed. Changing from stilboestrol to dienoestrol relieved this pain. The development of nausea in four cases necessitated a change from stilboestrol. Dienoestrol was substituted in each instance with complete relief. In view of these experiences it is proposed to treat all future cases with dienoestrol in preference to stilboestrol.

3. *Relation to Prostatic Obstruction*.—The early relief of a major degree of prostatic obstruction by stilboestrol in adequate doses has proved a complete failure in the two cases in which it was attempted. Furthermore, a third patient, while in hospital on stilboestrol 20 mg. daily, developed an acute retention with a bladder distension to 1 in. (2.5 cm.) from the umbilicus

eleven days after the beginning of treatment. The stilboestrol had in the meantime completely relieved his pain from spinal metastases. Three cases—two with acute retention and one with prostatic dysuria, all subsequently proved to be group 1—were relieved of symptoms by catheterization without stilboestrol for periods of one month, four years, and twelve months respectively. These latter experiences demonstrate clearly that the factors responsible for urinary retention or dysuria may be of a temporary nature even in malignant prostates and that early or immediate relief of such symptoms, if occurring while the patient is on stilboestrol, may be erroneously attributed to it. Reports of immediate or early relief of retention by stilboestrol should be viewed with considerable scepticism.

Orchidectomy.—The two cases in which orchidectomy was carried out after stilboestrol or dienoestrol, in adequate doses, failed to show any improvement either clinically or in reduction of acid serum phosphatase.

Summary

Suprapubic cystostomy and suprapubic resection as methods of relieving malignant prostatic retention are unjustifiable survivals of pre-endoscopic days. Normal micturition can and should be restored by perurethral resection.

The importance of pathological grading in assessing survival periods and of giving and continuing to give oestrogen in adequate doses has been stressed.

Reasons for a proposed change from stilboestrol to dienoestrol have been given.

Observations on the acid serum phosphatase in the blood have been made.

I should like to thank Dr. J. M. Greenwood, medical superintendent, for facilities for treating these patients.

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THE OUTBREAK OF SMALLPOX IN MIDDLESEX, 1944

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A case of variola major in a large hospital in Middlesex in 1944 was followed by 10 further cases, three of them fatal. The outbreak is thought to be of interest in that the diagnosis was not made in the primary case until the patient was ambulant in hospital, by which time six other persons had been infected—three nurses and a patient in the hospital, a nurse on leave at home, and a visitor. The diagnosis of smallpox in the nurse on leave drew attention to the outbreak. After the isolation of these secondary cases four others occurred.

Case Histories

Case 1.—L. C., a soldier aged 23, had arrived in convoy from Gibraltar on Feb. 6, and had been admitted direct to the hospital on account of an anxiety state. He had slight fever on admission, which became more pronounced on succeeding days. On Feb. 10 an erythematous rash appeared and his temperature rose to 103° F. (39.4° C.). A rubella-like eruption the next day was followed two days later by lesions suggesting chickenpox, so that on Feb. 13 the diagnosis of chickenpox with rubella was made and the patient barrier-nursed in a four-bedded ward until Feb. 24. Later the patient was up and about, and subsequently visited other parts of the hospital. A barber visiting the hospital cut his hair in company with that of a number of other patients.

When seen on March 2, the soldier had a few faint scars on the forehead, a number of seeds in the soles of the feet, one seed under a finger-nail, and a few scabs on the dorsa of the feet. He bore good vaccination marks from infancy, and a single scar from revaccination dated in his Army pay-book Sept. 17, 1942. Nevertheless, the condition from which he had been suffering appeared without doubt to be smallpox.

Case 2.—Nurse E. H., aged 24, unvaccinated, at home in Finchley on leave, became unwell on Feb. 22 with a bilious attack and vomiting. On Feb. 24 she developed a morbilliform rash, and on Feb. 28 vesicular lesions appeared on the hands and fingers. The following day the rash was profuse, and smallpox was suspected by the medical officer of health. This diagnosis was confirmed next day, when the patient showed a confluent early pustular rash on the face, upper chest, and back, with discrete but copious late vesicular lesions on the feet and legs. Many of the papules were haemorrhagic, and the vesicles showed central bluish haemorrhage. Death occurred on March 3.

A history of contact with a case diagnosed as rubella and chickenpox led to a visit to the hospital, with the discovery there of Case 1 and the four cases next described.

Case 3.—Nurse N. P., aged 22, who had nursed Case 1 at night, fell ill on Feb. 22 and reported sick on the 25th. She was admitted to the hospital sick bay that day, and transferred later the same day to a cubicle in the isolation ward as a chickenpox suspect. On March 2 a discrete modified pustular rash of scanty but typical

died on March 2. When first seen this patient had a temperature of 103° F. (39.4° C.), and was thought to have measles. Two days later there was a profuse papular eruption of general distribution, but most marked in the flexures, on a dusky red background. There were petechial haemorrhages, giving an appearance of erythema multiforme plus purpura. Oedema of the face and eyelids was marked, as were conjunctival haemorrhages. She died with her case undiagnosed, but it was undoubtedly haemorrhagic smallpox. This completed the secondary cases.

Cases 8 and 9.—On March 9 and 10 F. H. and I. H., two sisters of Case 2, one of whom had nursed her at home for eight days, fell ill and developed a rash, diagnosed as smallpox, on March 12 and 13 respectively. They had been successfully vaccinated on March 2. The eruption in the sister who had acted as nurse was profuse; the other was less so, and she was reported to have had no actual physical contact with Case 2. Both girls recovered.

Case 10.—M. H., an unvaccinated youth aged 17, who had been admitted from another hospital on Feb. 18, was transferred to a cubicle in the isolation ward on Feb. 24 with chickenpox. His cubicle was in the same corridor as that to which Cases 3 and 4 had been moved, all three patients being nursed by the same staff. There was no evidence of any direct contact with the nurse-patients (Cases 3 and 4). When seen on March 2 he had a very profuse chickenpox rash with an abnormally high incidence of lesions on the face and forearms. Despite this, no doubt was entertained that the condition was chickenpox. He was primarily vaccinated that evening, and vaccination developed typically into a large pustule

Table of Principal Clinical Features and Relevant Dates

Case	Age	Successful Vaccination	Source of Infection	Probable Date of Infection	Date of Onset of Symptoms	Date of Efflorescence of Rash	Type	First Day of Exposure to Infection	Remarks
L. C. 1	23	Infancy and 17/9/42	Mediterranean port	27/1/44	7/2/44	10/2/44	Discrete, modified	?	? Prodromal erythema, "chickenpox" lesions on 12/2/44. Primary case
E. H. 2	24	None	L. C.	10/2/44	22/2/44	24/2/44	Confluent, haemorrhagic	7/2/44	Died on 3/3/44
N. P. 3	22	Infancy	L. C.	13/2/44	25/2/44	26/2/44	Discrete, modified	7/2/44	? Prodromal erythema. Chickenpox spots noticed on 28/2/44
M. G. 4	20	Infancy	L. C.	13/2/44	25/2/44	28/2/44	Discrete, modified	7/2/44	
N. B. 5	34	Infancy	L. C.	14/2/44	26/2/44	28/2/44	Discrete, modified; scanty rash	7/2/44	First seen with vesicular rash 3/3/44
M. L. 6	51	Infancy	L. C.; fomites	17/2/44	29/2/44	2/3/44	Confluent, haemorrhagic	7/2/44	Died on 5/3/44
M. C. 7	36	None	L. C.	10/2/44	22/2/44	27/2/44	? Purpura haemorrhagica variolosa	5/2/44	Died, undiagnosed, on March 2, 1944. Labelled erythema multiforme
F. H. 8	32	Primary 2/3/44	E. H.	27/2/44	9/3/44	11/3/44	Discrete, modified	22/2/44	Sister to E. H.; vaccinated successfully 9 days after exposure
I. H. 9	19	Primary 2/3/44	E. H.	28/2/44	10/3/44	12/3/44	Discrete, v. modified; scanty rash	22/2/44	Sister to E. H.; vaccinated successfully 9 days after exposure
M. H. 10	17	Primary 2/3/44	N. P. or M. G.	28/2/44	10/3/44	13/3/44	Discrete, profuse	25/2/44	Suffering from varicella. Contracted variola subsequently
F. T. 11	56	Infancy and 6/3/44	N. B.	3/3/44	? 13/3/44	15/3/44	Discrete, profuse, modified	3/3/44	Ambulance driver; took N. B. to smallpox hospital. Successfully vaccinated 1914-18 war. "Failed to take" three times prior to March 6.

The numbers refer to the preceding clinical notes.

smallpox distribution was present. She had been vaccinated at the age of 3 or 4 years.

Case 4.—Another contact, Nurse M. G., aged 20, vaccinated successfully in infancy, reported sick on the 25th, having been first unwell on Feb. 22. She was admitted to a cubicle in the isolation ward, where chickenpox was diagnosed on the 27th. On March 2 his nurse showed a moderately profuse papular rash of typical malpox distribution, which (seen later) evolved rapidly with much modification of individual lesions.

Case 5.—Nurse N. B., aged 34, vaccinated successfully in infancy, and also nursed Case 1. This nurse lived at home. She felt unwell on Feb. 26 and went to bed at home, where a diagnosis of chickenpox was revised to smallpox on March 3. When seen later many of the lesions were aborting in all stages of evolution.

Case 6.—This patient, aged 51, suffered from carcinoma of the breast in a ward on the same corridor as Case 1, but separated from him by an intervening ward. The nursing staff, however, were common to the two wards. On Feb. 29 this patient had a temperature of 101° F. (38.3° C.), which rose to 105° F. (40.6° C.) on March 2. Seen the next day, she presented a very profuse bluish purple papular rash of typical smallpox distribution. On the face the lesions were so close as to appear as a uniform coloration of the skin. They were suggestive of a toxic haemorrhagic attack, and this proved to be the case, the patient dying on March 6 with a confluent haemorrhagic eruption little beyond the papular stage. Haematuria, melacna, and metrorrhagia preceded death. The marks of vaccination in infancy were present.

Case 7.—On March 3 it was learned that an unvaccinated woman (M. C.), who on Feb. 12 had visited another officer in the same ward as Case 1, had been taken ill in Bedford on Feb. 22, took to her bed on the 24th, two days before a rash appeared on Feb. 26, and

with extensive erythema and some adenitis. On the 10th the boy developed slight fever which rose to 105° F. (40.6° C.) on March 12. On the 13th there was a discrete profuse macular rash, contrasting vividly with the scars of the almost faded chickenpox rash. He developed modified smallpox.

Case 11.—The only other case to occur was that of an ambulance driver (F. T.) who removed Case 5 in the early hours of March 3. He was not revaccinated until March 6, and developed a rash on March 15. He had been successfully vaccinated in infancy and during the 1914-18 war. Vaccination was stated to have failed to take three times before March 6.

These cases are set out in the accompanying Table.

Transmission of Infection

Cases 2, 3, 4, 5, and 7 were all direct contacts of Case 1. Case 6 never made actual contact with Case 1, but was attended by the same nurses. Cases 8 and 9 were direct contacts of Case 2. Case 10 was infected from Cases 3 and 4, but without obvious contact. Case 11 was a direct contact of Case 5.

Action taken at the Hospital

The hospital was closed to further admissions; discharges were discontinued, and control measures—vaccination and surveillance of all close contacts—immediately applied. Since the infection had been present in the hospital for a relatively long period before detection, the number of possible contacts, both inside and outside the hospital, was large, and their identification a formidable task. Yet, so long as no unexplained case arose, it was felt that vaccination might be confined to persons

working at the hospital, possible contacts in the neighbourhood, and such visitors as investigation might show to have been possible contacts. Mass vaccination was not advised, but to allay local anxiety and to assist the Public Vaccinator, the medical officer of health of the local authority opened a vaccination clinic, at which those resident in the vicinity of the hospital could be vaccinated if they so wished.

By the evening of March 4 all patients and all members of the staff working at the hospital (approximately 1,100 persons) had been vaccinated, about 120 of them for the first time. On the same evening all members of the nursing, domestic, and laundry staff, etc., were inspected for rash on the head, neck, and arms, and all interrogated as to possible contact with any of the known sufferers. One or two girls who were not feeling well were kept under close observation, and the necessity for reporting sick at once if unwell was made clear to all.

The hospital consists of a main block (the original building) and a number of hutted wards erected as a wartime measure. The cases had occurred in the main block and in the isolation hut. These two buildings were placed out of bounds to all save the staff who worked there. Members of the staff were requested for the time being to limit their contacts and refrain from entering crowded places. For the observation of persons reporting sick arrangements were made to set aside one block containing a number of cubicles and two small wards. This proved extremely valuable for the observation of the numerous vaccinia rashes and reactions which appeared. All members of the staff, resident and non-resident, were kept under daily observation, and any non-resident members not attending for duty were reported to the medical officer of health of their place of residence. The laundry was dealt with in part at the hospital and in part at a public laundry in a near-by town. No infected laundry had gone outside, and arrangements were made that none should go.

Among the nurses who had been previously unvaccinated seven had had close contact with cases of smallpox. These were housed in a separate building in the grounds from March 8 to 16, and did not report for duty. Had smallpox developed in any of these nurses the contact would have been strictly limited to the medical officers observing them and one sister-in-charge. Although one nurse on the twelfth day after contact aroused some anxiety by reason of fever, headache, and backache, she did not develop smallpox.

Case 10 occurred in the isolation ward amongst a well-vaccinated community, and was removed to the smallpox hospital on March 13. From that date this ward was separated by physical barriers from the rest of the hospital. Arrangements were made for the nurses working in the isolation ward to sleep and feed in a nurses' hut next to that ward. No further cases developed from Case 10.

It became clear that the number of persons who might have been contacts was very considerable, and it was decided to notify medical officers of health of all patients discharged from the hospital between Feb. 6 and March 1 and of all visitors during that period. The patients were asked to prepare a list of their visitors between the dates mentioned. Names of visitors known to have entered smallpox wards were notified direct to the medical officer of health of their place of residence; all other visitors received a letter from patients, so worded that when the visitor took the letter as instructed to the medical officer of health it would be clear to the latter that this person was not thought to be in any appreciable danger. In this way it was hoped that the very large number who might possibly have been at risk would be brought under surveillance.

The hospital was freed from quarantine on March 17, with the exception of the main block, the isolation ward, and the ward used for observation cases. On March 20 the main block was freed for the admission of patients after cleansing had been carried out, and the other wards a week later.

Comment

The strain of variola major in this outbreak was of a high degree of virulence. Both the unvaccinated patients died from confluent haemorrhagic smallpox. Also, a modified attack occurred in Case 1; this patient, having been successfully vaccinated in infancy and 18 months previously, might have been expected to escape.

In spite of its virulence the disease was greatly modified by vaccination. The three nurses vaccinated in infancy—approximately 20 years previously—had mild modified attacks. Case 11, vaccinated in infancy and subsequently, was vaccinated four days after exposure and developed a profuse discrete but modified smallpox nine days later. Three previously unvaccinated persons (Cases 8, 9, and 10), vaccinated too late in the incubation period to afford complete protection, sustained modified attacks. The interval between vaccination and the appearance of the rash in those previously unvaccinated was 9, 10, and 11 days, suggesting that vaccination may have been performed on the fifth, fourth, and third days after the infection was contracted.

Wanklyn states that good marks of recent vaccination can be taken as evidence that an eruption is not smallpox. It would appear from Case 1 that this does not hold in the presence of a virulent strain. Nevertheless, the value of successful vaccination in mitigating the severity of an attack of smallpox even when, owing to lapse of time, it may not confer absolute protection, appears to be demonstrated by Cases 3, 4, and 5, whose vaccination dated back to infancy, some 20 years previously. The pronounced modification in Cases 8 and 9, whose sister died from a confluent haemorrhagic attack, appears to have been achieved by vaccination performed five and four days respectively after the infection had been contracted.

Case 1 was so much modified as to deceive competent medical opinion. In nearly all the vaccinated persons the lesions varied greatly in size, a large proportion aborting in the papular or vesicular stage. These lesions, together with the tendency for the rash to run a more rapid course, produced a picture simulating chickenpox, which, associated with the concurrent prevalence of the latter disease in the hospital, added to the difficulties of diagnosis.

After the isolation of the primary case and those infected by that patient, and the complete vaccination of the hospital population and outside contacts, there was no extension of the outbreak in the hospital apart from Case 10. The cases which did occur after the institution of these measures—Nos. 8, 9, and 11—acquired their infection outside the hospital.

Considering the opportunities for spreading the disease afforded by the primary case, by the number of unvaccinated persons in the hospital population, and by the virulence of the virus, the persons infected were remarkably few.

Conclusion

The experience of this outbreak suggests that control was achieved by the careful ascertainment, vaccination, and surveillance of contacts without embarking on the vaccination of the population generally. Of the seven nurses kept under close supervision because they were unvaccinated at the time of intimate exposure to infection, none developed smallpox. Nevertheless, one, as has been described, did develop headache, fever, and backache, and in four well-vaccinated nurses who had handled smallpox patients unexplained pyrexia without rash occurred under circumstances suggesting that they were reacting to the variola virus (Downie, 1946). There was serological evidence for this statement, and undoubtedly the virus was available in the hospital for the infection of nurses and patients. The failure of the disease to spread is attributed to vaccination.

At the present time importation of smallpox by returning Service men is a frequent occurrence. In these men the disease is modified, and may be misdiagnosed. It would therefore seem to be a wise precaution to employ only well-vaccinated persons in general hospitals, as well as in infectious disease hospitals.

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With a view to securing a more constructive type of legislation the National Smoke Abatement Society (Chandos House, Buckingham Gate, London, S.W.1) is putting forward for discussion preliminary proposals for extensions of the Public Health Acts by means of which local authorities could obtain bylaws that will help to prevent smoke and will directly encourage fuel efficiency and coal conservation. Three sets of bylaws are proposed. Details may be had from the society.

A CASE OF MERCURIAL POISONING AND ITS TREATMENT

BY

R. HAYDEN ELLIS, M.B., B.Chir.

A case of acute mercurial poisoning is described below in which there were severe gastro-intestinal symptoms and anuria lasting 5 days. The 5 ml. of urine passed the preceding day contained red and white blood cells and many hyaline casts—albuminuria was slight; oedema was absent. Recovery set in after suddenly on the eighth day, when the kidneys began to secrete a pale, low-specific-gravity urine containing microscopical blood, excess of leucocytes, and numerous hyaline and granular casts. The urine was normal by the twenty-fourth day. Apart from symptomatic remedies the basis of treatment was intravenous therapy. In all, 32 pints (18 litres) of fluid were given intravenously.

Report of Case

The patient, a young man of 20, was admitted in March, 1946, with severe abdominal pain, vomiting, and diarrhoea. Sixteen hours before admission he had taken 3 g. of corrosive sublimate in a glass of water. Half an hour later he vomited blood, and suffered severe abdominal pain with the passage of fresh blood per rectum. Three hours later there was frank haematuria. He was seen by a doctor, and given the whites of three eggs in a glass of milk and an injection of morphine, 1/4 gr. (16 mg.). The morphine was repeated in three hours because of great pain and restlessness, and he was then removed to hospital by ambulance. Blood-stained urine was passed during transit, but the specimen was not saved.

On examination the patient looked very ill and was obviously in great pain. There were bouts of colic, followed by the passage of blood-clots and mucus per rectum, about every half-hour. Vomiting was frequent, and the vomit consisted of bile and blood-clots. The mental condition was clear. Abdominal movement was restricted; there was diffuse tenderness, and gentle palpation was followed by violent bowel action and much pain. There was also some tenderness in the loins. His blood pressure was 152/74.

Progress and Treatment

On the second day pain, diarrhoea, and vomiting continued; stools were passed at the rate of one an hour and were darker in colour. During the day the patient passed 5 ml. of urine containing a small quantity of albumin. The centrifuged deposit showed occasional red blood cells, white cells, and many hyaline casts. Kaolin poultices were placed over the loins. Water and sips of iced orangeade were taken. Restlessness and pain were treated with morphine, 1/4 gr. four-hourly. Frequent vomiting continued, and much fluid was lost in the faeces. An intravenous drip was started in the left arm, and fluid was given at the rate of 4 pints (2.27 litres) in 24 hours—namely, alternating pints of dextrose-saline (4.8% and N/5), sodium sulphate (4.2%), and normal saline.

By the third morning the patient was very drowsy and there was twitching in the limbs. The tongue was covered with brown fur, and he complained of severe headache. Morphine, 1/4 gr. four-hourly, and the intravenous drip were continued. He vomited 1 litre during the day, but passed no urine. There was little improvement over the next three days, though the abdominal pain was less and the stools not so frequent. No urine had been passed since the original 5 ml. after admission. The patient was now mentally alert, and worried about himself. Blood urea was 236 mg. per 100 ml., and the patient was very ill. All veins except one had now been utilized, and the intravenous administration of fluid was discontinued. On the seventh day the abdominal tenderness had disappeared, the diarrhoea and vomiting had improved slightly, but the patient was hiccuping continuously. The plantar responses were extensor. Blood pressure, 174/84; blood urea, 350 mg./100 ml. Morphine was changed to heroin, 1/8 gr. (8 mg.) four-hourly, as this was thought less likely to aggravate vomiting.

On the morning of the eighth day the patient's condition was critical. No urine had been passed since the second day (5 ml.). Intravenous therapy had been stopped for 24 hours on account of technical difficulties, and was begun again—namely, dextrose-saline at the rate of 4 pints (2.27 litres) in 24 hours. During the day and following night 1.85 litres of urine was passed, and the patient's condition improved. The next day there was a pronounced improvement: 1.9 litres of urine, of specific gravity 1010, was passed; twitching and headache abated; and the patient was able to take rusks and 1.7 litres of fluid by mouth. Blood urea, 300 mg./100 ml.; haemoglobin, 65%; W.B.C., 21,000.

Over the course of the next three days intravenous dextrose-saline was continued and the diuresis and general improvement were maintained. Vomiting was less, and the patient was able to take solid

food in the form of eggs and custard, calves'-foot jelly, rusks, and pounded fish. At the end of this time the last vein had thrombosed, and the drip was discontinued. Blood urea, 380 mg./100 ml.; plasma chlorides, 419 mg. NaCl/100 ml.; alkali reserve, 42 vols. CO₂%; blood pressure, 150/60. The heroin had been discontinued, and phenobarbitone, 1/2 gr. (32 mg.) four-hourly, was given in its place. In spite of the high blood-urea figure the patient felt well and was cheerful.

On the 17th day after admission the blood urea was 170 mg./100 ml.; plasma chlorides, 487 mg. NaCl/100 ml.; alkali reserve, 52 vols. CO₂%. The centrifuged deposit of each specimen of urine passed showed successively diminishing numbers of red and white blood cells, and all showed persisting hyaline and granular casts. On the 24th day the patient was his normal self, eating well, with no vomiting, and passing one semi-solid darkish stool per day. The urinary output was in the region of 2 litres in 24 hours; the blood urea was down to 63 mg./100 ml.; plasma chlorides had been raised to the normal level of 576 mg. NaCl/100 ml., helped by the giving of 5 g. of NaCl daily in a litre of lime-juice; alkali reserve, 56.7 vols. CO₂%; blood pressure, 148/63. The urine contained no albumin and the centrifuged deposit was normal.

THE SYNDROME KNOWN AS "REITER'S DISEASE"

(A TRIAD OF POLYARTHRITIS, URETHRITIS, AND CONJUNCTIVITIS)

BY

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In 1916 Reiter, in Germany, reported the case of a young man in whom the presenting clinical features were the triad of polyarthritis, urethritis, and conjunctivitis. Fever and, at the onset, bloody diarrhoea were also present. The patient made a complete recovery. No previously recognized pathogen was discovered to account for these inflammatory reactions, but Reiter believed he had incriminated a spirochaete, for which, however, there has been no subsequent evidence. This syndrome of the "inflammatory triad" does apparently represent a disease *sui generis*, its aetiology being unknown. Kuske (1939) noted cutaneous eruptions to be frequent concomitants, and others have found a haematuria. Recently Miller and McIntyre (1945), in America, reviewed the condition and found that about 65 cases had been reported, mostly in Germany, some in America (e.g., Bauer and Engleman (1942), 6 cases). In a lecture in this country on keratoderma blennorrhagica, Harkness (1945) remarks in passing upon several cases of Reiter's disease seen by him, and notes that 16 cases have been reported in the literature in combination with this particular skin lesion. Apart from this brief mention I have not found a report on the syndrome in British journals.

Clinical Manifestations

The patient is usually a young adult male, presenting with an irregular fever and any one or more of the triad of essential symptoms. If one (e.g., the arthritis) occurs alone at first, the others (i.e., urethritis and conjunctivitis) develop later. The *conjunctivitis* is bilateral, catarrhal, or, more usually, profusely purulent, with episcleritis and sometimes an iritis or keratitis. There are local pain, weeping, and photophobia, but permanent damage to the eye does not occur. No constant organism can be found in conjunctival smears. The *arthritis* is manifested by severe pain and tenderness, occurs in the large joints of the limbs, is usually polyarthritic and often flitting. Synovitis is frequent, fluid developing rapidly and in considerable amount. This fluid may be purulent, but is always sterile. The *urethral discharge* is abundant and purulent, accompanied by surprisingly little frequency of, or pain on, micturition. Gross haematuria may occur (as in the two cases of Miller and McIntyre) and renal complications have been described. The urine contains red blood cells in varying numbers, clumps of pus cells, and a little albumin. The discharge presents no evident organism and is sterile on attempted culture. Erosions and small ulcers may appear on the penis from the constant irritating discharge.

Diarrhoea, sometimes severe and bloody, may be present at the onset, and several types of more or less generalized rashes have been described. The erythrocyte sedimentation rate is

raised, there may be a mild hypochromic anaemia, and the leucocytes are normal or slightly raised in number. Gonococcal fixation and Wassermann tests are negative. The disease is self-limited, though subject to recurrences, which may drag its course out into months. Complications are very rare.

Aetiology and Differential Diagnosis

Harkness claims to have demonstrated inclusion bodies in the discharge from the urethra and conjunctiva in five cases of Reiter's disease. Apart from this all efforts to discover an infecting agent have failed, although the hypothesis of virus causation is the most popular. Reiter's spirillum has not been seen since 1916. One thing seems certain—this is no venereal disease, and bears no relation to gonorrhoea or syphilis. There is no reason to believe that it is caused by gonococci "lurking in the background," as has been mooted.

The inflammatory triad of symptoms may occur in gonococcal infection, but here there will be a history of venal contact, and of urethritis well preceding the other symptoms. Pus from all sources will contain gonococci (except that the conjunctivitis may be catarrhal, metastatic, and non-infective), the fixation test will usually be positive, the course and response to treatment different. Secondary syphilis might be confused on account of the fever, rash, and keratoconjunctivitis. Penile erosions also occur in both diseases, but differ in their appearance, time relation to other symptoms, and bacteriology. Syphilis could not account for the urethritis. Rheumatic fever may be simulated if flitting polyarthritis is the presenting symptom, together with fever and night sweats. Reiter's disease does not respond to salicylates.

Treatment

Miller and McIntyre consider that putting the patient to bed for six weeks to three months is all that can be done. They found penicillin and sulphonamides to have no effect on their two cases. Protein shock therapy has been used in Germany, apparently with some success, especially by Beiglboeck (1943). Sulphadiazine, however, seemed to have a good effect in the cases noted below.

Case Reports

Two patients with Reiter's disease were seen in the Bahamas last year—one a British airman and the other a coloured Bahaman. Though they presented within a fortnight of each other there was no history of close contact between them to render likely the transfer of infection. Their stories were briefly as follows.

Case I

A Scottish leading aircraftman aged 30, employed as a batman for 4½ years, complained on April 5, 1945, of pain in and limping on the left foot. This had been coming on in the mornings for about three weeks, and had got worse. The previous January he had been in the R.A.F. hospital with a painful swollen left knee, which settled down completely after it had been opened and the pus had been evacuated. This pus was apparently sterile. The patient (who was a very reliable and honest person) denied intercourse since leaving England. There was no history of trauma.

On examination the patient was rather flushed and feverish. His skin was bathed in sweat and his temperature was 101° F. (38.3° C.). The body of the left foot was red, hot, and swollen, with thickening and some oedema of the tarsal periarticular tissues. The ankle was less affected, but showed some painful limitation of flexion and extension. There was also a moderate bilateral catarrhal conjunctivitis with episcleritis, of three days' duration according to the patient. There were no other noteworthy signs in any system. By next morning the right knee had become very swollen, warm, and tender, and there was a large synovial effusion. A little serous, slightly purulent fluid was aspirated for examination. No organisms were found in it, and it remained sterile on attempted culture. A full blood count was normal, white blood cells numbering 6,000, with 60% polymorphs. On the 14th the conjunctivitis, which had subsided fairly rapidly, flared up again, this time with rather more mucopurulent discharge. This subsided within a week. On the 18th a yellowish profuse purulent urethral discharge started, and within twenty-four hours two small erosions had appeared on the glans penis. No organisms could be found in the discharge, and rectal examination showed nothing abnormal. The two-glass urine test, with threads and debris in the first glass, suggested an anterior urethritis. No facilities were available for performing the gonococcal fixation test, but the Kahn test was negative. There had been little or no change in the affected joints, and there were fleeting pains in other joints, including those of the upper limbs.

On the 20th a course of sulphathiazole was started—8 g. the first day and 6 g. on succeeding days. The drug was stopped after total of 32 g. had been given. The fever, which had remained low and intermittent, with peaks of 100–101° F. (37.8–38.3° C.), since admission, stopped on the fourth day of the course, and stayed down. The urethral discharge also subsided and did not recur. Flitting joint pains remained. Tender purple raised irregular areas appeared on the palm of the right hand but disappeared within a few days.

By May 23 a gradual subsidence of joint pains and swelling had occurred. The most bothersome joint was now the right ankle which remained somewhat swollen and painful, causing a limp. The patient was discharged on June 6. The ankle continued to give him a little trouble for some weeks, but gradually got better.

Case II

On April 19, 1945, a coloured Bahaman aircraftman aged 27 complained of a pain in the left chest and left shoulder while carrying his meal to his table at lunch-time. After this he felt sleepy and unwell, and experienced some pain on inspiration. There were no other complaints. He denied sexual intercourse since January. The previous year he had been in the civilian hospital with a urethral discharge, but its nature was not known.

On examination he was found to have a temperature of 102° F. (38.9° C.), with a pulse of 106. His left lower intercostals were tender to digital pressure. He had a profuse purulent urethral discharge, but was vague as to its duration, though quite definite that it was very recent. Further examination, including a rectal one, revealed nothing significant. A blood count and a skiagram of the chest were both normal. The discharge showed pus and epithelial cells, but repeated examination failed to reveal gonococci. By the 23rd the pains in the chest had gone, but the patient was experiencing fairly severe flitting polyarthralgia. The affected joints would become painful, tender to touch, and warm, with restricted movement, but there was no inflammatory localization. He was given a course of sulphathiazole—26 g. in four days.

On the 25th a bilateral catarrhal conjunctivitis started. This was never severe and cleared up within a few days. By the 28th the urethral discharge was over, and the low irregular fever, present since admission, had stopped. He was discharged on May 1, and had not heard of any recurrence.

It is realized that this case is not so definite as the first. It might be objected that the conjunctivitis was a manifestation of sulphathiazole sensitivity, but this is unlikely to occur before the fifth day (M.R.C. War Memo. No. 10, 1945). Chronic gonorrhoea is improbable without evidence of genito-urinary involvement deeper than the urethra, and would not be expected to clear so rapidly simply on chemotherapy, especially as the patient's urethritis had been treated with sulphonamides the previous year. Considered together, the febrile polyarthralgia, purulent bacterial urethritis, and conjunctivitis make Reiter's disease a highly probable diagnosis.

There was another coloured Service man the diagnosis of whose illness had been in doubt, but who, in retrospect, showed some features suggestive of Reiter's disease, though without urethritis having been discovered.

Case III

A lance-corporal cook aged 29 was admitted to hospital on March 21, 1945, for pain in the left lower limb. A year earlier he had fallen and twisted the left ankle and foot, since when he had had intermittent aching in the region of the first-metatarsophalangeal joint, spreading up the leg as far as, and into, the knee. More recently he had been almost unable to walk, and had been on duty for 18 days. There were no other complaints and no history of venereal disease.

On examination there was found to be loss of muscle power, with out evident wasting, in all parts of the left leg. There was painful restriction of movement at the left knee- and hip-joints, but inflammatory signs were absent. As in the other cases, a low irregular fever, with peaks of 101 and 102° F. (38.3 and 38.9° C.), was present, and remained for nearly three weeks. There were no other noteworthy physical signs. Skiagrams of the limb were normal and the surgeon reported that the disability was not an orthopaedic one. On the 24th the patient complained of pains in the eye, lacrimation, headache, and photophobia. He had an acute serous purulent conjunctivitis with episcleritis, but the deeper structures were normal. Two days later an itching papular eruption had appeared on the chest, also involving the penis, and to a lesser extent the abdomen. Benzyl benzoate, applied as a therapeutic test, was ineffective. No organisms were found in the ocular discharge nor could they be at any time. The blood count was normal and the Kahn test negative.

The pains in the leg had almost cleared by the 28th, but some fleeting pains were now being felt in the shoulders. The rash had

spread to involve the whole body except the face, and included the hands and feet. It was only mildly irritating. The individual lesions were small, round, regular, uniform maculo-papules. They involved the extensor surfaces more than the flexor. Two of the papules on the shaft of the penis had broken down and ulcerated; examination of these was negative for treponemata and other organisms. Centrifugal scaling of the individual spots started next day, reminiscent of pityriasis rosea.

On the 30th the eyes felt better, but the sight was "dim." The conjunctivitis had largely subsided, but there was a bilateral circumferential injection with clouding of both corneae, which presented a superficial punctate keratitis. This was treated with atropine drops and a potassium iodide mixture, and there was a slow improvement. By April 30 the eyes were quite clear, and the rash nearly so. The patient was discharged. Unfortunately his eyes relapsed a little over a month later and the rash recurred, though in lesser degree. This time the eyes did not improve so quickly, though partial intermittent emissions occurred. When last seen, in August, keratitis was still present.

Conclusion

It is at least possible that Reiter's disease may occur without one of the three "essential" inflammatory symptoms, but until the causal agent is discovered this is likely to remain a speculation. Incidentally, two of Harkness's six cases of Reiter's disease with keratoderma blennorrhagica failed to show any ocular manifestations. One might, indeed, go further and suggest that perhaps a single symptom may, at times, represent an incomplete form of the whole disease, so bringing forth a possible relationship between Reiter's disease, "non-specific urethritis," kerato-conjunctivitis of unknown aetiology, and "palindromic rheumatism."

The main importance of an awareness of the syndrome lies in its distinction from chronic gonorrhoea, thereby altering the prognosis and avoiding hectic treatment and the venereal stigma. It is probable that Reiter's disease occurs much more commonly than is recognized, but it is considered that the symptom-complex described above is pathognomonic and should usually be unmistakable.

I should like to express my thanks to Prof. Findlay and Prof. Wits for their help in preparing this paper.

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Medical Memoranda

Reiter's Disease

In 1916 Reiter described a triad of symptoms characterized by conjunctivitis, urethritis, and arthritis; but very little seems to have been written about it in this country. Colby (1944) said that "Since the initial symptoms of Reiter's disease are frequently related to the urinary tract, the urologist is most apt to see these patients." The intention of his communication was to bring the characteristic triad of symptoms to more general notice. Rosenblum (1945) remarked on the paucity of the literature and the general lack of awareness of the condition. Quite recently Gersh and Reich (1945) described a case of Reiter's disease in a white soldier aged 19. He had conjunctivitis, arthritis, and urethritis.

Such literature as is available stresses the fact that this syndrome, consisting of conjunctivitis, urethritis, and arthritis, may, naturally enough, be mistaken for gonorrhoea or some other condition. In some cases the original diagnoses were rheumatic fever, gout, acute conjunctivitis, prostatitis, acute arthritis, and non-specific urethritis. Because of the lack of information in this country, I think it worth while briefly to describe a case of so-called Reiter's disease which came under my care.

CASE REPORT

The patient was a male German P.O.W., aged 21, admitted with a provisional diagnosis of gonococcal infection not yet diagnosed. Investigations had yielded negative results and he had had sulphonamide therapy. The history stated that the illness started with a cold three weeks before, followed immediately by balanitis, urethritis, conjunctivitis, and painful swelling of the right knee-joint, some slight loss of weight, frequency of micturition, and a fluctuating

temperature. He said that both knees were very painful and that he had had other joint pains; the frequency had settled. In other respects his statement agreed with the written history. He admitted intercourse on a few occasions several months before the illness began.

Examination showed marked bilateral conjunctivitis; both knees were hot, swollen, and tender; he had an abscess on the right calf, boils on the left calf, and a discharging right ear. There was a mild pyrexia. Further examination showed definite keratitis in the right eye, but no perforation of the right ear—external otitis only.

The gonococcal complement-fixation test showed unsatisfactory fixation of complement in absence of antigen. A urethral swab revealed many pus cells, but only a few diphtheroid bacilli were present. No gonococci were seen. A swab from the eyes produced very few diphtheroid bacilli, a few pus cells, but no gonococci. A swab taken after prostatic massage revealed a very large number of mixed organisms, chiefly staphylococci and Gram-negative bacilli, but no gonococci. A full blood count showed: red cells, 4,750,000; haemoglobin, 78%; colour index, 0.82; leucocytes, 11,550. The urine was alkaline with a slight trace of albumin but no sugar. The deposit showed very few pus cells, very few epithelial cells, many triple phosphates, but no casts or organisms.

A German medical officer, also a P.O.W., to whom I mentioned the case, said that it was very common on the Eastern front. It was believed by them to be a virus disease and was usually treated with amidopyrine.

This patient was treated with mist. sod. sal. N.W.F., 1 oz. (28 ml.) 4-hourly; atropine in castor oil, and then penicillin drops, to the eyes. The abscess was incised and drained. Dettol baths were given for the balanitis. The urethral discharge ceased about two days after admittance; the arthritis and balanitis cleared in a few weeks, skin extension having to be applied to the right leg. The eyes were very resistant to treatment and he had numerous relapses. When the right eye was almost clear he had diffuse keratitis of the left eye.

The patient was finally discharged from hospital just over four months after admittance and five months from the first appearance of the symptoms.

My thanks are due to Dr. A. R. Grant, medical superintendent, for permission to publish this case.

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Elongated Styloid Process encountered during Tonsillectomy

In the course of some 450 tonsillectomies performed under local analgesia in adults this is the first case of noticeable elongation of the styloid process I have encountered. It may therefore be considered interesting enough to merit recording.

CASE REPORT

On April 5, 1946, during induction of local analgesia for the removal of small septic tonsils in a woman of 44, the point of the needle encountered a bony prominence at the level of the lower pole of each tonsil. Dissection of the tonsils presented no exceptional difficulty; the plane of cleavage between the capsule of the tonsil and the pharyngeal aponeurosis had to be very strictly adhered to. After removal of the tonsils a pointed and bony-hard prominence could be seen in the lower third of the tonsillar fossa on each side. This prominence was produced by the tip of the elongated styloid process bulging downwards, forwards, and inwards the lateral wall of the tonsillar fossa formed by the superior constrictor muscle of the pharynx, lined on its inner surface by the glistening pharyngeal aponeurosis. Recovery was uneventful.

COMMENT

This moderate bilateral elongation was symptomless, unlike the more pronounced unilateral elongation, of which a case was reported by A. J. d'Abreu (1945), and which was accompanied by discomfort in the neck and throat and displacement of the tonsil.

Elongation of the styloid process is explained by the following morphological facts. The styloid process of the temporal bone, the stylo-hyoid ligament, and the lesser cornu of the hyoid bone represent the stylo-byal, epiphyal, and cerato-hyal portions, respectively, of the bar of the second visceral arch. The stylo-byoid ligament, which is attached to the tip of the styloid process and to the lesser cornu of the hyoid bone, is the morphological continuity of the styloid process, and may undergo partial ossification.

Maunius.

ARTHUR DE CHAZAL, M.S., F.R.C.S.

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Reviews

NEW YORK ADVANCING

New York Advancing. Seven More Years of Progressive Administration in the City of New York, 1939-45. By F. H. LaGuardia. Edited by Rebecca B. Rankin. (Pp. 393; illustrated. \$1.00.) Copies available from Municipal Reference Library, 2230 Municipal Building, New York 7.

This handsome and copiously illustrated book is a great tribute to the enterprise of New York City and to the stimulus which Mayor LaGuardia has applied to it during his years of office. We can only single out of the record a few of the city's achievements in the prevention and treatment of disease. Housing is apparently almost as great a problem in New York as it is in London, but during the last ten years the city has housed over 17,000 families of low incomes and proposes shortly to house 18,000 more. Fifty thousand slum buildings have been cleared away. The city's lowest death rate was 9.9 per 1,000 in 1941; it rose to 10.3 in 1944. The best record for infant mortality was when in 1942 there were 28.8 deaths in 1,000 live births; in 1944 it was 31.2, but it is to be noted that the average for the first ten years of the century was 119.9. The record with regard to diphtheria is very striking; thanks to a vigorous and sustained immunization campaign the deaths have dropped from an average of 1,290 a year to 7 in 1944. There is favourable mention of gamma globulin used for the prevention or modification of measles. In a group of 1,000 children exposed to measles, 80% did not develop the disease, while the rest had a very mild attack. The tuberculosis death rate has dropped to 46 per 100,000 of the population. Every quart of milk sold in the city must meet rigid standards of quality and undergo thorough pasteurization. The claim is justifiably made that the city "has one of the most perfect milk supplies in the world."

Hospital building and reconstruction have been partly held up during the war by lack of labour and materials, but the city is now proceeding with a forty-million-dollar programme. Much concern is shown at the alarming decrease of nurses available for city service. Before the war it had 62,000; in 1945 the number was less than 3,000. There is very close touch between the municipal hospitals and the medical schools in the city which has proved fruitful in many directions. An important new development is a forensic institute which will house all the activities of the department of the chief medical examiner, whose function it is to inquire into all doubtful deaths. It will be affiliated to the New York University College of Medicine and will be the centre for undergraduate and post-graduate training in legal medicine. Another novelty is the Bureau of Alcoholic Therapy, instituted by Mayor LaGuardia in 1943 to combat chronic alcoholism. The Bureau "takes the view that the chronic alcoholic is a sick person, his affliction being tantamount to a mental illness. The emphasis of the whole programme is (1) readjustment of the underlying personality defects which results in a perception of values hitherto distorted; and (2) total abstinence, on the assumption that the alcoholic cannot drink in a controlled manner." The therapists employed are themselves ex-alcoholics. The particulars given about the 175 men who have been treated are encouraging. There is no shrinking modesty about the claims made in this record, but the New Yorker may well be proud of it.

PUBLIC KNOWLEDGE

The State of Public Knowledge. By K. E. Barlow. Faber & Faber. 8s. 6d.

Dr. K. E. Barlow's little book suffers from two disadvantages: the first is that its paper and printing have a wartime austerity; the second (common to all philosophical essays) that, unless an author invents words, he is obliged to use common words in an uncommon way. "Integration," the author's favourite word, is an instance. Modern writers overwork it; sometimes it means co-ordination, sometimes harmony, sometimes the absorption of the part by the whole. St. Augustine expressed the stages of human psychology, the transition from the sensuous to ultimate harmony with the infinite, by the words: "De corpore, per corpus, circa corpus, ad se ipsam, in se ipsa, ad Deum, apud Deum." In modern usage this is a succession of "integrations."

A reader might do well to begin with Dr. Barlow's last two chapters; they will encourage him to read the whole book. His insistence on the conceptual nature of scientific knowledge will remind older readers of *The Grammar of Science* which thrilled so many of them forty or fifty years ago. That is not a criticism of Dr. Barlow; it is well that fundamental truths should be restated in the idiom of each generation. Fragments of the idols of the market-place (and of the study) which Karl Pearson smashed fifty years ago have been swept away, but others are worshipped in their room.

To a medical reader, Dr. Barlow's insistence on psychological pattern will be welcome. He takes the example of the intricate pattern of behaviour that such an insect as the hunting wasp *Bembex* follows and must follow. He notes that conscious man may modify his behaviour when the situation changes, but only within limits.

"Carlyle has said in his vivid way," wrote Bagehot 90 years ago, "Two or three young gentlemen have said, 'Go to, I will make a religion.' This is the exact opposite of what the irregular, enjoying man can think or conceive. What! is he, with his untrained mind and his changeable heart and his ruleless practice, to create a creed? Is the gushing life to be asked to construct a cistern? Is the varying heart to be its own master, the evil practice its own guide? Sooner will a ship invent its own rudder, devise its own pilot, than the eager being will find out the doctrine which is to restrain him. The very intellect is a type of the confusion of the soul. It has little arguments on a thousand subjects, hearsay sayings, original flashes, small and bright, struck from the heedless mind by the strong impact of the world. And it has nothing else. It has no systematic knowledge; it has a hatred of attention."

For the "irregular, enjoying man" we may read "every man," for the "two or three young gentlemen" a few powerful men who have shed the blood of thousands, and we have the situation of 1914-18 and of 1939-?. That is Dr. Barlow's case strengthened by evidence not available to Bagehot. It merits our serious attention.

OBSTETRICS AND GYNAECOLOGY

The 1945 Yearbook of Obstetrics and Gynecology. Edited by J. P. Greenhill, M.D., F.A.C.S. (Pp. 576; illustrated. \$3.00 or 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

Lest years of war service in distant parts of the earth have been responsible for ignorance which would be otherwise culpable, it is well to remind readers that the *Yearbook of Obstetrics and Gynecology* presents a remarkable summary of the published literature and should be on the desk of every general practitioner and of every doctor specializing in this branch of medicine. The 1945 edition follows the customary plan of being devoted almost equally to obstetrics and gynaecology. The papers to which reference is made are grouped conveniently in sections dealing with pregnancy, labour, puerperium, the new-born, gynaecological diagnosis, operative technique, etc., and there is an excellent double index of contents and authors.

It is interesting from year to year to see how attention is focused on different aspects of the subject in clinics the world over. Some of the published work is original, much of it consists of those reviews of results with the lessons to be learned which are so valuable in assessing the true merit of various methods of treatment. Considerable space is given this year to the subject of ante-partum and post-partum haemorrhage, with particular reference to placenta praevia. An excellent editorial summary helps to guide the inexperienced through the maze of conflicting opinions to the basic fundamental truths. In the gynaecological section vaginal hysterectomy receives some emphasis, and the relevant papers give ample indication that this operation should be more widely adopted. It is distressing to note that the "operative urge" in some clinics is such that the editor, in commenting on their published work, has felt the need to condemn in outspoken terms the tendency to perform hysterectomy for no reason, and Caesarean section with an alarming death rate for conditions such as eclampsia. It is interesting and encouraging to note the dissatisfaction expressed with the results of treatment of cervical carcinoma, for this dissatisfaction is leading to a search for better methods. At least one important American clinic is returning to radical surgery in selected cases as a possible means of improving results.

The *Year Book* is an excellent institution in that it allows busy practitioners to keep in touch with world thought in obstetrics and gynaecology. Dr. Greenhill is to be congratulated on the 1945 edition.

PSYCHOSOMATIC MEDICINE

Emotions and Bodily Changes. A Survey of Literature on Psychosomatic Interrelationships. 1910-1945. By Flanders Dunbar, M.D., Sc.D., Ph.D. Third Edition. With Supplementary Introductions and Additional Bibliography. (Pp. 604. \$7.50 or 50s.) New York: Columbia University Press; London: Oxford University Press.

The appearance of a third edition of Dr. Dunbar's survey of the literature of psychosomatic medicine bringing it up to 1945 is very welcome. In it we can find a mine of useful information culled from the opinions of many leaders of medicine both in America and other countries. It is well selected and arranged, so that there is every opportunity for those who wish to undertake research, which is so very necessary in this field, to get plenty of ideas and those who are perplexed by clinical problems will find authoritative opinions. An extensive bibliography at the end will point the way to further study. It is perhaps indicative of the youth of this branch of medicine that out of 432 pages of text only 11 are occupied by the section on therapeutic considerations.

The main point of this study is that, if medicine as a whole is to be progressive and really promote health and efficiency, the removal of symptoms of disease must no longer be the goal of the physician and surgeon: the patient must be regarded as a whole and his total reaction to the environment must be kept efficient, or if impaired must be repaired. As is very well stressed, the complaint of the doctor going into the Services that he gets no practice in medicine is a reflection on our medical education. What could be better medicine than keeping 1,000 men fit for service in the field and maintaining their morale so that they are ready to face the most violent and disturbing changes in the environment?

In addition to the necessity for further investigation into means of preventing such already well-recognized psychosomatic conditions as peptic ulcer, asthma, hyperpyrexia, and the like the author points out that this field covers such conditions as accident-proneness, liability to colds, and tendency to abortion, etc. In relation to accidents he quotes figures which show that by shifting 5% of drivers with the highest accident records to other jobs the accident rate fell by 80%. Nevertheless this 5 percentage of the employees who were moved to different jobs continued their high accident record, no longer through driving cars, but through slipping, falling, shutting fingers in doors, or in other ways, either at home or in going to and from work. Here there is obviously room for intensive personality studies to the great benefit not only of the individual but also of the community as a whole.

In more difficult cases it would seem that deep analysis is necessary for cure of psychosomatic disease, but in the earlier stages a good deal can be done by the much easier method of suggestion. Unfortunately, as the author points out, the conscious use of suggestion as generally understood by physicians is considered both dishonest and unscientific, being discussed usually in connexion with cults. The "scientific way" is to tell the patient "to buck up," "that there is nothing the matter except his imagination," that he seems to have "one of these troubles we do not yet understand." Clearly it is very necessary to get rid of prejudices and make a concerted effort to prevent and treat these conditions, having regard to the personality of the patient as a whole rather than to the symptoms of which he complains.

Notes on Books

Hereditary Hypochromic Anemia by I. LUNDHOLM was reviewed in an editorial in these columns in 1941, as it was first published as Supplement C 11 to the *Acta Medica Scandinavica* in 1939. It is now available in the form of a monograph (Uppsala: Boktryckeri-aktiebolag; no price given). Its contents are described in the subtitle as a clinical-statistical study, and it provides an extremely useful analysis of the frequency of different signs and symptoms in idiopathic hypochromic anaemia. Lundholm's purpose is to emphasize the importance of constitutional factors in the aetiology, but he has gone too far in renaming the condition hereditary hypochromic anaemia; as well speak of peptic ulcer as hereditary ulceration of the stomach.

Those who saw the recent March of Time film called "Life with Baby" will be glad to possess *How Baby Grows* (Hamish Hamilton Medical Books; 10s. 6d.), a pictorial record of child development during the first five years of life, with a skilful commentary by Dr. ARNOLD GESELL. The natural appearances of the babies and children is most convincing, and parents should find the book a valuable record against which to check the achievement of their own children. It is emphasized that the children chosen represent average trends and that every baby is an individual with his own way of growing up. All workers with children, medical and lay, will find something of value in this excellently produced volume, which attains the usual high standard of publication from Yale and the famous Gesell clinic.

Preparations and Appliances

PENICILLIN OINTMENT FOR OUT-PATIENTS

Dr. I. LLOYD JOHNSTONE, M.C., D.O. Oxon, honorary surgeon, Worcester Eye Hospital, honorary ophthalmic surgeon, Guest Hospital, Dudley, writes:

To overcome the difficulties of dispensing penicillin in the form of an eye ointment for use at home some sort of small container which would not easily become contaminated by non-sensitive organisms and would not affect the potency of the penicillin was required. During the war small porcelain ointment pots were not available, and they are not free from the objection of possible contamination when the lid is removed and a particle of ointment taken for each treatment. The price of such pots would probably be prohibitive.

Penicillin is destroyed by most metallic substances, so that the use of collapsible lead tubes appears to be questionable. There are other well-known collapsible tubes for oculenta and recourse has been made to one of these, namely a glyco-gelatine capsule of roughly one gramme capacity in regular use by Philip Harris, Ltd., of Birmingham, for dispensing eye ointments. These capsules of penicillin ointment have been in use experimentally since March, 1945, and are proving useful within limitations for the purpose for which they were intended.

Three different bases have been tried. The first contained 30% of lanette wax SX, but this irritates some skins. Next anhydrous eucerin was tried, but this had the same objection. This difficulty might be overcome if the pH of the sterilized base were carefully adjusted, but we next turned to a vaseline, lanolin, and liquid paraffin base (30% of each) with distilled water making up the remainder. This does not irritate the skin, but it is quite possible further improvements can be made. Possibly the lanolin could be reduced or omitted with advantage. Finality for the base is not claimed. Strength of penicillin used has been 250 O/u per gramme at first, 500 O/u latterly. The only penicillin used was sodium penicillin made by Glaxo Laboratories. The new British Pharmacopoeia ointment, with only 10% of lanolin and no water, contains 1,000 units of the calcium salt per gramme.

Tests for potency have been carried out week by week with the same capsule of ointment kept in a dwelling house at room temperature. A very small patch of ointment inhibited growth in all directions to a distance of 0.5 to 1 cm. No marked drop in its power of inhibition on the standard staphylococcus aureus was found till the seventh week, when inhibition ceased abruptly following a "heat wave." A further test is about to commence to compare the new British Pharmacopoeia base containing no water with the above base containing 10% of water.

Clinical results are satisfactory so far as the last ointment base is concerned. It is free from undesirable irritation of the skin. The therapeutic effect in blepharitis is variable. Some cases respond well, others not at all. In many cases cultures of the organisms have been grown and sensitivity to penicillin tested, but the quickest and best test is to try either penicillin or thiazamide ointment and change over if the response is not satisfactory. More cases of blepharitis, including styes as well as the chronic scaly and pustular forms of blepharitis, are clinically cured by thiazamide than by penicillin ointment at present.

The Penicillin Clinical Trials Committee of the Medical Research Council has provided the penicillin for this and other clinical research carried on concurrently. Messrs. Philip Harris, Ltd., have very kindly given the full benefit of their experience in making eye ointments and capsules, and have made, supplied, and filled the capsules without charge and on the understanding that they have no restrictive rights to information obtained. Dr. McMenemey and his staff in the Pathology Department of the Worcester Royal Infirmary have carried out the many tests with real interest and enthusiasm. To all these my sincere thanks are tendered.

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FOOD CONSUMPTION IN AUSTRALIA

Experience with rationing in this country has so far justified the old-fashioned advice that it is wise to leave the table still feeling slightly hungry. There is no evidence that anyone is physically the worse for shortage of food, and Magee¹ contends that our children, with their special allowances of "protective" foods, are actually better nourished than before the war. Mental preoccupation with food, both our own and that of other people, has, however, become a sign of the times. While hinting gloomily at the direction from which the next cut in our rations is to be expected, some sections of the popular press seek also to incite our envy. Glowing accounts are given of the supposed state of plenty prevailing in more fortunate countries. Thus beefsteak and strong drink abound in Eire, dairy products in Denmark, and asparagus and other choice foods in Northern Italy. Even battered Germany is said to be laughing at us behind our back, cynically contrasting our willingness to endure further sacrifices on her behalf with the thriving state of her own black market. Some of these dreams of rich living may be true, others may not. But in any case the availability of good food for those with money enough to buy it does not necessarily give a true indication of the nutritional status of a whole country. The rich may grow fat while the poor are starving.

In the midst of so much uncertainty it is a pleasure to refer to two official reports, recently issued from Canberra, which give authentic data on food consumption in the Commonwealth are tabulated and compared with similar data for this country and elsewhere. The first report,² issued in 1945 by the Australian Institute of Anatomy, described dietary surveys carried out by that body under the direction of the Nutrition Committee of the National Health and Medical Research Council, Australia. Col. F. G. Goucher was in charge of a team of 15 field officers, who were all women science graduates. About 25 other women were engaged in the compilation of data under Mrs. Isley Gottlieb, and Dr. F. W. Clements was chairman of an Advisory Food Survey Planning Committee. The survey took place during 1944, and in all 2,730 households, comprising 15,235 persons, were investigated. As the survey was limited to households containing 2 or more children, the proportion of children to adults in the groups examined was higher than in the general population. Information on food consumption was obtained through the co-operation of the housewife by means of the log-book or dietary budget method. Data collected from these records were then submitted to statistical treatment, and

figures were converted in various ways to give the mean daily intakes for the many kinds of foodstuffs used and for specific nutrients such as calories, carbohydrates, proteins, fats, minerals, and vitamins. The final values were expressed both for the "adult male unit" and *per capita* and were compared with the allowances recommended by the National Research Council of America. It was fully realized, however, that failure to reach these high standards cannot in itself be taken as evidence of deficiency.

So far as average intakes are concerned the results of the survey indicate that, with the main exception of calcium, Australians during 1944 obtained supplies of foodstuffs and nutrients sufficient to ensure a satisfactory diet. In many instances higher levels of food intake were found than had applied before the war. Thus more fruit and vegetables were consumed, more milk and dairy produce, and, in spite of rationing, more meat and meat products. Equally satisfactory conclusions, however, were not reached in regard to all sections of the population. The vitamin A intake varied considerably according to the amount of vegetables grown in different zones. In 43% of households the intake was less than 70% of the N.R.C. standard allowance, this level being taken as a "restricted" standard in view of the liberality of the original estimate. In 46% of households the vitamin B₁ intake was below the recommended level, and particularly low levels were found in country districts of Western Australia. As in this country, family food intakes were found to increase with income and to decrease with the size of the family.

The second report,³ published in 1945-6 by the Parliament of the Commonwealth of Australia, compares food consumption levels in Australia with those in the United Kingdom. Four Australian representatives, headed by Dr. Clements, arrived in London in September, 1944, and went into consultation with representatives of the Ministry of Food, led by Sir J. C. Drummond. The comparison was made by dividing the supplies of food "moving into civilian consumption" by the sizes of the populations to be fed from these supplies. The committee does not therefore appear to have had access to the results of the 1944 Australian survey. From an account of the statistical methods employed, which runs to 105 paragraphs, the extraordinary difficulty of arriving at strictly comparable estimates of food intakes can be realized. To give only one example, it was necessary to find conversion factors for many foods to relate actual weights to "common denominators." Thus meat was related to carcass weight by a factor which was 1.25 for boned beef, 2.5 for canned corned beef, and 1.35 for other canned meats. Fish had to be treated differently, according to whether it was filleted or whole. Great pains were taken to prevent anomalies arising through the use of different statistical methods in the British and Australian estimates.

The joint committee concluded that during 1944 food supplies were adequate to supply at least the "restricted" N.R.C. standards for all nutrients in both countries, again with the sole exception that the calcium intake was low in Australia. The estimated supplies of some nutrients—including calcium, iron, riboflavin, aneurin, and ascorbic

¹ Magee, H. E., *British Medical Journal*, 1946, 1, 475.

² *The Food Consumption and Dietary Levels in 2,730 Australian Family Households in 1944*, issued by the Australian Institute of Anatomy, Canberra, 1945, as Special Report Series No. 1.

³ *Food Consumption Levels in Australia and the United Kingdom*, published in 1945-6 for the Government of the Commonwealth of Australia by L. F. Johnston, Canberra, as No. 41, Group 1, F 33, price 3s.

acid—were greater in Britain than in Australia, while the situation was reversed for animal protein, vitamin A, and nicotinic acid. It was clearly stated, however, that the Australian diet was more varied and palatable because of the inclusion of more meat, sugar, shell eggs, and fruit.

Australia's pre-eminence as a meat-eating nation may be judged from the average intake of 212.6 lb. carcass weight per head per annum during 1944, which may be compared with 157.7 lb. for Canada, 155.4 lb. for the U.S.A., and 115.0 lb. for Britain. In contrast Britain led in potato consumption, eating 282.2 lb. per head, as against 190.3 lb. for Canada, 145.1 lb. for the U.S.A., and only 117 lb. for Australia. The Australian's dinner plate, therefore, may be roughly pictured as holding twice as much meat and half as many potatoes as our own. Fish supplies are better in Britain than in Australia, but this advantage must be balanced against inferior supplies of poultry and rabbits.

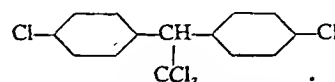
It is obvious, therefore, that we have good cause to envy not only Australia but also Canada and the U.S.A. for the richness and variety of their diets. We in our turn may be envied by our even less fortunate allies. We must not forget, for example, that until recently inhabitants of Holland poisoned themselves by eating beech nuts, and even tore up their floor boards to make fires for boiling sugar beets. Possibly we should rejoice that we are still far removed from the threat of actual starvation. This source of comfort, however, will do little to allay the growing resentment among our housewives. Often they are tired to the point of neurosis by the intricacies of rationing, by weary waiting in queues, and by the continual strain of planning improvised meals. The slight increase in our meat ration will be welcomed as a small step in the direction of Australian standards of diet, but the voice of the British housewife deserves to be heard much more loudly among those responsible for planning international food policy.

D.D.T. IN GENERAL USE

During the war D.D.T. helped to control the insect vectors of such diseases as typhus, malaria, and dysentery. There was no need to emphasize the importance of this work, and the D.D.T. was properly applied with attendant success. Now D.D.T. is on sale to the public, and it will be used against a wider variety of insect pests and nuisances, but there may be failures and disappointments in store. For example, it is often thought that a few puffs of D.D.T. powder in the wardrobe will protect clothing from moths. But since D.D.T. has no action at a distance and no repellent effect, there is nothing to prevent moth grubs living safely under the lapel of a coat the top of which is covered with D.D.T. dust. A summary of the properties and methods of application of D.D.T. has been prepared by the Ministry of Supply.¹ It should be useful to everyone concerned with insect control.

Pure D.D.T. is a colourless crystalline solid (melting-point 108.5–109° C.), with a low vapour pressure (about 1.3×10^{-7} mm. Hg at 20° C.). It is chemically stable under most normal conditions, so that traces of the substance are very persistent. It is sparingly soluble in water—less than

0.2 parts per million—but soluble in varying degrees in organic solvents. It is least soluble in hydroxylic and polar solvents and most soluble in aromatic and chlorinated solvents. D.D.T. is lethal to a wide range of insects and other arthropods, but the lethal dose varies very considerably from one to another. The dose which will kill a mosquito or a fly is much less than that necessary to kill a flea or a louse, which again are more susceptible than bugs and cockroaches. To be effective the D.D.T., either dry or in solution, must come into direct contact with the cuticle. It is then absorbed and will poison the insect, but the effect is slow and may take from a few minutes to a few days, according to the size of the dose and the resistance of the insect.



Structural formula of D.D.T.

The most valuable property of D.D.T. is its persistence. Surfaces contaminated with it will poison insects which walk over them for many weeks after the original application. To bring D.D.T. into contact with harmful insects it is usually necessary to spread a small quantity of the insecticide over a relatively large area of clothing, walls, vegetation, or water. To achieve this the D.D.T. is diluted with a solid in the form of a powder or with a liquid to form a solution, emulsion, or suspension. It is possible to purchase commercial grade D.D.T. (about 70–80% pure) and make up a suitable preparation from it; but in most cases it is more satisfactory to obtain the finished product from a reputable firm. Such products should give the percentage of D.D.T. on the label.

In the form of a powder, diluted to 5 or 10% with any suitable inert mineral, D.D.T. can be applied against body vermin, such as lice and fleas, against pests of domestic animals, and against crickets, cockroaches, etc. The powder can be dispersed simply by shaking or by means of a "dusting gun." The most commonly used solvent vehicle is kerosene. A solution of 3–5% in this liquid produces a residual toxic film on walls and ceilings to combat such insects as bed-bugs and houseflies. A relatively coarse spray is most successful, since it is necessary to wet the wall; fine atomizing guns create mists which tend to float away. Emulsions and suspensions of D.D.T. in water will also form a residual film. Such preparations have been employed for the control of mosquito larvae and against head lice. It has been shown that D.D.T. can be incorporated in paint or distemper and retain some of its insecticidal power. Its toxicity to insects in this form, however, is much less than that of a superficial deposit, presumably because much of the D.D.T. is buried in the paint. Against flying insects it can be used in the form of a fine mist (aerosol) or a smoke. But these methods do not produce the lasting residual film which is the principal merit of D.D.T.

We have previously^{2,3} reviewed the literature on the toxicity of D.D.T. to man and other mammals. Further results have appeared since then, but they have not substantially altered our conclusions. In insecticidal concen-

¹ *Some Properties and Applications of D.D.T.* H.M.S.O., 1946. 6d. net.

² *British Medical Journal*, 1945, 1, 333.

³ *Ibid.*, 1945, 2, 260.

trations D.D.T. is practically harmless to man and domestic animals. The most likely dangers from careless use will probably follow accidental or intentional (suicidal) drinking of concentrated preparations, among which may be included the 5% solution in kerosene. There may also be some risk involved in repeated contamination of the skin by oily solutions. These hazards must be considered by pest-control operators, who will regularly handle concentrated D.D.T., but the general public will hardly be concerned with preparations of this type.

The earlier development of D.D.T. was to combat disease vectors and aid military hygiene. In the wider field of plant protection control operations are complicated by the danger of destroying beneficial insects, principally the parasites and predators which naturally keep pests in check. However, this risk has perhaps been overemphasized, since D.D.T. will only do more efficiently what other insecticides have done in the past. The agricultural entomologist is alive to the possibility and will proceed cautiously, keeping an eye on the effects of D.D.T. on the balance of population. The medical entomologist has no such anxiety, since the insect parasites of man are remarkably free from other parasites and predators.

ARTERITIS OF THE TEMPORAL VESSELS

In 1934 Horton, Magath, and Brown,¹ of the Mayo Clinic, reported two cases of an affection they named "arteritis of the temporal vessels." With the recent reports of Kilbourne and Wolff² and Cooke, Cloake, Govan, and Colbeck³ a further 36 examples have been observed, and the clinical picture can now be recognized. The disorder has not been seen below the age of 55, and women are attacked twice as frequently as men. The illness commonly starts with an acute febrile episode, malaise, and muscular pains; in their wake follows a period of ill-health marked by the features of a general toxæmia, low fever, loss of weight, generalized aching, and weakness. This phase may last as long as nine months before symptoms due to occlusion of the temporal artery, or less often some other cranial vessel, indicate the nature of the disease. The spread of the inflammatory process to the temporal artery is accompanied by intense fronto-temporal headache; the vessel may be visibly thickened and the overlying skin red. In many cases pain in the jaw or occiput has suggested that other branches of the external carotid artery were diseased. Two other groups of symptoms have been noted: first, confusion, stupor, or coma, attributed to cerebral arterial disease, though evidence of focal damage to nervous tissue has rarely been found; and, secondly, visual loss, often amounting to blindness—in some of these patients the ophthalmoscopic appearances have been those of occlusion of the central retinal artery, but in many the visual defect has been disproportionate to the visible retinal disease.

The outlook was considered good by those who described the earlier cases, and in the greater number reported the disease appears to have ended in recovery. Doubt has been cast on its benign nature by Cooke and his colleagues, who have recently recorded seven instances, of which three patients died and only one regained good health. In those who have survived, the duration of the illness has varied from three months to over two years.

The morbid anatomy of this condition has excited some dispute. Horton, Magath, and Brown, from the study of an excised segment of temporal artery, believed the process to start as a localized periarteritis and described cellular infiltration in the media and around the vasa vasorum in the adventitia. They considered the lesion to differ from those of periarteritis nodosa and thrombo-angiitis obliterans. Jennings,⁴ recording the first British cases in 1938, found a chronic productive arteritis affecting all coats, with giant cells in the media; he favoured the view that it was a variant of periarteritis nodosa. Gilmour was so impressed by the presence of giant cells that he named the condition "giant-cell arteritis"; it was his belief that the process started in the media. Cooke and his colleagues have pointed out the non-specific character and inconstant presence of these giant cells. These last two papers have shown the widespread nature of the affection. Gilmour found lesions in the aorta, the branches of its arch and their branches; the other authors described them in the mesenteric and femoral arteries. There is general agreement on the obscurity of the cause of the disease; all attempts to isolate a causative organism have been unsuccessful.

There is now abundant evidence that the syndrome of "temporal arteritis" must be regarded as the local expression of a specific generalized disease of the arterial system and the experience of the Birmingham observers justifies their comment that it is "not uncommon but rarely recognized."

SELF-PROTECTION IN THE STOMACH

The mechanisms underlying the development of chronic peptic ulcer in man remain enigmatic. Two facts, however, are not in dispute—that the condition is extremely common as a cause of chronic dyspepsia among the populations of Europe and America, and that treatment is still far from satisfactory. From time to time enthusiastic reports in the medical journals suggest that a solution to the problem of treating peptic ulcer has been found. But in a disease so prone to spontaneous remission of symptoms and so intimately associated with psychological factors, assessment of results is notoriously difficult, and none of the claims previously made has survived the test of prolonged and carefully controlled experiment. Nevertheless, any reported success for a new method of treatment deserves attention, and two recent papers by Morrison⁵⁻⁷ suggest a promising line of investigation.

Working on the assumption that the gastric juice might contain a substance which protects the gastric mucosa from self-digestion, Morrison treated ten patients with radiologically demonstrable peptic ulcers (five duodenal, three pre-pyloric, and two gastric) by the administration of normal gastric juice obtained from healthy volunteers. The gastric juice was removed at 15-minute intervals over a period of three hours, after the subcutaneous injection of two doses of histamine, 1 mg., one hour apart; the first specimen was discarded, and subsequent specimens, in which the concentration of pepsin and mucin was low, were pooled, rendered neutral by sodium hydroxide, filtered, and preserved with 0.3% tricresol. This was then administered, in doses of half an ounce diluted with 2 oz. of tap water, every hour during waking hours to the patients with peptic ulcer. No other medicament of any kind was given, and the patients remained ambulant and on a normal diet. Smoking was allowed, but alcohol was forbidden. Two of the patients, the previous duration

¹ *Arch. intern. Med.*, 1934, 53, 400.

² *Ibid.*, 1946, 24, 1.

³ *Quart. J. Med.*, 1946, n.s. 15, 47.

⁴ *Lancet*, 1938, 1, 424.

⁵ *J. Path. Bact.*, 1941, 53, 263.

⁶ *Amer. J. Digestive Dis.*, 1945, 12, 323.

⁷ *Ibid.*, p. 328.

of whose symptoms was 19 and 25 years respectively, showed no improvement during three weeks' treatment. The remaining eight, who had had symptoms for periods varying from one to thirteen years, all showed relief of symptoms within 24 to 48 hours and disappearance of radiological evidence of ulcer in 10 days to 3 weeks, and had remained free from recurrence for three years.

Morrison's second paper deals with the prevention of experimental peptic ulcer in dogs by the administration of a preparation of hog stomach. Each of two groups of dogs was given 2.5 grammes of yellow cincophen (phenylquinoline carboxylic acid) daily by mouth: this substance has been found by many investigators to produce chronic peptic ulcers, indistinguishable pathologically from those occurring in man. In the control group of ten dogs chronic peptic ulcers were produced in all cases, being multiple in five animals: the ulcers were produced within six weeks in nine of the dogs and within four months in the tenth. In the second group, of twelve dogs, 1/2 lb. of a preparation of the mucosa and submucosa of fresh hog stomach and duodenum was fed to each animal daily, and the dogs were sacrificed at intervals up to four months, one dog being killed at the time of each death in animals of the control group. No peptic ulcer was found in any of the second series of dogs, though some degree of gastritis was present in eight of them.

It is to be hoped that other investigators will undertake research along these lines. There is no lack of clinical material, and if Morrison's therapeutic results can be confirmed in a larger series of patients, with adequate controls, a new and promising field of study will be opened up.

WELFARE SERVICES UNDER THE RED CROSS

After the first world war the national Red Cross Societies in this and other countries, with their raised prestige and enlarged place in public affection, took up a number of activities in addition to the continued relief of those suffering as a direct result of war. These included, in Great Britain, various forms of hospital social service, ambulance work, the training of nurses and auxiliaries, popular health instruction, and child welfare. This time the British Red Cross Society contemplates an even larger and more closely defined peace programme. The great momentum which the Red Cross and St. John Organization achieved during the war is by no means spent. Under the terms of its supplementary charter the British Red Cross Society is empowered to assist the civil population in any manner calculated to promote health, prevent disease, or mitigate suffering. Accordingly a special department of welfare services has been set up, the primary purpose of which is to supplement the work already done throughout the country by voluntary organizations and statutory bodies. Three sections are proposed—one for welfare work among and after-care of the civilian disabled, including presumably those wounded in industry, an army whose numbers have never been adequately assessed; another for the care of invalid and crippled children; and the third for the care of the aged infirm. The supplementary nature of this work is emphasized—for example, the care of invalid and crippled children will be undertaken in association with the Central Council for the Care of Cripples, the Invalid Children's Association, and similar bodies.

This Red Cross effort is not concerned with the creation of a new organization but the assistance and reinforcement of such organizations as exist. The newly appointed director of welfare services is Dr. Harold Balme, who will continue to act as medical officer in charge of rehabilitation to the Ministry of Health, but on a part-time basis.

Already various forms of welfare services have been started by members of the Society in different parts of the country, and the co-ordination of these will be one of Dr. Balme's principal tasks. The mere existence of the new department will probably bring a large accession to the ranks of such workers. Plans will be made for their training, because training to the Red Cross worker, whether for peace or war tasks, is more than half the battle. At the same time the various forms of welfare work undertaken by the Joint War Organization of the British Red Cross and the Order of St. John on behalf of men and women in the Forces or invalidated therefrom will go on under joint committees set up for the purpose, and the emergency help committee, also a joint organization, will continue to give financial and other aid in cases of need among war pensioners. Thus the fine work done in war will be repeated and carried on in the less exciting but not unadventurous fields of peace, and no doubt when the programme of activity comes to be formulated new occasions will present themselves and new duties be undertaken on behalf of distressed and disabled members of the community.

SEQUELS OF KERNICTERUS

That kernicterus might be responsible for many clinical syndromes of childhood and adolescence is becoming recognized.

A demonstrable mother-child Rh incompatibility in neuro-psychiatric syndromes provides suggestive support to this conception. We recall the study made by H. Yannet and R. Lieberman,¹ who found that incompatibility of this kind occurred more often among undifferentiated defectives than in a control group of organic amentias and dementias. The same authors² have carried their earlier investigations somewhat further. A series of 277 defectives (with I.Q. less than 30) was available, with maternal blood samples to hand. Of these children 158 belonged to well-defined diagnostic categories, such as mongolism, diplegia, post-traumatic sequelae, and this number was used as a control group. The remaining 119 were regarded as undifferentiated defectives, though it was pointed out that inadequate data and case-histories might have resulted in the inclusion within this series of a number of "organic" cases. In the control group 22, or 14%, of the mothers were Rh negative, a figure which corresponds with a basis of random selection. According to W. T. J. Morgan³ a Rh negative woman has a 60% chance of giving birth to a Rh positive child. Hence the 22 mothers might be expected to have 13 Rh positive children—that is an 8.2% random ratio of mother-child Rh incompatibility. The actual findings in the authors' control group were 12 instances out of 22, or 7.6%. Amongst the undifferentiated cases, however, 26 (or 22%) of the mothers were Rh negative. One would expect to find in such, 15 or 16 Rh positive children; actually there were 19, or a 16% incidence of mother-child incompatibility. The difference between the two ratios (16% and 7.6%) is statistically significant.

This report tallies with the findings of L. H. Snyder, M. D. Schonfeld, and E. M. Offerman,⁴ who found almost twice as many instances of Rh incompatibility in a series of 68 undifferentiated mental defectives than random selection would have warranted. A similar study of cases of high-grade defect and minor neurological abnormalities might have yielded even higher figures than those of Yannet and Lieberman, whose patients comprised only idiots and imbeciles.

¹ *Amer. J. ment. Def.*, 1944, 49, 133.

² *J. Amer. med. Ass.*, 1946, 130, 335.

³ *Brit. med. Bull.*, 1944, 2, 165.

⁴ *J. Heredity*, 1945, 36, 9.

TYPHOID AT ABERYSTWYTH

A first case of typhoid fever was admitted to hospital on July 27 at Aberystwyth. Other cases followed, and confirmation of the clinical diagnosis was obtained in the first case by a positive Widal test. All the cases were of a mild character. Headache was usually complained of at the onset, and there was a high temperature and no very clear-cut clinical findings. The first 22 patients were questioned carefully, and it was found that all of them had eaten ice-cream from the same source. The only other factor common to all cases was water, and both water and milk supplies in the area concerned had already been tested, with negative results.

By July 29 it was clear that the infection had been conveyed by a single barrel of ice-cream. The man who had manufactured and sold it was immediately placed under observation. A Widal test was positive 1:320, and on July 30 a test against the Vi antigen of the typhoid bacillus was positive 1:80. He gave a history of having had typhoid fever in 1938, and the bacteriological findings strongly suggest that he is still excreting the *B. typhosus*. The following statement was issued on August 4 by Dr. D. I. Evans and the Mayor, Alderman H. G. Pickford:

Every certified suspect is being taken into hospital for observation, and in every household affected the members have been instructed as to precautionary measures to be taken. So far as can be traced no single case has occurred outside the original source of infection, which was ice-cream. The milk and water supplies are satisfactory. The town medical authorities are having the fullest support from the county medical authorities and from the Welsh Board of Health, and every precaution is being taken to prevent the spread of infection.

We are informed by Dr. D. I. Evans, who is the part-time M.O.H. for the Borough of Aberystwyth, that up to August 6 there were 51 admissions to hospital from the borough itself, and in most, but not all, of these cases the diagnosis of typhoid fever had been confirmed bacteriologically. Other cases have been notified in the districts just outside Aberystwyth.

The local isolation hospital is now full and arrangements have been made for any additional cases to be sent to hospitals outside the area. The cases so far are mainly among women and children, and it has been reported in the lay press that there are no visitors affected. At the same time, practitioners throughout the country should be aware of the Ministry of Health view: "It is feared that the disease may occur in holiday-makers who have returned to their homes in other parts of the country." It seems that secondary cases are now appearing, and therefore the likelihood of cases arising in places far removed from Aberystwyth is the greater. In view of the fact that the primary source of infection was not stopped until July 29 further cases may occur up to the middle of August.

An appeal to local authorities to intensify their efforts to ensure larger uptake of the welfare foods which have proved so important to the health of expectant mothers and young children is made by Rt. Hon. Joseph Westwood, M.P., Secretary of State for Ireland, in a Department of Health circular. The Government has decided to continue the welfare foods scheme for expectant mothers and young children as a supplement to the family allowances scheme. The welfare foods scheme, however, is not being restricted to families entitled to a family allowance. The foods will remain as at present, milk—liquid milk or, alternatively for infants, national dried milk—orange juice and cod liver oil, or vitamin A and D tablets in place of cod liver oil for expectant mothers. There will be no change in the quantities to be made available. But liquid milk is to be available under the scheme at a cost of 1½d. a pint instead of 2d. a pint; the price of national dried milk is reduced from 1s. 2d. to 10½d. per tin; and cod liver oil—or vitamin A and D tablets—is obtainable free. Free milk and orange juice will be allowed automatically to people receiving public assistance or payments from the Assistance Board. Local authorities are notified that application forms for free milk and orange juice can be obtained from the Ministry of Food if they wish to have a supply for women in their area at, for example, maternity and child welfare centres. In a circular to welfare authorities in England the Ministry of Health draws attention to the Government's decision to continue the existing welfare foods scheme with some slight modifications, as a supplement to the family allowances scheme, though the welfare foods scheme is not being restricted only to families which are entitled also to a family allowance. The welfare foods scheme has proved its importance to the health of expectant mothers and young children and full advantage should be taken of it. The Minister therefore asks welfare authorities to intensify their efforts to ensure a larger take-up of the welfare foods.

Correspondence

The Plebiscite

SIR,—The Representative Meeting of the British Medical Association has decided, and quite rightly, to take a plebiscite of the profession. It is to be regretted, however understandable, that there should have been uncertainty and some confusion over the terms of reference. We are approaching the most crucial moment in the history of British Medicine, and it is absolutely vital that the terms of reference should be crystal clear, so that no doctor can be in any doubt as to what he is being asked to decide, together with all the implications of that decision. The Health Bill is now past its Third Reading, and it is obvious that any changes will be in matters of mere detail only. The ring fence described by Dr. Dain is complete, and the medical profession is invited to walk in. Upon the main structure—the central and general organization, hospitals, Ministerial powers, direction of doctors, sale of practices, and so on, and so on—upon such as these the profession has not been, and will not be, consulted, nor was it ever intended that it should be. Our negotiators are invited to negotiate—but it will be upon matters of detail, upon regulations which the Minister may make, upon terms of service.

Herein lies the danger. Many may say: "What harm can there be in that, if we can do so without prejudice?" Unhappily, and this is particularly true in dealing with the Government, there is no such thing as "without prejudice." It has been shown time and time again, and it needs shouting from the house-tops at this moment, that it is impossible to negotiate on detail without at the same time conceding principles—those principles which the representatives of the profession have affirmed, and reaffirmed, as fundamental. Once we are committed to discussion of detail, the flank of principle is turned, and our position becomes untenable. There is no recovery.

If any man still doubts that the Government intend to pass and to implement the Health Bill as it stands, let him read the nauseating statement with which Mr. Bevan concluded his speech on the Third Reading. In such circumstances, and having ensured by personal contact that doctors are fully aware of the implications of their action, the question to each should be just this, "Are you prepared to enter the Government Health Service as it stands?"—answer, "Yes!" or "No!"—I am, etc.,

Dr. D. I. Evans.

E. D. BROSTER.

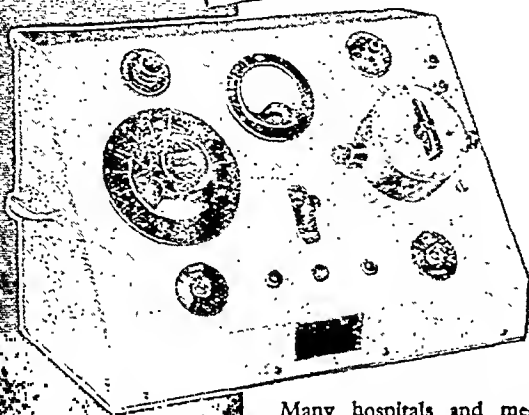
Health Service Bill

SIR,—There has been a disquieting silence on the part of the leaders of the medical profession concerning the policy, if indeed they now have a policy, which they would recommend the rank and file to adopt *vis à vis* the National Health Bill, soon to become an Act without the adoption of any but minor amendments. The appearance of so many letters on the subject in the *Journal* demonstrates the continued interest of the profession in the subject, even if the variety of opinions expressed approximates too closely to the number of writers.

Why this prolonged silence? Is it because with Machiavellian guile the Minister of Health has succeeded in dividing the profession against itself, favouring the Universities and teaching hospitals, granting the latter privileges that he denies the non-teaching hospitals, at the same time promoting the dictatorial attitude which so many good men and women so easily acquire?

Were we wise in seeking to have so much decided at the regional level? Have we so little trust in, and so little influence on, the men and women among whom we live—and from whom our incomes are derived? Surely this is a defeatist attitude? If we cannot influence our neighbours, what prospect is there of influencing a more distant body and making it aware of our local needs?

A great danger of the Bill is that it aims at stercotyping the country's medical services. The Minister of Health, as the grand panjandrum, will direct the specialists of the teaching hospitals, the *prima donnas* (the Minister's description),

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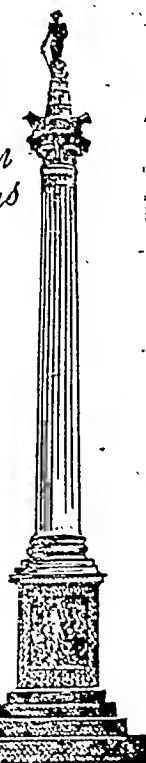
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who in turn will direct the rest of the ballet, consisting of the medical staffs of the non-teaching hospitals. In this performance the general practitioners are to be relegated to the position of supernumeraries, scene-shifters, and such like.

Now no medical service will be satisfactory unless the general practitioner is satisfactory. Properly educated and organized for his work, not only would he deal more satisfactorily with early illness and thereby make much hospital treatment unnecessary, but could engage in much at present neglected research work, which probably cannot be, and certainly has not been, done in hospital. Illness has an ante- and a post-hospital stage, and until that is fully recognized and acted on there will continue to be a deplorable amount of chronic illness.

I think the account of the grand panjandrum ended "and the gunpowder ran out of his heels," or was it boots? If the Minister of Health pursues his present course he will find his gunpowder similarly run out. I suppose it is too late for the slogan "Negotiation not dictation" to be effective.—I am, etc.,

London, W.8.

HAROLD H. SANGUINETTI.

SIR,—I trust that now the Committee Stage of the National Health Service Bill is completed Council will give us a definite lead. The road to hell is paved with good intentions, and "intentions," and those on minor points, rather than "promises" or "changes," are all the Minister has conceded, according to your analysis of the Bill's Committee Stage. (*Supplement*, July 20, p. 13.)

The profession is in a state of bewildered frustration. Few, I believe, like the Bill. The majority are apathetic, resigned, or ignorant. We have had to refrain from playing the Minister's game by fighting shadows, but now he is committed and the issues are becoming clear.

Let us not now cloud the fundamentals by discussing terms of service or details of administration. Our seven points can be converted into something concrete—e.g., the removal of direction, the removal of the penal clauses, etc. The issue is freedom, and with a proper lead now a large part of the apathy will go. Let our consultant friends remember that theirs may be, at present, a gilded cage, but it is a cage nevertheless, and the Minister is not unaware of the maxim *divide et impera*.

The contumely with which this Minister has from time to time treated the profession and its representatives makes it certain that no satisfactory arrangements which will be respected by him or his successors will ever be made until he has been fought and beaten on some major issue. He has to be converted from his Fascist concepts by a wholesome course of medical discipline.

The time for fighting is now. We have the power; the public believe we have the power. Let us not have feet of clay.—I am, etc.,

Wolverhampton.

ROBT. S. V. MARSHALL.

SIR,—There is one point about which many of us are concerned at the present time. This is the question of victimization of members of the profession as a result of impending legislation. There are many men who are either bound to lose a portion of their income or, in the case of certain specialist branches, to lose the whole of the capital value of a purchased or carefully built-up goodwill, without hope of compensation, if some sort of safeguard is not provided.

Whatever view any medical man may take of things to come, either antagonistic or laudatory, the profession as a whole would be solid in fighting rank injustice. If the B.M.A. takes the attitude that, as an essential preliminary to accepting and recommending Government proposals to the profession, a tribunal of suitable composition should be established to guard against what amounts to a total capital levy, it would have the profession behind it to a man.

No trades union would allow, or be permitted to allow, victimization of a single one of its members in coming to agreement with the political caste—for caste it is.

This is not a question of politics but plain justice. Even a criminal is not deprived of his all. One can only surmise that some of us, having dared to enter the profession and develop certain branches in advance of State provision, have

somehow qualified as superior criminals, whose professional goodwill can just be confiscated by the bureaucratic machine. If the B.M.A. does not stand firm on this point it will not only lose our respect but many of its members.—I am etc.,

London, S.E.5.

GUY BOUSFIELD.

The Public and the Bill

SIR,—Mr. Aneurin Bevan, the Minister of Health, must be none other than Mr. Bevan, the Minister of Housing, who forgot to order the bricks. He has offered the public a complete national health scheme to start in 1948, but he has forgotten the medical personnel. It is quite definite that two or three times the present number of doctors and nurses will be required if the Minister is to fulfil his promises, and yet he has cut off the supply of new recruits at the source. By pouring scorn on the voluntary system with its flag days and its charity he has cut down subscriptions to the larger hospitals, which had to close wards as a result, and by describing the smaller hospitals as inefficient and unfit for the training of nurses he has caused the junior staff to leave these hospitals, with the result that they have had to close.

The medical student is to be called up in just the same way as other boys, and the result is that many of these will not feel inclined to undertake the long and tedious course which is required, when they have finished their military service. Surely it would have been wiser to have let the medical student carry on with his studies when he left school and do his military training at the end of his course, when he is a qualified doctor? The Services will require doctors, and so many will have to do their service both before and after their medical course. I think the public should know these facts, as they are shortly to begin paying very large weekly sums for something of which there is little hope of fulfilment.—I am, etc.,

Camberley.

LESLIE HARTLEY.

Direction under the Bill

SIR,—There are many who approve of a National Health Service. There are many who do not. But on the issue of direction there can be no Britishers who are not against it. No amount of side-tracking can get over the following: If a man enters the Service he can be directed; if he does not enter, as he cannot use the hospitals, he will starve. The matter is really national, as well as personal, and if we doctors, in summer, cannot spare time to point out to our patients that Magna Carta and its amplifications are nearly strangled, then we deserve to suffer the loss of personal freedom. We must somehow find the time and energy to get every patient who is against the National Health Service, or has doubts, to write to the Prime Minister. Then get the local M.P. to ask in the Commons the number of these letters, and force an honest reply. If we do the job well, the number, I believe, will be a good half of the adult population, and if our servants of State (so-called) choose to ignore that number, then the Press will do the rest of the job.

To those practising in predominantly Labour areas: point out to the individual that there isn't any risk of indirect punishment via the T.U.C., as even this Government hasn't enough spies to do that.—I am, etc.,

Stamford.

A. HENRY GREGSON.

Hours of Work under the Bill

SIR,—We have still no information from the Minister of Health, nor from the Negotiating Committee, as to what hours of work per day, or week, are proposed for the State Service. Remuneration, as in other services, must be related to hours worked, off-time periods, and pay for overtime. Without this information it is impossible to evaluate the remuneration, or answer anything in the way of a referendum.

One cannot suppose that the Ministry will require us to work a twelve-hour day with no week-ends off and two weeks' holiday in the year, as at present many of us do. Such doctors' hours of work are those of the worst period of the Industrial Revolution. May we have this very necessary information from someone, please?—I am, etc.,

Birmingham.

W. J. BURNS SELKIRK.

Regional Hospital Services

SIR,—The regional hospital scheme of the Health Service Bill aims at remedying defects in the present hospital services. Most of these are traceable to want of co-ordination between institutions, to want of co-operation in the public interest. History is our warrant for saying that the successful schemes of public service have been those in which a primary and basic purpose has been clearly seen and consistently followed; that on the other hand the failures have been those in which secondary considerations have been allowed to interfere in the making of the scheme's pattern.

There will be no quarrel with the dictum that the satisfaction of public need should be the basic purpose of this scheme and should dictate its pattern without serious interference. This purpose would have had a fair prospect of being fulfilled if a directing regional board, experienced in public administration and finance, had been given control of all hospitals in an area, subject to an obligation to consult the governing body of a university medical school on questions that concern the appropriate use of institutions, the sharing of duties between them, and their medical staffing. In the Provinces this is not to be the plan.

Regional boards will all need, to complete their schemes, a group of central institutions manned by the most experienced consultants and specialists, to serve as a last court of reference for patients who present the most difficult problems of investigation and treatment. The plan of the Bill withdraws from the direction of regional boards the institutions that are best equipped for this function, and sets them apart under separate governance on the ground that they are to fulfil a special function, that of teaching. The selection of patients for admission to these "teaching hospitals" will presumably be based upon the carrying out of this duty, which is the reason given for their segregation. This is surely an example of allowing a secondary obligation to mutilate a scheme to the serious detriment of its primary obligation.

I cannot, in any space that you, Sir, could allow me, mention all the difficulties and disadvantages that this division of authority is likely to create. Under such a uniform scheme as I have envisaged, the medical schools would, with the support of the Ministry, have had no difficulty in obtaining the teaching facilities that they need for their students. The means that the Bill offers them are not only clumsy and insufficient from the administrative point of view, but also cut across the prospect of a service that will give what the public needs. Incidentally, it recreates and stereotypes caste distinctions between hospitals, which have been one of the chief defects of the past system, or want of system, and which every wartime hospital administrator had good reason for recognizing as such.

No material change in the Government plan is now to be expected, but when those who elaborate it discover that there are not in the provincial centres any "teaching hospitals" comparable to the teaching hospitals of London which house, maintain, and direct medical schools, what then? Medical faculties and faculty boards are the only bodies which possess the experience necessary to give expert advice to regional boards on the professional matters mentioned above; is the allocation of them of this duty and privilege possible within the Bill's framework?—I am, etc.,

Liverpool

K. W. MONSARRAT.

An Aspect of Government Salaried Service

SIR,—In view of the threatened salaried service that is upon us, I would like to call attention to a previous situation when medical practitioners were paid salaries for full-time State service under contract to the Government; especially as in conversation with my colleagues in various departments of medicine I found few who realized that such a sequence of events had taken place.

In September, 1939, many resident medical officers were virtually "drafted" into the Emergency Medical Service. I believe that a very high percentage of these medical officers accepted the posts gladly, and with a great deal of willingness to do their utmost under any circumstances in the threatened devastation by air attack on their country, and were unconcerned by considerations of the salary that might be meted out to them, provided they were reasonably fed and housed in accordance with conditions that might prevail under total

war. Many were gratified at the princely sum of £350 per annum, plus board and lodgings, that they received under Government contract, and which was indeed a financial satisfaction to those who at the time were only receiving £50 and keep for full-time services; thus they were able to undertake domestic commitments in accordance with their age and station in life which would otherwise be prohibited owing to finances. Approximately six months later, however, when Britain had not suffered the hardships that had been anticipated, these same M.O.s were asked to waive their contracts and accept £200 per annum, a reduction of salary of over 42%. The penalty for not conceding to the request was appointment to another area, usually more uncomfortable, with its attendant personal and professional inconveniences, or drafting to military service. This time a direct contract was not given to the M.O., but he was paid from a central pool, often very much in arrears and with no contract or guarantee that his income would remain stable for a greater length of time than three months. Soon after this the major blitz on Britain commenced with numerous areas affected, entailing very continuous and arduous work for this class of M.O. and no reinstatement to the £350 basis. The first generalized blitzing of Britain quietened down considerably by the summer of 1941, and within three months the same class of M.O., on appointment, received remuneration to the extent of £120 per annum, a further reduction of 40% from his immediate predecessor, and a total reduction of over 65% of what the Government had originally contracted to pay one class of its employees.

Admittedly this occurred during a national emergency, and any hardships due to these reductions would be willingly undergone, except, if the public press is to be believed, that most other employees on essential services did not have to share these financial "cuts," in spite of the fact that they had not had the years of training and personal monetary outlay in acquiring the skill for specialized wartime employment, therefore presumably would be better able to stand reduction. Were these reductions only made on the medical profession because they were unlikely to strike, as opposed to workers who have since shown their irresponsibility by striking, and thus have been able to demand their "rights" and maintenance of remuneration and comfort?

I agree that all this is a hatchet that is best left buried, and the necessity of bringing it into the light at all only occurs when a similar situation may be allowed to reappear through insufficient warning to enough of the people concerned. It has been cited that the Government, from the financial standpoint at any rate, will not be stinting in their remuneration of the State doctor, but what value can be placed in their contract, especially when they are spending such "global" figures? Will they not have to cut their expenditure some time because the taxpayer cannot, or will not, stand the pace or the Treasury cannot afford it? How will they begin to economize? Will they reduce the doctor's scale of capitation fee or basic salary, because he will carry on his job in spite of it? Or the standard of equipment required in hospitals? They will continue to aid the sick, too. Or will they economize in the wages of the industrial workers, who have been known to lay down their tools when they have a grievance?

Please do not think that my only objection to State medicine is on the financial side, for I am entirely opposed to a lay dictatorship of medicine on the totalitarian system, and honestly believe that politics and trade unionism are best left to those who have not been acquainted with the Hippocratic oath. My feelings have already been stated more adequately than my ability to express them by others of your readers, but hitherto I have not seen this particular aspect brought up.—I am, etc.,

Wheatthampstead.

C. F. C. PARKINSON.

Black Tongue and Oral Penicillin

SIR,—We read with great interest the letter on this subject by Dr. P. D. Bedford (July 13, p. 63). We should like to bring to your notice that two cases of "black tongue" were reported at the meeting of the Royal Medico-Psychological Association on Feb. 14, 1946, by one of us (F. M. S.).

One was observed after oral administration of sulphadiazine and the other of penicillin. The local effects were similar to those described by Dr. Bedford, and the penicillin case showed in addition distinct symptoms of nicotinamide deficiency—such as skin changes, sensory disturbances in the legs, abdominal pains, general fatigue, inability to concentrate, and memory disturbances. In the latter patient it was also possible to reproduce the same symptoms with a second course of oral peni-

cillin and to examine the nicotinamide status simultaneously. The level of nicotinamide methochloride in the urine before penicillin was given for the second time was low but above the deficiency level. It fell considerably during dosage to a level indicating a deficiency. After discontinuing penicillin the nicotinamide methochloride level rose higher than before. When at this high level penicillin was given orally for a third time the nicotinamide methochloride output did not fall below that of the nicotinamide deficiency level, and no local changes were observed on the tongue; and only very mild general symptoms were experienced. These findings indicate that oral administration of penicillin can cause a nicotinamide deficiency, as has been found after oral administration of succinyl sulphathiazole or sulphaguanidine by one of us (P.E.) and by Hardwick, by their action on the intestinal flora. Whether the black-tongue symptom, which is rare in human but common in canine nicotinamide deficiency, is partly due to an additional local effect of penicillin on the tongue has still to be investigated. The details of our findings will be published in due course.—We are, etc.,

P. ELLINGER.

Lister Institute of Preventive Medicine. F. MACKENZIE SHATTOCK.

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The "Intractable" Vesico-vaginal Fistula

SIR,—The correspondence on this subject is of deep interest to all who have the management of these difficult cases under their care. I am without experience of the conditions existing in Bantu, but in this country there are other fistulae which occur in the bladder at a higher and more lateral level than those located near the urinary meatus; these may involve the ureter as well as the bladder. They are not suited to the approach of Marion Sims.

I would draw attention to an alternative to colonic transplantation, and that is the suprapubic transvesical approach. The bladder is opened by an adequate incision, as in suprapubic prostatectomy, the access afforded is good, the technique is not difficult. In addition to the ordinary case, multiple fistulae are readily closed, and ureteric damage remedied by transplantation of the divided end into the bladder. In all cases the operation concludes with suprapubic bladder drainage. This technique originated, I believe, with the late Mr. Swift Joly, and if it is adopted I cannot think that many cases will call for repeat operations nor for colonic ureteric transplantation.—I am, etc.,

London, W.1.

EVERARD WILLIAMS.

Carcinoma of the Bladder and Vesical Calculus

SIR,—Since 1833, when Bayle first drew attention to the relationship between bladder calculi and tumour, calculi have frequently been described in association with bladder tumour. Ash (1940), however, in a study of 2,743 cases of carcinoma of the bladder recorded that in no case could he find any association of a calculus with the formation of a bladder tumour. In a recent investigation which I carried out on 189 cases of bladder tumour treated at the Cardiff Royal Infirmary, 6 of the cases had a history either of having passed stones *per urethram* or of stones having been removed suprapubically prior to the appearance of the symptoms related to the tumour. There was no direct evidence in any of the 6 cases that the calculi were the exciting factor in the production of the tumours. In one other case, however, there was more definite evidence that the bladder tumour may have been due to the presence of a stone.

Case History.—The patient, a male aged 57, was admitted with acute retention. He gave a history of haematuria and frequency of four years' duration. Cystoscopy was impossible. At suprapubic cystotomy I removed a large calculus, the size of a walnut, which had become impacted in the internal urinary meatus. After removal the base of the bladder was inspected but no obvious lesion was observed. There was certainly no obvious tumour growth. Six months later he was readmitted with haematuria of three months' duration. At operation a papillomatous growth was found surrounding the internal urinary meatus at the site where the stone had previously been impacted. Histologically the tumour was a papillary carcinoma with very marked squamous metaplasia present.

Squamous metaplasia in papillary carcinoma was seen histologically in 7 of the tumours of my series, and in all of these tumours there was marked histological evidence of long-standing inflammation. Clinically, 4 of the 7 cases gave a history of chronic renal tract infection over a period of from three to ten years; in the other 3 the history of infection was much more recent. I personally feel that though there is uncontroverted evidence that chronic irritation, whether in the form of chronic infection, or of a calculus, or of vesical schistosomiasis, does produce bladder tumours, yet in a number of cases the squamous changes are secondary and arise in a tumour which is already present in the bladder.—I am, etc.,

Cardiff.

J. GUNN ROBERTS.

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Drug Eruption after Sodium Pentothal

SIR,—Drug eruptions due to sodium pentothal, as Dr. G. A. Grant Peterkin (July 13, p. 52) points out, must be exceedingly rare. After using the drug for seven years I had never seen any form of eruption until two weeks ago.

The patient had a tuberculous lung and a hysterectomy for fibroids was to be performed under a spinal anaesthetic. The patient, wishing to be put to sleep, was given 10 ml. of a 5% solution of sodium pentothal and then turned on her side for the administration of the spinal anaesthetic. Within a few minutes and before any antiseptic had been applied to the back, large urticarial weals occurred on the back and quickly spread all over the body. Her eyelids swelled considerably and her lips to a small degree. Fortunately no swelling of the tongue occurred.

The operation was proceeded with under light nupercaine and as the patient was restless a few more mls. of pentothal were given. At the end of the operation all the urticarial weals had subsided but the eyelids were still a little swollen. Next day the patient was quite well.—I am, etc.,

Bristol.

R. HASTINGS MOORE.

Total War on Cancer

SIR,—In his interesting paper on this subject (July 20, p. 77) Mr. G. F. Stebbing omits to mention one valuable line of attack and research. It was known to witches, and is a matter of scientific observation to-day, that intractable cutaneous papillomata of many years' standing are curable by suggestion. This discloses the fact that the body can produce, or be persuaded to remove, some simple new growths by activities engendered in the psyche. Emotional states also are known to be a source of variation in the chemistry of gastric secretions. When, therefore, Mr. Stebbing writes "Cancer starts in every case with a single cell or group of cells in the body that revolt, as it were, against the general system," we already have a hint that conflict in the personality may, by its effects on tissue fluids, be the cause of inviting and promoting this daemonic activity.

I believe that authentic cases of spontaneous disappearance of malignant growth, if rare, are known to exist. This would be explainable on these lines, as also the fact that carcinoma of the breast occurs more often on the left, the more unconscious side of the body. For in using dreams to understand the depths of the personality the psychotherapist becomes familiar with the fact that, in our right-handed civilization, the left side of the body and left-handed symbols represent something at a more unconscious level than similar objects represented on the right. Hence an assault on the soma engendered unconsciously in the psyche might well be expected to express itself in a left-sided manner.—I am, etc.,

Exeter.

E. JOYCE PARTRIDGE.

SIR,—Why, in the background of the admirable paper "Total War on Cancer" (July 20, p. 77), is there the suggestion of competition between the wars against different kinds of disease? Why, in fact, is there any hesitation in applying what we have learned of the finance of total war to the struggle for freedom from the ills to which our bodies are now heir?

Having returned from India but a couple of months ago, I cannot attempt to answer these questions, but a visit to Madanapalle in 1944 (to help a doctor with his mathematics) taught me a reply which may be worth stating now. As I

watched the fight against tuberculosis and realized how slow would be the returns from all the labour of operations and of nursing, it became evident that the costs of a total war against tuberculosis should fall as much as possible on future generations, which would receive most of the benefit. The implication of this is that the costs of such a fight should come from Government loans, and immediately, as the mobilization of resources and the training of personnel will be slower than for ordinary war, that no institution which is now doing good work in the fight should be frustrated for lack of funds.

To broaden the picture, the war against malaria is comparatively so simple as to be chiefly a matter of finance. In my own time in Bombay I have seen malaria cleared from the southern part of the island by routine expenditure from municipal budgets. Leprosy stands much on a par with tuberculosis as regards speed of returns. For cancer I get the impression that it is future generations that will benefit most from well-coordinated research, and so the cost of research into cancer might well come from loans—though this suggestion may seem unnecessary in England.

As regards education of the public to co-operate more effectively in reducing the mortality from cancer, has not investigation advanced so far that the main demand on the man in the street can be crystallized in slogans? So far as my education has gone I'd suggest the following: "Suspect cancer early without fear." "Cancer the most curable of diseases if taken quick." But such slogans would doubtless be the concern of local committees.—I am, etc.,

Wilson College, Bombay.

JOHN MACLEAN.

Trilene in General Practice

SIR,—Drs. A. Barratt and S. H. B. Platts are to be congratulated on their article on the use of trilene in general practice (July 6, p. 10). I am in full agreement with their main conclusions, but I feel that some points about administration warrant further discussion. The authors prefer a Clover's inhaler to the type of apparatus which delivers a fixed percentage of trilene, because patients vary in their response to, and need for, the anaesthetic. I have used Freeman's inhaler, which delivers a fixed percentage of trilene, in obstetrics in my practice for the past eighteen months, and find it excellent for producing analgesia. The point which I feel has been overlooked in the article of Drs. Barratt and Platts is that the amount of anaesthetic vapour inhaled by the patient is controlled not only by the inhaler used but by the rate and depth of the patient's respirations. Thus, I have found that towards the close of the second stage of labour, if the patient is told to breathe deeply and rapidly, with her finger on the small hole of the horizontal tube of the Freeman's inhaler to increase the percentage of trilene, one can obtain analgesia adequate for the delivery of a head in a normal case. Some patients go completely over in a minute or two with this procedure. The perineum can be stitched by repeating this process, but if anaesthesia is required I prefer to give trilene on an open mask, under which is run a constant stream of oxygen. Without the oxygen, tachypnoea and cyanosis may develop rapidly, and this makes me dubious about using the Clover's inhaler with the bag to produce anaesthesia. Perhaps the duration was short enough in the cases described to avoid these side-effects, but they can on occasion develop very rapidly at quite an early light stage of anaesthesia.—I am, etc.,

Nelson

T. D. CULBERT.

Penicillin Therapy and Control in 21 Army Group

SIR,—May we be permitted to amplify the information given in the kindly review of *Penicillin Therapy and Control in 21 Army Group* in your leading article (July 13, p. 56)?

It is said that "the reader has to delve" because the various reports on the special investigation into the treatment of war wounds are not summarized. They are summarized and analysed in a complete article (pp. 143-156); as explained in this article, the technique of treatment approximated closely to the methods detailed in a separate publication (*Memorandum on Penicillin Therapy in 21 Army Group*), and to save space these were not repeated.

It is also stated that the question, "Is it possible to achieve good results by the simple and economical method of local application?", is not answered. The pioneer work of Florey and Cairns, confirmed later by Fraser, Jeffrey, Bentley, and others, supplied the answer to this question. We gave figures dealing with local penicillin both in prophylaxis (pp. 22-3) and therapy (pp. 144-5); it was shown (p. 144) that in a group of 2,359 patients whose wounds were sutured with the help of local penicillin only, excellent results were obtained. There is no doubt that local applications of penicillin powder are effective both in prophylaxis and therapy, but we wish to emphasize that, in our opinion, systemic administration in addition is essential to secure the maximum protection in those with complicated and lacerated wounds, especially if there are retained foreign materials.—We are, etc.,

A. E. PORRITT.

G. A. G. MITCHELL.

London, W.1.

Of Secondary Importance

SIR,—I believe I am correct in stating that, according to a decision of the House of Lords, a professional man does not come under the law relating to master and servant as far as his employer is concerned. Mr. Bevan is reported to-day (July 24) to have said that "a good doctor may be a bad servant and if he fell short of what was required he would be liable to be removed." We do know now where we stand; the public may in future be deprived of the services of a good doctor if he does not entirely conform to the detailed requirements of civilian administrators. Clearly the well-being of patients is to be of secondary importance!—I am, etc.,

St. Mawes.

B. H. SHAW.

Book Reviewing

SIR,—I hesitate to reply to Mr. H. Osmond Clarke's letter of reproof (July 20, p. 102), lest he goes further and regards me as a general paretic. Only on one score has he any grounds for complaint against my pomposity, and that I think because he has misinterpreted the word "so" before "unsatisfactory" to mean a pedantic disparagement instead of simply "therefore" (June 1, p. 837).

The very worst person to review a book is one who knows the author intimately; he should no more do it than a surgeon should carry out a major operation upon his own child. To achieve objectivity in the space you allow your reviewers, a certain *ex cathedra* method is inevitable. Perusal of most medical reviews reveals this general tendency. Complete objectivity is assured by anonymity. We are your agents whom you select, presumably, because of our practical knowledge of a particular subject, our familiarity with the literature, and our insight into the interests of the very different groups of your readers. We take this duty seriously. Mr. Clarke has shown little reason for his objections. It is no part of a reviewer's function to parry an author's statement with statistical findings from the reviewer's experience. What I did say, and what Mr. Clarke is prepared to pass by, is that having agreed with older authorities that operations for cruciate ligament injury are rarely indicated, the author of the book had nevertheless found 17 patients upon whom to carry out an unproved procedure of his own invention, apart from the other operative measures which he describes. It is necessary that your readers know what are the merits of the author's operation. The statement that the results are dubious is merely a reflection of the author's report on the end results, and has nothing to do with the reviewer's judgment. What the reviewer does imply is that this matter was injected prematurely into the monograph, and should first have been displayed in the special literature after a proper presentation of cases before a medical audience qualified to discuss them.

"New" information was given about the function of the quadriceps muscle, and particularly the vastus medialis section. Unorthodox statements were made so dogmatically that, as there was no scientific anatomical or physiological support for these statements, I refused to accept them. These were examples of much else which suggested superficiality, over-

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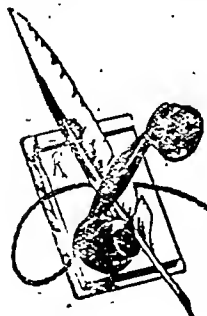
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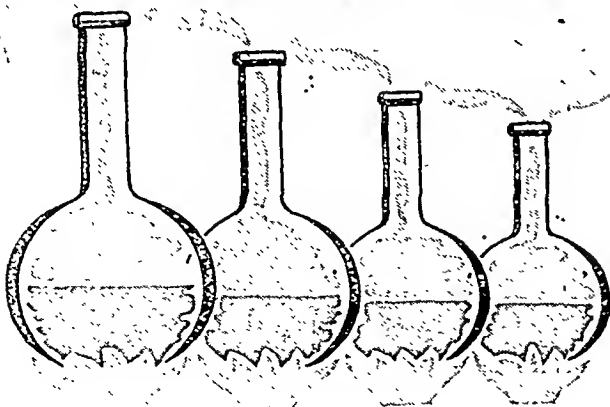
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tement, and premature publication, which one hopes will be a feature of British medical monographs. That is why criticism should be public. I appreciate that the author of the book in question had worked very hard, and so have any other young men who have seen a large amount of work under Service conditions, and who have dealt with large numbers of knee injuries. We would also like to have heard from them. There is still room for the publication of a work dealing with the derangements of the knee-joint arising from the experience of the recent war.

Finally, I am a practising surgeon, not yet senile, and sign myself,—

"ONE OF YOUR REVIEWERS."

Socialism and the Pay-bed

SIR,—I am surprised that you find three letters to support the contentions of Mr. J. B. Macalpine (June 22, p. 968). Mr. Macalpine apparently feels himself capable of "instructing the community in biological affairs." As a medical man, "trained in biology and in a position to understand genetics," I consider the letter a confused, unscientific piece of snobishness.

May I ask for a definition of the "desirable genes" which are in danger of being "lost and gone for ever"? May I ask for evidence that "social desirability and service" are hereditary? Is it the contention that acquired characteristics are also inherited? Or is the characteristic of "a fine level of intellectuality and sensibility" only "acquired" by "strenuous effort at perfection in the art of living"?

The contention of the whole-time medical officers of the Middlesex County Council is that privacy should be obtainable on medical grounds. Surely they would agree that "mental sufferings," which Mr. Macalpine so readily attributes to his "highest types," would indeed be legitimate grounds for isolation.

In what way can it be said that the abolition of the pay-bed is the "stamping out of desirables"? There seems to me no connexion whatsoever between this bigoted approach to the principles of genetics and Socialism and the subject of the pay-bed. To make special medical provision for these "superiors" because of their ability to pay is to try to perpetuate a sense of values only appropriate to the Victorian age. I am glad that, in common with the medical officers of the Middlesex County Council, I have never possessed this "sense of value."—I am, etc.,

Hessle.

IAN C. GILLILAND.

A New Decalogue

SIR,—*Magna est veritas et praevalabit.* The tag sounds more impressive in Latin, which serves to accentuate the complete falsity of the sentiment. The wishful thinking that inspires it is, in fact, little short of pathetic in the light of experience. The subject is brought into relief again in the new book on Morell Mackenzie reviewed in your columns on June 8 (p. 880). This is, perhaps, not the place to go into a detailed consideration of the pros and cons of this case. But one comment, I think, is justified, if not demanded, and that is the nauseating unscrupulousness with which the situation was manipulated and the facts distorted from political motives. Nausea is the appropriate reaction to this little cameo of history.

Can we draw any reassuring lesson from this episode? Can we say that things are better at the present time? Have we developed in the interval a more scrupulous respect for facts and accuracy of statement? Making every allowance for its "many-sidedness," it would seem that even to-day, when the muddled hand of politics touches science, truth will suffer. That it inevitably will prevail is a dangerously misleading notion. Rather, the tag should be altered to read that truth is a fragile flower that every man (even the politician) must, on his conscience, cherish. I should like to see a re-statement of the relevant Commandment in exceedingly intimidating terms beginning: "Let no man tamper with the Truth." A modern Moses in a new decalogue would, I am sure, feel to-day that first place should be given to this injunction. Most of the others are of little consequence in comparison.—I am, etc.,

London, W.I.

FREDERICK DILLON.

Obituary

R. E. ROBERTS, M.D., F.R.C.P., F.F.R.

By the sudden death of Dr. R. E. Roberts we have lost a man of outstanding ability, a loyal colleague, and one whose personality endeared him to all with whom he came in contact. It is not only for his scientific and administrative gifts that he will be missed, but also for that sincere genial manner and human sympathy, coupled with an urge to help others, that enabled him to see and understand the other man's point of view. These gifts often helped him to compose the differences that are inevitable in human affairs. His willingness to undertake thankless and uncongenial tasks brought burdens of worry that did much to undermine his health, so much so that during the last three years he had had to withdraw from many of his activities, particularly in London.

Born in 1890, educated at the Birkenhead School and at Liverpool University, he took his B.Sc. in 1908. He then turned to medicine and qualified M.B., Ch.B. in 1914, having gained the Junior Lyon Jones Scholarship, the Holt Medal in Physiology, and the Derby Exhibition in Surgery. On the outbreak of war he at once joined the Forces and served from 1914-18 in the R.A.M.C., chiefly in India, being mentioned in despatches. Returning to Liverpool he took his D.P.H. in 1919, but very soon turned to radiology and was one of the first small group who took the Liverpool D.M.R.E., which had just been inaugurated at the instance of Dr. Thurstan Holland. Entering into partnership with Dr. J. H. Mather, and later with Dr. Holland, there followed twenty years of very active work in which Roberts produced a series of important contributions to the radiology of bones and to the study of pelvimetry. For the most part these were published in the *British Journal of Radiology*. He also contributed a section to the standard *Textbook of X-ray Diagnosis*, edited by Shanks, Kerley, and Twining.

Thurstan Holland was the dominating figure in radiology for many years, but as he became less active Roberts gradually took his place, succeeding him as Honorary Radiologist at the Liverpool Royal Infirmary and also in teaching for the Liverpool Diploma in Radiology. In the affairs of the Liverpool Medical Institute he took an active part, and had held the offices of Vice-President and General Secretary. In London he upheld for Liverpool the prestige that had been established by Thurstan Holland, taking over the leading offices in the radiological societies. He was President of the Section of Radiology of the Royal Society of Medicine, 1937-8, President of the Faculty of Radiologists, 1939-40, and Vice-President of the British Institute of Radiology, 1938-9. He was nominated President of the Institute in 1943, but had to withdraw owing to illness. He examined for the Fellowship of the Faculty of Radiologists, and for the diplomas in radiology of the Conjoint Board, and of the London and Liverpool Universities. During the war the Liverpool diploma was suspended, but it is typical of Roberts's views on the importance of radiology and the necessity for thorough training that at his instance the diploma has been replaced by a degree in radiology, but, alas, he will not be there to direct this course when it is due to start next September. With a view to increasing teaching facilities in this course he had just resigned from the Liverpool Royal Infirmary to take up a similar appointment at the Liverpool Southern Hospital.

During the war Roberts was one of the regional advisers in radiology for the E.M.S., and he also served as Honorary Consultant Radiologist to the Army at home, in which capacity he examined all the officers who were trained in radiology at Millbank. In appreciation of all his services he was recently elected to the Fellowship of the Royal College of Physicians.

The selfless devotion with which Roberts gave of his time and energy was an inspiration to many of his colleagues, who appreciated not only all that he did, but also the willing co-operation of his partner, Dr. J. H. Mather, who made his frequent absences from Liverpool possible. Diagnostic radiology suffers a severe blow in the premature death of this devoted worker whose loss will be felt for many years not

only in Liverpool but in the radiological counsels of the country. To his wife and two daughters we extend our sympathy.

A. E. B.

The sudden death of Dr. Robert Edward Roberts, at the age of 57, came as an unexpected shock to a wide circle of friends in the profession and particularly in the radiological world. It further depletes the distinguished group of provincial radiologists who did so much to build the reputation of British radiology between the two world wars. In the 'thirties a Lancashire triumvirate—Roberts from Liverpool, and R. S. Paterson and Twining from Manchester—took a commanding part in the radiological activities of the country, and on the death of both the Manchester radiologists in 1938 Roberts was looked upon as the leader of the diagnostic radiologists of the North. The claims of a busy hospital and consulting career were not enough to satisfy his energy and ability, and it was not long before he began to interest himself in the scientific, academic, and administrative aspects of his specialty. He published a number of important papers, and his early work on x-ray investigations in obstetrics and gynaecology soon established him as an authority on the subject.

Robin Roberts had an endearing personality which combined a scientific outlook, clinical acumen, and charm of manner in a way that won him success in whatever he attempted, and the respect and affection of all who knew him. More than any other quality it is perhaps his personal and social charm that will linger longest in the memory of his friends. A week before he died, the writer found him full of *joie de vivre*, and enthusiastic for the future. The end was brief and unexpected, as he would have wished, and British medicine is the poorer for his passing.

S. C. S.

Universities and Colleges

UNIVERSITY OF LONDON

At a meeting of the Senate, held on July 24, the following appointments were made:

Neil Hamilton Fairley, C.B.E., M.D., D.Sc., F.R.S., F.R.C.P., to the Wellcome Chair of Tropical Medicine tenable at the London School of Hygiene and Tropical Medicine, from Oct. 1; George Macdonald, M.D., D.T.M., D.P.H., to the University Chair of Tropical Hygiene tenable at the London School of Hygiene and Tropical Medicine, from Oct. 1; Francis Cyril Oliphant Valentine, M.R.C.P., to the University Readership in Chemotherapy tenable at the London Hospital, from Oct. 1.

The title of Professor of Morbid Anatomy and Histology in the University has been conferred on Robert Wilfred Scarff, M.B., B.S., in respect of the post held by him at the Middlesex Hospital Medical School.

The title of Prof. Emeritus of Helminthology in the University has been conferred on Prof. R. T. Leiper, C.M.G., D.Sc., M.D., F.R.S., F.R.C.P., who retires in Sept. from the William Julien Courtauld Chair of Helminthology at the London School of Hygiene and Tropical Medicine, which he has held since 1917.

The title of Professor Emeritus of Experimental Pathology in the University has been conferred on Prof. E. L. Kennaway, M.D., D.Sc., F.R.S., F.R.C.P., who retires in Sept. from the Chair of Experimental Pathology at the Chester Beatty Research Institute of the Royal Cancer Hospital, which he has held since 1931.

UNIVERSITY OF MANCHESTER

Prof. Henry Stanley Raper, C.B.E., D.Sc., M.B., Ch.B., F.R.S., F.R.C.P., who has held the Chair of Physiology in the University since 1923, has accepted an invitation to become full-time Dean of the Medical School and Professor of Chemical Physiology, from Sept. 29.

The Council has appointed Walter Schlapp, Ph.D., M.B., Ch.B., at present Reader in Experimental Physiology and Assistant Director of the Physiological Laboratories, as Brackenbury Professor of Physiology and Director of the Laboratories from Sept. 29, in succession to Prof. Raper.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the College held on July 25, with Mr. James M. Graham, President, in the chair, the following, having passed the requisite examinations, were admitted Fellows:

R. D. I. Beggs, H. W. Gallagher, G. C. Gordon, D. B. Handelman, R. W. B. Holland, C. McT. Hopkins, P. Jardine, J. P. Lane, T. J. McCormac, M. McLeerie, A. McL. Millar, G. H. Moore, J. F. Paxton, H. H. Pearson, N. A. Punt, S. Sacks, D. G. Simpson, W. M. Van Essen.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council held on July 27, with the President, Mr. Eardley Holland, in the chair, Mr. William Gilliatt, C.V.O., M.D., M.S., F.R.C.S., F.R.C.O.G., was elected President to take office in September next. Robert Marshall Allan, M.D., F.R.A.C.S., Hon.F.A.C.S., F.R.C.O.G., and Sir William Fletcher Shaw, M.D., F.R.C.P., Hon.F.A.C.S., F.R.C.O.G., were elected vice-presidents.

The following candidates were elected to the Membership:

H. R. Arthur, S. J. Barr, B. E. Blair, Catherine I. Blyth, Joyce M. Burt, H. Burton, G. B. W. Fisher, B. G. Halder, R. L. Hartley, D. Jefferiss, Iola I. T. Jones, L. W. Lauste, Elizabeth McCallum, Margaret Orford, H. C. Perry, Dwifendra L. Poddar, Esther M. Pollock, J. E. Scott-Carmichael, W. R. Sloan, R. A. R. Taylor, E. W. L. Thompson, T. G. E. White.

Medical Notes in Parliament

The Royal Assent to the National Insurance Act was given on Aug. 1.

Parliament will reassemble on Oct. 8. The Second Reading of the National Health Service Bill is set down for that day in the House of Lords.

Hospital Finance in the Interim

On July 25 Major LEGGE-BOURKE invited Mr. Bevan to say how many intimations he had received from hospitals that they were having to dispose of their assets in default of voluntary contributions since the announcement of the introduction of a health service scheme. Mr. BEVAN replied that he had been approached by a few hospitals about their general position, but was not aware of any case of the kind described by Major Legge-Bourke.

Mass Radiography Progress

Mr. Bevan was asked on July 25 if his advisers had come to any decision as to the periods at which mass photographs of the population should be made to diagnose early cases of tuberculosis. Mr. BEVAN said there could be no standard rule about frequency of examination. Regular survey of the same groups was obviously desirable, but present resources—which were steadily increasing—still kept short of that ideal. Replying to a further question Mr. Bevan stated that the number of civilians examined by mass radiography in England and Wales up to Dec. 31, 1945, was approximately 797,000, of whom 2,900 were diagnosed as suffering from active tuberculous conditions. Of those requiring institutional treatment 830 had been admitted to such treatment up to Dec. 31 last, and admissions since then would have substantially increased this number.

Cancer

Mr. WATKINS on July 25 asked the Minister of Health to consider setting up an independent commission to inquire into the progress, if any, made by the various uses of radium in the cure of cancer.

Mr. BEVAN answered that he did not consider such a commission to be necessary, since the progress of cancer research and treatment was kept continuously under review by the bodies concerned.

Death rates per 1,000 population in England and Wales from cancer, 1936-45, were given by Mr. Bevan on July 25 as follows:

1936	..	..	..	..	1.575
1937	..	..	..	..	1.583
1938	..	..	..	..	1.616
1939	..	..	..	..	1.628
1940	..	..	..	..	1.723
1941	..	..	..	..	1.780
1942	..	..	..	..	1.834
1943	..	..	..	..	1.899
1944	..	..	..	..	1.897
1945	..	..	..	..	1.933

(provisional)

(The rates for the years 1939 to 1945 relate to civilians only.)

Although these rates showed an increase, Mr. BEVAN's information was that earlier diagnosis was resulting in reduced mortality, which was concealed by the simultaneous increase in ascertainment through better facilities for diagnosis and treatment.

Mental Defectives in Institutions

Mr. BEVAN on July 25 regretted that figures of the number of mental defectives now in institutions were not available, but added that the number on Jan. 1, 1946, was 52,788. This, he said, was approximately 20% of the estimated total number of

fectives in the country, many of whom, however, did not require institutional care. He had authorized the Board of Control to consider plans for the provision of additional accommodation for low-grade and tuberculous patients, whose care in ordinary homes imposed great hardship upon parents.

Nutritional Standards in School-children

On July 23 Mr. WESTWOOD told Mr. Willis that all education authorities in Scotland had been advised that the classification "bad nutrition" should be used to cover only those children who, in the opinion of the medical officer, were suffering in a serious degree in consequence of bad or insufficient feeding. Nutrition standards were not capable of exact statistical measurement, but the findings of the school medical officers served their main purpose of drawing attention to those children who appeared to require medical supervision and, if necessary, treatment.

Prevention of Blindness in the Colonies

Mr. GEORGE HALL told Mr. E. Edwards on July 24 that the Empire and Colonial Development Subcommittee of the National Institute for the Blind, under the chairmanship of Mr. Bernard Reilly, had suggested a joint tour of various colonies by representatives of the Institute and of the Colonial Office to report on methods of preventing blindness and of providing welfare services for the blind. This tour had just begun. It was proposed to visit most of the East and West African Colonies, Cyprus, Palestine, and Aden.

Rehabilitation of War Casualties

In a reply on Aug. 1 Mr. WILFRED PALING said it could not be claimed that cases of serious spinal injury could be restored to a condition approaching normality in the sense of full mobility, but modern methods of treatment substantially reduced the mortality rate in these cases and enabled the majority of the men to get about in self-propelled or motor-propelled chairs instead of being permanently confined to bed. He estimated that, on the completion of treatment and, where necessary, training, about 60% would be able to undertake remunerative employment. Artificial limbs had been supplied in about 15,000 cases since 1939, of which 12,000 were war-disabled cases. Practically all of the persons concerned had been fit to take up remunerative employment or undergo training for employment.

Mr. Paling further explained that the Plastic Surgery and Jaw Unit at Roehampton Hospital was enlarged in 1939 to deal with Service cases and air-raid casualties. Considerable advances had been made, the most important of which were the insertion of special material, known as tantalum, for the restoration of facial contours, the fixation of skin grafts by specialized methods, the making of skin flaps for amputation flaps, the treatment of chronic disease of bone, and the development of a highly specialized physiotherapy service. Co-operation with the orthopaedic unit and dental department had been developed on a large scale, and an excellent photographic department capable of producing technical cinefilms had been built up. As regards research, he made special mention of the investigations into the conditions influencing the healing of war wounds and the development of scar tissue. Mr. Paling expressed appreciation of the invaluable work done by the medical and dental officers, nurses, and other staff in the care of the patients in this hospital.

Diphtheria Notifications and Immunization

Mr. BEVAN furnished on Aug. 1 figures relating to diphtheria notifications between January, 1940, and June, 1945. He explained that the figures for, and subsequent to, 1944, reflected corrections made at infectious diseases hospitals; material for in exact comparison with the years 1940 to 1943 was not available. The details are:

Year	Original Notifications	Corrected Notifications
1940	47,165	46,280
1941	51,298	50,804
1942	42,580	41,404
1943	36,017	34,662
1944	29,949	23,199
1945 (January-June)	11,993	8,531

On Aug. 1 Mr. PETER FREEMAN asked Mr. Bevan to ensure that in all future advertisements recommending the practice of immunization a statement was added that 19,040 children contracted diphtheria after submitting to this operation and of these 142 died in the last five years, "in order that the public may have the full facts concerning immunization."

Mr. BEVAN refused the proposal and added that he could not agree that this would be giving the public "the full facts."

He went on: "Obviously you cannot guarantee absolute immunity in every case; but the most striking facts are that the chance of a child's death from diphtheria is twenty-six times greater if it is not immunized and that deaths from diphtheria have been reduced to about a quarter of the pre-war-yearly average."

Streptomycin

Mr. THOMAS BROOKS inquired on Aug. 1 what steps were being taken to import supplies of streptomycin from the U.S.A.; and what efforts were being made to manufacture it in this country. Mr. BEVAN said American production of streptomycin was too small to permit export to this country. Arrangements were being made with the Ministry of Supply and the Medical Research Council to set on foot the manufacture in Great Britain of sufficient streptomycin for adequate clinical trials.

Polish Doctors in Britain.—Sir JOCELYN LUCAS asked on July 25 how many Polish military doctors, being repatriated with General Anders' army, would be allowed to practise in this country other than with the Resettlement Corps. Mr. BEVAN said he was considering this matter, but was not yet in a position to give the detailed information asked.

Malaria in British Troops in Japan.—On July 23 Mr. LAWSON stated the incidence of malaria in Japan as a whole, for British troops, was very small. In the fortnight ending May 31, 1946, three cases were reported, and in the fortnight ending June 14, 1946, one case. All the usual anti-malarial precautions, and certain special measures which included spraying with D.D.T. and the arsenical compound (Paris Green), were being taken.

Medical News

Mr. John Pringle, Deputy Editor of *The Listener*, has been appointed Press Officer to the British Medical Association. Mr. Pringle was formerly responsible for "The World Goes By" broadcast feature, and was a member of the editorial staff of *The Manchester Guardian*.

The residential summer school on "Healthy Living" at the University of St. Andrews, arranged by the Scottish Council for Health Education, opened on Aug. 3 and continues until Aug. 17. Subjects for discussion during the second week include the quest for pure food (Aug. 12); mental affliction (Aug. 13); adolescence and senescence, venereal disease (Aug. 14); homeostasis, tuberculosis (Aug. 15); and the case for eugenics (Aug. 16). Films on various subjects will be shown each evening from Monday to Friday at 8 p.m.

The County Borough Group of the Society of Medical Officers of Health held its Annual Meeting from July 19-22 at Eastbourne, under the presidency of Dr. R. H. H. JOLLY. Among the addresses given at the conference was one by Dr. SCOTT WILLIAMSON on the work of the Peckham Pioneer Health Centre from its foundation. Dr. F. FENTON, the Medical Officer of Health of Eastbourne, in a paper on "The Care of Homeless Children" stressed the need for co-ordination of their care through the person of the medical officer of health. Prof. J. M. MACKINTOSH outlined his ideas on the training of medical administrators and on the scope of their activities. Dr. W. S. WALTON, the newly appointed Medical Officer of Health for Newcastle-upon-Tyne, was elected president of the Group for the coming year. The secretary is Dr. J. GREENWOOD WILSON.

Prof. P. F. Armand-Delille, a member of the French Academy of Medicine, is on a visit to this country under the auspices of the British Council to gather information on British social services. He is visiting various organizations in London, Birmingham, and some rural areas, under the guidance of the National Council of Social Service.

The Medical Research Council have made arrangements with King's College Hospital Medical School, London, for the establishment of a dental research unit there under the direction of Dr. J. D. King, a member of the scientific staff of the Council.

Certain admirers of the work and career of the late French scientist Prof. Antoine Béchamp hope to hold a small dinner in his honour on Oct. 16, the anniversary of the date of his birth in 1916. If any who might like to attend will write to Mrs. L. S. Caffyn, 31 Chelsea Gardens, London, S.W.1, further particulars will be supplied.

There was some discussion at the Annual Representative Meeting (Supplement, Aug. 3, p. 38) on the need for operating gowns, and the coupons wherewith to obtain them. The Board of Trade has recently had under consideration the possibility of the supply of coupon-equivalent certificates to doctors in private practice for whom white operating gowns are essential. It has now been agreed that any practitioner who needs gowns in his private practice for obstet-

rical work, treatment of venereal diseases, operations, or necropsies, shall be entitled to obtain six surgeons' operating gowns. Private practitioners in England and Wales who require gowns for these purposes should apply, stating particulars, to the Ministry of Health, Whitehall, London, S.W.1. Doctors in Scotland should write to the Department of Health for Scotland, St. Andrew's House, Edinburgh. Practitioners in Northern Ireland should apply to the British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, enclosing a stamped addressed envelope.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* a rise occurred in the notifications of whooping-cough 204, scarlet fever 91, and cerebrospinal fever 16; decreases were recorded for measles 198 and diphtheria 30. Whooping-cough notifications were the largest for over two years. During the week there were small increases in many areas and the largest variations were a rise in Staffordshire 35 and a fall in Lancashire 63.

Scarlet fever increased for the whole country; the largest of the local changes was a decrease in Lancashire of 32. Large falls in the notifications of measles were recorded in Lancashire 213 and London 138, while the largest rises were Staffordshire 56 and Kent 44. A further decline from the record low level of diphtheria was recorded; the chief fluctuations were falls in Lancashire 23 and Yorkshire West Riding 10, with an increase in Warwickshire 10. Dysentery remained at the low level of the preceding week, and the only large returns were those of Yorkshire West Riding 10 (Bradford C.B. 9), and the Port Health District of Southampton 8.

In *Scotland* there were only small variations in the incidence of infectious diseases, except for measles, which declined by 66. The notifications of diphtheria fell by 4 for the whole country, but a rise of 10 was recorded in Glasgow.

In *Eire* notifications of diarrhoea and enteritis fell by 10 to 54, and cases of diphtheria decreased by 9. A rise occurred for measles 16, whooping-cough 10, and scarlet fever 8.

In *Northern Ireland* whooping-cough rose by 10 cases and diphtheria by 5, while a fall of 8 was recorded for scarlet fever.

Quarterly Report for England and Wales

The birth rate during the first quarter of the year was 17.2 per 1,000, which was 1.5 above the average of the five preceding March quarters. Stillbirths formed 2.8% of the total births registered. Infant mortality was 55 per 1,000 live births and was 14 below the average of the ten preceding first quarters. The general death rate was 14.8 per 1,000 compared with 15.7 for the average of the five preceding March quarters.

Birth Rate in June Quarter

The Registrar General for England and Wales has stated that 203,797 live births were registered during the June quarter of this year. This number is equivalent to a birth rate of 19.2 and is the highest recorded in any June quarter since that of 1925.

Statistical Review

The publication of the Registrar General's annual statistical reviews, suspended during the war, is now being resumed. So at the latest statistics shall be available again as soon as possible, the Registrar General is now preparing the Review for 5, which will contain both medical and civil tables, and it is hoped to publish these later in the year. This will then bring the series up to date except for the reviews for the war years 1942-3-4, which will be issued separately as soon as possible.

Quarterly Return for Northern Ireland

The birth rate during the first quarter of the year was 21.9 per 1,000, which was the same as the average of the five preceding quarters. The infant mortality was 64 per 1,000 registered births, compared with 95 in the corresponding quarter of the previous year and 91 as an average for the five preceding March quarters. Maternal mortality was 3.3 per 1,000 births, the same as the five-year average. The general death rate was 16.4 per 1,000 and was 0.1 above the average for the five first quarters. The number of deaths from pulmonary tuberculosis was 247 and from other forms of tuberculosis 64, the averages of the first quarters 1941-45 being 255 and 79 respectively.

Week Ending July 27

The notifications of infectious diseases during the week in England and Wales included: scarlet fever 994, whooping-cough 2,468, diphtheria 308, measles 3,741, acute pneumonia 363, cerebrospinal fever 41, dysentery 90, acute poliomyelitis 18, paratyphoid 14, typhoid 8.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 20.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	49	9	19	—	1	45	2	16	1	1
Deaths	—	1	—	—	—	—	—	—	—	—
Diphtheria	247	23	67	25	20	444	30	115	76	17
Deaths	1	—	1	—	—	9	1	—	—	—
Dysentery	60	4	28	—	—	249	41	44	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	2	2	—	5	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	37	8	—	—	—	36	5	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	36	2	13	54	17	59	11	4	58	14
Deaths	—	—	—	—	—	—	—	—	—	—
Measles*	3,783	492	201	70	1	3,475	153	81	32	2
Deaths	3	—	—	—	—	3	—	1	—	—
Ophthalmia neonatorum	66	5	29	—	1	65	3	18	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	20	—	1(B)	1(B)	1(B)	9	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	380	22	2	1	3	350	21	4	1	2
Deaths (from influenza)†	2	—	—	1	—	5	—	—	—	—
Pneumonia, primary	—	—	140	19	—	—	134	11	—	—
Deaths	—	14	4	6	—	—	12	11	8	—
Poli-encephalitis, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	10	—	2	—	—	16	—	—	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	3	31	—	—	—	4	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡,	133	12	21	1	2	133	8	14	4	3
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	936	79	104	29	15	1,254	74	191	14	19
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	6	—	6	4	2	9	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,474	167	25	46	24	1,158	49	21	20	8
Deaths	4	1	—	1	1	8	—	—	1	1
Deaths (0-1 year)	299	36	64	34	13	295	38	35	24	16
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,856	571	540	162	136	3,878	531	510	149	117
Annual death rate (per 1,000 persons living)	—	—	11.9	10.4	—	—	—	11.6	9.6	—
Live births	8,921	1356	1158	396	321	7,055	835	907	456	321
Annual rate per 1,000 persons living	—	—	23.3	25.4	—	—	—	18.1	29.4	—
Stillbirths	241	31	44	—	—	209	12	33	—	—
Rate per 1,000 total births (including stillborn)	—	—	37	—	—	—	—	35	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Antology Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Common Cold and Duodenal Ulcer

Q.—*Why does a common cold aggravate the symptoms of duodenal ulcer?*

A.—It is a well-established fact that catarrhal infections, including the common cold, will bring about a relapse of symptoms in a number of alimentary conditions, notably duodenal ulcer. In this respect it is second only to emotional stress as a cause of ulcer recurrence. It is difficult to say exactly how or why this comes about. The ulcer base has been shown, particularly by French observers, to be an infective area, and various organisms, notably enterococci and non-haemolytic streptococci, have been obtained from it on culture. It seems reasonable to suppose that this area becomes sensitized and re-activated by the organism of the catarrhal infection, or perhaps by the general tissue response to the accompanying low-grade fever. Rosenow's theory of the elective affinity of streptococci, notably those found in oral sepsis or certain damaged tissues, especially peptic ulcer, may be cited as a possible mechanism, though his work has not received confirmation in this country. The practical point to remember is that in all schemes directed towards the prevention of ulcer recurrence emphasis must be laid on the need for drastic modifications in the diet and a short period of rest in bed in the presence of these infections.

Urobilinogen Excretion in Infective Hepatitis

Q.—*The presence of excess of urobilinogen in the urine is often used as an index of liver damage, particularly in the early diagnosis of infective hepatitis. What is the rationale of the test?*

A.—Urobilinogen is formed in the bowel by bacterial action (reduction) on bilirubin. A proportion is reabsorbed into the blood stream and re-excreted by the liver in the bile. If the liver cannot deal with all the urobilinogen presented to it, increased amounts will appear in the urine. This function of re-excretion by the liver is one which tends to fail early in many types of hepatic damage, especially in infective hepatitis, so that urobilinuria is often an early and valuable indication of liver dysfunction. Either the presence or absence of the pigment in the urine must, however, be cautiously interpreted in cases of frank jaundice (where bilirubin, and therefore urobilinogen, may be absent from the bowel) and if excessive haemolysis is occurring, when the excretory function may be so overloaded that very slight hepatic impairment is sufficient to allow urobilinuria to appear. Incidentally, urobilin and urobilinogen have the same significance in this connexion, the distinction being merely one of technique.

Dupuytren's Contracture

Q.—*What are the late results of the operative treatment of Dupuytren's contracture?*

A.—The results are very good if the operation is done at the correct time and in the approved manner. The correct time for operation is before the ligaments and joints of the finger become secondarily affected. The approved method is to remove all the contracted palmar fascia through an incision not in the line of an affected finger but so planned that it runs as nearly parallel as possible to the creases of the palm. If

the skin of the palm is attached to the contracted fascia it must also be excised and a graft of whole skin taken to make good the gap in the palm. A pedicle-graft may be utilized.

Artificial Blondes

Q.—*A patient of mine is in the habit of bleaching her hair periodically with a mixture of hydrogen peroxide (20 vol.) and ammonia (about 2 parts to 1 part). She has been informed by a hairdresser that this will eventually destroy the hair roots. Is this true? If not, is there any danger?*

A.—It has been suggested that the different colouring of the hair is due to differences in the keratin and not to different kinds of colouring matter. Whether this be accepted or not, it is evident that to change dark hair to the fashionable blonde calls for drastic treatment, such as that described above. The effect is to make the hair lighter in colour, but harsh in texture and liable to split, which can hardly be beneficial. The popular description of the roots being darker refers to the darker texture and colour of the hair near the scalp, which may be due to the natural growth of the hair or to technical causes. The true roots or papillae are situated in the skin and are unlikely to be affected by external applications.

Idiopathic Epilepsy

Q.—*Can idiopathic epilepsy be due to a very heavy strain—e.g., carrying or pulling or pushing a very heavy weight?*

A.—There is no evidence that physical stress of the sort mentioned could bring about an idiopathic epilepsy. According to the modern conception this disease is a constitutional and largely inherited paroxysmal disorder of cerebral activity.

Significance of Renal Glycosuria

Q.—*What is the true clinical significance of renal glycosuria? Does the condition ever lead to true diabetes, and should a patient with renal glycosuria be accepted for life insurance at ordinary rates?*

A.—Provided that the sugar tolerance curve is within normal limits, glycosuria is not of any significance. The health remains good and the patient is neither more nor less likely than anyone else to develop diabetes later on in life. He should be accepted for life insurance at ordinary rates. The amount of sugar lost in the urine is usually small—5 or 10 g. a day, though as much as 30 g. may be excreted in the day. This is a very small amount and the glycogen in the liver and muscles can easily be maintained by an adequate diet.

A very low threshold occasionally occurs in some patients with true diabetes mellitus. The control of the diabetes is then much more difficult, as qualitative urine tests are useless and the blood sugar must be estimated more frequently. Sometimes very large amounts of sugar are excreted although the blood sugar is not much raised. In these circumstances the total sugar excreted in the urine in the twenty-four hours must be estimated, and if the patient is excreting, say, 100 g. a day the carbohydrate content of the diet must be raised to 200–300 g. in the day, with a corresponding increase of insulin to make certain that the body, and the liver especially, has enough glycogen. If the total daily output of sugar is estimated at intervals, and the insulin and diet are adjusted according to the results, these patients keep very well.

Amoebic Dysentery

Q.—*(1) How should I treat a mild case of amoebic dysentery? (2) Can chiniofon be given by mouth, and which preparation do you recommend? (3) Is rest in bed necessary for a mild case?*

A.—1.—In a mild case of amoebic dysentery it is not necessarily easier to eradicate the infection, nor is the disease necessarily less prone to relapse than a more severe case. Consequently treatment should be thorough in all cases. A favoured standard treatment consists of a twelve-day course of emetine bismuth iodide 3 gr. (0.2 g.), in a loosely packed capsule each night, and preceded half an hour before by phenobarbitone 1 gr. (65 mg.). Each morning of this course the patient is also given a retention enema of 200 ml. of 2% solution of chiniofon, which should be retained for four or five hours, and which is

preceded by a bowel washout of 2% sodium bicarbonate solution. This twelve-day course is then followed by treatment with an arsenical drug, for example carbarsone 0.25 g. by mouth, morning and evening, for a further ten days.

2.—Chiniofon may be given by mouth. Chiniofon is the *Pharmacopoeia* name for a standard iodo-hydroxyquinoline compound. This product is marketed by different firms under different names, and the product of any reputable firm should be equal in its therapeutic effect to that of any other reputable firm. Administered by mouth in amoebic dysentery it appears to produce less satisfactory results than does the combined treatment outlined above.

3.—During the first fortnight of the treatment recommended in para. 1, the patient should be kept in bed.

Cholecystitis and Duodenitis

Q.—How can one differentiate between mild cholecystitis and duodenitis and duodenal ulcer without x-ray examination?

A.—It is difficult and at times impossible to distinguish between these three conditions in the absence of radiology, and even this may fail to do so. Generally speaking, the symptoms of cholecystitis lack the periodicity of ulcer dyspepsia and are more likely to be associated with excessive flatulence and with such toxic manifestations as furring of the tongue, anorexia, and even vomiting. Tenderness, if present, will usually be confined to the gall-bladder, Murphy's sign may be present, and there may be local areas of tenderness to the right of the sixth dorsal spine (Ryle) or the twelfth dorsal spine (Boas).

It would be worth while trying the effects of a course of sulphadiazine or sulphamethazine, which are excreted into the gall-bladder in high concentration. More empirically, a course of hexamine, 20 gr. (1.3 g.), with a full dose of alkali to prevent gastric irritation, has been credited with satisfactory results in cholecystitis. Duodenitis is a pathological rather than a clinical condition and its symptoms are probably indistinguishable from those of duodenal ulcer.

Sex-determination

Q.—Is there any recent new knowledge of sex-determination? Has the theory of Dawson (1921) any foundation?

A.—The basis of sex-determination in man, elucidated many years ago, has required no modification. The female somatic cell contains two x-chromosomes, hence the ovum contains one. The male somatic cell contains an x- and a y-chromosome, hence approximately half the sperm contain an x and half contain a y. The sex of the future individual is determined at the moment of conception and depends simply on which kind of sperm happens to fertilize the egg. The sex ratio does depart somewhat from equality, however, and it has been shown, for example, that the younger the mother the more likely she is to have a boy. There are also indications that the tendency to

duce an excess of boys, or vice versa, may be inherited. Therefore it is clear that there are influences that make it on rather less or rather more likely that it will be an x-bearing sperm that fertilizes the ovum. These are slight tendencies, however, only detectable in the averages of very large numbers. From the point of view of any individual parent the chance is pretty close to 50-50.

Dawson's theory, perhaps the best known of several of the same type, postulates that one ovary produces eggs destined to give rise to females and that the other gives male-producing eggs, and that the ovaries function alternately at successive ovulations. There is no scientific basis for these theories.

Psychological Impotence after Long Separation

Q.—I have been consulted lately by several men, all about the age of 45, who after service abroad for some three or more years return home to their wives to find themselves completely, or almost completely, impotent. Instead of happy reunion after so many years apart, the marriage is in danger. I am convinced that this impotence is psychological, but what is the explanation and what advice can I give them?

A.—The problem here presented involves the whole personality and not merely the sex functions. It is a problem of readjustment and psychological rehabilitation. The war and

absence change the relationship between husband and wife, a change in which both are affected. For one thing, wives have had to be more independent and therefore self-sufficient; they do not need their husbands so much as before, and therefore to the husband have become different persons. On the other hand, the husband has either developed a much broader outlook on life, or he may return war weary and desire more affection from the wife, whose independence makes her less willing to give it. His war weariness may go to the extent of developing a "mother" complex towards his own wife, which in itself is sufficient to produce an inhibition of sex. In other cases a different mechanism is found, namely, that absence has made each idealize the other, especially the soldier who idealizes both his wife and home. After the first rapture the reunion may be in the nature of an anticlimax: each thinks the other has "changed," which indeed is true, but the change is often in contrast to the ideal. These problems of rehabilitation of returned Servicemen have been studied by Dr. A. T. Wilson and embodied in a paper, "The Service Man comes Home." Among more normal reasons is the possibility that the wife may have made other attachments, though not necessarily of a sexual nature, to some other man, and being now more conscious of other men has less regard for her returning husband. There is also the obvious possibility that in the Middle East the husband may have met some younger and perhaps more exotic girl with fewer inhibitions, and it is an anticlimax to return to the more mature and stable, if not drab, circumstances of life. The middle-age factor is important: the wife, though still attractive, may not make the same glamorous appeal.

During their enforced separation both husband and wife have each taken a lot of trouble to adapt themselves to being without the other. Having once established this new set-up in the personality, it is difficult for them to readapt themselves to their partners. Time, trouble, and patience are required to re-establish their relations. These relations will not be the same as previously, for even in ordinary marriage we need to readjust ourselves differently at each phase of life. But with readjustment of such personal relations, the sexual life will re-establish itself as an expression of affection.

In many cases we find that war service and separation have only served to bring to light an incompatibility of temperament or disposition which was already present before the break, so that the break becomes a welcome relief, and there is reluctance to resume former relations. A readjustment in such circumstances is very difficult. It will be observed that we cannot regard the sex functions in isolation, but need to regard the reactions of the whole personality, which requires to be thoroughly investigated.

LETTERS, NOTES, ETC.

Acid Treatment of Tetany

"MGANGA" writes: With reference to Dr. Marjorie Bourdillon's note (June 8, p. 902), I had an exactly similar condition in a male patient very recently. The onset was sudden and occurred after three days of a febrile illness, at first undiagnosed but which later was clearly typhus. Sweating and vomiting had been prominent symptoms just before the attack started. I obtained just as dramatic a cessation by administering two tumblerfuls of slightly hypertonic saline—by mouth, of course. I suggest that in my case and Dr. Marjorie Bourdillon's personal experience loss of chlorides due to sweating in the febrile attack occurring in a subject already low in salt was the real cause of the attack. In my case the patient was a railway employee occupied out of doors. He normally sweated freely at his work and was accustomed to drink large quantities of water. While taking food he just managed to maintain a chloride balance. Three days of fever, fluids, vomiting, and no food upset this, and the attack was the result. In Dr. Bourdillon's case lactation and malaria would have the same effect. In passing, I have succeeded in re-establishing lactation in a case where this was beginning to fail after three months, merely by prescribing a daily tumblerful of normal saline.

Health Service Bill

Dr. LESLIE HARTLEY (Camberley) writes: Mr. Douglas Houghton explained on the wireless in fifteen short minutes how many B.U.s were necessary to buy a small loaf in this country, twelve months after total victory. I hope some similar speaker will give a talk on the National Health Service when it comes in, so that fond parents may be able to decide whether to spend their P.U.s on little Willie's tonsils and adenoids or on another bottle of liquid paraffin for granny.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

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PROCEEDINGS OF COUNCIL

Tuesday, July 23

A meeting of the Council of the Association was held on Tuesday, July 23, immediately preceding the Annual Representative Meeting. Dr. H. Guy Dain was in the chair.

The Chairman said that during the previous week the death had occurred of one of the great figures in the Association. Sir Ernest Kaye Le Fleming had been associated for more than twenty years with the Association's central work in one capacity or another. He was Chairman of the Representative Body, 1931-4, and Chairman of Council, 1934-9. He was a most worthy successor in the line of extraordinarily able Chairmen who had immediately preceded him—J. A. Macdonald, Robert Bolam, and Henry Brackenbury—a line of which any organization might be proud. The members of Council expressed their sense of grief and loss and their sympathy with Lady Le Fleming and her family by standing in silence.

It was decided that a special Council meeting should be held in the early autumn for the consideration of the National Health Service Bill in its final stage in the light of the views of the profession, as expressed at the Annual Representative Meeting and in resolutions on the present agenda, and to determine future action.

Dr. O. C. Carter, chairman of the Journal Committee, presented recommendations for an increase in the editorial staff of the *British Medical Journal*, and these were approved. The Council also accepted proposals of the Staffing Committee that Dr. G. W. M. Findlay and Dr. S. S. B. Gilder be appointed editor and assistant editor respectively of the Abstracting Service, and that Dr. E. G. Murphy and Dr. D. Swinscow be appointed sub-editors of the *British Medical Journal*.

Dr. J. A. Pridham, chairman of the Organization Committee, presented the proposals concerning South African affiliation which on the following day were placed before the Representative Body and accepted (*Supplement*, August 3, p. 41). The Organization Committee was instructed to prepare the necessary amendments of articles and by-laws to provide for the new class of affiliated membership. It was agreed to inform the Federal Council in South Africa that the Council welcomed the proposal to appoint an observer to attend meetings of the Federal Council. Dr. Pridham also presented the report of the International Relations Committee and proposed that a sum of £1,000 be placed at the disposal of the committee for the session 1946-7 for the purpose of assisting selected British medical practitioners of high standing to give "B.M.A. Lectures" to the profession in various European countries. This was agreed to.

Psychiatry and the Law

Dr. R. G. Gordon presented a report by the Committee on Psychiatry and the Law—a joint committee of the B.M.A. and the Magistrates' Association, with observers from the Home Office, Ministry of Education, and Board of Control. The Criminal Justice Bill, which was introduced into Parliament in 1938 but not proceeded with, is likely to be reintroduced next session, and the committee made recommendations for its amendment, for transmission to the Home Office.

Dr. James Fenton dissented from a proposed amendment concerning offenders on probation or remand whose mental condition was considered to be such as required medical examination and might be susceptible to treatment. It was proposed

in the original Bill that such treatment should be by or under the direction of a duly qualified medical practitioner, but the committee wished to add the words "with experience of psychological medicine." Dr. Fenton considered that the addition of such words would create another example of the sectionalizing of the profession. They would all admit, he said, that whatever the branch of medicine concerned, no one could have too much experience; but that was very different from translating the requirement into an Act of Parliament. If this kind of thing went on—another example was the attitude of the Royal College of Obstetricians and Gynaecologists to the practice of midwifery by general practitioners—it would mean that after a man had spent six or seven years in studying medicine and had become qualified he would not be considered capable of practising without some further special qualification.

Dr. Gordon said that he fully appreciated the objection, but the Magistrates' Association—the other half of the committee—was very keen on this point. It was not a question of treatment but of giving expert opinion. He could not accept the responsibility of altering the recommendation without referring it back. It was agreed that this proposal, that the medical practitioner must have "experience of psychological medicine," should be withdrawn from the general body of the recommendations.

Assistance for Ex-Service Practitioners

Dr. Martin Brodie introduced a report by the Ex-Service Practitioners Committee. Attention had been drawn, he said, to the considerable number of temporarily registered practitioners who were holding hospital posts which might otherwise be available for ex-Service practitioners. The committee felt that the time had come when alien practitioners should be called upon to vacate their hospital appointments in order to expedite the absorption of ex-Service practitioners eligible for the more senior posts under the Government's postgraduate scheme.

It was agreed that representations should be made to the Ministry of Health that a greater number of Class III hospital posts be authorized to expedite the absorption of such practitioners; that the present restriction whereby only those ex-Service practitioners who could prove intention to specialize before recruitment to the Forces and were not established either in general or special practice were eligible for Class III appointments should be removed; and that Class III appointments should be open to ex-Service practitioners who had made progress in the direction of specialism during their service with the Forces.

The principal discussion centred round a recommendation that hospital appointments now held by practitioners who have not served with the Forces, including alien practitioners, should be re-advertised as soon as legally possible. Dr. R. G. Gordon suggested that after "Forces" the words "and who are not liable to do so" should be inserted, otherwise the hospitals were being asked to re-advertise the posts of practically all the staff who had not actually served in the Forces.

It was explained that the hospital appointments which it was suggested should be re-advertised were almost entirely "B1" appointments. The proposal was not intended to cover visiting staffs. On this point Col. A. H. Proctor pointed out that a good many of these "B1" appointments were in small hospitals which did not offer to the ex-Service practitioner the opportunities he wanted. The suggestion was made that the matter was covered by the Central Medical War Committee.

The Secretary explained that recruitable cases were constantly being examined by the Central Medical War Committee, but a substantial proportion of the jobs now under consideration were held by men who were ineligible for service on medical grounds and by alien practitioners.

Eventually the resolution was accepted in the following form:

That senior hospital appointments, including "B1" appointments, which have been held by their present occupants for two years or more, including those held by alien practitioners, should be re-advertised as soon as the relevant contract or agreement permits in order that demobilized practitioners may have an opportunity of applying for them, and that a communication be addressed to all hospitals urging that this step be taken.

It was further agreed to draw the attention of hospitals to the fact that there are now full specialists available for appointment to hospital staffs, and that it would be both in the hospitals' and in the national interest to review the staffing position now with a view to restoring it at least to the 1939 level and to increase the hospital establishments where possible. Dr. Carter pointed out that it would be a serious matter for part-time staffs, who would be squeezed out if hospitals were encouraged to increase their staff beyond the 1939 level, but an amendment to leave out those words was not carried. The committee had prepared an appendix setting out the problems of the ex-Service practitioner and the way in which they might be met. On certain points, including the present value of practices in terms of years' purchase, the committee undertook to look at the appendix again, after which it would be referred for office staff use in advising inquirers.

Some months ago the Council decided to withdraw its recommendation that medical appointments should continue to be made on a temporary basis. The question now arose whether the time had not come to discontinue the practice of insisting that, in advertisements of permanent medical appointments, two months should be allowed for the receipt of applications. Mr. Newell, chairman of the Hospitals Committee, recommended that this requirement be withdrawn, and that in future the Association should not insist on any minimum period for the purpose, and this was agreed to.

Other Committees

Mr. Dickson-Wright reported that the committee charged with the consideration of the composition and procedure of the General Medical Council had held two meetings and had deliberated on the method of dealing with penal cases—a very absorbing and intricate subject. It had been greatly helped by the two defence societies which had prepared a memorandum (*Journal*, July 6, p. 21). The committee had not yet arrived at any finality in its decisions.

Dr. H. R. Frederick presented a report of the Welsh Committee, with a memorandum by Dr. D. B. Evans on hospital services in North Wales. He said that the committee had discussed the position of Wales in relation to the administrative proposals in the National Health Service Bill and had reaffirmed the resolution of the Special Representative Meeting, '5, that Wales should be represented on the Central Health Services Council and the Medical Advisory Committee. The committee considered also that Wales should be administered as a region based on the Welsh National School of Medicine, but that satisfactory interim arrangements should be made in respect of areas more readily linked with university centres in England.

A report by the chairman of the Public Health Committee on the salaries of whole-time medical officers employed at mental hospitals and mental deficiency institutions, which roughly followed the lines of the interim "Askwith" document, was approved.

A report by the Building Committee concerned the ventilation of the council chamber, the lighting of the library, the use of the basement garage, and the letting of accommodation in the Association House.

FIRST MEETING OF NEW COUNCIL

A short formal meeting of the new Council was held on July 25, at the termination of the Annual Representative Meeting. Dr. H. Guy Dain was unanimously and with acclamation elected Chairman of Council for a further term.

New members of Council were welcomed. They were Sir Hugh Lett (President, *ex officio*), Mr. Lawrence Abel and Dr. W. D. Steel (elected by the Representative Body), Dr. Mary Esslemont and Dr. H. M. Golding (elected by Branches in Great Britain), Dr. J. H. Anderson, Dr. P. T. O'Farrell, Dr. Harper Nelson, and Mr. A. E. Porritt (elected by Branches outside Great Britain), and Surgeon Rear-Admiral W. H. Edgar (on recommendation of Council, to represent Royal Naval Medical Service).

The following Special Committees were reappointed: Protection of Practices, Compensation and Superannuation, Medical Curriculum, Public Relations, Rehabilitation, International Relations, Building, Parliamentary Elections, General Medical Council, Films in Medical Education, Ex-Service Practitioners, and Psychiatry and the Law. The committees on the relationship of the Association and the British Medical Bureau, on the Care of Children, and on the Treatment of Children under the Education Act, having completed their reference, were discharged. The Council also reappointed its members on the Joint Committee of the Association and the Trades Union Congress, the Joint Committee of the Association and the Pharmaceutical Society, and the Liaison Committee of the Association and the Royal College of Nursing. The nine practitioners representing the Association (in addition to the officers and chairmen of standing committees) on the Central Medical War Committee were nominated, and the Council confirmed the nomination of Dr. F. Gray and Dr. E. A. Gregg as representatives of the Association on the Council of the Society of Medical Officers of Health.

Following the approval of the interim agreement on the salaries of whole-time medical officers, it was intimated that it would be necessary to re-establish the Joint Advisory Committee set up under the original memorandum. This committee, although consisting predominantly of whole-time medical officers of health, has always had at least two practitioners from other fields, and indeed the spokesmen from the professional side of the committee (which is a joint committee with the associations of local authorities) have invariably been members who were not whole-time medical officers. Five names had been suggested from the public health side, and the Council nominated in addition Dr. J. W. Bone, Dr. F. Gray, and the Secretary.

The Council considered the date on which to hold a special meeting to consider the National Health Service Bill in its final form, the views of the profession upon it, and the course of future action. The meeting was fixed provisionally for October 9.

Correspondence

Delayed Release of Specialists

SIR,—You are probably weary of reading letters from disgruntled doctors in the Services. Perhaps you regard them as a collection of hysterical individuals who have lost all sense of proportion. Perhaps, Sir, you are right. But we did not start off our Service careers with those neurotic fixations and phobias. They have developed as a reaction—in many cases the only available reaction—to the irrationality and caprice of Service policies.

At the moment there can be few groups, anywhere in the world, of people of such a grade of intelligence and such training who demonstrate the phenomenon of mass anxiety to so marked an extent as the collection of specialists in the Forces whose Age and Service Groups lie between 35 and 50. They are penalized (the word is just) for being, in some cases, a bit more clever than the average and, in all cases, for having worked at their own job a bit harder than the average. And the form of the penalty is particularly malevolent—they are not to be allowed to do the work for which they are best suited. G.D.M.O.s may go, but specialists must remain and do the G.D.M.O.s' work—there being in most cases no work in their own specialty. Or, even worse, they are to stay and be company officers, part-time registrars, and general "stooges."

Our fault is, of course, that there are too few of us and our combined votes would be of little value in even a single

onstituency. We can therefore, being numerically negligible, be ignored by the politicians—national and medical. Such pleas as we make that our services are no longer required (and your correspondence columns show that that is at least a fairly general opinion among us) can accordingly be treated with contemptuous silence or by vague references to national as against individual needs. Even the most sanguine amongst us now knows that appeals for justice or even to common sense are fruitless. The baffled realization of our impotence aggravates our mental irritation and increases our painful laustrophobia.

I do not expect this letter to have the slightest effect on the rate of release of specialists in the forces. It has, however, had a slight cathartic effect on my own congested cerebrum, and as a purely therapeutic measure has perhaps been worth writing.—I am, etc.,

Secunderabad,

D. MACAULAY

SIR,—Stationed as we are, in the Far East, it is some time before we receive copies of medical journals, and we realize that by the time this letter reaches England many other similar ones may already have been published on what is to us the very pressing subject of demobilization of specialists in the R.A.M.C. All we know of the future rate of release of specialists contrasts most unfavourably with the general rate of release throughout the Army, and even with the rate of release of specialists after the last war, when large numbers were retained for indefinite periods after the war ceased.

The War Office announces that for the period July to September, inclusive, part of group 31 to part of group 40 will be released throughout the Army, except in the case of R.A.M.C. specialists, of whom groups 34 and 35 only will be released. Here we would emphasize that we are not asking for the accelerated release of the G.D.O. (group 50 by the end of September), but at the present rate many specialists face the prospect of a further two years' compulsory deferment, despite Mr. Morrison's statement that demobilization will be virtually complete by December 31, 1946. Added to this dismal prospect is the fact that we are not even eligible for L.I.A.P. (Leave In Advance of Python) to U.K. This leave is intended for all those who will have a further four months to serve in their overseas station on their return from U.K.; reckoning on the normal rate of release, only those over group 56 may apply. No allowance is made, however, for the compulsory deferment of specialists, so that a specialist of group 50, with the probability of at least a further eighteen months' service over-seas is still banned from applying for L.I.A.P. The points that we feel should be brought to the notice of the profession are these:

1.—Before the end of the European War an official representative of the E.M.S. stated to M.O.s in France that the release of specialists would be kept up to the standard rate of release throughout the Army by the call-up of civilian specialists. We can only infer that this call-up is not in fact taking place, since the demobilization of specialists is falling so far below the general rate.

2.—On account of the extreme disparity between the rates of release of G.D.O.s and specialists, no G.D.O. now applies for training in any specialty. Further, as a result of this rapid release of G.D.O.s, not only are there no young replacements for specialists forthcoming from within the R.A.M.C. itself, but also specialists are further penalized by having to do their own G.D.O. work on account of the shortage of G.D.O.s. If there is any shortage of doctors in the Far East, it is of R.A.M.C. G.D.O.s rather than specialists.

To sum up, what we ask is that the release rate of specialists be brought into line with age and service group release, and this, we believe, can be implemented by a further call-up of civilian specialists into the R.A.M.C.—We are, etc.,

"SEVEN SPECIALISTS."

The standing committee of the Bristol and District Divisional Hospitals Council at a recent meeting passed a resolution unanimously regretting that "the provisions under the National Health Service Bill for representation on Regional Hospital Boards, hospital management committees, and boards of governors of teaching hospitals do not give local interests the scope necessary for the maximum success of the proposed National Health Service."

H.M. Forces Appointments

ROYAL NAVY

Surg. Cmdrs. C. Keating, M.S.M., and R. C. May, O.B.E., M.C., to be Surg. Capt.

Surg. Cmdr. F. W. A. Fosberry has been placed on the retired list. Surg. Lieut.-Cmdrs. (Emergency) N. S. Heppburn, J. P. Corcoran, and J. C. Wyatt have been transferred to the Permanent List in the rank of Surg. Lieut.-Cmdrs.

Acting Surg. Lieut.-Cmdrs. (R.N.V.R.) R. S. P. Hawkins and G. A. S. Anthony have been transferred to the R.N. in the rank of Surg. Lieut.-Cmdr. and Surg. Lieut., respectively.

Temp. Surg. Lieuts. (R.N.V.R.) J. T. Morgan, M. P. Glanville, S. G. F. Linton, A. J. Sangster, R. S. McDonald, and A. W. Hagger have been transferred to the R.N. in the rank of Surg. Lieuts.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lieut.-Cmdr. R. D. Jenkins to be Surg. Cmdr.

Temp. Surg. Lieut. V. P. McDonagh to be Temp. Surg. Lieut.-Cmdr.

Temp. Acting Surg. Lieut.-Cmdrs. O. G. Lloyd and F. A. Hampton to be Temp. Surg. Lieut.-Cmdrs.

ARMY

Maj.-Gen. G. A. Blake, C.B., K.H.S., late R.A.M.C., has retired on retired pay.

Col. F. S. Irvine, C.M.G., D.S.O., late R.A.M.C., retired and re-employed, to be acting Major-Gen.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. C. L. Emmerson has retired on retired pay and has been granted the honorary rank of Col.

Lieut.-Cols. E. O. A. Singer and J. D'A. Champney, having attained the age for retirement, are retained on the Active List supernumerary.

Capt. (War Subs. Major) E. H. Evans and Capt. H. A. Bowker have retired and have been granted the honorary rank of Major.

Short Service Commissions.—War Subs. Majors J. J. Sullivan, P. Coleman, and R. G. Davies, Capt. (War Subs. Majors) P. H. Ball and O. W. W. Clarke and Capt. J. B. Plews, K. P. Brown, A. B. Fountain, N. G. G. Talbot, O.B.E., I. A. Walsh, J. H. McLaughlin, J. M. Laferla, F. G. Neild, J. J. McGrath, and A. Grieve, have been appointed to permanent commissions.

Short Service Commissions (Specialist).—To be Capt.: War Subs. Majors A. G. Wright, A. Torrie, and E. H. Larkin; War Subs. Capt. R. T. Wordingham and J. J. Voller; Lieuts. (War Subs. Capt.) R. T. Fletcher and J. C. Scott, from R.A.M.C., Emergency Commissions, and Capt. R. M. Henderson, from R.A.M.C., S.S.

Capt. L. A. S. Edmondson and W. A. Groom have retired.

Capt. A. B. Dick and Lieut. N. G. G. Talbot, O.B.E., from R.A.M.C., T.A., War Subs. Capt. D. L. Scott, Lieuts. (War Subs. Capt.) J. H. McLaughlin, R. G. Boyd, M.C., T. C. R. Archer, J. P. Mitchell, D. Macdonald, and S. H. Roe, from R.A.M.C., Emergency Commissions, and War Subs. Capt. H. A. Ferrante, from Royal Malta Artillery, Emergency Commission, have been granted short service commissions in the rank of Lieut. and to be Capt.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Senior Training Corps.—Major R. J. S. McDowall, supernumerary for service with Birmingham Univ. Senior Training Corps (Med. Unit) has resigned his commission. Lieut. A. S. Davie, supernumerary for service with St. Andrew's Univ. Senior Training Corps (Med. Unit) to be Lieut. Lieut. A. C. Lendrum, supernumerary for service with Glasgow Univ. Senior Training Corps (Med. Unit) has resigned his commission.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Col. (Local Brig.) A. E. Porritt, C.B.E., has relinquished the appointment of Consultant Surgeon and the local rank of Brig.

War Subs. Capt. R. G. A. Savage, W. E. David, G. A. Fraser, J. W. Anderson, R. P. Seymour, and C. T. Jones have relinquished their commissions, and have been granted the honorary rank of Major.

War Subs. Capt. A. Pearlman, P. X. Bermingham, and M. C. Chapman have relinquished their commissions on account of disability and have been granted the honorary rank of Major.

War Subs. Capt. T. A. Cox and D. Whitaker have relinquished their commissions and have been granted the honorary rank of Major.

War Subs. Capt. W. E. Brigg, W. H. Bennisson, G. L. G. Kiloh, and M. J. Pleydell have relinquished their commissions on account of disability and have been granted the honorary rank of Capt.

War Subs. Capt. R. Spicer.

A. Rusznak, V. Tausch.

I. Fischer, and I.

Lieut.

nursery and welfare-centre children

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Mrs.) O. R. Major has relinquished her commission and has been granted the honorary rank of Capt.

War Subs. Capt. (Mrs.) M. Bergman has relinquished her commission.

ROYAL AIR FORCE

Fl. Licut. R. Mortimer to be Squad. Ldr. (War Subs.).

To be Fl. Lieuts. (Permanent): D. S. Grant, J. S. Howitt, and K. L. G. Nobbs, G.M.

ROYAL AIR FORCE VOLUNTEER RESERVE

Squad. Ldr. (honorary) R. J. Dyson has relinquished his commission on cessation of duty.

To be Squad. Ldrs. (Emergency): C. H. Catlin, M. L. Meade-King, and P. H. Sandifer.

Fl. Lieut. P. M. Peters has relinquished his commission on account of medical unfitness for Air Force service retaining the rank of Squad. Ldr.

To be Fl. Lieuts. (Emergency): P. L. Allen, A. F. Rushforth, J. M. Lipscomb, S. N. Nathan, C. E. Davies, and I. C. Simpson.

To be Flying Officers (Emergency): F. Alberts, G. J. E. Ansell, E. R. Arnold, T. C. G. Barnes, H. S. Bennett, F. M. Benton, J. H. Boydell, R. J. Bruce, I. Butler, H. E. Claremont, N. C. Connell, J. A. Cooney, W. G. C. Craigen, D. S. Cramond, R. Davidson, J. G. Duncan, C. W. Graham-Stewart, R. Horn, D. C. W. Jenkins, P. M. P. Jones, C. R. Kirkpatrick, R. F. Payne, P. A. Reed, D. F. Reynolds, C. G. Roberts, R. Rodger, J. S. T. Searle, A. Sherlock, J. G. Smirk, C. Todd, D. E. Truscott, I. A. Waldie, K. A. A. Wray, E. A. J. Alment, H. F. McG. Bassett, D. E. St. J. Burrowes, D. A. Chandler, D. G. Davidson, R. I. Dixon, D. D. C. Howat, C. R. Neve, R. R. W. Nichols, D. R. L. Peill, J. E. Place, J. M. Pugh, D. H. Sinclair, J. Stevenson, F. N. Valdez, C. W. A. Pullan, G. M. Bailey, R. A. H. Bannatyne, A. F. Bromwich, J. A. Clarke, L. G. G. Davies, D. W. James, E. G. Jenner, G. R. B. McCarter, H. B. Maliphant, A. D. Moffat, S. S. F. Munro, D. A. A. Parker, C. M. Ruben, J. F. Shaw, G. S. Tapsall, P. Vlasto, G. G. Wells, P. W. Wells, and F. R. M. Young.

Association Notices

CONSULTANTS AND SPECIALISTS COMMITTEE

Part-time Consultants and Specialists

Notice is hereby given of the formation by the Council of an electoral roll for the election to the Consultants and Specialists Committee of five representatives of members of the Association who are engaged part-time in consultant and specialist practice. Members of the Association who claim to conform to this definition, including those serving with H.M. Forces, are requested to complete and return the appended form to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, not later than Monday, Sept. 2, 1946.

CHARLES HILL,
Secretary.

Aug. 3, 1946.

BRITISH MEDICAL ASSOCIATION

CONSULTANTS AND SPECIALISTS COMMITTEE

Part-time Consultants and Specialists

FORM OF APPLICATION FOR INCLUSION IN ELECTORAL ROLL

to the Secretary,
British Medical Association,
B.M.A. House, Tavistock Square,
London, W.C.1.

I wish to apply for inclusion in the electoral roll for the election of representatives of part-time consultants and specialists on the Consultants and Specialists Committee. I am a member of the Association and am engaged part-time in the consultant and specialist practice of.....

Signed.....

A short formal meeting.....
July 25, at the termination of the.....
ing. Dr. H. Guy Dain was unanimously and.....
elected Chairman of Council for a further term.

The Katherine Bishop Harman Prize

The Council of the B.M.A. is prepared to consider an award of the Katherine Bishop Harman Prize of the value of £75 in 1947. The purpose of the prize, which was founded in 1926, is to encourage study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best essay submitted in open competition, competitors being left free to select the work they wish to present, provided this falls within the scope of the prize. Any medical practitioner registered in the British Empire is eligible to compete.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1947, but will be offered again in the year next following this decision, and in this event the money value of the prize on the occasion in question will be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be final.

Each essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address. Essays must be forwarded so as to reach the Secretary, to whom all inquiries should be addressed, at B.M.A. House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946.

Diary of Central Meetings
OCTOBER

9. Wed. Council, 10 a.m.

POSTGRADUATE NEWS

A series of special Edinburgh postgraduate lectures has been arranged, under the auspices of the Honyman Gillespie Trust, for the summer vacation. The lectures will be held in the West Medical Theatre, Edinburgh Royal Infirmary, on Thursdays, at 4.30 p.m., Aug. 15, 22, and 29, Sept. 12 and 19; and Oct. 3, and are open to all graduates and senior students. Details will be published in the diary column of the *Supplement* week by week.

WEEKLY POSTGRADUATE DIARY

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre, Edinburgh Royal Infirmary, *Thurs.*, 4.30 p.m. Dr. J. K. Slater, Trauma as a Cause of Organic and Functional Nervous Disease.

APPOINTMENTS

BIRMINGHAM UNITED HOSPITAL.—Honorary appointments. *Assistant Physicians*: G. S. Hall, M.D., M.R.C.P., C. G. Parsons, M.D., F.R.C.P., C. R. St. Johnston, M.D., M.R.C.P., J. M. Mallins, M.B., M.R.C.P. *Assistant Surgeons*: T. S. Donovan, M.Ch.Orth., F.R.C.S., A. L. d'Abreu, Ch.M., F.R.C.S., A. Innes, F.R.C.S., J. Leigh Collins, M.D., F.R.C.S., G. H. Baines, F.R.C.S.

CALEY, IZZA, B.Chir., D.P.H., Deputy Medical Officer of Health, Mansfield.
HAMPTSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—*Gynaecologist to Out-patients*, John Howkins, M.D., F.R.C.S., M.R.C.O.G. *Honorary Anaesthetists*, H. Walton, L.R.C.P., M.R.C.S., D.A.; G. C. Steel, M.R.C.S., L.R.C.P., D.A. *Ear, Nose, and Throat Surgeon*, E. Oliver Harris, F.R.C.S.

HULL ROYAL INFIRMARY.—Honorary appointments. *Physician*: E. O. Halliwell, M.R.C.P. *Surgeon*: A. Pavick, F.R.C.S. *Ed. Orthopaedic Surgeon*: R. C. Tatham, F.R.C.S. *Ophthalmic Surgeon*: D. D. Stenhouse, M.R.C.S., L.R.C.P., D.O.M.S. *Gynaecologist*: G. S. Brown, F.R.C.S. *Ed. Pathologist*: N. T. Whitehead, M.B., B.S. *Assistant Surgeons*: J. R. Blackburne, F.R.C.S., and J. I. C. Mason, F.R.C.S. *Assistant Ophthalmic Surgeon*: S. J. H. Miller, M.B., Ch.B., D.O.M.S.

LANCKENAU, N. I., M.D., Physician-in-charge of Physiotherapy Department, Queen Mary's Hospital for the East End, Stratford, E.

WORCESTER ROYAL INFIRMARY.—Honorary *Assistant Surgeon in Ear, Nose, and Throat Department*: I. W. MacGregor, M.B., Ch.B. *Assistant Radiologist*: A. Vickers, M.B., B.S., D.M.R.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

GOODWIN.—On July 27, 1946, at the Lindo Wing, St. Mary's Hospital, W.2, to Barbara (née Robertson), wife of Dr. J. F. Goodwin, M.D., M.R.C.P., a daughter—Jennifer Jane Blair.

HYLTON.—On July 20, 1946, at Leeds, to Lorna Christine (née Petersen), M.R.C.S., wife of W. H. Hylton, M.R.C.S., a daughter.

KWANTES.—On July 31, 1946, at the Maternity Unit, Carmarthen Infirmary, to Catherine Mary Sheara (née Griffiths), A.I.H.A., wife of Dr. Willem Kwantes, M.B., B.Chir., a daughter—Sheara Elizabeth.

MARTINEZ-ALONSO.—On July 26, 1946, at Queen Charlotte's Hospital, London, to Ramona, wife of Dr. E. Martinez-Alonso, a daughter—Patricia Ann.

SMITH.—On July 22, 1946, at 18, Collin Gardens, N.W.9, to Betty (née Gilbert), wife of Brian J. Douglas Smith, M.B., B.S. (London), a son—Nicholas.

DEATH

BROWN.—On July 20, 1946, Jane Ann (formerly Sister Johnston, Queens Hospital, Birmingham), beloved wife of Henry Skinner Brown, M.D., Leland House, Stakford, Choppington.

LONDON SATURDAY AUGUST 17 1946

THE HEALTH OF CHILDREN IN WARTIME DAY NURSERIES

A REPORT OF AN INVESTIGATION BY THE DAY NURSERIES COMMITTEE OF THE MEDICAL WOMEN'S FEDERATION, IN CONJUNCTION WITH W. J. MARTIN, Ph.D.

his investigation was sponsored and planned by the Day Nurseries Committee of the Medical Women's Federation.* The statistical analyses have been in the hands of Dr. W. J. Martin. All the medical examinations were carried out by doctors in the Public Health Service in a number of areas throughout the country.

Aim and Method of the Investigation

The purpose of the inquiry was to obtain data concerning the effect of life in wartime day nurseries on the health of young children. The present report describes one section of the investigation only—a comparison of children who had been in months or more on the register of a wartime day nursery (nursery group I) with two other groups: (a) children who had been less than one week in a day nursery (nursery group II); and (b) children attending welfare centres.

A comparison only with children attending welfare centres might be misleading, since economic and other factors may influence admission to a day nursery or attendance at a welfare centre. To eliminate differences between these two groups, so far as was possible, each nursery where the inmates were examined was paired with a welfare centre serving the same area, so that for each district the children were drawn from a roughly similar environment; further, in the records used for this report the children at any one day nursery and its paired welfare centre were examined by the same doctor and within one short period, which in most areas was less than a week and in no area longer than a fortnight. Nevertheless, it was recognized that even with these conditions the two groups are not necessarily strictly comparable. For this reason comparison was also made with children within one week of admission to a day nursery, as this group should show whether or not children on arrival at a day nursery were similar to welfare-centre children. Unfortunately it was not possible to examine the majority of these children on the first day of nursery life as would have been desirable.

The examinations were carried out by 73 medical officers in the course of their usual work. Each child was examined once only, and the records were limited, with one exception, to items about which there should be the minimum variation of opinion between doctors. The exception was an impression of the general health of the child, and it was recognized that this would be of value only if there were a large preponderance of opinion one way or the other. The records included sex, date of birth, date of admission (for nursery children), weight, and the presence or absence of the following signs of respiratory infection: enlargement of the tonsillar glands, nasal discharge, mouth-breathing, and physical signs of bronchitis.

Clinical Material

Children were examined in day nurseries and welfare centres in 22 local government areas in Great Britain. These included 14 county and non-county boroughs (3 in Scotland, 1 in Wales, 6 in Northern England, 2 in the Midlands, 1 in the West of England, and 1 on the outskirts of London), also 5 county areas (including small towns and semi-rural areas in Scotland

and Southern, Midland, and Northern England) and 3 London boroughs. All the examinations were made in the period February to September, 1945. The age range was from 6 months to 5 years. It proved impossible to obtain a similar age distribution in the different groups because of the relatively small number of young children attending day nurseries, and of older children attending welfare centres. The age distribution in the two major groups (nursery group I and welfare-centre group) is given in Tables II and III.

The report is based on the records of 4,587 children, made up as shown in Table I.

TABLE I.—Groups of Children Examined

	Males	Females	Total
Children on the register of a day nursery for 6 months or longer (nursery group I)	1,193	943	2,136
Children attending a welfare centre	1,094	1,067	2,161
Children on the register of a day nursery for 1 week or less (nursery group II)	158	132	290

For those unfamiliar with the implication of names such as day nursery, nursery school, and nursery class it may be as well to state that wartime day nurseries were established with the object—not necessarily fulfilled—of augmenting the country's labour force, that admission was therefore limited in the main to the children of mothers in employment, that the nurseries were usually open from 7 a.m. to 7 p.m. for 5½ or 6 days a week, and admitted children up to 5 years old. Each nursery was under the charge of a matron, usually a State-registered nurse, assisted by a certificated or uncertificated teacher, trained nursery nurses, nursery assistants (with a brief wartime training or none at all), and student nursery nurses. The approved complement of full-time staff (excluding domestic) was one to every five children. A nursery school or class does not admit children under 2 years old, and is under the direction of a certificated teacher, with assistants, and a visiting or whole-time nurse. Normally a nursery school is open only for the usual school hours, and, though they have often been open for longer hours during the war, it has not usually been for as long as the 12-hour day of the wartime day nurseries. The report deals with children in day nurseries only, but the findings observed would probably apply to some extent to any congregation of young children.

Comparison of Welfare-centre Children and those who had been Six Months or More on the Register of a Day Nursery

Tables II and III show separately for males and females in the welfare-centre group and nursery group I the percentage distribution of the various physical conditions on which information was sought.

Tonsillar Glands.—The doctors were asked to record these glands as being "not palpable," "just palpable," "intermediate," or "grossly enlarged." The last two classifications have been grouped together in the tables. Tonsillar gland enlargement of all grades was more common among children in nursery group I than among welfare-centre children, and the difference between the two was significant for both males and females. When these two groups are subdivided by age (five age groups for each sex—see Tables II and III) the difference between nursery and welfare-centre children is significant in five out of

* The following are the members of the Committee: Dame Janet Campbell, President of the Medical Women's Federation (*ex officio*), Dr. Katherine Hirst (Chairman), Dr. Beryl Harding (Hon. Secretary), Dr. Marjorie Back, Mary Boyd, Annis Gillie, Sylvia Guthrie, Helen Mackay, Jean Mackintosh, Mary Sheridan, and Nora Wallie.

the ten age groups. It is a curious fact that, although "just palpable" tonsillar glands were considerably more common among nursery children than among welfare-centre children, the greater degrees of enlargement were only slightly more common.

Nasal Discharge.—The doctors were asked to record nasal discharge as "not present," "present and observed" (i.e., observed by the doctor by ordinary external examination), or "stated to be present" (i.e., the nurse or mother stated that

children. The proportion with "reported" nasal discharge was larger among the welfare-centre children, and the difference was significant for all ages combined among boys, but not among girls. It is probable that there is a difference in the reliability of the information regarding "reported" nasal discharge, since in the welfare-centre group the mother of the child was questioned, but in the nursery group the matron or other member of the staff supplied the information; the results have, however been included for the sake of completeness.

TABLE II.—Incidence of Physical Conditions: Males. (Children affected shown as percentage of total number examined)

Age in Years		No. of Children	Tonsillar Glands			Nasal Discharge		Mouth-breathing	Bronchitis	General Impression		
			Just Palpable	Intermediate and Grossly Enlarged	All Degrees of Enlargement	Observed	Reported			Very Fit and Well	Fair Health	Poor Health
1/2-1	N.	43	25.6	4.7	30.2	25.6	7.0	37.2	20.9	86.0	11.6	2.4
	C.	247	15.0	2.4	17.4	20.6	5.3	25.9	17.0	86.2	10.9	2.9
	Difference ..		+10.6	+2.3	+12.8	+5.0	+1.7	+11.3	+3.9	-0.2	+0.7	-0.5
	S.E.		6.1	2.7	6.5	6.8	3.8	7.4	6.3	5.7	5.2	2.7
1-2	N.	211	37.0	11.4	48.3	35.1	9.5	35.5	15.2	72.5	24.7	2.8
	C.	294	27.2	10.2	37.4	20.4	8.8	29.3	8.8	74.5	20.1	5.4
	Difference ..		+9.8	+1.2	+10.9	+14.7	+0.7	+6.2	+6.4	-2.0	+4.6	-2.6
	S.E.		4.8	2.8	4.6	4.0	2.6	4.2	2.9	4.0	3.7	1.8
2-3	N.	313	44.7	16.3	61.0	45.4	4.5	37.4	16.3	81.5	15.0	3.5
	C.	240	34.6	14.2	48.8	28.3	9.2	26.3	10.0	73.3	21.7	5.0
	Difference ..		+10.1	+2.1	+12.2	+17.1	-4.7	+11.1	+6.3	+8.2	-6.7	-1.5
	S.E.		4.2	3.1	4.3	4.2	2.1	4.0	2.9	3.6	3.2	1.7
3-4	N.	356	38.5	20.2	58.7	39.0	2.5	33.7	9.8	79.2	19.7	1.1
	C.	185	31.9	19.5	51.4	21.6	8.6	27.6	9.2	74.0	18.4	7.6
	Difference ..		+6.6	+0.7	+7.3	+17.4	-6.1	+6.1	+0.6	+5.2	+1.3	-6.5
	S.E.		4.4	3.6	4.5	4.3	1.9	4.3	2.7	3.8	3.6	1.6
4-5	N.	270	47.8	18.1	65.9	28.9	4.1	28.9	5.2	84.4	13.7	1.9
	C.	128	35.9	23.4	57.8	13.3	10.2	21.9	3.1	71.9	21.9	6.2
	Difference ..		+11.9	-5.3	+8.1	+15.6	-6.1	+7.0	+2.1	+12.5	-8.2	-4.3
	S.E.		5.3	4.3	5.2	4.6	2.6	4.7	2.2	4.3	4.0	1.9
1/2-5	N.	1,193	41.5	10.0	58.1	37.2	4.8	34.0	11.8	80.1	17.7	2.2
	C.	1,094	27.9	12.4	40.3	21.6	8.2	26.7	10.3	76.5	18.3	5.2
	Difference ..		+13.6	+4.2	+17.8	+15.6	-3.4	+7.3	+1.5	+3.6	-0.6	-3.0
	S.E.		2.0	1.5	2.1	1.9	1.0	1.9	1.3	1.7	1.6	0.8

N. = children on nursery register for six months or more; C. = welfare-centre children. Significant differences are shown in italics.

TABLE III.—Incidence of Physical Conditions: Females. (Children affected shown as percentage of total number examined)

Age in Years		No. of Children	Tonsillar Glands			Nasal Discharge		Mouth-breathing	Bronchitis	General Impression		
			Just Palpable	Intermediate and Grossly Enlarged	All Degrees of Enlargement	Observed	Reported			Very Fit and Well	Fair Health	Poor Health
1/2-1	N.	36	30.6	—	30.6	19.4	8.3	25.0	22.2	77.8	22.2	—
	C.	221	14.0	1.8	15.8	17.2	5.4	19.5	12.2	86.0	12.7	1.3
	Difference ..		+16.6	-1.8	+14.8	+2.2	+2.9	+5.5	+10.0	-8.2	+9.5	-1.3
	S.E.		6.7	2.2	6.9	6.8	4.2	7.2	6.8	6.5	6.2	1.9
1-2	N.	157	32.5	5.1	37.6	43.3	4.5	21.7	14.7	77.7	17.2	5.1
	C.	305	26.9	3.6	30.5	19.7	5.9	18.0	10.5	75.4	22.0	2.6
	Difference ..		+5.6	+1.5	+7.1	+23.6	-1.4	+3.7	+4.2	+2.3	-4.8	+2.5
	S.E.		4.4	2.0	4.6	4.4	2.2	3.9	3.2	4.2	4.0	1.8
2-3	N.	254	46.1	11.8	57.9	45.7	6.3	28.0	15.0	76.0	22.8	1.2
	C.	215	34.4	9.3	43.7	17.7	5.6	21.9	5.1	74.4	21.4	4.2
	Difference ..		+11.7	+2.5	+14.2	+28.0	+0.7	+6.1	+9.9	+1.6	+1.4	-3.0
	S.E.		4.6	2.9	4.6	4.4	2.2	4.0	2.8	4.0	3.9	1.5
3-4	N.	270	46.7	14.8	61.5	33.3	5.9	30.4	8.1	82.6	15.9	1.5
	C.	184	37.0	13.6	50.5	13.0	9.8	19.0	6.5	74.0	22.2	3.8
	Difference ..		+9.7	+1.2	+11.0	+20.3	-3.9	+11.4	+1.6	+8.6	-6.3	-2.3
	S.E.		4.7	3.3	4.7	4.1	2.5	4.2	2.5	3.9	3.7	1.5
4-5	N.	226	45.1	16.4	61.5	29.6	2.2	30.5	8.0	85.4	13.7	0.9
	C.	142	35.9	17.6	53.5	12.0	4.9	17.6	6.3	75.4	20.4	4.2
	Difference ..		+9.2	-1.2	+8.0	+17.6	-2.7	+12.9	+1.7	+10.0	-6.7	-3.3
	S.E.		5.3	4.0	5.3	4.5	1.9	4.6	2.8	4.2	4.0	1.6
1/2-5	N.	943	42.2	12.2	55.4	36.9	5.0	28.1	11.6	80.5	17.7	1.8
	C.	1,067	28.7	8.0	36.6	16.6	6.3	19.2	8.5	77.1	19.8	3.1
	Difference ..		+13.5	+4.2	+18.8	+20.3	-1.3	+8.9	+3.1	+3.4	-2.1	-1.3
	S.E.		2.1	1.3	2.2	2.0	1.0	1.9	1.3	1.8	1.7	0.7

N. = children on nursery register for six months or more; C. = welfare-centre children. Significant differences are shown in italics.

the child had a "running nose" that day but it was not obvious at the moment of examination, owing probably to the child's having recently blown his nose). Any nasal discharge was included, either purulent or simple catarrhal. The proportion of children with observed nasal discharge was much greater among the nursery children than among the welfare-centre children, and the differences were significant for all ages combined, and for each separate age group except the youngest. Excluding those under 1 year old, nasal discharge was twice as common among nursery children as among welfare-centre

Mouth-breathing.—This was reported simply as "not present" or "present" at the time of the examination. Mouth-breathing was more frequent in the nursery group than in the welfare-centre group, and the difference between the two significant for all ages combined. In the individual age groups one male and two female age groups had significant differences.

Physical Signs of Bronchitis.—These were also reported simply as "not present" or "present." Bronchitis was more common among nursery children than among welfare-centre

children, and the difference for all age groups combined was significant among girls. In the individual age groups one female and two male age groups had significant differences.

Impression of General Condition.—The observers were asked to record their impression of the child's general condition as "very fit," "well," "fair health," or "poor health." Records on this point are obviously open to the criticism that doctors will differ in their classification. Nevertheless, it was thought worth while to obtain some indication of opinion, bearing in mind that with a large number of examining doctors individual variations may tend to be cancelled out. It is apparent from the individual records that, in general, the impression reported relates to the child's physique rather than to his state of general health, since many cases with well-marked evidence of respiratory infection were recorded as "well" or even "very fit." The classifications "very fit" and "well" have been grouped together in the tables. With the exception of the youngest age groups a larger proportion were described as "very fit" or

There was no consistent difference between the sexes in either group in the incidence of "just palpable" tonsillar glands, nor of bronchitis.

Closely similar proportions of boys and girls were recorded under "very fit" or "well" and under "fair health" in each age group of the welfare-centre children, but there are considerable and inconstant variations of these proportions for boys and girls in the different age groups of nursery children. The mean weight of boys was higher than that of girls at nearly all ages, among both nursery and welfare-centre children.

Comparison of Nursery Children within One Week of Admission with Those in the Other Two Groups

Children in the two major groups (nursery group I and welfare-centre) showed considerable differences, especially in the incidence of respiratory infection, but the question remains whether these were the result of nursery environment or whether there was already a difference between welfare-centre and nursery

TABLE IV.—Comparison of Mean Weights of Children who had been Over Six Months on Nursery Register with Mean Weights of Welfare-centre Children

Age in Months	MALES					FEMALES				
	Welfare-centre Group		Nursery Group I		Differences (Nursery less Welfare Centre)	Welfare-centre Group		Nursery Group I		Differences (Nursery less Welfare Centre)
	No. of Children	Mean Weight (lb.)	No. of Children	Mean Weight (lb.)		No. of Children	Mean Weight (lb.)	No. of Children	Mean Weight (lb.)	
6- ..	141	19.2 ± 0.24	13	19.2	0	114	17.9 ± 0.22	10	16.6	-1.3
9- ..	104	21.3 ± 0.26	30	20.3 ± 0.46	-1.0 ± 0.53	106	19.9 ± 0.26	24	20.0 ± 0.55	0.1 ± 0.61
12- ..	105	23.0 ± 0.25	44	23.2 ± 0.36	0.2 ± 0.44	95	21.6 ± 0.24	36	21.8 ± 0.43	0.2 ± 0.49
15- ..	63	24.8 ± 0.47	40	24.9 ± 0.42	0.1 ± 0.63	74	23.5 ± 0.29	25	22.6 ± 0.35	-0.9 ± 0.45
18- ..	71	25.5 ± 0.34	49	25.7 ± 0.34	0.2 ± 0.48	63	24.6 ± 0.34	40	24.1 ± 0.34	-0.5 ± 0.48
21- ..	52	26.7 ± 0.36	76	26.9 ± 0.35	0.2 ± 0.50	67	25.3 ± 0.32	54	26.7 ± 0.38	1.4 ± 0.50
24- ..	60	28.0 ± 0.41	69	28.7 ± 0.40	0.7 ± 0.57	63	26.9 ± 0.35	67	26.9 ± 0.37	0.0 ± 0.51
27- ..	59	28.4 ± 0.42	71	29.9 ± 0.35	1.5 ± 0.55	61	27.9 ± 0.43	46	28.0 ± 0.51	0.1 ± 0.67
30- ..	53	30.1 ± 0.41	89	31.2 ± 0.33	1.1 ± 0.53	56	29.3 ± 0.41	73	29.9 ± 0.32	0.6 ± 0.52
33- ..	56	32.0 ± 0.45	83	31.9 ± 0.43	-0.1 ± 0.62	35	30.1 ± 0.59	65	30.9 ± 0.36	0.8 ± 0.76
36- ..	57	31.8 ± 0.48	101	32.5 ± 0.34	0.7 ± 0.59	60	31.0 ± 0.47	61	32.5 ± 0.39	1.5 ± 0.61
39- ..	48	33.3 ± 0.48	84	33.8 ± 0.33	0.5 ± 0.58	43	32.8 ± 0.52	62	33.4 ± 0.43	0.6 ± 0.67
42- ..	40	34.2 ± 0.60	82	35.2 ± 0.35	1.0 ± 0.69	34	32.9 ± 0.66	67	33.2 ± 0.39	0.3 ± 0.77
45- ..	39	34.3 ± 0.62	87	36.1 ± 0.39	1.8 ± 0.73	45	33.9 ± 0.44	77	34.8 ± 0.48	0.9 ± 0.65
48- ..	35	36.1 ± 0.80	76	37.2 ± 0.39	1.1 ± 0.89	48	34.9 ± 0.51	68	35.1 ± 0.40	0.2 ± 0.65
51- ..	21	39.3 ± 0.88	56	37.4 ± 0.55	-1.9 ± 1.04	37	36.7 ± 0.64	60	36.3 ± 0.51	-0.4 ± 0.82
54- ..	36	36.7 ± 0.71	78	39.6 ± 0.47	2.9 ± 0.85	31	36.8 ± 0.92	43	37.6 ± 0.67	-0.2 ± 1.14
57- ..	33	39.1 ± 0.70	59	39.9 ± 0.51	0.8 ± 0.87	24	37.0 ± 0.85	54	39.1 ± 0.60	2.1 ± 1.04

Significant differences shown in italics.

TABLE V.—Comparison of the Observed Incidence of Infection in Nursery Children with the Expected Incidence, based on Welfare-centre Children

Evidence of Infection	Nursery Group II (Admissions)				Nursery Group I			
	Observed Incidence	Expected Incidence	Observed less Expected	Probability of the Difference occurring by Chance	Observed Incidence	Expected Incidence	Observed less Expected	Probability of the Difference occurring by Chance
	%	%			%	%		
Tonsillar glands:								
Just palpable	32.1	28.6	+3.5	0.5 > P > 0.3	42.2	32.7	+9.5	P < 0.01
Intermediate and grossly enlarged ..	8.3	10.3	-2.0	0.5 > P > 0.3	14.7	14.1	+0.6	0.8 > P > 0.7
All degrees of enlargement	40.3	38.9	+1.4	0.5 > P > 0.3	56.9	46.8	+10.1	P < 0.01
Observed nasal discharge	33.4	19.9	+13.5	P < 0.01	37.1	18.6	+18.5	P < 0.01
Mouth-breathing	27.2	23.4	+3.8	0.5 > P > 0.3	31.3	23.1	+8.2	P < 0.01
Bronchitis	9.0	9.5	-0.5	0.9 > P > 0.8	11.7	7.7	+4.0	P < 0.01

"well" among the nursery children than among the welfare-centre children. The differences at ages 3-4 and 4-5 years for females and 2-3 and 4-5 years for males were significant.

Weight.—Table IV gives the mean weights for males and females in three-monthly age groups. The total number of children is rather less than in the other tables, since in a few instances weight was not recorded. The nursery children were, on the whole, heavier than the welfare-centre children, although only four of the 18 male age groups and two of the female age groups had differences that were significant.

Sex Differences.—The ratio of boys to girls in nursery group I is 5 boys to 4 girls, and the preponderance of boys is apparent at each year of age. There is a slight preponderance of boys in the welfare-centre group as a whole but not in each separate age group. Although a comparison of the health of boys and girls was not a primary object of the investigation, the following observations are of interest. Boys in the welfare-centre group showed a higher incidence of observed nasal discharge at all ages than did the girls, but there is no consistent difference between boys and girls in the nursery group. Boys in both the welfare-centre and the nursery group showed at all ages a higher incidence of the greater degrees of tonsillar-gland enlargement. The same is true of the incidence of mouth-breathing (except in the 4-5-year-old nursery children).

children at the start of their nursery life. The records of the group who were examined within one week of admission to nurseries (nursery group II) throws light on this question. This group of 290 was made up of small numbers of children scattered all over the country, and may be regarded as reasonably typical of that section of the community from which the nursery population was drawn. It would be unreliable to compare the children in this group, age for age, with those in the two major groups, because of the small numbers. Nevertheless, they can be compared by calculating the observed and expected incidence of infection in the groups as a whole, using the incidence in the welfare-centre children of similar age and sex (as shown in Tables II and III) to calculate the expected incidence in the nursery groups. Table V shows this comparison. The columns headed "Observed Incidence" show the percentage of children in each group suffering from the various defects, as actually observed. Those headed "Expected Incidence" show what would have been the percentage affected in each group had the defects occurred in the same proportion at each year of age as they occurred at that age in the welfare-centre children. In other words, the table shows the incidence of infection that would have been expected had the nursery children been similar to the welfare-centre children in respect of respiratory infection.

In the nursery admission group the differences between the observed and expected incidence of defects show that these children had in fact a slightly lower rate than might be expected of some defects and a slightly higher rate than expected of other defects, and that only for nasal discharge is the observed incidence considerably greater (by 67%) than the expected incidence. Statistical interpretation of these figures indicates that only for nasal discharge is the difference greater than might occur by chance. It should be remembered that these children were examined within one week of admission, not on the first day in a nursery. The fact that nasal discharge was the only evidence of respiratory infection in which the observed incidence was significantly greater than would be expected, and was, moreover, strikingly greater, suggests that a considerable proportion of these children had developed a cold during the first week after admission. Were this not so it would be reasonable to expect that the other signs of respiratory infection would have also shown significant differences between observed and expected incidence.

In the group of children who had been six months or more on the register of a nursery the observed incidence of infection is greater than the expected incidence for every defect recorded. The observed incidence is 100% greater than the expected incidence for nasal discharge, 29% greater for "just palpable" tonsillar glands, 22% greater for all degrees of tonsillar-gland enlargement, 36% greater for mouth-breathing, and 52% greater for bronchitis. The probability that the

Discussion

The data show that children who had been on the register of a wartime day nursery for six months or more had a much higher incidence of respiratory infection than those attending welfare centres in the same localities. The difference was present in all age groups and in both sexes. When all the defects observed are taken into consideration the 2-3-year-old groups showed the greatest difference. Further, the increase in the evidence of respiratory infection was not attributable to significant differences between welfare-centre and nursery children at the start of their nursery life—with the doubtful exception of some part of the increase in the incidence of nasal discharge. On the other hand, the data show that the nursery children were on the whole heavier than the welfare-centre ones, and the differences between the observed and expected mean weights of the nursery children were significant for those over 2 years of age. In support of this, also, more nursery children were recorded as "very fit" and "well" in the upper age groups than in the same age groups of welfare-centre children.

The scope of the evidence is admittedly limited, but so far as it goes it does not indicate a beneficial effect of nursery life for the younger children—rather the reverse. There was a general increase of respiratory infection, to a significant extent in some instances, but no constant or significant improvement in physical development as indicated by weight or the doctor's impression of general physique. For the older children, the

TABLE VI.—Comparison of Observed Mean Weight of Nursery Children with Expected Mean Weight based on Welfare-centre Children

Age in Years	MALES								FEMALES							
	Nursery Group II (Admissions)				Nursery Group I				Nursery Group II (Admissions)				Nursery Group I			
	No. of Children	Observed Mean Weight	Expected Mean Weight	Observed less Expected	No. of Children	Observed Mean Weight	Expected Mean Weight	Observed less Expected	No. of Children	Observed Mean Weight	Expected Mean Weight	Observed less Expected	No. of Children	Observed Mean Weight	Expected Mean Weight	Observed less Expected
1/2-1	28	19.6	19.9	-0.3 ± 0.5	43	20.0	20.7	-0.7 ± 0.4	24	18.8	19.1	-0.3 ± 0.6	34	19.0	19.3	-0.3 ± 0.5
1-2	45	24.6	25.0	-0.4 ± 0.5	209	25.5	25.3	+0.2 ± 0.2	45	22.5	23.6	-1.1 ± 0.4	155	24.2	24.0	+0.2 ± 0.2
2-3	39	29.3	29.7	-0.4 ± 0.5	312	30.5	29.8	+0.7 ± 0.2	28	28.2	28.7	-0.5 ± 0.6	251	29.0	28.6	+0.4 ± 0.2
3-4	31	34.5	33.7	+0.8 ± 0.6	354	34.3	33.3	+1.0 ± 0.2	19	32.2	32.5	-0.3	267	33.5	32.7	+0.8 ± 0.3
4-5	10	36.4	37.7	-1.3	269	38.5	37.6	+0.9 ± 0.2	15	36.6	35.9	+0.7	225	36.5	36.2	+0.7 ± 0.3
1/2-5	153	27.7	27.9	-0.2 ± 0.3	1,187	32.2	31.5	+0.7 ± 0.1	131	26.0	26.5	-0.5 ± 0.3	932	31.0	30.5	+0.5 ± 0.1

Significant differences shown in italics.

difference between observed and expected incidence is due to chance is negligible for every defect except "intermediate and grossly enlarged" tonsillar glands.

This comparison of the two nursery groups with the welfare-centre group indicates that the high incidence of respiratory infection in children who have been six months or more on a nursery register is not accounted for by significant differences between welfare-centre and nursery children at the start of their nursery life. The only difference between them was in respect of nasal discharge, but this was of doubtful significance, for the reason already given. Moreover, though the observed and expected incidences of nasal discharge were not the same in children within one week of admission to nurseries, there was a much greater discrepancy in those who had been in nurseries for more than six months.

The observed mean weights of the children at each year of age in the two nursery groups have similarly been compared with the expected mean weights based on the welfare-centre children, and the results are shown for males and females separately in Table VI. Although the observed mean weights for the admission group of children are in the main below the expected mean weights, the differences are not significant for the total of males or females. For the children six months or more in a nursery the differences between the observed and expected mean weights are significant in each age group over 2 years for both males and females, and for the total of males and females. For the group as a whole the mean weight of boys was 0.7 lb. (317.5 g.) greater than would be expected on the basis of welfare-centre children, and the mean weight of girls 0.5 lb. (226.8 g.) greater, in spite of the fact that there was no significant difference in weight between welfare-centre and nursery children at the start of their nursery life.

effect of nursery life, as reflected in the investigation, was partly adverse and partly beneficial. There was a considerable increase in respiratory infection, but also a definite improvement in weight and physique. Certain points should be borne in mind in considering these facts.

The investigation was planned solely with reference to certain aspects of the physical health of the children. It does not attempt to deal with the social or economic aspects of day nurseries, nor with their effect on the mental health and development of the children. Only wartime day nurseries could be considered—that is, nurseries run under difficulties inherent in wartime conditions. Such factors as unsuitable premises, long nursery hours with early-morning and evening journeys, shortage of staff, and inadequately trained staff may well have influenced the incidence of respiratory infection. But in the absence of data relating to large numbers of children in nurseries not handicapped by these conditions it is impossible to assess just how far such factors may influence the occurrence of infection when young children are congregated together. On the other hand, wartime conditions were not wholly unfavourable to day nurseries. The extra milk, meat, cheese, fats, and other foods available to nursery inmates, over and above their rations at home, made it possible for nursery children to have a more satisfactory diet than non-nursery children, who were limited solely to their share of the family rations, and this no doubt contributed to the improved physique of the former. This difference in diet might not be so marked under normal conditions when the purchase of food for children at home is not limited by rationing.

The evidence of respiratory infection was necessarily limited to the less severe conditions that did not preclude a child from admission to a day nursery or from being brought to a welfare

centre. Wartime day nurseries have been used almost entirely for the children of mothers going out to work, and there is reason to expect that nurseries will continue to be used mainly by mothers who are at work or who have pressing domestic or housing difficulties. In these circumstances, mothers, and perhaps nursery staff, may tend to disregard minor ill-health, so as to avoid the hardship that may result from excluding the child from the nursery. Such a state of affairs may contribute to the incidence of respiratory infection, and in itself help to create the risk of such infection.

Conclusions

It is perhaps unwise to attempt, from these limited findings, to assess the value of day-nursery life to children, since many factors have necessarily been left out of account. The outstanding fact is the constant and considerable increase of respiratory infection, and the question arises of its importance in considering the well-being of a community of young children. The whole answer cannot be given without further research, and may well involve considerations which elude statistical investigation. This report deals with only one part of the investigation undertaken by the Day Nurseries Committee of the Medical Women's Federation. A further report is in preparation, and will cover work carried out by Dr. Margaret McLaughlin, on behalf of the Federation, in observing the health of children in day nurseries and welfare centres of one city over a period of twelve months.

From the collated observations of many independent observers here presented it can be said with certainty that they clearly demonstrate the existence of a high incidence of respiratory infection in wartime day nurseries, and that this constitutes a risk to health demanding careful consideration in weighing the value of day-nursery life to an individual child or to a community of children.

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THE AFTERMATH OF PERFORATED PEPTIC ULCER

BY

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Perforation of a peptic ulcer is an accident of supreme importance to the patient, for it places his life in jeopardy. It also results in considerable economic loss, and as similar factors probably underlie the onset of peptic ulceration and the causation of perforation no apology is necessary for another review of this subject.

The incidence of peptic ulcer, especially duodenal, has risen enormously in the past 20 years (Tidy, 1944), and more especially in the early years of the recent conflict (Stewart and Winsor, 1942). O'Donohue and Jacobs (1942) state that at their clinic there has been a 300% increase in the past 10 years. They quote De Bakey as stating that, in his experience, the incidence of peptic ulceration has risen from 443.7 per 100,000 hospital admissions in 1929 to 614.3 in 1938, and of perforation from 13.9 per 100,000 hospital admissions in 1929 to 78.3 in 1938.

Aim and Scope of Present Study

The following series is presented with full foreknowledge of its manifold defects. It represents an attempt to evaluate the late results of simple suture of perforated peptic ulcers in patients upon whom this operation had been performed 12 or more years previously. The material for this investigation comprised all cases of perforated peptic ulcer admitted to the Royal Victoria Infirmary, Newcastle, during the years 1929-32 inclusive. To these patients a questionnaire was sent which they

were asked to bring to the hospital for completion, and examination, and, if this was impossible, to take to their local practitioner for completion. No effort was made to trace those who were more than 55 years of age at the time of operation, and in order to obtain a uniform standard all who attended hospital were examined by the writer.

Results

The total number of letters dispatched was 538, and replies were received from 244, or rather less than half. Of the 244 replies 33 contained the news that the patient had died in the interim—11 from various other causes, 6 from "stomach trouble," and 16 from causes not mentioned. Of the remaining 211, 170 attended for examination and 41 merely returned the completed questionnaire.

(a) INCIDENCE

One of the most disturbing features about the majority of recent reports on the subject of peptic ulceration is the large rise in numbers noted. Illingworth *et al.* (1944) in a recent comprehensive study reported a rise in admissions of perforated peptic ulcer cases from 200 in 1929 to 600 in 1940 in an area where population changes had been minimal. The incidence of perforated peptic ulcer appeared to have risen from 11 per 100,000 in 1924 to 25 per 100,000 in 1938. Other writers, as previously mentioned, have noted a similar upward tendency.

The area drained by the Royal Victoria Infirmary is extensive, and any tendency to change in the population has been in a downward direction. Thus the ratio of admissions for perforated duodenal ulcer to total surgical admissions should be a fair indication of any change in incidence.

Year	Total Surgical Admissions	Total Perforated Duodenal Ulcers	%
1926	7,192	186	2.59
1931	6,931	156	2.25
1937	6,862	181	2.64
1938	6,909	198	2.87
1939	6,785	199	2.93
1940	6,418	221	3.44
1941	6,181	242	3.92
1942	6,253	156	2.49
1943	7,113	202	2.84
1944	7,240	205	2.83

There has been a slight rise in incidence between 1926 and the years from 1938 onwards. The greater rise during the dark days of 1940 and 1941 would seem to indicate that the "functional" element in peptic ulceration has not received the attention it merits.

(b) MORTALITY RATE

Year	Total Numbers	Deaths		Ratio
		No.	%	
1939	178 R.D.U.	22	12.4	R.D.U. : R.G.U. ... 8.5 : 1
	21 R.G.U.	4	19.0	Male, 194 : female, 5 ... 39 : 1
1940	193 R.D.U.	25	13.0	R.D.U. : R.G.U. ... 7 : 1
	28 R.G.U.	3	28.6	Male, 207 : female, 14 ... 15 : 1
1941	217 R.D.U.	22	10.1	R.D.U. : R.G.U. ... 8.5 : 1
	25 R.G.U.	6	24.0	Male, 229 : female, 13 ... 17.5 : 1
1942	138 R.D.U.	22	16.0	R.D.U. : R.G.U. ... 7.6 : 1
	18 R.G.U.	2	11.1	Male, 147 : female, 9 ... 16 : 1
1943	184 R.D.U.	15	8.2	R.D.U. : R.G.U. ... 10 : 1
	18 R.G.U.	6	33.3	Male, 193 : female, 9 ... 21.5 : 1
1944	190 R.D.U.	12	6.3	R.D.U. : R.G.U. ... 12.6 : 1
	15 R.G.U.	0	—	Male, 195 : female, 10 ... 19.5 : 1

Several points of interest emerge from these figures. First, the large preponderance of males, the ratio of males to females being at least 15 to 1. Griswold and Antoncic (1941) found this ratio to be 26 to 1, and Berson (1942) 31 to 1. Secondly, the confirmation of the accepted figure of 8 to 1 for the ratio of ruptured duodenal ulcer to ruptured gastric ulcer. And, thirdly, the not inconsiderable mortality, and the improvement which sulphonamides have effected. I think the reduction in the mortality rate in 1943 and 1944 must be due in large measure to the correct use of drugs of the sulphonamide group, though it may not be out of place to record that in 1932 Gilmour and Saint reported a personal series, from this same hospital, of 64 cases with an overall death rate of 4.7%. This is an achievement of which they have every reason to be proud, as most published figures give a much higher rate. Donald and Barkett (1942) had

an 18.5% death rate, and *Monro* (1945) states that most hospital series show a mortality of 20 to 25%, with little change in the last 10 years.

Late Results

Of the 244 patients who were traced, 33 had died, as already mentioned, 41 replied by post, and 170 attended for examination. I have kept these two latter groups separate, as postal replies are notoriously unsatisfactory. It will be noted that in referring to results I have studiously avoided the word "cure," and have preferred to speak of those who have had no symptoms, or otherwise. This is the only accurate way to consider results, and gives an idea of how I tried to sift the cases. Any patient who gave a history of periodic attacks of indigestion, however mild, was classed as a failure; and in the cases examined, even if there was no such history, any sign of stomach retention or dilatation or duodenal tenderness was regarded as evidence of a still active lesion. This clinical assessment must be the most accurate available, since x-ray examination will always show a deformed duodenal cap after suture of a perforation (*Lewisohn*, 1928, 1937; *Harrison and Cooper*, 1942).

Replies by Post.—41 patients: 40 R.D.U. (no further symptoms, 14, or 35%; some further symptoms, 26, or 65%), 1 R.G.U. The ruptured gastric ulcer had had further symptoms. Of the 26 with symptoms, 12 had required some further operation—3 for another perforation, and the remainder mainly for pyloric obstruction.

Attended for Examination, 170 Patients.—This total included 4 women, two of whom had had perforated duodenal ulcers and two perforated gastric ulcers, each pair presenting one symptomatic cure and one failure. It also included 7 cases of perforated gastric ulcer; six of these had had further symptoms, and one was symptom-free. This leaves 161 cases of perforated duodenal ulcer for analysis, which may be classified broadly thus: no further symptoms, 61 (38%); further symptoms, 100 (62%). Of those patients who had further symptoms, 33 (33%) required further operation, 1 had had later perforations, 1 gastrectomy, and the remainder gastro-enterostomy or some form of pyloroplasty. These figures are instructive in that they show that at least 20% of patients suffering perforation of a duodenal ulcer require further surgical intervention, and that of those who fail to obtain relief after suture of a perforation at least 26% will need some further operative procedure. It would also seem that there is a better prospect of symptomatic relief after perforation of a duodenal ulcer than of a gastric ulcer, though the number of the latter is too small to permit definite conclusions to be drawn.

Factors Affecting Symptomatic Cure

In an attempt to discover the factors influencing the relief of symptoms, these results were further analysed in three ways: (1) The chronicity or otherwise of the ulcer at time of perforation. The type of ulcer was based on the length of history rather than on operative findings, which are not very reliable. (2) The age of the patient at time of operation. (3) Whether or not any attempt to remain on a diet had been made after operation.

Results of Analysis

1) **Length of History.**—Of the patients tabulated below 38.9% said that the first indication of ulceration was perforation, and this was checked against the history given before operation. Of these, 22 had remained symptom-free and 16

	History less than 1 Year		History more than 1 Year		Total
	Symptomless	Return of Symptoms	Symptomless	Return of Symptoms	
By post ..	6 (15%)	7 (17.5%)	8 (20%)	19 (47.5%)	40
Attended ..	26 (16%)	34 (21%)	43 (27%)	58 (36%)	161

had had later dyspeptic symptoms. From the table it would appear that in those who have suffered perforation of a duodenal ulcer the odds are about 4 to 3 in favour of recurrence, whether the duration of symptoms be long or short. However, when perforation is the first symptom of ulceration the chances are 3 to 2 in favour of symptomatic cure.

(2) **Age of Patient at Time of Perforation.**—For this analysis the patients have been arranged in 5-year groups, and the percentage of symptomatic cures or failures in each group is expressed graphically (Figs. 1 and 2). When subdivided in this way the numbers in each group become relatively small, and inferences must therefore be drawn with caution. But it does seem that the prognosis is better in the higher age groups.

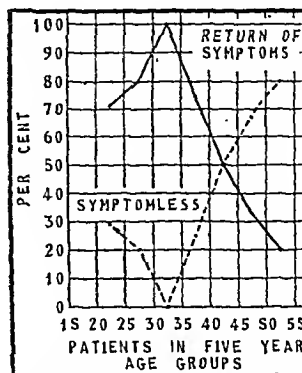


FIG. 1.—Showing results of perforation, at different ages, of those replying by post.

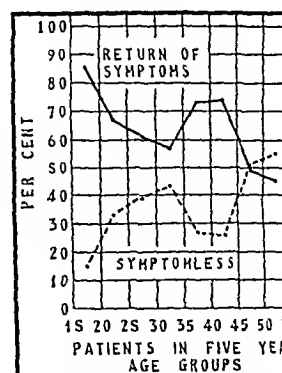


FIG. 2.—Showing results of perforation, at different ages of those who attended examination.

(3) **Effect of Diet.**—In this connexion dieting connotes sincere effort on the part of the patient to avoid foods which disagree with him and to follow the main principles of dieting i.e., regular small meals and avoidance of rough or high seasoned foods. It is virtually impossible for most patients to follow a strict regimen outside hospital. Of the 40 patients who replied by post, 14 were cured of symptoms, and, of the 6 (41%) dieted. Among the 26 with recurrent symptoms (50%) dieted. Of the 161 who attended for examination, symptomatic cure resulted in 61 cases, 13 (21%) of them having dieted. Among the 100 patients who returned with recurrent symptoms, 44 (44%) dieted. These figures require caution in their interpretation, but they would seem to indicate that perforated duodenal ulcers, dieting, unless of the strict nature possible only under hospital conditions, is of relatively little value. In this connexion it may not be amiss to consider allied questions of the effects of alcohol and tobacco. The great majority of those who smoked before operation continued to do so afterwards, though sometimes reducing amount, and the same finding obtained regarding the consumption of alcohol. Of the whole series 10 (4.7%) patients had given up or considerably reduced their consumption of tobacco. No non-smoker had started smoking after operation. Nineteen (9%) patients had become teetotal or almost so, but seven who had never taken alcohol before operation turned to beer and even stronger beverages for solace afterwards. One philosopher had discovered what Sir Hugh Devinc (1940) called the "water cure" for ulcer pain, and extolled the virtue of beer in "flushing acid out of the system." Many patients found beer necessary as a laxative, or discovered some other imperative reason for continuing their potations. Of the ulcer patient it may well be asked, "Can he change his habits?" and it would seem that any treatment which depends for success on such drastic change is doomed to failure.

Discussion

In the main the results of this investigation are confirmatory of work reported by other writers and bring little in the way of new facts to light. But some controversial points have arisen. For example, why should the incidence of perforation show such a slight increase in this area, where all the environmental factors are favourable to the production of such lesions—poverty and unemployment, old-fashioned housing, and the underground work?

Then there is the question of mortality. The fact that it is still high in spite of all modern aids should encourage practitioners to send all doubtful cases to hospital, as procrastination is so lethal.

The great difference in incidence of this complication between males and females is another perplexing aspect. Undoubtedly, aggravating factors are not so prominent in the lives of most women, and they have much better opportunities for regular meals. But it would seem that there must be some fundamental difference.

Perforated gastric ulcers are a great deal less common than duodenal, which is fortunate, as their mortality in general is much higher; over the whole six years for which figures were given, the mortality rate for perforated duodenal ulcer was 10.7%, while for perforated gastric ulcer it was 20.8%. This agrees with Tidy (1945).

The late results with reference to alleviation of symptoms are in agreement with those of most recent authors. In the period 1920-30 several reports of very high "cure" rates were published—e.g., Stewart and Barber (1922) reported 28 cures out of 37 cases treated by simple suture. In 1925 Grey Turner in a Hunterian lecture recorded 81 cures out of 120 cases, and in the ensuing discussion R. P. Rowlands said that only 25% had further symptoms. Pannett, writing in 1928, thought 50% were cured by simple suture. But towards the close of this decade more critical appraisal of results showed that only 30 to 40% of cases so treated remained symptom-free. Gilmour and Saint (1932) reported 64 cases, with 38% satisfactory afterwards, Sallick (1936) 9 cases symptom-free out of 33 cases traced, and Scotson (1933) 42% symptom-free after 3 years.

In the present series 38% of such patients have remained symptom-free 12 or more years after operation. This confirms the work quoted, and tends to support the belief that recurrences usually betray themselves within two years of operation or not at all. There are exceptions to this rule, which appeared to be true in the present series, though patients' memories are not entirely reliable. Five years is the longest interval after which symptoms recurred.

An old-established belief that the more chronic the ulcer the less the likelihood of cure is challenged by the figures I have advanced. The "cure" rate in those whose symptoms had lasted less than one year was 43% (26 out of 60), while in those in whom symptoms had lasted more than one year it was 42% (43 out of 101). Brown (1925) also challenged this belief, and stated that patients with no previous history fared worse, as regards return of symptoms, than those with long-standing histories. But of the 38 patients who had had no symptoms beforehand, 22 (57.9%) remained symptom-free, which would seem to indicate that in this group the prognosis is relatively good. And Gilmour and Saint (1932) had excellent results in all their cases with short histories.

One further point requires some elaboration, and that is the effect of diet on the rate of recurrence. Most authors are agreed that perforation should be followed by a strict medical ulcer regimen, and doubtless this counsel of perfection is the ideal towards which we should strive. But, human nature being what it is, ideals are seldom attained, and the figures I have gathered seem to suggest that nothing less than a strict diet is of any value. Only 21% of those who remained symptom-free after operation had made any serious attempt to diet, whereas 44% of those in whom symptoms recurred had made such an effort. Scotson (1933) stated that diet post-operatively had a very definite effect in reducing recurrence of symptoms. Cutler has always stressed the importance of such measures, and undoubtedly they are most important. The point I wish to make is the uselessness of half-hearted measures: if results are to be worth while a strict regime is essential.

Summary

The general results of simple suture in treatment of perforated peptic ulcers have been traced in a series of 244 cases which had been operated on 12 years or more ago.

The mortality rate of perforated peptic ulcer has declined since the introduction of the sulphonamide drugs.

Symptomatic cures were obtained in 38% of cases.

The prognosis with regard to symptomatic cure is better in patients with no preceding symptoms and in those in whom perforation occurs after the age of 45.

Diet, unless rigidly supervised and enforced, exerts little effect on the late results.

Alcohol and tobacco, although tending to aggravate symptoms, continued to be enjoyed by most patients accustomed to them.

I would like to thank all the members of the surgical staff of the Royal Victoria Infirmary, Newcastle-upon-Tyne, past and present, for permission to use and publish their case records. I should also like to thank Mr. Rodney Maingot for much helpful advice in the preparation of this paper.

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MENINGITIS DUE TO A PENICILLIN-SENSITIVE, SULPHONAMIDE-INSENSITIVE PITTMAN b STRAIN OF *H. INFLUENZAE*: RECOVERY

BY

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In a previous publication (McIntosh and Drysdale, 1945) a case of recovery from *H. influenzae* meningitis (Pittman b type) in a child aged 2½ years following treatment with penicillin and sulphamezathine, to both of which the organism was sensitive, was described. The following case is of interest since (a) the causal Pittman b type of *H. influenzae* was penicillin-sensitive but sulphonamide-insensitive; (b) recovery ensued after prolonged treatment with penicillin.

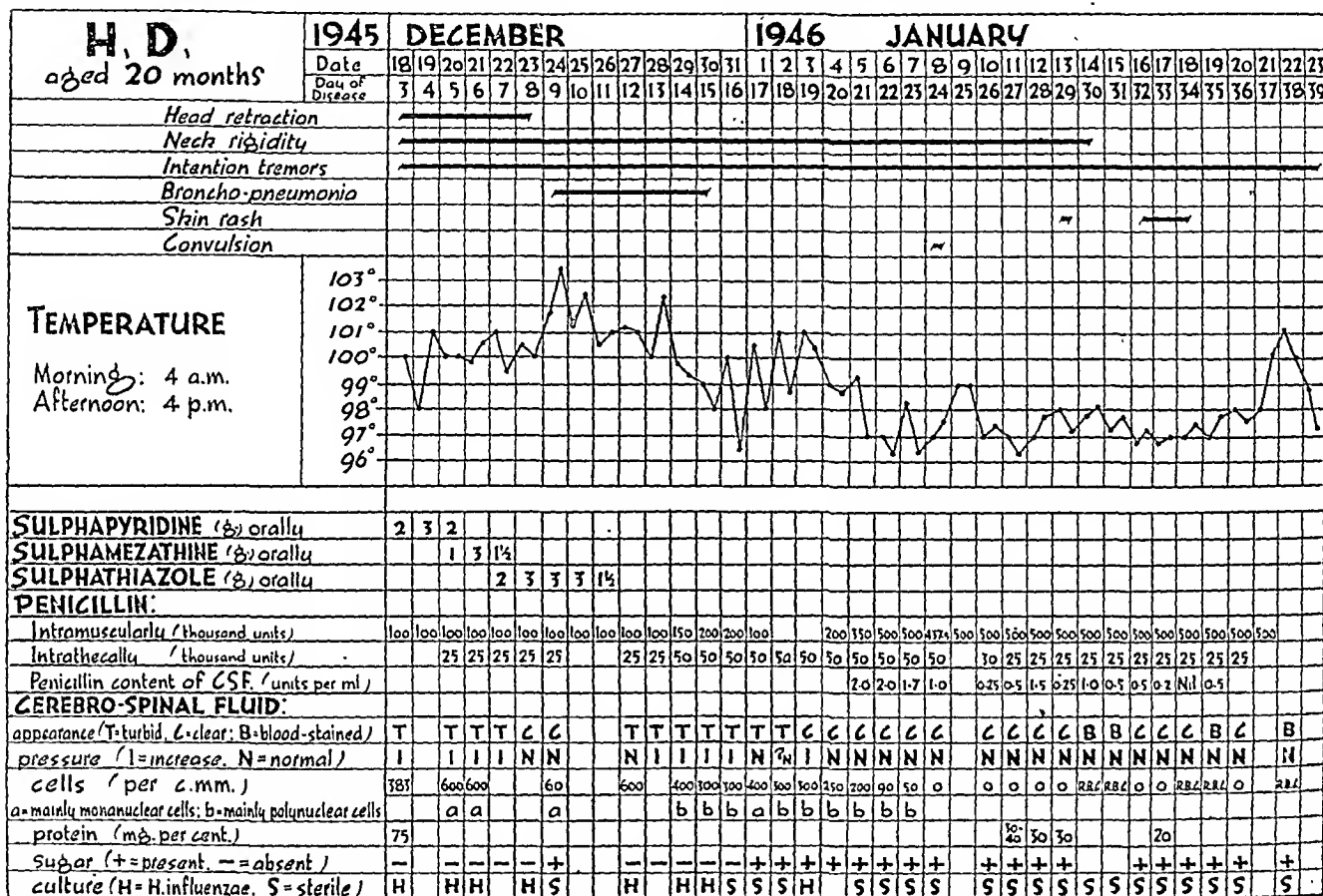
Case Report

A male child aged 20 months was admitted to King's Cross (Infectious Diseases) Hospital, Dundee, on Dec. 18, 1945, with a three-days history of stiffness of the right leg, tenderness of the spine, and vomiting. Examination revealed bead retraction, presence of Kernig's sign, absence of abdominal reflexes, absence of knee-jerks, indefinite plantar reflexes; temperature 100.8° F. (38.2° C.), pulse rate 128, respiration rate 60. Lumbar puncture yielded a turbid fluid under increased pressure containing 383 cells per c.mm., of which 260 were red blood cells, and 75 mg. of protein per 100 ml. Sugar was absent. On Dec. 20 the preliminary bacteriological report stated that a micro-organism, probably *H. influenzae*, which was sensitive to penicillin and very slightly sensitive to sulphathiazole, but insensitive to sulphapyridine, sulphamezathine, and sulphadiazine, had been cultured. Detailed examination proved that the bacillus was a *H. influenzae* Pittman b type and quite insensitive to the above sulphonamides and also to sulphamerazine. *In vitro* tests showed that growth was noticeably inhibited in haematin broth containing 0.6 unit of penicillin per ml., and completely inhibited in a concentration of 0.7 unit per ml. Until the diagnosis had been established and full sensitivity tests completed 25 g. of sulphonamide (7 g. sulphapyridine, 5.5 g. sulphamezathine, 12.5 g. sulphathiazole), 125,000 units of Seitz-filtered penicillin intrathecally, and 900,000 units of penicillin intramuscularly were administered during Dec. 18-26. Thereafter penicillin alone was given. During the period Dec. 18-Jan. 21, 1,005,000 units were given intrathecally and 10,237,500 units intramuscularly (see Chart). The child's condition gave rise to anxiety until Jan. 10, when, with his reserves of strength almost depleted, and having made a good recovery from a convulsion (Jan. 8), probably induced by penicillin, he remained apyrexial, except for a slight elevation of temperature on Jan. 21 and 22, until he was discharged, recovered, on March 1. Clinically the most notable features of the illness were: head retraction (Dec. 18-23); the persistence of neck rigidity (Dec. 18-Jan. 14); intention tremors of

head and upper limbs (Dec. 18-Jan. 23); the occurrence of bronchopneumonia (Dec. 24-30) despite the antecedent penicillin-administration; the daily recurrence of a blotchy erythematous rash about two hours after the intrathecal injection of penicillin—appearing first on the thighs, then on the lower abdomen, followed by some blotchiness of the face, next morning found only on the thighs (Jan. 13, 16-18). The persistent nature of the meningeal infection is reflected also by the results of examination of the C.S.F. shown in the Chart. After the fluid had become clear and the culture sterile on Dec. 24, omission of lumbar puncture on Dec. 25 and 26 was followed by the recurrence of turbid C.S.F. on Dec. 27-Jan. 2 and by positive cultures on Dec. 27, 29, 30, and Jan. 3. Thereafter the pleocytosis diminished and a series of negative cultures was obtained. From Dec. 29 the daily intrathecal dose of penicillin was increased to 50,000 units until Jan. 8, on which date, owing to the occurrence of a convulsion about three hours after the injection, the dose was reduced to 30,000 units (Jan. 10) and to 25,000 units (Jan. 11-20). It is to be noted, however, that, using the method

2.0 units per ml. (with an average of 1.7 units per ml. for four days). While this concentration was adequate, as judged by the *in vitro* tests, for the inhibition of the causal strain, a reduction of the intrathecal dose to 25,000 units daily, despite the continuance of 500,000 units daily systemically, resulted in a concentration of penicillin in the C.S.F. which was in excess of the minimum *in vitro* level on only two of the nine occasions on which estimations were made (average for nine days, 0.1 unit per ml.)

Smith, Duthie, and Cairns (1946), referring to the danger of intrathecal treatment with penicillin, point out that excessive dosage (40,000 units and over at a single injection) may produce fits or other severe cerebral reactions when injected into the ventricles, or damage to the cauda equina or gumming of the subarachnoid space when injected by the lumbar route. I McIntosh and Drysdale's (1945) case myoclonic movements of



of Brodie (1945), the penicillin content of the fluid as estimated 20 to 24 hours after the previous intrathecal injection showed 2.0, 2.0, 1.7, 1.0 units, respectively, on Jan. 5-8 (average, 1.7 units). After the dose had been reduced to 25,000 units the daily values were only 0.5, 1.5, 0.25, 1.0, 0.5, 0.5, 0.2, *nil*, and 0.5 units, respectively, for the period Jan. 11-19 (average, 0.6 unit).

Discussion

in vitro sensitivity tests conducted by Gordon and Zinnemann (1945) showed that with 2.5 units of penicillin per ml. of medium the growths of 16 of 18 meningeal strains of *H. influenzae* were completely inhibited and those of the remaining two strains showed marked inhibition. Accordingly they recommended that it would be necessary to administer penicillin intrathecally (in addition to systemic dosage) so as to obtain a concentration of at least 2.5 units per ml. in the C.S.F. at the outset. "Later, more exact determination of the penicillin sensitivity of the particular *H. influenzae* strain isolated and assay of the penicillin content of the cerebrospinal fluid should serve as a guide to the further dosage to be given." The results obtained in the present case indicate that, even with a dosage of 200,000-500,000 units systemically and 50,000 units intrathecally daily, the penicillin content of the C.S.F. is, at least towards the end of the 24-hour period, not greater than

the face, arms, and lower limbs occurred five minutes after an intrathecal injection of 50,000 units by the lumbar route, and in the present case a fairly severe convulsion took place about three hours after an injection of 50,000 units by the same route. In each of these cases the convulsion occurred after the meningeal infection had been brought under control, as evidenced by sterile cultures, and there seems little doubt that the reactions were directly due to the penicillin. Smith, Duthie, and Cairns (1946) suggest that a single daily intrathecal injection of from 3,000 to 16,000 units is usually adequate to achieve the 0.03 to 0.06 unit per ml. concentration in the C.S.F. necessary for the control of the pneumococcal infections they have encountered. The findings of McAdam *et al.* (1945) accord with the view that the passage of penicillin into the C.S.F. depends on the breakdown by inflammation of the blood-brain barrier. They were unable to demonstrate penicillin in the C.S.F. of any of seven normal subjects who received a dosage of penicillin intramuscularly varying from 100,000 to 500,000 units. In persons suffering from meningitis and post-meningitic encephalitis adequate amounts of penicillin passed into the C.S.F. The results are not expressed in units per ml., but it seems unlikely that the concentrations would have approached the levels required for the control of *H. influenzae* infections.

The findings in the present case suggest that the necessary concentration of penicillin required to inhibit *H. influenzae* may not be maintained unless dosages greater than 25,000 units intrathecally are given, daily.

Summary

A case of *H. influenzae* meningitis in a male child aged 20 months is described. The organism belonged to the Pittman b type, and was sensitive to penicillin in a concentration of 0.7 unit per ml. and insensitive to sulphapyridine, sulphamezathine, sulphadiazine, ulphathiazole, and sulphamerazine. Complete recovery followed prolonged treatment with penicillin.

Estimations of the penicillin content of the C.S.F. showed that concentrations between 1.0 and 2.0 units (average, 1.7 units) were achieved by daily intrathecal injections of 50,000 units and daily systemic injections of 200,000–500,000 units, while concentrations between nil and 1.5 units (average, 0.6 unit) were achieved by daily intrathecal injections of 25,000 units and daily systemic injections of 100,000 units. These findings indicate that intrathecal doses greater than 25,000 units daily may be required to combat *H. influenzae* infections. The dangers associated with this dosage are discussed.

We desire to thank Dr. W. L. Burgess, C.B.E., and Prof. W. J. Fulloch, O.B.E., for granting us facilities for the preparation of this paper, and Dr. J. Gordon, Senior Lecturer in Bacteriology, University of Leeds, for very kindly typing the organism.

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ACUTE ENTERITIS IN SUBTROPICAL CLIMATES

BY

IAN MACGREGOR, M.R.C.S., L.R.C.P.

Acute enteritis in subtropical climates is the cause of the loss of a great number of working hours, and is therefore a vital consideration in industry as well as to Forces in the field. It is, in fact, responsible for the loss of many times more man-hours than are lost from intestinal diseases such as typhoid or dysentery, which, though much more common than at home, do not normally reach a serious level, except in the event of a definite epidemic.

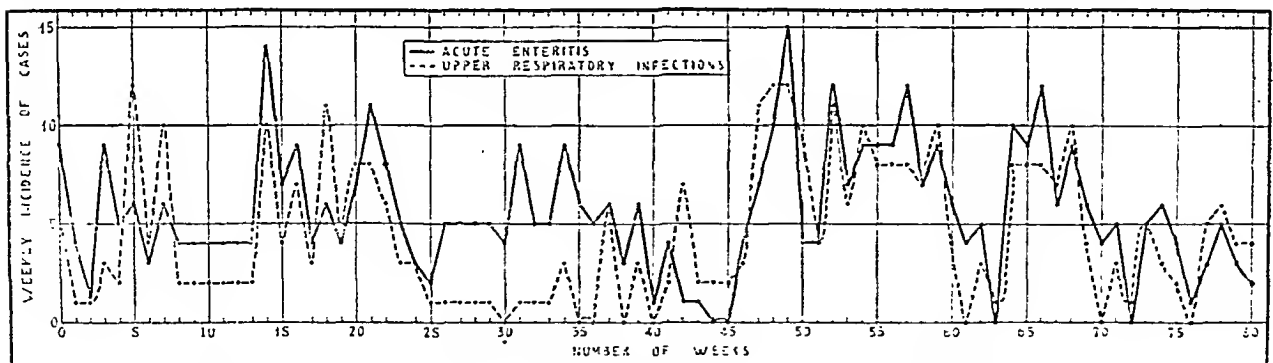
acute enteritis. The cases included in the statistics for upper respiratory infections were attacks of acute nasal catarrh and fresh cases of sinusitis. Cases of chronic nasal catarrh and chronic sinusitis with acute exacerbations were excluded for the reason stated later. The cases of acute enteritis taken were those of simple diarrhoea—i.e., those with loose frequent motions only, with no obvious blood or mucus. Microscopical examinations were carried out on the faeces of most of these cases, and the typical pathological report was: "Loose stool; no blood, mucus, or pus seen; culture, *B. coli* only"; or "Loose stool; some mucus with an occasional pus cell seen; no blood; culture, *B. coli* only." The occasional case the report of which proved it to be a true dysentery was withdrawn from the statistical figures. Pathological examinations were not carried out on swabs from the nose and nasopharyngeal cavities in either of the two conditions, as such swabs have frequently been investigated by other workers on upper respiratory infections and the common organisms usually present are well known to all.

The incidence of the two diseases in relation to climatic conditions and diet was also studied, and the following observations were apparent.

Climate

(a) Sandstorms and khamsins appeared to cause no increase in the incidence of acute enteritis or in fresh upper respiratory infections. This observation suggests that the pathology of subtropical acute enteritis is more complex than a mere irritation of the bowel. These storms did, however, produce a marked increase in the incidence of acute exacerbations of chronic rhinitis and sinusitis. It was this fact which induced me to exclude such cases from the statistical figures, as it appeared that there must be some slight difference in the pathology involved. Other observers have stated that sandstorms and khamsins have increased the incidence of acute enteritis, but this was certainly not so in this large series of cases.

(b) Climatic conditions conducive to the common cold—such as sudden cold spells after severe heat, a sudden fall in the night temperature after a very hot day—and men who admitted going to sleep on the top of the bed in the open air without pyjamas or bed-clothing, produced not only an increased incidence of acute respiratory infections but a corresponding increase in the number of cases of acute enteritis. This was most pronounced at the beginning of a hot season, when Service dress was changed from the winter uniform to the thin summer khaki drill. The period over which these observations were



Graph showing weekly incidence of upper respiratory infections and acute enteritis in subtropical climates.

My attention was first drawn to the possibility that the cause of these cases of acute enteritis may be in some way related to the causative organism of upper respiratory infections by the fact that, while serving with the Royal Air Force in the Middle East, I kept a graph indicating the weekly incidence of these two conditions. A careful study was made of the incidence of acute enteritis as related to upper respiratory infections, and the possibility of a correlation between these diseases became apparent (see Graph)—a rise in one being accompanied by a corresponding rise in the other, and vice versa.

Over a period of 80 weeks observation was made of this relationship, and during that time the figures involved no fewer than 455 cases of upper respiratory infections and 357 cases of

made included two such occasions, and on each of them the incidence of both conditions showed a marked increase.

Diet

The observations were made at a base station in Egypt where rations arrived regularly, were always plentiful, and were more or less standardized, with only slight variations from week to week. There appeared to be no connexion between the incidence of acute enteritis and any one specific ration issue, except an occasional and obvious epidemic of acute food-poisoning that was traceable to one particular commodity in the week's issues. The recognition of such epidemics was made even easier by the fact that I was medically responsible for three

individual units, each of which drew its own rations independently of the others, so that when such an epidemic occurred it was usually confined to one camp. It was also noted that such epidemics were almost without exception accompanied by an acute gastritis.

The figures of these epidemics, too, were deleted from the statistics, as they obviously involved an independent pathology.

Discussion

The present general opinion in textbooks regarding acute enteritis must be borne clearly in mind—namely, that it is unconnected with any specific infection or disease, is caused by irritation of the bowel by sand or dust or by coarse and unsuitable food, and by exposure to chill.

If this condition was a simple irritation by sand or dust one would expect to find a marked increase in incidence during the khamsin season or following a sandstorm. In this particular series of cases such was certainly not the case. Further, one would expect to find a high incidence of associated acute gastritis; for, although the gastric mucosa is known to be much less sensitive than that of the intestines, one would expect an extraneous irritant such as sand or dust to prove sufficiently irritating to affect it. Apart from the oesophagus, the only other possible portal of entry for such irritants is the anus, the nervous control of the sphincter of which would immediately result in its contraction if stimulated by such an irritant, rendering entry most unlikely. Should entry occur by this route, however, the irritation would immediately set up peristalsis, which would prevent the irritant penetrating high into the bowel and bring about its expulsion within a very short space of time.

If the origin of the irritation was coarse or unsuitable food one would expect an increased incidence of the condition with particular food issues, and also a higher incidence of associated gastritis, but such was not the case. It was obvious, however, that when the enteritis was due to a more severe irritation—such as an extraneous poison, as seen in the cases of "food-poisoning"—the stomach was affected as well as the intestines, and an associated gastritis almost invariably resulted.

Considering the question of exposure to chill, observations show very definitely that under any conditions conducive to the common cold not only the incidence of acute enteritis is increased, but also that of upper respiratory infections. Workers in the field of paediatrics have recently inclined to the view that acute gastro-enteritis in infants is primarily due to invasion of the intestinal tract by a virus or group of viruses, and the damage to the mucous membranes thereby sustained renders them more vulnerable to the ordinary bacterial flora of that region, notably coliforms and enterococci—a view similar to that at present accepted by many authorities as the pathological explanation of the common cold. The same theory can be applied to the acute enteritis of the subtropics, and provides an explanation for the observations recorded above. The absence of an associated gastritis can be accounted for on the following grounds: (1) that the virus, in the first place, lodges in the nasopharyngeal cavity and reaches the intestines by invasion of the blood stream—a process proved to occur in certain other diseases; (2) that the virus gains direct entry to the intestinal tract from the nasopharynx through the oesophagus, the slightly higher resistance of the adult gastric mucosa being sufficient to protect it from damage by the virus as it passes through this organ; or (3) that, the bacterial flora of the adult stomach being different from that of the small bowel by reason of the high pH value of its contents, there are not the organisms to attack the mucosa when it has been damaged.

Conclusion

These observations suggest that the pathology of acute enteritis as it occurs in subtropical climates is more complex than that resulting from irritation by sand, dust, or coarse unsuitable food, and that the resistance of the intestinal mucosa is lowered either by chill or by the invasion of an unknown virus or group of viruses, rendering it vulnerable to the bacterial flora of that region.

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OVERDOSAGE WITH BROMIDES

A REPORT ON 59 CASES

BY

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Bromides are still very widely used, often as a placebo in patients with a psychoneurosis. It appears that the danger associated with their prolonged administration have not been sufficiently stressed, although there have been a number of articles written on the subject (Pilkington, 1941; Kitchin, 1942; Barbour *et al.*, 1936).

Bromides given in so small a dosage as 10 gr. (0.65 g.) thrice daily can sometimes produce a state of intoxication in an elderly patient within a few weeks. The amount of bromide in the blood appears to affect patients differently, probably according to their renal efficiency. In arteriosclerotic patients a blood bromide of 125 mg. per 100 ml. may result in signs of overdosage (the normal is less than 25 mg.), whereas young epileptics with a blood bromide of twice this figure have been seen apparently free from physical signs attributable to the drug. The present extensive use of bromides is hard to justify for they are poor hypnotics and not very good sedatives. Sodium amytal 1 gr. (65 mg.) three times daily in acute cases of anxiety, or phenobarbitone 1/2–1 gr. (32–65 mg.) morning and night for the less upset and for the more elderly patients are examples of much better sedatives.

The figures given in this paper were the result of the routine blood bromide estimations on 1,500 patients in a little over two years. The first 800 were continuous, and the last 700 were made on unselected cases, but owing to absence of a laboratory staff there were gaps in the continuity. Many of the figures for the bromide estimations are low, as it was often three to seven days after admission before estimation could be made, while many of the cases had previously been in the observation ward for about the same period before admission.

Incidence of Raised Blood Bromide

A blood bromide of 125 mg. per 100 ml. or over was present in 4% of admissions, and the very wide use of these drugs reflected in the 34% of admissions in which the value was over 25 mg. It is interesting that Garrard (1942) found, among 1,042 consecutive admissions to the North Carolina State Hospital, that 4% had a blood bromide of 150 mg. per 100 ml. or over, and 27.5% a figure of 50 mg., the corresponding values in this series being 2.4% and 22%. The figures in this series are also very like those of Tod (1942).

The following Table shows the numbers of patients with the various levels of blood bromides found among the 1,500 admissions:

Blood Bromide in mg./100 ml.	<25 (Normal)	25–49	50–100	125	150	175	200	225	250	275 or over
No. of cases:	994	329	118	23	12	11	5	1	2	3

It will be seen that there were 59 cases with a blood bromide of 125 mg. per 100 ml. or over—that is, they were above the minimum intoxication level—and the following results are derived from an investigation of these cases.

The Table below gives the age incidence in this series of 59 compared with the total admissions to hospital in the corresponding period:

Age:	<25	25–34	35–44	45–54	55–64	65–74	75 or over
% of cases with blood bromide of 125 mg./100 ml. or higher	7	12	20	24	20	12	1
% of total admissions to hospital in these age groups	13	17	19	16	14	11	5

The expected increase in high bromide values with age is as well shown as might be anticipated.

Physical State and Bromide Intoxication

The rash is rarely found in cases of bromide intoxication, since it is usually an early sign of intolerance. In this series a pustular rash was seen in 3 patients.

Neurological signs are often found as evidence of bromide intoxication, and 20 of the 59 patients showed some abnormalities. In 12 there were ocular signs such as sluggish, unequal, or irregular pupils, nystagmus, or ptosis; in a further 8 there was ataxia, headache, slurred speech, weakness, or retention of urine.

Anorexia is not infrequent, and a condition is sometimes seen in bromide intoxication in which there are signs suggesting a likeness both to general paralysis and to disseminated sclerosis. This is probably a reflection of a vitamin B lack, as may, for instance, be the somewhat similar alcoholic pseudo-paralysis. During their stay in hospital 4 of the patients lost more than 7 lb. (3.17 kg.) in weight, 11 gained more than 7 lb., 8 gained over 14 lb. (6.35 kg.), 1 gained 2 stones (12.7 kg.), and 2 gained more than 3 stones (19.05 kg.).

Physical illness was common among the patients with high blood bromide readings: 5 had some cardiac insufficiency, 2 chronic bronchitis, 2 a cerebral thrombosis, 2 were recovering from pneumonia, while other conditions found were pernicious anaemia, duodenal ulcer with secondary anaemia, a carcinoma of the oesophagus, and migraine. Six patients were seriously ill on admission, their blood bromides being 300, 300, 200, 150, 150, 125. The subsequent improvement of 5 suggests that, at least in part, their serious state was due to this cause. It was likely that the bromides contributed to the death of the sixth patient; this has previously been suggested in other cases (Pentreath and Dax, 1937; Kitching, 1942).

Among the 59 patients there were 7 deaths within a year of admission. Albumin was found in the urine in 8 of the 56 cases in which records of urine testing are available. No fewer than 5 of the 7 deaths occurred among these 8 cases. In 12 patients there was gross thickening of the peripheral arteries, and 10 of the 47 in whom the blood pressure was recorded had a diastolic reading of over 100 mm. Hg. The blood urea was estimated in only 13 of the cases; in 6 the reading was between 40 and 50 mg. per 100 ml., and in one it was 196 mg.; the remaining readings were under 40 mg.

In 19 of the 59 cases the blood sedimentation rate was greater than 8 and 16 mm. with a 200-mm. Westergren column. In 4 of the 19 no satisfactory explanation was discovered, but there did not appear from the present series of figures that there was any proper evidence to support a relationship between a high blood bromide and a raised sedimentation rate.

Mental State

The following Table illustrates the various psychiatric illnesses from which the patients suffered on admission:

	No. of Cases
Senile and arteriosclerotic dementia	15
Psychoneuroses	12
Depressive states	12
Schizophrenia	6
Paraphrenia	5
Mania	2
Epilepsy	2
Other conditions	5

It appears that the symptoms in 13 of the cases were largely due to the bromides. Some special form of psychiatric treatment was required by 26 of the 59 before discharge, in 17 electrical convulsion therapy was given, 4 had insulin comas, and 2 modified insulin shock therapy. Sensenbach (1944) lists confusion as the commonest symptom; it was found in 18 of his 49 cases, and 15 were in stupor. Of the present series 14 showed much confusion but only 2 were stuporous.

Treatment

When the blood bromide is 100 mg. per 100 ml. or higher the usual treatment is to give common salt by the mouth in beef-tea or with sugared cordials; in this way 2 or 3 drachms (8-12 g.) of salt can easily be given in a day. If the blood bromide is over 200 mg. it is usual to give rectal salines in addition, while intravenous salines have been used on a number of occasions. Vitamins are always added to the diet in these cases. In most instances the blood bromide becomes normal in about two to three weeks, but in 2 of these patients it changed

very little in the first month. Improvement in the mental state may lag behind the elimination of the bromides even though it is induced by their use.

Of the 59 cases with high blood bromides, 46 were discharged, 7 died, and 6 remain in hospital. The length of stay in hospital is shown in the following Table:

Time in Months:	<1	1-3	3-5	5-7	>7
Number of patients	4	18	13	4	7

In conclusion, it may be stressed that a number of the symptoms for which bromide is often prescribed may actually result from the drug itself; therefore an increase in dosage should be avoided if the condition becomes worse. It is unfortunate that the teaching in regard to the therapeutic uses of bromides, and in particular for the treatment of epilepsy, has lagged behind clinical knowledge. As bromides are easily obtained, a number of cases of self-intoxication arise; 7 of the 59 in this series occurred in this way. It is therefore important to be prepared to treat these cases as well as to guard against their causation.

Summary

Not only are bromides of less therapeutic value than their wide use would indicate, but they are dangerous drugs to use on certain patients.

Their prolonged administration, even in small doses, often produces intoxication.

Fifty-nine cases with high blood bromides have been examined.

I would like to thank Dr. W. A. Hulme, of the laboratory staff, for the estimations.

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Medical Memoranda

Laryngeal Foreign Body

The main interest in the following case is the fact that such a small child could harbour such a large foreign body in its larynx for four months and survive.

A male child aged 11 months was admitted to a medical ward of the Belfast Hospital for Sick Children on Aug. 11, 1945, with the diagnosis of laryngismus stridulus. The mother gave the history that he had been a healthy baby until 4 months before, when he had taken "cramp" and was admitted to a provincial hospital with the diagnosis of bronchopneumonia and diphtheria. He was discharged after two weeks. Three weeks later he was readmitted as a case of rickets, and remained in hospital for 10 days. Since then he had been having sun-ray treatment, but his condition had not improved.



FIG. 1.—The foreign body.

He perspired freely and coughed up mucus and there was some vomiting. He was taking feeds (Sister Laura's food) fairly well and slept well. His chest had been x-rayed in the out-patient department, and reported normal. His temperature on admission was 99.6° F. (37.55° C.). There were extreme wasting and evidence of rickets:

his weight was 11 lb. (5 kg.). Nothing definite was noted on clinical examination of chest or abdomen. The Mantoux reaction was negative.

During the next three weeks he vomited frequently and did not take feeds well. An attempt was then made to pass an oesophageal catheter, but this failed. Three days later I was asked to see him. He was extremely wasted and appeared to have some laryngeal obstruction. The same evening I performed a direct laryngoscopy without anaesthesia. On exposing the larynx a foreign body was seen to be impacted in the larynx between the true vocal cords. After some difficulty, as the only instrument available at the moment was a pair of Mackenzie's forceps, the foreign body was removed and found to be a metal rivet 1/2 in. (1.27 cm.) long, the base having a diameter of 1/2 in. (Fig. 1). There was no evidence of



FIG. 2.—Skiagram showing the foreign body impacted in the larynx.

oedema following the manipulation, and the child improved at once. He was discharged 10 days later, having gained 2 lb. (0.9 kg.).

After the child had been discharged it struck me that the skiagram of the chest would include the larynx in such a small subject. The plate was obtained, and the foreign body was plainly visible (Fig. 2). It may have been seen in the first place and thought to be something in the child's clothing.

I wish to thank Dr. Rowland Hill for permission to publish this case.

KENNEDY HUNTER, M.B., B.Ch., F.R.C.S.Ed., D.L.O.

Lingual-nerve Block for Calculi in Wharton's Duct

A patient was seen with a large calculus impacted near the orifice of Wharton's duct. The lingual nerve is the only sensory nerve of the floor of the mouth between the midline of the tongue and the alveolar margin, and it occurred to me that a block of this nerve would meet the analgesic needs for the removal of a calculus in the oral part of this duct. I blocked the nerve, and an ideal analgesia resulted. The calculus was removed without discomfort to the patient. This was in sharp contrast to my previous experiences with surface and local infiltration analgesias. The former is inadequate, and the latter requires the calculus and the anatomy. Neither is satisfactory. ordinary textbooks do not mention the use of lingual-nerve block for this commonplace minor operation, nor are my colleagues acquainted with it; therefore this short note may be of interest.

TECHNIQUE

The internal oblique line of the mandible is a sharp ridge of bone which descends from the coronoid process to bound the retromolar fossa medially; the pterygo-mandibular ligament is attached to it just behind the third molar tooth at an acute angle. This angle is the anterior wall of an areolar space between the ramus of the mandible and the superior constrictor of the pharynx. The lingual nerve descends in this space and is most superficially placed behind the lowest part of the angle. A finger in the retromolar fossa will identify the internal oblique line, and just medial to it is the pterygo-mandibular ligament. If the finger-nail is facing inwards it will guide the injecting needle to the lingual nerve. 2 ml. of 2% procaine with adrenaline will produce complete analgesia in five minutes.

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Newcastle-upon-Tyne.

J. ALAN CARR, M.B., B.S.,
Surgical Registrar.

Reviews

SOCIAL MEDICINE IN FRANCE

Les Directives de la Médecine Sociale. Médecine de Soins: Médecines Prophylaxie. By Noël Fiessinger. (Pp. 300. 230 francs.) Paris: Mass et Cie. 1945.

It is not sufficiently realized in this country how great is debt to France for her example in social legislation. pioneer work on maternity and child welfare and social insurance has usually been one step ahead of us, in conception at least if not in practice. The "Revolution of Our Times" in social matters has been progressing steadily in France since 1914, under the German occupation, and in this book, *The Code of Social Medicine*, authoritative views are expressed on some of the most important aspects of social medicine by a widely representative series of writers under the editorship of Dr. Noël Fiessinger.

Recent legislation has increased the amount and scope of social insurance, which differs chiefly from our present system in that it is a compulsory system. The State contributes correspondingly high contributions by employer and employee. Thus at present the comprehensive payment is 16% of wages, of which the employer pays 10% and the employee 6%.

In the medical service, which corresponds to our National Health Insurance scheme, the upper income limit for participation is 60,000 francs per annum. The patient and his dependants are insured. They have free choice of an approved society, although apparently some pressure is exerted by big firms for their workers to join the firms' mutual benefit societies. As regards doctors the patient is given a free choice, and he may consult any doctor at any time. He pays his fee "on the spot" on a fixed scale for the consultation or treatment, and the doctor signs his insurance card as a receipt. The patient gets the fee returned on presentation of the signed card to his society. The benefits, in addition to a general practitioner service, include provision for antenatal care, home or hospital care at time of delivery, sickness benefits, and pensions for invalidism—the last for the insured himself only. The patient has free choice of a hospital and his society pays 80% of the cost, the remainder being found by the patient.

The medical service is in process of change, and there is evolving a system of centres for general practitioner consultation with a central clinic to which cases are sent for specialist consultations. The Assistance Médicale Gratuite seems to be organized very much as in this country. The responsible department is the local authority, and patients may go to any doctor on an approved list. The local *maire* keeps a list of those entitled to free medical attention. All ex-Service men are entitled to free medical attention and have free choice of doctor. A new corps of medical inspectors of factories was formed in 1941, and is developing into a complete Industrial Medical Service whose organization might well be studied in this country before the omissions from Mr. Bevan's proposals are remedied.

The progressive "socialization" of the profession in France is well illustrated by the passing of the "conseils de l'ordre." These local bodies which governed professional conduct in all professions have had their names changed (for that would appear to be the sum of it) to "syndicats." The change might be described as from a "trade guild" to a "trade union."

We have not heard much from our French colleagues during recent stormy years, and this book is a useful reminder that we should do well to avoid complacency in our own institutions until we have more detailed knowledge of progress made in France and other countries.

PSYCHIATRY IN MODERN WARFARE

Psychiatry in Modern Warfare. By Edward A. Strecker, M.D., Litt.D., LL.D., and Kenneth E. Appel, M.D., Sc.D. (Pp. 88. 6s.) New York: The Macmillan Company.

This is a short but very interesting and important book. Two psychiatrists of great experience who have served in both world wars sum up their conclusions, first on the nature and incidence of psychiatric conditions and secondly on the difficulties and requirements of demobilization and rehabilitation. It would

appear that the lessons of World War I were not applied as they ought to have been in the United States either in selection of recruiting or in establishing sufficient personnel to deal with psychiatric casualties which have been not only actually but relatively higher in World War II. This the authors attribute to the greater terror of modern warfare and also to greater calls for adjustment to climatic and other conditions arising in tropical and arctic warfare.

In the recent war there has been more anxiety and less hysteria, and fear has been more exclusively the emotion underlying conflicts. The most striking feature has been the large incidence of psychosomatic troubles, though this may have been due to their more ready recognition, but the manifestations have been much more commonly in the digestive system than in the circulatory system, which loomed so largely among the invaliding disabilities of the first war.

In the second part the authors stress the difficulties now confronting the returned soldier and his family, his employers and his community, in the process of readjustment, which call for real understanding and patience and not sentimentality and stereotyped methods. They sound a note of warning on the very large numbers of men who have been discharged for psychiatric conditions and the inadequacy of the provisions to meet the need. No one should grudge the time spent on this little book of 88 pages; readers will be richly rewarded in interest while their ideas and social consciences will certainly be stimulated.

ATLAS OF DERMATOLOGY

An Atlas of the Commoner Skin Diseases. By Henry C. G. Semon, D.M., F.R.C.P. Third edition. (Pp. 343; with 139 plates reproduced by direct colour photography from the living subject. Photography under the direction of Arnold Moritz, M.B. 50s.) Bristol: John Wright and Sons. 1946.

This deservedly popular atlas of dermatology has now reached a third edition. Although, as the author states in the preface, no atlas can take the place of a standard textbook, and still less can it serve as a satisfactory substitute for actual clinical inspection of cases, it is extremely useful both to the student and to the teacher of dermatology. In particular the practitioner to whom the facilities of a large dermatological clinic are not readily available will find it very helpful when confronted with a puzzling manifestation of skin disease (and there are many such) and he may thereby have a much better chance of arriving at a correct diagnosis, while the specialist teacher at whose feet a class of students cluster will find his powers of exposition greatly aided by having this atlas available so that he can show them pictures to compare and to contrast with the clinical conditions actually before them.

The photography in the present volume reaches the high level which the former editions would lead us to expect, and perhaps Plate CXVIII—necrobiosis lipidica, specially mentioned by the author in his preface—is outstanding as a representation of a condition very difficult to render in a lifelike manner. But we must add that in a few instances the colour values do not seem quite correct, the reds are too purple; and why in the plate of naevus verrucosus (LXXVIII) is the hair dyed green? But anyone who has attempted colour photography will not withhold sympathy, for the difficulties in obtaining lifelike colouring are immense, and for the most part they have been successfully overcome in this atlas. We again recommend it to the profession.

HAPPINESS IN MARRIAGE

Marriage and Freedom. By Dr. Eustace Chesser. (Pp. 149. 12s. 6d.) London: Rich and Cowan Medical Publications.

The author is one of those who have studied and written about the question of sex education for children, a subject the importance of which the Government has now openly recognized. Too often, however, sex education has been confined to the physiological facts of life and has meant no more than an anatomical, physiological, and sometimes pathological disquisition on coitus. While no one can doubt that the fog of ignorance and prejudice which surrounds the subject of physical union is thoroughly bad for society and the future of the race, and that without enlightenment of young people marriage can hardly be expected to be successful, there is "more to matrimony" than mating and child-bearing. In this book, while the physical aspects still loom largely, the author has endeav-

oured to touch on the wider questions of the economic and social background. Marriage should be a companionship in every sense of the word except, according to the author, that of the trial trips called companionate marriage advocated by Judge Lindsey. The wife has a right to an equal status and freedom in every aspect. She should be enabled to get full enjoyment of the physical union, and this will depend on the patience, understanding, and skill of the husband. She should be free to enjoy the company of her own friends and free to manage her own share of the family income, and in all these respects the husband, of course, should be equally free. But, as has often been said, freedom is not licence, and can only be enjoyed with a full sense of responsibility and a measure of self-control which is, to say the least of it, difficult for most people.

What is wanted to bring about happiness in marriage is knowledge, tolerance, and clear thinking, and these are specially necessary for ministers of religion, who ought to be, but too often are not, the helpful advisers of young people about to marry. All these matters the author discusses in simple language, and his book may well serve as an introduction to that wider sex education which is so necessary for human happiness.

Notes on Books

The Mentally Ill in America, by ALBERT DEUTSCH, is published in New York (Columbia University Press) at \$4, and in London by the Oxford University Press at 26s. 6d. The author has produced a painstaking and illuminating history of psychiatry in America. Naturally it will be of greatest interest to Americans, but it will repay study in this country because of the continuous close association between the social and cultural institutions of the two nations which still pertains to-day, especially in medicine. The first chapter is devoted to the theories of demoniac possession which were held by the ancients, after which an exposé is given of the astonishing cruelties, prejudices, and superstitions which marked the treatment of the mentally afflicted in the 17th and 18th centuries. A good historical survey follows of the dawn of light due to Pinel and Tuke in Europe and Benjamin Rush in America. Real progress, however, had to await the foundation of the mental hygiene movement by Clifford Beers and the work of such men as Adolf Meyer, Healy, and many others. Meanwhile the public conscience had been roused by the accounts of the terrible conditions in the asylums given by Dorothea Lynde Dix. Chapters on the progress of American medical and social provision for mental deficits and on the relation of psychiatry to the criminal law are of great interest. Finally, the future trends of mental hygiene are outlined and Dr. Deutsch rightly points out that it is not only the individual patient who must be considered but the social milieu in which he has to live. Until mankind can construct a world in which the "four freedoms" really pertain we cannot expect much real improvement in the mental health of the community.

The librarian of the Royal Medico-Psychological Association should properly be at once an expert in diseases of the mind and a connoisseur of literature, and in *Analecta Psychiatrica* (H. K. Lewis and Co.; 16s.) Dr. J. R. WHITWELL shows how well he fits this dual role. In the first part he presents to us his collection of quotations relating to mental disorders which he has culled from the whole gamut of literature from Plato to the moderns. In the second part he gives brief notes on historical personages who were mentally afflicted in one way or another. As a bedside book for the psychiatrist this could hardly be bettered, and those who like to illuminate their own writings with "tags" from the work of their forebears will here find a rich store from which to draw.

We welcome a second edition of *Psycho-Analysis and its Derivatives*, by Dr. H. CRICHTON-MILLER (Oxford University Press; 3s. 6d.). Since the time of its first appearance knowledge of the whole subject has become much more widely diffused, and therefore popular interest may be more concerned with the chapters which criticize and compare than with the brief lucid descriptions of the teachings of Freud, Jung, and Adler which were once so valuable. Especially may we commend the attention of readers to the exposition of the work of Prinzhorn, too little known in this country, which puts the whole subject on a much wider philosophical basis and with a due sense of values. In the appendices are notes on the more recent advances, including methods of shortening treatment such as narcoanalysis and Steckel's method of "direct attack." It is pointed out that the success of convulsion therapy in certain psychoses makes it highly improbable that these conditions are wholly psychogenic. In addition there are appreciative memoirs of ten distinguished medical psychologists who have died since the publication of the first edition.

Nova et Vetera

JOSEPH-IGNACE GUILLOTIN (1738-1814)

Physician and Reformer

It is singularly unfortunate that this worthy physician is remembered for his suggestion that judicial execution should be accomplished by mechanical means, while his humanitarian writings and actions are forgotten. Even numerous biographical notices, though making clear that his name was wrongly given to the guillotine, barely mention his medical career during the revolutionary terror or his valuable reports on vaccination and other medical matters.

Guillotin was born at Saintes, was educated in a Jesuit school, joined the Order and taught for some time in the Irish Jesuits' High School in Bordeaux. He then decided to leave the Order and in 1763 began to study medicine in Paris, but took his degree in Rheims on Jan. 7, 1768. In February of the same year he obtained a scholarship and was granted a professorship in the Medical Faculty in Paris; this he held from 1778 to 1783. In 1784 the King appointed a Commission to investigate the claims of Charles Deslon (1750-86), a practitioner of mesmerism who had many supporters at Court. On this committee were Benjamin Franklin (1706-90), Antoine Laurent Lavoisier (1743-94), Sylvain Bailly (1756-93), and several other scientists. Guillotin was consulted and apparently helped to draft the report, but did not sign it. The Commission concluded that no magnetic fluid could be detected in the famous tub.

Guillotin wrote: *Pétition des citoyens domiciliés à Paris* (Paris: Clousier, 1788); in this he appealed to the King to grant representation to the Third Estate in proportion to their numbers—which was allowed. He was then elected to the National Assembly, which in October, 1789, discussed various penal reforms; Guillotin took an active part in these debates, in the course of which he pleaded that death sentences should be equalized and carried out by means of decapitation through mechanical means. It must be explained that at the time commoners sentenced to death were hanged, while noblemen had their heads cut off. On Dec. 1, 1789, carried away by his zeal for reform, Guillotin expressed himself thus: "Avec ma machine je vous fais sauter la tête en un clin d'œil et vous ne souffrez pas." This remark was received by the Assembly with loud laughter, but it can be said that mechanical means for judicial decapitation had been known and employed in England, Scotland, Germany, and Italy for centuries; so that Guillotin was not proposing a novelty. It was not until June 3, 1791, that this suggestion was considered, and in May, 1792, the advice of a surgeon, Antoine Louis (1723-92), was obtained, who designed a diagonal edge for the falling knife. Next, the estimate of a carpenter named Guedon proved far too expensive—5,660 livres; so a tender for 820 livres of a German musical instrument maker, Tobias Schmidt, was accepted. Schmidt was a friend of the executioner Henri Sanson fils (1767-1840), both being violinists.

The contrivance, when first constructed, was called *la Louison* or *la Louissette*, and was tested on sheep and five dead bodies. On April 25, 1792, it beheaded a highway robber, Nicolas eques Pelletier; then on Aug. 21, 1792, the first political victim was executed, Louis David Collinot d'Augremont. The guillotine functioned daily in Paris from April, 1793, to 10 Thermidor II and year=July 28, 1794; during this time 2,625 persons were beheaded. History books mention far larger numbers, but the total would include provincial towns, where revolutionary tribunals also sentenced political suspects to death. The name "guillotine" soon became popular as the outcome of a song in the royalist journal *Les Actes des Apôtres* No. 10—though Dr. Guillotin was far from being flattered by the attribution.

In the National Assembly, Guillotin sat on a Comité de Salubrité, the secretary of which was Jean Gabriel Gallot (1743-94); here Guillotin was steadfast in his support of sound medicine and sensible hygiene; he adopted many of the proposals made by Félix Vicq d'Azyr (1748-94) and suggested that all matters pertaining to the prevention of disease in man and animals should be controlled by a Conseil de Santé; that examinations in four principal medical schools should be in

French; that surgeons should complete their studies in a medical faculty and the diploma should entitle them to practice medicine and surgery everywhere in France; that children should receive physical training. *Projet de décret sur l'enseignement et exercice de l'art guérir, etc.* (Paris: Imp. Nat. 1791).

In August, 1792, the Legislative Assembly abolished "privileged associations"; these included academies, universities, faculties, and learned societies, since republican zeal decided that medicine was an aristocratic profession, that physicians were charlatans, and that the Revolution provided the true path to liberty, equality, and fraternity. It must be admitted that these destructive decisions received the support of men with a medical education, like Marc Antoine Baudet, François Bousquet, Dr. Choffinal, Jean Baptiste Bô (1753-1811), a Ferdinand and Pierre Guillemardet (1765-1809). The physician Re Georges Gastellier (1741-1821), who tried to protest, would have gone to the scaffold had he not been saved by the timely death of Robespierre on July 28, 1794. These revolutionary decrees were not popular and the people soon asked for hospital treatment; and from the end of 1793 onwards eminent medical men like Jacques René Tenon (1724-1816), undertook to reorganize the hospital system after its chaotic disarrangement by the Legislative Assembly. In December, 1793, Antoine François Fourcroy (1755-1809) succeeded in reopening the medical schools of Paris, Montpellier, and Strasbourg. In October, 1794, Guillotin was arrested while attending the poor in the Paris market district, accused of having refused to reveal the whereabouts of émigrés. It is not astonishing that he was suspected because he continued powdering his hair and wearing breeches or *culottes* during the Terror; he was, however, soon released.

Guillotin did not publish any scientific writings, but prepared several reports in which he advocated the adoption of Jenner's vaccination in France. The famous *Inquiry into the Causes and Effects of the variolae vaccinae, etc.*, appeared in June, 1794, and soon after Pinel attempted to vaccinate with lymph brought over by Colladon—these attempts were so clumsily performed that no result was obtained. Then the Duke of La Rochefoucauld-Liancourt, with the support of Guillotin, proposed the formation of a society for the study of vaccination, and Louis Husson offered to perform vaccination gratis. Hallé reported favourably on vaccination on March 14, 1803.

In 1804 Guillotin was one of the founders of the reconstituted Académie de Médecine, becoming its president in 1807. This body was not the direct forerunner of the present-day French Academy of Medicine. It can be mentioned that a prolonged discussion took place whether beheading by a falling knife was painless, in which Thomas Sömmerring (1755-1830), Melchior Adam Weicart (1742-1803), and others took part. Jean Baptiste Sue (1760-1830) wrote: *Opinion sur le supplice de la guillotine et sur la douleur qui survit à la décollation* (Paris, 1796), asserting that the method was painful. This was denied by Jean Baptiste Leveillé (1769-1829), Georges Cabanis (1757-1808), and others, who examined severed heads as they fell into the basket.

Guillotin developed an anthrax pustule on his left shoulder of which he died on March 26, 1814. During the troublous times through which he lived it was no mean achievement to preserve an even temper and equable mind, to attempt to promote reform and introduce improvements by peaceful means, and to practise medicine according to sound principles. All this was accomplished by Joseph-Ignace Guillotin, and those who appreciate his merits will recognize in him a worthy son of Hippocrates.

H. P. B.

It is estimated that, as every twenty-fifth Swedish man or woman, or more than 250,000 individuals, suffer from rheumatic diseases, they cost the country annually well over 150 million kronor (£8,800,000) and the loss of 20 million working days. With the aim of intensifying the fight against this group of diseases a National Anti-Rheumatism Union was recently instituted, backed by a large number of big Swedish organizations, such as the Swedish Co-operative Wholesale Society, the Federation of Swedish Trade Unions, the Employers' Association, the Swedish Agricultural Federation, etc. The organization will carry on an "information campaign" for making the people more generally aware of the nature and serious consequences of rheumatism, collect funds for supporting medical research, etc. It is the intention to work largely along the same lines as a similar Danish organization, which at present comprises 125,000 members.

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BERYLLIUM POISONING

beryllium was discovered in 1797, but in recent years it is become increasingly important because of the properties of its alloys. Beryllium copper resists corrosion,

non-rusting, non-sparking, and non-magnetic, and has good electrical conductivity, high strength, and astonishing fatigue-resisting powers. It is used in precision instruments, altimeters, aeroplane pipe-lines, carburettors, telephone switchboards, and in aircraft production. Beryllium metal also has such remarkably valuable properties that it will doubtless receive much commercial attention. The principal ore of beryllium is beryl, and from this the beryllium oxide is extracted by processing at high temperatures with concentrated acids and fusion methods which result in the production of fume and dust. Weber and Engelhardt¹ first showed that these dusts produced lung damage in guinea-pigs, while Fabroni² coined the term "berylliosis" for this pathological condition. Fairhall and his colleagues³ in 1943, however, reported a full investigation of the toxicity of beryllium compounds in animals. They succeeded in producing experimentally both pneumonitis and dermatitis with beryllium fluoride and oxyfluoride, and certain hydrolysed beryllium salts such as the chloride and sulphate.

The earliest reports of poisoning in industrial workers come from Russia, Gelman⁴ describing a condition in which shivering and fever, similar to metal-fume fever, were followed in two days by extensive bronchio-alveolitis. This lung condition he attributed to the action of fluorine which was separated from beryllium oxyfluoride in the bronchioles and alveoli. In 1940 further observations appeared in a report on 46 cases of poisoning by Berkovits and Israel.⁵ Inhalation of beryllium fluoride was followed by fever, which subsided in a few days but was succeeded in a similar period by a second phase characterized by cough, scanty sputum, dyspnoea, temperature of 102–103° F. (38.9–39.4° C.), and cyanosis of the face and extremities. Rales were heard in the lungs, particularly at the bases. The blood showed a fall of haemoglobin and leucocytes, lymphopenia, and a raised sedimentation rate, while x-ray examination revealed many small ill-defined discrete opacities, especially in the middle and lower areas. The patient usually recovered completely in 10 days to 2 months. The beryllium fluoride affected mainly the smaller bronchi which have no cartilage in their walls. These showed desquamation; their walls became infiltrated with leucocytes, and later they became blocked with inflammatory exudate, leading to minute atelectases with compen-

satory emphysema. Berkovits and Israel consider that, though resolution of the acute stage is usually complete, it may be followed by fibrosis.

Full reports of this form of poisoning are now appearing in the United States. Van Ordstrand, Hughes, and Carmody⁶ gave an account of three cases of chemical pneumonia among workers extracting beryllium oxide; and Kress and Crispell⁷ reported 4 cases of the condition in men working with fluorescent powders containing beryllium. Van Ordstrand, Hughes, DeNardi, and Carmody⁸ have now described 170 cases of poisoning which have occurred among workers in three plants during the past four years. The manifestations were dermatitis, chronic skin ulcer, and inflammatory changes in the respiratory tract, producing in extreme cases diffuse pneumonitis. The incidence and severity of the changes were proportional to the degree of exposure and were caused by the chemical irritation of dusts and fume. Acid radical salts were more toxic than other compounds, but severe damage was caused by beryllium compounds other than the acid radical salts. Contact dermatitis and skin ulcer occurred in 42 patients in contact with beryllium sulphate, fluoride, or oxyfluoride. The eruption was oedematous and papulovesicular and appeared on the exposed portions of the body, itching being intense. Inadequate cleanliness, excessive perspiration, and failure to use protective devices were contributing causes, while after exposure was terminated the condition subsided. Calamine lotion and phenol, wet packs of 10% Burrow's solution, and boric acid ointment with phenol were the more effective local treatments. The chronic skin ulcers resulted from a crystal of beryllium deposited within the skin layers. Treatment was by early incision of the papule before necrosis and curettage of the fibrous base, when healing was complete in 8 to 10 days. Conjunctivitis occurred as a "splash burn" or in association with contact dermatitis of the face. Local treatment included the use of boric acid solution with mild zinc and adrenaline.

Ninety patients were seen with infection of the upper or lower respiratory tract. Soreness of nose and throat and epistaxis were the symptoms of upper respiratory infection, and most cases cleared in three to six weeks. Lower respiratory tract infections were characterized by non-productive cough, but with occasional blood-streaked mucoid sputum and dyspnoea. Rales were characteristically present in the early phase of inspiration, fine at first but becoming coarse later. Vital capacity was reduced by as much as 30%; there was low-grade fever. If the patient was removed from contact no case of pneumonitis developed after three weeks from the onset of the bronchitis. The condition can be prevented if the workers use a face mask to stop dust entering the respiratory tract. Chemical pneumonitis developed in 38 workers, five of whom died. Symptoms were cough with occasional blood-streaked sputum, substernal burning pain, shortness of breath, cyanosis, abnormal taste, anorexia with some weight loss, and increasing fatigue. The onset was insidious, and signs were conspicuously absent. The vital capacity was reduced as low as 2,000 c.cm., but the sedimentation rate was normal.

¹ *Zbl. Gewerbelyg. Unfall.*, 1933, 10, 41.

² *Med. del Lavoro*, 1935, 28, 297.

³ *National Institute of Health Bull.*, No. 181, Washington, D.C., 1943.

⁴ *J. Industr. Hyg.*, 1936, 18, 371; *Occupation and Health*, Geneva, Suppl., 1938.

⁵ *Klin. Med.*, 1940, 18, 117.

⁶ *Cleveland Clin. Quart.*, 1943, 10, 10.

⁷ *Guthrie Clin. Bull.*, 1944, 13, 91, quoted by van Ordstrand.

⁸ *J. Amer. med. Ass.*, 1945, 129, 1054.

Bronchoscopy showed a hyperaemic mucosa with some oedema. X-ray examination showed diffuse haziness of both lungs, followed by development of soft irregular areas of infiltration with prominence of pure bronchial markings, and then by absorption of the soft infiltration and the appearance of discrete large or small conglomerate nodules scattered throughout both lung fields, and finally by the clearing of the lung fields after one to four months. Necropsies showed an atypical pneumonitis; striking features in sections of lung tissue were large numbers of plasma cells, relative absence of polymorphonuclear infiltration, diffuse pulmonary oedema, and haemorrhagic extravasation; fibroblasts with evidence of organization were present. Beryllium present in the lung varied between 6.20 and 1.89 mg. per 10 g. of dry tissue.

MAN'S FRONTAL LOBES

From observations of the effects of operative removal there has been much difference of opinion on the apparent functions of the frontal lobes. Brickner,¹ in his synthesis of findings in a case in which both frontal lobes were excised in a case of tumour, concluded that the removal had caused a single basal intellectual defect, which he considered to be a loss of the power to synthesize minor thought processes into more complex structures. Goldstein and Katz² interpreted as a loss of "abstract behaviour" the results they obtained in a group of patients. Freeman and Watts,³ from observing the effect of bilateral frontal leucotomies, considered that the frontal lobes were concerned with foresight, particularly in respect to personal acts and "the relation of the self to the self." Hebb, in a useful critical review,⁴ says that, although these three general conceptions of the function of the frontal lobes differ so much, they have this in common—that they attempt to explain at once too much and too little. He points out that the theories expounded by these authors are broad and somewhat ill-defined, and that because of this it has perhaps been a little too simple to make all the observed phenomena fit into the structure of each. He is opposed to the acceptance of each of these theories, because of evidence which he has produced with Penfield⁵ from the detailed and careful observation of one case of bilateral frontal lobe amputation. In that there was little likelihood of any structural abnormality in the brain beyond the limits of the extirpation, he considers that this case differs fundamentally from those studied by other workers. The frontal lobes had been amputated because of gross antisocial behaviour associated with epileptic attacks. The abnormal behaviour had followed severe head injury, with damage to both frontal lobes and subsequent scar formation. According to Hebb there was a return to normal behaviour after complete recovery from the operation. In fact the man was able to enlist, and he was fit enough to be posted over-seas: his service was interrupted by an epileptic attack. In spite of very elaborate psychiatric observation and psychometric testing Hebb and

Penfield could find no intellectual defect as a result of almost total loss of both frontal lobes.

Hebb therefore tried to find out why his observations differed so widely from those of other workers. In analysing the differences between his case and others he considered certain general principles. To assess the effect of cortical extirpation one must be able to say how much has been removed and to be sure that no other than the operative lesion need be taken into account. Hebb points out that the neat diagrams which purport to show the path of surgical excision may be misleading. An operation is one thing; a diagram is another. No animal experiment would be complete without full anatomical data, but this can rarely be obtained in human cases. In the absence of exact knowledge of the amount and state of what is excised and what is left behind most careful alternative observations must be made: the limitations of such study must be kept in mind. Hebb says: "The moral is not to abstain from studying clinical material until the perfect case is found but to regard fallible data as fallible, to make every effort to get as good cases as possible, and to put more weight on the cases in which anatomic data are most complete and trustworthy." He also says that a negative conclusion—that a function is not dependent on a certain part of cortex—can be arrived at more accurately than a positive conclusion: it is easier to determine that an area has been removed without producing particular symptoms than that those symptoms follow destruction of one part of the cortex only. He takes the view, with which many must agree, that an adequately studied case with absence of sequelae may yield more information than another in which sequelae of uncertain cause are found. This view is important when we consider the limits of the pathological tissue in relation to the material removed, for, histologically, cerebral lesions are often found to extend much more widely than was expected, and it is also well recognized that the effects of circumscribed lesions on the function of healthy tissue may extend beyond their boundaries. Furthermore a small region of partial damage may produce more severe symptoms than a larger area of complete destruction. The electro-encephalogram shows that abnormal cerebral tissue may interfere with the function of areas of normal cerebral tissue. Hebb therefore considers that the functions of the frontal lobes can be satisfactorily investigated in cases of brain injury operated on or in cases in which cerebral tumours have been excised. And, again, as surgical intervention may cause complications in the neighbourhood of the section, that case in which the fewest symptoms follow operation is likely to be the one which gives the truest picture of the effect of the removal alone. Hebb goes on to discuss the problems raised by taking as control material persons believed to be normal. He points out that not only is it very difficult to obtain an identical group of normal control subjects in age and social and intellectual status, it is also difficult to devise an adequately comprehensive method of testing the group when it has been selected. In his view all the control material used in the past is open to criticism on these grounds.

From analysis of all the recorded cases of unilateral or bilateral amputation of the frontal lobes, Hebb agrees

¹ *The Intellectual Function of the Frontal Lobes*, New York, Macmillan, 1936.

² *Arch. Neurol. Psychiat.*, Chicago, 1937, 33, 473.

³ *Psychosurgery*, Springfield, C. C. Thomas, 1942.

⁴ *Arch. Neurol. Psychiat.*, Chicago, 1945, 54, 10.

⁵ *Ibid.*, 1940, 44, 421.

Jefferson⁶ and Lidz⁷ that there is no evidence that unilateral bectomy causes a change in behaviour. He applies this observation to the cases with bilateral amputation, backed up by the evidence provided by his own case, in which a change of abnormal behaviour could be found after lateral frontal lobe amputation.

Hebb, of course, is not so naïve as to deny function to the frontal lobes, which have their greatest development in man. All he does is to affirm that "no one has proved at any single form of normal behaviour is dependent on any part of the brain, or that a clean surgical removal of both frontal lobes has any effect on behaviour." What he has done by careful analysis of the facts at his disposal is to reach a negative conclusion. He has cleared the air for other workers. But it cannot be assumed that the frontal lobes have no effect on behaviour. Although a man seems to manage quite well in his day-to-day life without his frontal lobes, it may well be that more complex thought and behaviour, such as remote planning and initiative, capacity for adjustment or for creative work, have been seriously impaired.

ANTERIOR POLIOMYELITIS

Few infections cause as much public concern as anterior poliomyelitis. A small number of cases in a district, as, for example, in the Barnet area in the past weeks, soon give rise to parental anxiety. But, difficult as may be the problem for the general practitioner, an outbreak in a residential school constitutes an epidemiological—and a psychological—problem of the highest importance for the school doctor. A memorandum by the Medical Officers of Schools Association⁸ is therefore timely. A number of medical men with special knowledge of the subject were invited to consider the action which should be taken at a residential school on the occurrence of the disease, and their report contains valuable guidance for all who may have to face such a problem.

The memorandum opens with a short note to headmasters. It is emphasized that even in an epidemic the likelihood of a particular child's being attacked is small. One of the still imperfectly explained vagaries of this infection is that overt cases of paralytic disease are the exception. Usually 80% or 90% of those exposed show no apparent upset. Of cases reported by Illingworth,⁹ for example, about two-thirds of those attacked by the virus suffered from a mild abortive illness only, with no sequelae. The diagnosis of the single case, therefore, is not necessarily a cause for acute concern, since case-to-case infection will not as a rule be common. The committee has felt disinclined to be dogmatic on the question of school closure when only one case has appeared; at this stage insistence on a rigid code of hygiene, especially in regard to food-handling, together with the imposition of a strict quarantine for three weeks, may be all that is necessary. The parents of contacts must, of course, be informed. No objection should be offered if a parent seeks to remove his child, but steps must be taken to ensure that the child is properly quarantined at home for three weeks, out of contact with young children and adolescents. Further cases alter the picture so far as parental anxiety is concerned, and the committee advise that on this account

alone "the wisest course may then be to disperse the school for at least three weeks." The cases will have been notified to the local medical officer of health, who may supply information regarding others in the district. Close liaison with the public health department is always wise in these circumstances, and consultation between the headmaster, the school doctor, and the M.O.H. is advisable. The second part of the report contains a suggested basis for a letter from the headmaster to parents. This puts the position clearly. As has been said, no obstacle should ever be placed in the way of a parent who desires to remove his child. At the same time the parent must be warned of his responsibility to the community. The local health department of the district to which the boy is removed should be notified of the circumstances.

The Medical Officers of Schools Association has also taken this opportunity to revise that part of its "Code of Rules for the Prevention of Communicable Diseases in Schools" which deals with poliomyelitis. The importance of the gastro-intestinal as well as of the respiratory tract, both as a source of infection and in transmission, is properly stressed. It is not much of an exaggeration to say that the modern conception of the disease would place it in the same group as typhoid fever in so far as methods of control are concerned, and would emphasize the importance of food, fingers, flies, and faeces. It is perhaps still too early to assess the importance of vectors in the spread of the disease. The detection of poliomyelitis virus in faeces was reported in 1941 by Paul and his co-workers¹⁰. More recently, Ward, Melnick, and Horstmann¹¹ have supplied evidence that flies thus infected may be a link in the chain of infection. Since D.D.T. has apparently proved effective in the control of such conditions as sandfly fever, its intensive use in the face of an outbreak of poliomyelitis might seem worthy of trial.

"BENADRYL"

A substance which has anti-histamine properties is likely to have an extensive use in therapeutics, for the liberation of histamine in the tissues is believed to be an important factor in many allergic and anaphylactic phenomena. Such a substance¹² has recently been synthesized and studied, and under the trade name of "Benadryl" is now available in this country. This organic compound (B-dimethyl-aminoethyl benzhydryl ether hydrochloride) is a stable white powder, soluble in water and alcohol. It is active when taken by mouth, but may also be given intravenously to the human subject.

In experimental work on guinea-pigs it reduced the mortality from histamine shock from 100% to zero. Its clinical applications in allergic disorders have been studied by a number of workers at the Mayo Clinic.¹³ Though mild side-effects occur, it was found that there is a good margin of safety between the therapeutic dose and that required to produce toxic symptoms. When histamine is slowly injected intravenously a general cutaneous flush and nasal congestion normally result. Both these could be promptly controlled by the intravenous injection of benadryl. Usually, however, it has been taken by mouth, and in doses of 50 to 100 mg., two to five times a day, it was tried in a series of 15 cases of acute urticaria. It brought prompt relief to 9 and improvement to a further 5, with a decrease in pruritus in half to one hour and, in the successful cases, disappearance of the lesions in two to six hours. In another series of 35 cases of chronic urticaria and angio-

⁶ *British Medical Journal*, 1937, 2, 199.

⁷ *J. Neurol. Psychiat.*, 1939, 2, 211.

⁸ Duplicated memorandum recently issued by the Medical Officers of Schools Association.

⁹ *J. R.A.M.C.*, 1945, 84, 210.

¹⁰ *Science*, 1941, 84, 395.

¹¹ *Ibid.*, 1945, 101, 491.

¹² *J. Pharmacol.*, 1945, 83, 120.

¹³ *Proc. Mayo Clin.*, 1945, 20, 417.

neurotic oedema, of duration varying from four months to thirty years, the lesions disappeared in 25, and there was improvement in a further 7 cases. Good results have also been noted in hay fever. At least 75% improvement was obtained in 19 out of 22 cases, and the relief in cases of vasomotor rhinitis was striking. Less satisfactory results are reported in bronchial asthma, though on theoretical grounds this condition would seem well suited to the use of the drug. Two-thirds of such patients have failed to benefit from adequate dosage of the drug. However, more careful selection of truly allergic cases may lead to a higher proportion of successes in this group. In certain types of headache, particularly those made worse by histamine, good results were obtained, but other types of headache responded less well.

One interesting use of benadryl was in a 3-year-old child with nephrosis who had had an urticarial reaction after every plasma infusion. When benadryl was administered both before and after a transfusion little reaction occurred. Another child developed a severe urticaria after the injection of tetanus and gas-gangrene antitoxin. This was promptly relieved by 30 mg. of benadryl orally. The side-effects which accompany its administration are usually mild, and in a series of 100 cases were never severe enough to call for discontinuance of the drug. Sleepiness was noted in 60% of cases; dizziness, dry mouth, and a feeling of nervousness each affected about 15%.

PROTECTION OF SCIENCE AND LEARNING

Thirteen years ago, at the beginning of the new era of persecution, some British scholars thought of establishing a society to alleviate suffering already foreshadowed. We do not know who was the actual pioneer, but certainly Sir William Beveridge, Prof. Charles Singer, and Prof. Major Greenwood were early in the field. In a very short time, under the title of Academic Assistance Council, a body was formed which included the most illustrious names in British science and learning; it was generously supported not only by a wealthy men and organizations but by hundreds of individuals who could ill afford a new subscription. Later, the society was renamed Society for the Protection of Science and Learning; at the outbreak of war appeals for funds and the publication of an annual report ceased. Now the society has issued an account of its work during the war.¹ In one sense this is a cheering document, for it not only records the saving of the lives and minds of several hundred gifted human beings, but shows what service they have since done for mankind in general and our cause. As was to be expected, medicine and its ancillary sciences contribute a large proportion of those the society has helped; of the 601 scholars registered with it more than one-sixth have aided this country in the medical services of the fighting Forces, in medical research, medical teaching, and clinical practice. Those who have worked for the S.P.S.L.—some of the busiest men and women in England have worked hard for it, and the devotion of the small permanent staff has been beyond praise—and those who have been generous in supporting it will read this document with comfort. Old-fashioned readers may remember "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." It is easy to be eloquent on the brotherhood of science and learning, better and much more difficult to help even a few of our brethren. Sorrowful people, strangers in a strange land in time of war, are not always easy to help;

that fact, painfully familiar to those who have done the society's work, leads to the less cheerful side of the report.

Every reader of newspapers knows that progress in the reconstruction of Europe is slow; it is vain to expect the restoration of those scholars and scientists who wish to return to what were their homes can be rapid; it is certain that some may not wish to return at all. It would not be possible to wind up the society quickly without making another small contribution to human suffering. Inevitably the society's present rate of expenditure exceeds its income, and these are not times when a public appeal for funds would be reasonable. Still it has generous helpers, who will continue to help after the propagandist appeal made by any organization which is certainly anti-Nazi has lost its impetus, and after an official need to secure good brains for war work has been sated. Perhaps there may even be recruits to the ranks of subscribers. The society will continue to help the men of science and humanists driven into exile by "ideologues" now dead. If funds permit it may be able to help others whose fate is, or will be, to bear the wrath of "ideologues" still living in Europe at present.

"Chaos umpire sits,
And by decision more imbroils the fray
By which he reigns; next him, high arbiter,
Chance governs all."

AUTONOMIC RESPONSES AFTER FRONTAL LEUCOTOMY

It is now fairly well established that the effects of section of the white matter in the anterior part of the frontal lobes can be of therapeutic value in some cases. Most of the patients who have benefited have suffered from chronic and severe disorders of the schizophrenic, depressive, and obsessional types. Success, however, can never be predicted with certainty. The prime reason for this is that the operation is a blind one, and the surgeon is never entirely sure which tracts have been destroyed. Our knowledge of the functions of the frontal lobes is too limited for an answer to be obtained subsequently, unless the patient comes to necropsy. Clinically, the beneficial results of the operation are seen in a lesser preoccupation with painful thoughts, delusions, or compulsions, and a placidity which has on occasion been compared to that of a vegetable. It was to be expected that this placidity would have an autonomic aspect, and support for this notion has been provided by some interesting experiments of Reitman.¹

All Reitman's subjects were schizophrenic females of the excited catatonic type, and consisted of fifteen leucotomized and ten control patients. A further three patients were tested both before and after leucotomy. Doses of prostigmine, eserine, ephedrine, and amphetamine were given of a strength to produce brisk physiological reactions in the control subjects; but their effects were found to be a rule perceptibly attenuated in the leucotomized patients. In the patients tested both before and after operation the reduction in autonomic lability was not seen until the fourth week but was fully established by the sixth. The degree of mental improvement was not associated in an absolute manner with the amount of autonomic change. These results provide obvious pointers towards further experiments along biochemical and physiological lines. But our best hopes of advance depend on the development of a satisfactory open operation to replace the present blind surgical procedure.

¹ Fifth Report (obtainable from Secretary S.P.S.L., c/o Westminster College, Cambridge).

CHEMOTHERAPY OF TUBERCULOSIS

The Harben Lectures for the year 1946 were delivered in London at the Royal Institute of Public Health and Hygiene by Dr. WILLIAM H. FELDMAN of the Mayo Foundation, University of Minnesota, U.S.A., on July 15, 16, and 17. His subject was the chemotherapy of tuberculosis, including the use of streptomycin.

Basic Considerations

Dr. Feldman began his first lecture by saying that though notable advances had been made during the past two decades in the surgical treatment and sanatorium care of the tuberculous patient, something more was desperately needed. The discovery of the high effectiveness of "sulpha" drugs in certain acute infectious diseases, such as pneumonia, and the amazing therapeutic value of penicillin, made it logical to assume that an agent effective in the treatment of tuberculosis would eventually be found. The problem was to discover a suitable substance which, while effective against the tubercle bacillus, did not have serious or irreversible poisonous effects on the patient. The possible action of a drug against the bacillus might be determined in test tubes, or by experiments on animals whereby its actual effect in an experimental tuberculous infection might be observed. Wherever possible the latter approach to this very complex problem was preferred. As a result of many experiments in recent years fairly satisfactory methods of tackling the problem had been evolved. The great obstacle, however, that still remained in the testing of new drugs was the relatively large amount of a drug necessary for an animal test, and in comparison with other and more acute diseases the long time taken to obtain definite results. After Ehrlich's epochal discovery of the value of salvarsan in the treatment of syphilis chemotherapy was hailed as the great hope in treating all infectious diseases. These hopes failed to be realized in the field of tuberculosis and in other infectious diseases. It was only after the discovery of the first "sulpha" drug in 1935, and the extremely significant observations of Fleming, Chain, and Flörey concerning penicillin, that hope was revived that a specific drug against the tubercle bacillus might be found.

The problem of chemotherapy in tuberculosis was best approached by group research. The talents of many specialists should be integrated so as to obtain the maximum co-operative results of the biochemist, the pharmacologist, the bacteriologist, the bio-physicist, the experimental pathologist, and the clinician. The efforts of all those were needed for the development of a successful form of drug treatment in tuberculosis. This exceedingly important field of investigation should have adequate support from public funds.

Evaluation of the Efficacy of Chemicals

Dr. Feldman's second lecture was concerned with an evaluation of the efficacy of sulphonamides, sulphones, and certain other chemicals in tuberculosis. The development of the modern experimental approach to this question originated from the observation that the sulpha drugs were highly potent in certain acute infectious diseases. Sulphanilamide was shown to have a limited but definitely deterrent effect on tuberculosis in guinea-pigs; but, unfortunately, none of the compounds of this character proved of any value in human tuberculosis. Another closely related group of compounds—the sulphones—proved highly potent in treating experimental tuberculosis in animals. This was of much significance because it demonstrated for the first time that the disease caused by the tubercle bacillus would respond favourably to drug treatment. Unfortunately, when the sulphone drugs were used for human tuberculosis they could not be given with safety in large enough doses to attain a similar dramatic effect. The development of safe compounds of this type, used rather extensively in the experimental form of the disease, had provided much important basic information which justified the belief that eventually a highly efficacious and non-poisonous drug of definite value in treating human tuberculosis would be found. The number of compounds yet untried or possible to be made was limitless.

The difficulties of the problem confronting the chemist or the experimentalist entering this field of research were many and formidable, but not necessarily insurmountable. If the skill, the experience, and the information acquired by chemists

during the exigencies of war were directed with like intensity to the discovery of chemical weapons against tuberculosis, it seemed highly probable that several safe and efficacious drugs would eventually be found.

Streptomycin for Tuberculosis

In his third lecture Dr. Feldman discussed the effect upon tuberculosis of antagonistic substances of microbial origin, with particular reference to streptomycin. An example of an antibiotic substance was penicillin, which had revolutionized the treatment of many infectious diseases; but penicillin was ineffective against the tubercle bacillus. The search for an agent derived from other microbes began nearly half a century ago and many agents of this kind had been investigated. While most of the studies had been conducted in test tubes, a few of the substances extracted were tried on human beings afflicted with tuberculosis. Until recently, however, when Dr. Waksman of New Brunswick discovered streptomycin, no substance had been discovered which was highly potent against the experimental form of tuberculosis and could also be used safely in man.

In the experimental animal streptomycin had so far proved to be the most efficacious drug for suppressing the infection caused by the tubercle bacillus. Tuberculosis in man and tuberculosis in animals had distinctly different characteristics. The disease in animals was relatively simple in character and fairly predictable in its course; in the human being the disease was far more complex, and one must therefore be very cautious in assuming that a drug effective in the experimental animal would act to a similar degree in man. A limited number of human cases of tuberculosis had been treated with streptomycin, and while in no instance had the results been spectacular they were for the most part highly encouraging. It was of great importance, however, to emphasize that the tuberculous patient must not refuse or delay conventional forms of treatment in favour of some inadequately tried drug that had shown promise in preliminary trials. While the experimental results with streptomycin up to now were suggestive of the future possibilities of this new drug the facts available did not warrant the conclusion that an ideal drug for treating clinical tuberculosis had been found.

Streptomycin was difficult to prepare and the available supply exceedingly small. It would probably be many months before there were amounts sufficient for extensive clinical investigation. This drug, however, had many virtues over previously tried substances in the treatment of tuberculosis, and it was a reasonable expectation that it would eventually find a useful place in medicine. Of much importance was the fact that the tubercle bacillus, like the germs of pneumonia, was definitely vulnerable to the suppressive action of specific drugs. This observation gave considerable impetus for investigators all over the world to search for other and more effective substances, either derived synthetically from chemicals or obtained from microbes in a manner similar to that which produced penicillin and streptomycin.

BEIT MEMORIAL FELLOWSHIPS

The following elections have been made:

Fourth-year Fellowships.—G. J. Popjak, M.D.: to study the behaviour of plasma lipids under different experimental conditions and the problem of foetal fat metabolism; at the Department of Pathology, St. Thomas's Hospital, London. Ethel G. Teece, Ph.D.: to study the chemistry of bacterial polysaccharides and nucleoproteins, with special reference to the Gram complex and to the factors responsible for cell division; at the Department of Chemistry, University of Birmingham.

Junior Fellowships.—S. E. Dicker, M.D., Ph.D.: to study the extrarenal water metabolism and renal function in rats; at the Department of Pharmacology, University of Bristol. P. M. Tow, M.B., B.S.: to study prefrontal leucotomy and the function of the frontal area; at Research Department, Runwell Hospital for Nervous and Mental Diseases.

Major-Gen. Walker, Deputy Director, Medical Services, Scottish Command, recently unveiled in Newbattle Parish Church a stained glass window in honour of the Royal Army Medical Corps, who regularly worshipped there when Newbattle Abbey was their headquarters. The window was designed by Mr. William Wilson, A.R.S.A.

Reports of Societies

POST-WAR CONFERENCE ON NUTRITION

A conference arranged by the Nutrition Society, under the auspices of the British Council, was held at the London School of Hygiene and Tropical Medicine on July 5, 6, and 8. The object was to enable research workers in ex-occupied territories to re-establish contact with their colleagues in this country. British nutritionists were thus given the opportunity to learn about dietary conditions and investigations carried out during the war period on the Continent, while the Continental workers were told about the progress of research in Britain and America.

Sir JOSEPH BARCROFT took the chair at the introductory session, when Prof. J. R. MARRACK gave a comprehensive account of wartime research on human nutrition in this country, while Dr. D. P. CUTHBERTSON dealt similarly with animal nutrition. Sir EDWARD MELLANBY spoke on the activities of the Medical Research Council; Prof. R. A. PETERS described the activities of the Accessory Food Factors Committee, Sir JACK DRUMMOND those of the Ministry of Food, and Dr. H. E. MAGEE those of the Ministry of Health.

The Scandinavian Zone

Dr. HAMMOND presided at the first open session, and Prof. FRIDERICIA, of Denmark, was the first speaker. He explained that his country normally imported calories in the form of cereals, and exported animal protein and fats in the form of bacon and dairy products. During the war less butter and sugar had been consumed, but there had been no serious privation. The usual form of bread had always been 100% rye, so that arguments about increasing the extraction rate had not arisen. The daily ration of bread for ordinary persons was 250 g., and about 70 g. of wheat flour of 80% extraction was also consumed. Among other scientific investigations in Denmark Prof. Fridericia mentioned those on the anti-haemorrhagic vitamin K, which gained a Nobel prize for Prof. Henrik Dam. On the whole the Germans did not interfere much with research.

Dr. J. K. TIKKA said that in Finland nutritional conditions remained fairly good until 1941, when scarcity of labour, infertility of the soil, and loss of territory began to take effect. Even under these handicaps country dwellers continued to get what food they wanted from the farmers through the black market. Many industrial workers and intellectuals living in towns with large families, however, had to subsist mainly on bread and potatoes with only minute amounts of milk, meat, and dairy products. In adults losses of 10% body weight were common, while in children the incidence of rickets increased.

I. O. GALTUNG HANSEN told how the food situation in Norway deteriorated until in 1940 coffee, tea, eggs, and fruit had practically disappeared. Shortage of meat was met by increasing the daily consumption of fish from 100 g. to 300 g. per person. Adults lost weight, and in some cases developed oedema. Almost everyone felt cold, tired, and weak. Hunger persisted even after meals, and nycturia was often an additional trial. The children suffered little until 1943, but then became paler, thinner, and less muscular. In the general population the incidence of infectious diseases increased six times, and notifications of tuberculosis went up by 34%.

Prof. E. L. ABRAMSON reported the results of a dietary survey of 500 Swedish families. Although during the war the consumption of meat fell to 75% of the previous level, there was little evidence of malnutrition and the death rate in 1942 was at its lowest level. To avoid the risk of vitamin A deficiency carotene was extracted from carrots and incorporated in the margarine supply.

Poland, Batavia, America

Dr. A. SZCZYGIEL, of Poland, started the second open session, at which Dr. D. P. CUTHBERTSON was chairman, with a story of tragic suffering and acute starvation. In 1941 the common

diet provided only about 1,200 calories per head, and black market did valiant service in distributing food which would otherwise have been requisitioned by the Germans. Available foodstuffs were not only inadequate in amount but were usually of most inferior quality, and were often infected with *Salmonella* or *Trichomonas*. Diarrhoea was common. The rye bread, with 25% added bran, contained a high proportion of fibre and was often sour. Nervous lesions were frequent, whilst scurvy was sometimes so severe as to cause loss of teeth. Over a million people suffered from tuberculosis, and resistance to typhus was reduced. In concentration camps 75% of the Jewish prisoners had oedema and in the ghettos infants died of hunger. Even now the food shortage in Poland was severe, and the infantile mortality remained at about twice the pre-war figure.

Dr. S. K. KON, of Reading, mentioned that he had seen a report describing the shocking effects of starvation in the Warsaw ghetto which had been drawn up by twenty-five doctors, of whom only one now survived. Prof. VAN VLIET related his experiences in Java. Confiscation of food by the Japanese was probably responsible for the death of three out of four million Indonesians.

Dr. C. G. KING, scientific director of Nutrition Foundation Inc., the large research fund financed by American food firms, welcomed the presence in Washington of Sir J. BOYD (Director-General of the F.A.O.). He said that there had been practically no nutritional diseases in the U.S.A., although the intakes of some nutrients might occasionally have been below the optimal level. Research had covered a wide range, including diets for hot and cold climates, food preservation, dehydration, human requirements for amino acids, and rehabilitation of subjects who had suffered severe loss of weight from prolonged partial starvation. He had great hopes that the work of Spies and others would lead to the successful treatment of many forms of anaemia with folic acid, which had recently been synthesized. His account of the feeding of troops in the Pacific war area by means of mobile factories which were landed complete and started ploughing a few hours after the islands had been cleared of Japanese by the assault parties, was an excellent illustration of the American gift organization.

Belgium, France, Holland, Switzerland

Prof. E. BIGWOOD, of Belgium, spoke first in the third open session, at which Dr. L. J. HARRIS presided. He said the lowest intake had been in 1943, when urban inhabitants had received about 1,800 calories, excluding those derived from milk and green vegetables. Home-produced protein fell during the war to about half the pre-war level, and in 1941 there were many cases of oedema. The increased consumption of herrings from the North Sea caused a steady decline in this condition and by 1944 cases had become very rare.

Dr. TRÉMOIÈRES, of France, said that the nutritional conditions in the agricultural districts were good, but in industrial towns the diet was often very poor. The infant mortality rate and the incidence of tuberculosis were greatly increased. Deficiency of vitamin A was suspected in groups of the population who were too poor to resort to the black market; and in some instances there appeared to be reduced efficiency in the conversion of carotene to vitamin A.

Prof. B. C. P. JANSEN told how in Holland 66% of the pastures had been used for growing potatoes. In view of the great importance of this foodstuff experiments were carried out to determine the effects of variety and season on the concentrations of vitamins C and B₁. While 30–40 mg. of ascorbic acid was found just after harvesting, only 5–10 mg. remained in storage until the following spring. One third of the daily requirement of vitamin B₁ was derived from potatoes. Holland did not suffer from severe malnutrition until 1944, when a great railway strike caused a reduction in the food intake to 500 calories daily, resulting in 20,000 deaths from starvation. Speaking of fundamental research, Prof. Jansen stated that vaccenic acid, which is present in butter fat, had been found to act as a growth factor in rats.

Prof. D. F. VERZAR described dietary conditions in Switzerland. His country was surrounded by warring powers, and bread rationing had been necessary. Dr. DEMOLE dealt

research activities, and mentioned that a diet rich in vegetables containing vitamin C afforded some protection against whooping-cough.

International Problems

Dr. W. AYKROYD, of the United Nations Food and Agricultural Organization, explained that the nations exporting wheat had twenty million tons available, whereas the importing nations required thirty million tons. The present food crisis arose suddenly and demonstrated the need for a world food-intelligence service. Steps had now been taken to persuade nations to save wheat by increasing the extraction rate of flour, and by discouraging the feeding of wheat to animals. The International Emergency Food Council would act on the assumption that the basic daily requirement for western nations was 1,900 calories, and for eastern nations 20% less.

The two final sessions, at which Mr. A. L. BACHARACH and Dr. S. K. KOV presided, dealt with animal nutrition. In achieving its expressed aim of establishing contacts between British and European nutritionists the conference was completely successful. Few can have left without a broader outlook on the international aspects of nutrition, and a keener appreciation of the problems to be faced.

Correspondence

Work for the Disabled

SIR,—The language in which official pronouncements are couched has a peculiarly numbing effect on the average mind, and when it was noted in the House of Commons on July 30 that the Minister of Labour had made an Order under the Disabled Persons (Employment) Act, 1944, that the standard quota will hereafter be raised from 2% to 3%, few medical men realized that they were witnessing an important stage in the evolution of one of the great social reforms in the history of this country.

Expressed in simple terms the Order means that employers must now include three disabled persons in every hundred of their employees: their former obligation to the disabled was the employment of 2%; they must now employ not less than 3%. Has this any particular significance? Does it mean anything to the average practitioner of medicine? It does indeed. It is the complete answer to correspondents who in recent months have criticized the action of employers in persuading disabled employees to register under the Act even although they were already engaged in work. It is also the answer to the criticism of your leader (June 29, p. 990) that the "typical Civil Service approach to the problem . . . does not even achieve its object, since it merely means that the 2% will be made up of those with flat feet and subject to bronchitis." The purpose of the Act is to ensure employment for every disabled person—that is to say, for every person who has a handicap in seeking or keeping employment, no matter whether his handicap is simple flat foot or bronchitis, or grave deformity or disease. Every such person should register no matter whether he is already employed or not and no matter whether his handicap is serious or not. As the number on the register increases, so will the percentage obligation on the employer increase. Six months ago, when the Act was first introduced, the proportion was fixed at 2%. Since then 600,000 disabled persons have registered, including 50% surgical cases, 30% medical cases, and 5% psychiatric cases, many of them very seriously disabled. Of this number 50,000 are still unemployed. The increase in the quota from 2% to 3% offers employment for another 150,000 disabled persons, which should cover the immediate problem. But this increase is not only an assurance to those already registered who are unemployed; it is also an assurance to those who will register in the future. The quota will be increased still further as soon as increase is justified by numbers. The scheme may perhaps bear the stamp of the Civil Service mind, but, whether that is a good thing or a bad thing, it bears the stamp of an organized plan by which to guarantee employment for every disabled person.

In the leading article to which reference is made emphasis was also placed on the importance of securing employment

"for those grossly incapacitated." This presumably refers to patients whose incapacity is so serious that they cannot in any circumstances compete with the able-bodied on an economic basis. It must first be emphasized that few fall into this category. In the case of the vast majority of disabled patients the problem is only to secure the right type of employment; if this is secured the possibility of successful competition with the able-bodied has been proved time and again. Placement is, of course, difficult. It calls for co-operation between medicine and industry; it demands the skilled service of well-trained Disablement Rehabilitation Officers, suitably aided by medical boards in hospitals and directed by regional medical consultants, working in harmony with industrial medical officers; it demands all the research into industrial health which can be achieved; it requires the co-operation of every medical man. All this is recognized by the Ministry of Labour and the medical committee of its National Advisory Council, and active steps have already been taken to ensure suitable training and medical direction of Disablement Rehabilitation Officers. But it must be acknowledged that some patients remain for whom sheltered employment is the only possible answer. This is the task of the Disabled Persons Employment Corporation. Three factories have already been established by this Corporation; they are in active production and others will be established in the near future. Almost insurmountable difficulties have arisen, but nevertheless energetic steps are being taken to secure employment, not only for those who are incapable of competing with the normal output of able-bodied men, but also for those who are incapable of engaging in normal hours of labour.

No one who applies his mind to these tasks believes that they are easy of solution, and no one imagines that the solution is to be found without the commission of error; but recent experience in the course of a series of lectures in Canada and the United States reaffirms my belief that simple recognition of the problem, and the resolute attempt to solve it, has in itself brought credit to this country.—I am, etc.,

REGINALD WATSON-JONES,
Chairman Medical Committee, National Advisory
Council on the Employment of the Disabled.

Demobilized Specialists

SIR,—I have read with interest the letter from the Presidents of the Royal Colleges (July 27, p. 134). There is no doubt that the situation to which they draw attention really does exist and is causing very great anxiety to the demobilized specialists concerned. The suggestions they put forward are constructive and if accepted would prove a great boon to many. Unfortunately, they are already too late.

A large number of men who qualified in the months and years immediately before the war joined up in late 1939 and early 1940, and after varying periods of service and experience were accepted as trainees and eventually passed on to specialist work. These men usually had not had the opportunity of taking higher qualifications, but, after instruction and observation by senior consultants, were considered to have the professional and other qualities necessary to the Service specialist. A large proportion of these men were demobilized at the end of 1945 and beginning of 1946, and have now completed, or are about to complete, the six months' hospital appointments offered to them.

What of their future? Some have obtained the higher diplomas they lacked; some have not; but in either case they are faced with the problem of supporting themselves (and many of them have families) in the almost complete absence of any prospect of employment.

The Presidents of the Colleges have said: "... a reservoir of most useful recruits for the consultant service of the future will be lost." That is true, but I fear the final phrase should read: "... has been lost," for many of these men have had to give up their ambitions of a consultant career and have turned to general practice. This, when the bitterness has passed, will be greatly to the advantage of general practice, but with the introduction of any National Health Service the greater shortage will be of specialists and these men will no longer be available.

Here I think I may be permitted a personal note as illustration. I joined the R.A.M.C. in 1939 and, apart from the first six months, spent the whole of six years' service in military

hospitals (through no special manœuvring of my own!). After some four years I was classified as a graded physician, and eighteen months later was advanced to specialist physician with the rank of major. During the last two years of my service I was accustomed to considerable responsibility and to directing the work of junior medical officers. After demobilization I, in common with many similarly placed colleagues, applied for and obtained an appointment at my own London teaching hospital, with the object of consolidating my experience and of working for the M.R.C.P. Unfortunately, under the system in operation at this hospital, demobilized doctors are divided into two groups—those with, and those without, higher qualifications, and are paid salaries, respectively, of £550 plus £100 and £350 plus £100 regardless of their Service experience.

The example of one colleague who served in the same overseas command as myself serves to illustrate the inequity of this arrangement. He had been classified as a specialist physician for several years and after a very varied experience was, during his last six months in the Army, appointed officer i/c division. Since returning to his hospital to work for his diploma he has been employed as a junior house-officer with an income of £350 plus £100!

My appointment is now about to end, and as I found that I could not support my family on this income, and there was no prospect of any further employment at the end of six months, instead of devoting my time to preparing for an examination I have been travelling about the country interviewing agencies and doctors in an effort to find a suitable practice in congenial surroundings. I have been fortunate, and have at last succeeded in my quest, but many of my contemporaries are still searching.

If my case were an isolated one it would be of no interest, but I wish to stress the fact that there are many men similarly placed who are anxious, and well equipped, to continue in consultant work but who cannot hold on much longer without the prospect of reasonable employment at a sufficient income. Many, perforce, have made their choice, but others are still struggling along, and if some such scheme as the Presidents of the Royal Colleges suggest could be put into practice it would help to stop this wastage of potential consultants, but it must be done quickly. The matter is urgent.

In order not to cause embarrassment to my future partners in practice I shall use a pseudonym, but if any of your readers really wish to know my identity I trust, Sir, that you will not withhold it.—I am, etc.,

London, N.W.

SPECIALIST (late).

SIR,—As one of "the 800," I should like to express satisfaction and thanks for the letter from the Presidents of the three Royal Colleges (July 27, p. 134). Should their suggestion be adopted, however, I feel that the present scale of remuneration is inadequate for so long a period, and would suggest that, subject to satisfactory service, an increase in pay of £200 per annum after the first twelve months is an absolute necessity.

Many of us are over 35 years of age, with families to bring up and educate in the meantime, and with the present rising cost of living more and more dips into capital are having to be made. Unless some such provision is made, many good men of "the 800" will have to go into general practice long before April, 1948.—I am, etc.,

Epping

GORDON S. A. KNOWLES.

SIR,—I feel sure that the Presidents of the three Royal Colleges will receive the whole-hearted support of the profession in their endeavour (July 27, p. 134) to obtain assistance from the Government for the demobilized specialist who has either finished his educational rehabilitation or, as a recognized specialist, has returned to practice. Those who were well established before the war may have been able to re-establish themselves; but the young man who was called up just as he was about to acquire a suitable hospital appointment, or was in the early days of such an appointment, is having an extremely hard time.

If it were possible for the Local Medical War Committee or a similar organization to invite him to replace a specialist whose

call-up is now due, or to fill hospital vacancies, prior to election of a permanent member to their staff, on a sessional basis similar to that prevailing in the Emergency Medical Service, it would be helpful to all concerned.—I am, etc.,

Liverpool, 1.

R. KENNON.

Health Service Bill

SIR,—Surely every doctor has by now read the momentous information in the *Journal*, Aug. 3, and surely every doctor will join with myself in offering our most sincere congratulations and thanks to Dr. H. Guy Dain for his address as Chairman of Council at the Annual Representative Meeting. Several correspondents have written from time to time asking that the B.M.A. should give the profession a lead in its attitude to the National Health Service Bill, and I would submit that Dr. Guy Dain has now given all of us the lead for which we have been waiting. It is difficult for any single doctor to make up his mind definitely, by himself, as to the course he will pursue should the present Bill become law (as it probably will), but our course has now been set for us, and if the profession will now cast aside all doubts, all hesitation, all "sitting on the fence," and rally solidly behind the Chairman of Council we shall manage to save ourselves from bureaucracy and a medical dictatorship. I would go further and say that any medical man who still hesitates will deserve all that the State medical service will inflict upon him and more, for he will be betraying his colleagues.

The question of flouting a law does not arise, as even the Minister of Health has said a doctor does not need to join the Service unless he likes; consequently 50,000 doctors do not need to join the Service either. Let every doctor then stand firm for freedom, and support Dr. Dain and the B.M.A. to the limit before the medical profession becomes extinct. Let us remember that this matter does not concern England and Wales only, but all doctors in the British Isles must rally to support one another. We must all realize, as Dr. E. A. Gregg pointed out, that it will mean "blood and tears and toil and sweat," but surely even this will be better than selling ourselves and our profession for ever. Some doctors are at present going abroad, others are trying to decide between going abroad or giving up their profession rather than become political pawns, and these are grave decisions to make—even blood and tears and toil and sweat are preferable to preserve our ideals. Arising from this, would it be possible in some way to pool the profits of practices so that those who are badly hit in their adherence to the cause may be compensated by sharing in the profits of others who are better off? Personally I have signed to contribute to the Fighting Fund (and, only to show my sincerity, for more than the £25 suggested), and I for one will be very pleased to contribute, along with others, a proportion to a fund to reimburse those who have less remunerative practices or who are likely to be in straitened circumstances. This would be an annual payment out of profits, and would last until the present crisis is past.

One thing is certain: the even tenor of our professional lives will be inevitably disturbed, and we must choose between a dishonourable capitulation to the State or to make sacrifices ourselves, even to the extent of pooling our incomes so that we may remain free and keep others free. Let every doctor rally behind Dr. Guy Dain, supposing we have to scrub our own surgeries.—I am, etc.,

Kirkcubright.

J. McINTOSH RATTRAY.

SIR,—Many of us will have read with a sense of bitter disappointment the account of the discussion of the National Health Service Bill at the Annual Representative Meeting last week, and the decision to submit to a referendum of the whole profession the question as to whether negotiations on Regulations should take place. We are faced by constructive proposals by the Minister for the new service and apparently nothing but destructive criticism by our own leaders. The result of a referendum on such terms must be a foregone conclusion, and it can do nothing but weaken our position. It is obvious that a Bill of this nature is bound to come into operation. It should also be obvious that however much we may wish to retain the right to buy and sell our practices, it is

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coming economically impossible to continue this system. How can the average young doctor find, say, £7,000 capital to pay for his practice, house, furniture, and car? And how can he ever pay off a loan from his bank under present rates of taxation? Times are changing and we must adapt ourselves to them.

Most of us will feel, after reading Dr. Dain's speech, that ministerial autocracy is the greatest danger to a satisfactory service, and that the Bill in its present form gives the Minister most absolute control of the profession. We are all anxious to co-operate in an effort to improve the medical services of the country so that they may become a model of efficiency. We have agreed that "many points in the Bill are excellent." Is it too late to demand that this issue, which affects every man, woman, and child in the country, be lifted out of the atmosphere of party politics? Can we not say that we would be willing to be anxious to co-operate in it if a committee of the best brains in the country, free from any partisan bias, were appointed to consider how this Bill could be modified to produce such a service?

If this is now impossible, cannot we be given some clear indication of what our positive policy is, and be clearly told what amendments to the Bill are considered so vital that we should refuse to operate, it unless they are introduced?—I am, etc.,

Goring.

L. G. BOURDILLON.

SIR,—The word "Quisling," appearing twice in your report *Supplement*, Aug. 3) of the Annual Representative Meeting, makes pathetic reading. It would now seem that those of us who have looked forward since our student days to a comprehensive health service for the nation, and who mean to take part in it given the honour so to do, are to be classified as traitors. Traitors to what? The cause of medicine and the well-being of the people? Or traitors to the interests of Mr. Lawrence Abel and others like him? Do Drs. Burnell and Robinson really think that we would be deterred by an appearance before the B.M.A. Ethical Committee? I for one would welcome the opportunity. It would give me a chance at long last to tell them that they should have been busy ere this pursuing those dishonest doctors who failed to carry out their obligations to their comrades in the Services, and who, now being safely established, will not even give them a fair chance to start again; who are now loudest in their protestations against inevitable change, and who seem to think a legally binding document is a mere scrap of paper.

It would be wise not to attempt to interfere with those of us who mean to support what will soon be the law of the land. The B.M.A. has already lost a great deal of public sympathy by its attitude and its cheap propaganda. Let it not make the fatal and final error of persecuting what it imagines to be a minority. Surely there has been sufficient warning in recent years of the idiocy of such a policy.

The Minister of Health has said that without the co-operation of the profession the Health Service will fail. He has deplored that this should have been made a political issue. Yet Dr. Guy Dain in his address persists in this attitude. "Some of us are Socialists and some are not," he says. We are, however, all members of the B.M.A., and I for one do not want it to be made the laughing-stock of future generations of men who will be doctors because it is their vocation, and who will compete with each other not for money but for the honour of belonging to a health service which has as its only objective the physical, mental, and moral welfare of the people. And it is people, not professions, that matter.—I am, etc.,

Okehampton.

C. G. JONES.

SIR,—In my opinion many of the vital decisions made at the S.R.M. held in May do not represent the considered opinions of the majority of doctors in this country. My Division, Winchester, may be taken to represent a fair cross-section of the profession, urban and rural. At a meeting of this Division held in April, resolutions were passed approving (1) limited negative control; (2) State ownership of hospitals; (3) Government compensation for loss of practice. The voting at the S.R.M. on these points was as follows: (1) 214 to 2 against; (2) 210 to 29 against; (3) 229 to 12 against.

It is extremely odd that apart from Winchester only one Division in the whole country was in favour of the very necessary degree of limited negative control which, with 100% inclusion, is essential in the interests of doctors themselves. Something is wrong somewhere. Now we are faced with a referendum of the whole profession on the simple issue of whether negotiations on Regulations with the Minister shall take place or not. Blank refusal to negotiate is an unsound position and will alienate all sympathy from Parliament, public, and press. I think rightly so.

The Regulations will be framed by the Minister with or without co-operation from the doctors. The chance to assist in moulding these Regulations in accordance with the accepted principles of the profession will be gone for ever. A blow will be dealt to the profession from which it will never recover. It is essential that each doctor should give deep consideration to his own interests and those of his colleagues. The straight answer to the straight question, "Shall we negotiate?" is clearly "Yes." As the Chairman of Council points out, a negative reply is irrevocable. He who thus decides is pledged not to accept service under the Act. Many will be thereby ruined. I forecast that 75% of the profession will answer, "Yes." Any other decision is suicidal (while of unsound mind).—I am, etc.,

Bordon.

C. NEWTON-DAVIS.

Private Practice—A Principal Issue

SIR,—That private practice should continue in the presence of a National Health Service has been recognized repeatedly at meetings of the Representative Body and by the profession in general as being the only certain safeguard for the freedom of patients and doctors against a monopoly. It has been recognized also that it is not enough to maintain the right of private consultation but that all the facilities essential for modern methods of diagnosis and treatment, especially including independent nursing institutions, must be available for private patients. Yet the provisions of the Bill which has now passed through the Commons give the Minister power to acquire compulsorily private institutions, and in this and other ways to destroy private practice whenever he may see fit. From several statements it is clearly the intention of the Minister and of his political party to abolish or to squeeze out private practice as soon as convenient, and in truth the provisions of the Bill giving this power met with no determined opposition from the other parties. The threat to continuance of private practice has thus become a principal, if not indeed the principal, point which the profession must take into account in deciding whether or not to take part in the Service, and before that in the making of the Regulations under the Act.

It does not seem, however, that the Council of the Association fully realizes the importance of this point, although through resolutions of the R.B. the preservation of private practice is in the policy of the Association. The Chairman of Council made only a brief reference to it in his remarks at the recent A.R.M.; and the recommendations of the Council for continuance of private practice presuppose, at least as to institutional facilities, such practice operating through publicly managed hospitals. There can be no doubt, however, that there would be no certainty of private practice continuing in that way, and that without independent institutions such practice may not survive.

A decision not to take part in a vital service set up by Act of Parliament, thereby to prevent its operation, could be maintained only with the understanding and sympathy of the public. Such understanding is not likely to be awakened by arguments, however sound, about the inadequacy of the Service, the ownership and management of the public hospitals, or the failure to consult with the profession in the making of the Service. Only on the moral ground of freedom for patient and doctor could there be public understanding of refusal. The profession has no stronger moral ground for refusal than in the power of the Minister to abolish private practice, for without the alternative of independent private practice there will be no real freedom for patient or doctor.

It is to be hoped, therefore, that the Council will put the threat to private practice under the Bill among the foremost points at issue which it will place before the profession when the plebiscite is held.—I am, etc.,

Bournemouth.

N. ROSS SMITH.

Negotiators and Legal Advice

SIR,—I think that most doctors will agree that the members of the Negotiating Committee of the Insurance Acts Committee have been singularly unfortunate in their deliberations with the Ministry of Health. I appreciate and gratefully acknowledge the great amount of work and time that all the members of these committees have expended for the general good of the doctors, but after all they are doctors themselves and not professional negotiators. I know that the B.M.A. does obtain legal advice, but this is not enough. In my opinion, the B.M.A. should procure the best possible barrister obtainable to undertake all necessary future negotiations with the Ministry, because it will be necessary for deliberations to take place whatever the result of the proposed plebiscite—otherwise the doctors will become entirely subservient.

In an interview I had recently with a Labour M.P.—a man who has been a negotiator on behalf of his union for many years—this sentiment was endorsed.

It would be interesting if other doctors would express their views on this important matter.—I am, etc.,

GEOFFREY DUDLEY.

The Doctor's Dilemma

SIR,—Under the heading "Demobilized Specialists" (July 27, p. 134) the Presidents of the Royal Colleges of Surgeons, Physicians, and Obstetricians and Gynaecologists respectively have painted a gloomy picture showing that the spectre of unemployment is stalking among the ranks of demobilized specialists.

What is the position among G.P.s? I quote a statement from the current bulletin of the Socialist Medical Association: "Applicants for assistantships were out of proportion to the number of vacancies available." What can this mean but unemployment?

I am quite aware that in 1948, when the Health Bill starts to operate, we shall be short of doctors, dentists, and most probably many other things as well. What interests the demobilized doctor is not so much what may happen in 1948, but what is going to happen in the few remaining months of 1946.—I am, etc.,

Southernport, Lancs

JOHN H. HANNAN.

The Plebiscite

SIR,—Before the plebiscite goes out to us all it behoves us very seriously to consider, and very clearly to see, what the issue really is. Quite obviously it is *not* a matter of finance: to many a salary is more comfortable than a winter rush and a summer stagnation. Nor is it an issue where selfishness enters. It is an altruistic choice we must make on the sole grounds of honour and humanity.

For nearly four thousand years the Christ-like spirit of our Hippocratic Magna Carta has stood for all that is decent and honourable in our profession. The spirit of that oath has produced a profession which daily performs more for humanity—without thought of personal gain—than all others put together. The ultimate analysis that is the birthright we are asked by the would-be dictator to sell for a mess of Marxian pottage. We are to desecrate the wishes of the dead upheld by British justice through the centuries. We are to prostitute uncoerced charity and voluntary free will to a bureaucratic autarchy. How dangerous this is! The annals of medicine clearly show that every advance in the healing art and appurtenances thereof came through voluntary and sacrificial effort.

Think of the great ones of our profession who cheerfully laid down their lives to alleviate this or that scourge of humanity. Remember the yellow fever investigators and all those other heroes. Can you see the Bevan Boys rising to any comparable altruistic heights under the scourge of Whitehall with its avalanche of forms and impersonal directorates? I throw out.

If enough of us are conscious of the priceless value of our honour this disgrace will not fall upon us, nor can we ultimately lose our free heritage. I am certain that we will have the vision to see, the heart to understand, and the power to prevail.—I am, etc.,

Loughton.

G. B. KIRKLAND.

SIR,—I am sure every doctor who has read the full statement made by Dr. Guy Dain (Aug. 3, p. 168), will have a thrill of pride at the first clear-cut, emphatic, and straightforward letter we have received from the B.M.A. as to our position in the impending National Health Service Bill. Either we want it or we don't; and let us have an immediate "Yes" or "No" from the profession by sending out a questionnaire something like the following lines:

Are you in favour of negotiations taking place on the matter of Regulations and the drawing up of the scheme? Yes or No. If "No," it will be assumed that you reject the scheme absolutely, whatever form it may take.

Dr. Dain says truly that "there are no other doctors but the doctors who are qualified. We are in the strongest possible position for ensuring that what we think is best for the public will be carried out."

Finally, a word to the returned Service doctors who themselves have found the change-over none too easy. No one would object to my mixing medicine with religion and literature, the latter two contain much good advice applicable to the present day. We require faith, which is excellently defined in Hebrews xi, 1: "Faith is the substance of things hoped for, the evidence of things not seen." While Shakespeare says:

"Our doubts are traitors,
And make us lose the good we oft might win
By failing to attempt."

Let us remember the motto which carried the Imperial Province safely through its hour of trial some thirty years ago and, substituting the first and fifth words, take as our watchword, "Doctors will fight, and Doctors will be right." I am, etc.,

Appleby Magna.

J. R. SALMOND.

Tuberculosis under the Bill

SIR,—I think that the majority of experienced tuberculosis physicians will agree with the general remarks expressed in your annotation (July 6, p. 20), and Dr. Hugh Ramsay's letter (July 27, p. 135). The importance of co-ordination of all measures affecting the tuberculosis patient cannot be over-estimated. It was one of the basic principles formulated by Sir Robert Philip well over fifty years ago on founding the first tuberculosis dispensary. It was endorsed by the Astor Committee in 1911 and since then up to the present day has stood the test of time. To quote Philip (*Journal*, 1906, 2, 1529):

"The tuberculosis dispensary should be, for every city or district, the uniting point of all other agencies. It should not be an isolated institution, but form an integral part, indeed the centre, of a general network of operations. . . . It cannot be too strongly emphasized that the strength of such a scheme lies especially in its organization and co-ordination. Each factor is doubtless of value. Each department has its own sphere of operations. As isolated elements the possibilities are relatively limited. In proportion as the various departments are intimately connected and co-ordinated, they can become more serviceable. The key to complete success in the campaign against consumption lies in the harmonious co-ordination of well-directed measures." (My italics.)

These remarks apply with even greater force to-day in view of the ever-widening sphere of anti-tuberculosis activities especially in relation to mass fluorography and rehabilitation. If a tuberculosis scheme, therefore, is to function at the highest level of efficiency there must be unity of control, and seems rational that this should be vested in the tuberculosis physician, who has a sound knowledge of the patients' requirements. In addition to the tuberculosis physician's examination and assessment it is desirable that the patient should undergo a psychological examination, chiefly for rehabilitation purposes: so that his mental aptitude or otherwise for certain well-defined types of work may be made manifest. For this reason a specialist psychologist should be attached to the consulting staff of the tuberculosis scheme. In this connexion preliminary observations of the 1944 Disablement Act suggest that more detailed attention to the patient's mental make-up is necessary if the placing of "square pegs in round holes" is to be avoided.

The proposal to link the tuberculosis dispensary to the general hospital should meet with wide approval, but it is essential that the individuality of the dispensary be maintained. As one who has been for many years on the visiting staff of a county general hospital, which for a period housed a che-

surgical unit, the writer can speak from experience of the advantages gained from such close association. Apart from the activities of the out-patient department of a general hospital the in-patient department should have two main functions in respect of tuberculosis. First, in-patient investigation of chest cases seen at dispensaries or elsewhere which require further investigation to establish the differential diagnosis. Secondly, cases of definite tuberculosis, mainly minimal lesions, whose condition is doubtfully active and requires accurate assessment. Cases in either of these categories found to require treatment should be transferred to the appropriate institution for pulmonary tuberculosis, but non-tuberculous cases would be retained in the hospital. Valuable beds in sanatoria required for the urgent treatment of active progressive lesions are thus unblocked and the long waiting-list materially reduced. The tuberculosis physician's main duties at the general hospital therefore should be to "pin-point" the diagnosis, and where the patient is found to be tuberculous to assess the state of activity and determine manner of disposal. It is obvious that with the development of mass fluorography, as yet in its extreme infancy, many more beds will be required for these investigations.

At the present time there are over one hundred and eighty committees throughout the country concerned with the administration of tuberculosis schemes. *Quot homines, tot sententiae!* Can it be wondered, then, that there is such a divergence in the standard of efficiency attained in the operation of these schemes? The following story may not be irrelevant. An Englishman touring the Scottish Highlands called at a wayside inn, and was surprised at being able to obtain alcoholic refreshment outside the usual licensing hours. "Is there any difference in the law here?" he inquired. "Nae deference in the law, but a great deference in the interpretation thereof!" was the reply.

The new Bill offers an excellent opportunity for reviewing the present scheme throughout the country and eradicating existing defects. Let us then build up a first-class, integrated, national scheme which will keep Britain in the forefront of the campaign against tuberculosis, and so fulfil even the most sanguine hopes of the early pioneers, both those whose names are recorded, and also those who have gone "unhonoured and unsung."—I am, etc.,

Chester.

D. W. TOUGH.

Congenital Malaria

SIR,—During part of June and July this year I had blood-films from 31 mothers and their newly born babies examined (June 22, p. 966). In every case the mother's blood was taken from the finger, and the baby's from the umbilical cord at birth. Out of the 31 cases 14 mothers and 5 of their babies had malarial parasites, malignant tertian; and 6 mothers and 3 of their babies had benign tertian parasites.—I am, etc.,

Cawnpore.

C. B. ADDERLEY.

Transurethral Prostatectomy

SIR,—After the numerous papers and letters recently contributed to various journals by the advocates of abdominal prostatectomy and the originators of new technical methods, I much appreciated the refreshing note of stability struck by Mr. W. E. M. Wardill's letter (July 20, p. 100), and I entirely agree with his observations on transurethral prostatectomy.

Hey and Millin have not only written about their respective techniques of abdominal prostatectomy, but have criticized the transurethral route. Most criticisms of transurethral prostatectomy—to which the above are no exceptions—are, I believe, misleading or inaccurate. Hey's observations bear no relation whatever to transurethral prostatectomy except that of simple inaccuracy. Transurethral prostatectomy, especially in comparison with abdominal prostatectomy, must be judged according to its mortality rate, morbidity rate, and operability rate for comparable cases. It is according to these standards that the operation will stand or fall. The advantage in operability and mortality rates for comparable cases lies overwhelmingly with the transurethral route. Since the adoption of this route the whole scope of prostatic surgery has been vastly increased to include the large group of very aged prostates quite unfit for abdominal prostatectomy, and to render safe for surgery the

much larger border-line group of bad risks. The whole group of permanent ambulatory suprapubic cystostomies—a large one in municipal hospitals—has, in my personal experience, now disappeared. The results of transurethral prostatectomy using the Thompson cold punch after adequate experience (over one hundred cases) have on the whole been much better than the results following suprapubic prostatectomy.

In January of this year Millin gave his total for transurethral resection as 219 and (*Proc. roy. Soc. Med.*, 1946, 39, 328) went on to say, "I can claim, I think, a wider experience of these operations (loop and punch transurethral resections) than anyone in this country." One does recall, however, that Wardill's published total was 230 cases five years ago. My own total is 369 cases—97 treated by the diathermy loop and 272 by the Thompson cold punch.—I am, etc.,

Manchester.

H. T. COX.

The Catheter and the Prostate

SIR,—Mr. W. E. M. Wardill (July 20, p. 100) presents a strong case for prostatectomy with the cold punch; but in his letter he fails to make clear the great difficulties associated with this operation, though admittedly he has done so elsewhere (*Lancet*, 1941, 2, 127). I agree with him that the operation can be very satisfactory and gives a low mortality when expertly performed; but it requires a very high degree of technical skill to remove an adequate amount of gland; and a large experience, probably some five hundred cases, is necessary before this proficiency can be attained. A further difficulty is the need for intensive after-care, which requires a team of trained assistants and orderlies, preferably housed in a special department, such as the one at Newcastle.

In a small experience of some one hundred consecutive cases operated on with the Thompson punch I was able to raise my operation rate for prostate patients to 90% with a mortality of just over 9%, but the strain on the theatre and ward staffs in a crowded general hospital was very great. Furthermore, a number of these cases had sooner or later to be done again on account of incomplete removal of prostatic tissue. Also, haemorrhage is sometimes very difficult to control; and that urethral complications are not infrequent is shown by the increasing use of a perineal urethrotomy in some American clinics.

I therefore turned to the Hey operation, and up to the end of January this year had operated on 62 cases out of 65 admissions (two admitted moribund, and one refused operation). There were altogether six deaths: uraemia—2 cases, 8th and 9th day, aged 78 and 67; pneumonia—2 cases, 4th and 53rd day, aged 83 and 73; senility and cardiac failure—1 case, 10th day, aged 88; streptococcal septicaemia—1 case, 21st day, aged 61 (cross-infection in ward). Thirty-three cases came in with acute retention, with one fatality in this group. As with Mr. Wardill, no case is refused operation if there is the faintest chance of recovery, the average age of the fatal cases being 75 years.

Nearly all your correspondents have criticized Mr. Wilson Hey's methods adversely, but from reading their letters it would appear that none of them has given "aseptic prostatectomy" a fair trial. The Hey procedure has definite advantages: it ensures complete removal of the gland, requires a minimum of pre- and post-operative treatment, and the cases can therefore be nursed in the surgical wards of a general hospital. Also, the stay in hospital is comparatively brief—an important point with the present shortage of hospital beds. Lastly, a very high proportion of prostate cases can be offered the chance of permanent relief with a reasonable over-all mortality rate. Lately, I have combined Mr. Wilson Hey's principles with the Millin retro-pubic approach, which presents some attractive features—notably, good haemostasis and absence of a bladder wound; but it is as yet too early to assess the value of this combination.—I am, etc.,

Lincoln.

G. A. BAGOT WALTERS.

SIR,—Mr. W. E. M. Wardill, in his forceful letter (July 20, p. 100), writes from want of knowledge of my operation, the type of patient, and the standard of operability. He has yet to see a prostate removed aseptically, and the results. He is quite unaware of the extraordinary care taken in diagnosis both before and during the operation. It is well realized that urinary

retention in the presence of an enlarged prostate may be due to some other cause, perhaps in the abdomen, which can be and often is explored during my operation without shock, and at the slightest provocation. Prostatic obstruction can no longer be considered as an entity in-itself as the cause of obstruction. Prostatectomy has entered upon a new era.

Mr. Wardill believes that the septic transurethral route should be the only one. I hold that whilst the transurethral method has a definite place (*Brit. J. Surg.*, July, 1945) the transvesical route, with full investigation of the bladder, and, if necessary, abdomen, is generally the wiser route. There must be at least six ways of dealing with any individual prostatic obstruction. Mr. Aneurin Bevan could create for himself everlasting fame in surgical history if he would appoint investigators with full powers to evaluate the results and tell the world which method is the best. This would apply in cancer of the breast and many other diseases. Each surgeon now ploughs a lonely surgical furrow, believing that his method is the best, in spite of the journals, his clubs, societies, and conferences. Assessment and evaluation of results should be in the hands of experienced judges. Mr. Wardill's chief objections are to my refusal to pass the cystoscope to diagnose the disease, and the catheter to relieve the patient. If the cause of the urinary retention is in any doubt, of course the catheter or cystoscope must be passed; but the infection occasioned thereby must be allowed to recover before an operation is permissible. It is quite true that many a catheter has been passed only once and never required again. But it is chronic, not acute, retention that kills, and the prostate is allowed to grow and ultimately by some complication assist in the patient's death. We are all asking the prostate patient to come early, but Mr. Wardill refuses his first urgent and most definite indication. He suggests that his cases are worse than mine. Well, I have refused no case of any type this year, and during this week three patients died before they could be admitted to nursing homes and each one of them had been waiting less than a week. Such is the standard of aseptic prostatectomy, and I doubt if such a standard has ever been set in any other type of prostatectomy, including transurethral resection. My figures include cases as bad as these.

"Simple suprapubic cystotomy" is a far, far more dangerous procedure than aseptic prostatectomy, and any surgeon who declines "routine preparatory anti-infective therapy" is wantonly refusing to take advantage of the marvellous advances of science. At every operation of moment pre-operative anti-infective therapy should be the general rule, because with all the will in the world infection may come from the surgeon, his assistants, and even the patient himself. After all, the microbe is the greatest living enemy of mankind.—I am, etc.,

Manchester

WILSON H. HEY.

Intravenous Adrenaline in Asthma

SIR,—In status asthmaticus, Sir Arthur Hurst's method of continuously injecting adrenaline subcutaneously at the rate of 0.06 ml. every 15, 30 or 60 seconds (according to the patient's tolerance) usually brings relief, and it is generally agreed that this is the most satisfactory method of treatment. In a few cases, however, the condition shows a marked tendency to recur. A patient will be relieved of his asthma in the evening only to wake up in the morning with bronchial spasm just as bad as ever. When this happens, adrenaline has to be injected as often as is necessary to keep the patient free from asthma. Very often the succession of paroxysms soon comes to an end; further administration of adrenaline is not required, and one can then proceed to the general treatment and investigation of the patient. Occasionally, however, status asthmaticus persists, and a time comes when large amounts of adrenaline by the subcutaneous route have little effect. One can inject syringe-ful after syringe-ful without relieving the bronchial spasm to any appreciable extent, and without producing symptoms such as tremor or tachycardia.

When this stage has been reached, I have found adrenaline by the intravenous route remarkably successful. Severe bronchial spasm is completely abolished in about five minutes, when previously the continuous subcutaneous injection of adrenaline for the best part of an hour has had little effect. I should emphasize that I have given adrenaline intravenously only when

the injection of 1 ml. subcutaneously straight off has ceased to produce subjective symptoms such as tremor. The technique is as follows:

A tuberculin syringe graduated in hundredths of a ml. is used, and 0.15 ml. of a solution of adrenaline (1 in 1,000) is drawn into it. This is diluted to 1 ml. with sterile water, and of this 0.05 ml. is injected very slowly intravenously, and a pause made. At this point the patient experiences what he describes as a feeling of suffocation, and the bronchial spasm appears to become more severe. I have never seen tremor, tachycardia, or palpitations produced. This reaction passes off in a few seconds, after which the contents of the syringe are injected at the rate of 0.1 ml. every 30 seconds. No further subjective discomfort is experienced, and the bronchial spasm disappears. I usually follow up the intravenous injection by a subcutaneous injection of adrenaline to prolong its effect.

Aminophylline has been employed by some in "adrenaline-resistant" asthma, as has morphine, but these drugs are not always effective. In treating status asthmaticus I think a very important principle is to relieve bronchial spasm as completely as possible and as often as necessary. If this is done, the illness will be less prolonged, and less permanent damage will be done to the lungs.—I am, etc.,

Troon.

JAMES ROSS.

Migrainous Headaches

SIR,—Mr. Cecil Tivy (July 27, p. 138) appears determined to label Gasserian injection as necessarily causing total anaesthesia of the cornea. This is not so, as he might have learnt from Case 3 in my article of May 18 (p. 754), of a schoolboy in whom I injected only 3 minims (0.18 ml.) alcohol, producing light analgesia of V.1 and only diminished corneal reflex, but yet cure of his recurrent headaches.

Complete corneal anaesthesia following Gasserian injection is not such a serious handicap as Mr. Tivy seems to imagine, for if the eye is taken care of for a few weeks in the way I described in my letter of July 6 (p. 24), it usually gives no further trouble, as has been my experience in literally hundreds of cases. Severe keratitis and loss of sight in one eye is, of course, a serious occurrence, but it cannot compare with the crippling recurrent headaches of almost daily migraine, or the violent neuralgic spasms of trigeminal tic, which have often in the past led to suicide. Case 8, described in my article, indeed made such an attempt, but was subsequently cured by Gasserian injection, and though totally anaesthetic his eye has given no trouble. If my critic is still dissatisfied, I shall not trespass further on your valuable space.—I am, etc.,

London, W.1.

WILFRED HARRIS.

Paralytic Ileus

SIR,—In connexion with paralytic ileus, first described, as I believe, by Mr. Sampson Handley, and on which you have given us several communications lately, I should like to submit a surgical measure designed to forestall its happening. I have neither heard nor read of it in the literature, nor written of it hitherto. It is intended for all cases of appendicitis in which there is reason to fear that the pelvis is in danger of becoming involved, or suspected of being so already.

The old routine practice of first exploring and dealing with the region of the appendix and then proceeding through this inferno to explore and drain the pelvis is a piece of work which, surely, no surgeon can feel happy about. If upon doing this the pelvis be found already involved, no harm, of course, has been done. On the other hand, if not, and there be found but a pool of clean-looking serum, or none at all, then the surgeon's finger has spread the conflagration. I suggest that in fact such artificial extension is even worse for the patient than a gradual one due to progressive spread of the inflammatory process. General shock is increased and local too, well calculated, as if by scalding, to paralyse the coils of intestine lying there by suddenly drenching them in poisonous pus.

My plan is to anticipate this danger by traversing a clean route. The pelvis is explored through a small suprapubic incision by passing a small swab down over the bladder with a long pair of pressure-forceps. It will show what kind of effusion, if any, lies below. If unquestionably foul, we have at any rate probably done no harm. But if not obviously foul, a tube no larger than a pencil is passed right down to the bottom, its outward end turned 3 or 4 inches (7.5 or 10 cm.) away to the left, and wrapped in anti-septic gauze and wool. This done, the wound is stitched up round the tube and

thoroughly covered with antiseptic dressings. Now, and only now, may the main focus be approached, and the further to the right the incision is placed the safer for the plan. Final drainage through a stab-wound in the flank will still further diminish the danger of contamination of the suprapubic wound. It seems difficult to me to overestimate the value of the pelvic tube as a safeguard, for it cannot be denied that even the gentlest handling may be too much for the barrier of peritoneal adhesion bounding the primary abscess, and even without this the process may spread by reason of its own virulence.

I have had no more than two or three opportunities of doing this since first thinking of the plan, but the effect was in every case thoroughly gratifying. The pelvic drain had done its work in a few days, normal peristalsis was quickly restored, and there was no contamination of the pelvic track. The original focus remained strictly localized.—I am, etc.,

Doncaster.

WALTER REGINALD WILSON.

Immunization with B.C.G.

SIR,—Referring to your leading article (July 27, p. 125) on the B.C.G. deputation to the Minister of Health, I may say that there has come to my notice, since the completion of the memorandum which was presented, a development of possible importance which you may care to make available as an addendum to the information contained in the memorandum. As usually prepared, B.C.G. vaccine must be used within a few days, and, faced with the problem of sending it to far distant places, Russian scientists have been experimenting with methods of preserving it in the dry state for longer periods. They have found (Leshchinskaya, E. N.: *The Immunizing Value of the B.C.G. Dry Glucose Vaccine. Amer. Rev. Soviet Med.*, 1946, 3, 210) that freeze-drying of a bacillary suspension in 50% glucose solution yields a product which retains full viability and immunizing efficacy for at least eighteen months.

A major difficulty in production at present is that the vaccine must be used before tests for virulence, or for the presence of virulent contaminants, can be completed, which necessitates the most rigid supervision and complicated precautions at all stages of preparation. If vaccine can be stored so that tests are complete before it is issued the process of production can be simplified both technically and administratively, and public confidence at the same time increased. Further, preparation of large batches at long intervals, rather than frequent small batches, may make for greater uniformity of dosage, and should reduce production costs. Preliminary experiments to test the efficacy of the Russian and of other comparable methods are at present under way.—I am, etc.,

Cardiff.

W. H. TYTLER.

The "Intractable" Vesico-vaginal Fistula

—SIR,—The object of my previous letter (May 18, p. 774) is achieved if I have been able to present a more hopeful picture of the curability of the vesico-vaginal fistula than that shown in certain recent publications—and reflected, it seemed, in Dr. Mackay's report—in which scores of uretero-colic transplantations have been recorded without, apparently, any adequate attempt having first been made in those cases to effect a direct repair of the bladder injury. With this main issue Drs. O. S. Heyns and P. Keen (July 20, p. 99) are more or less in agreement.

Dr. Heyns is, however, in error in supposing that I have the "impression that fistulae can be invariably cured by vaginal operation." I have never made so bold or unwarranted a statement. It is, however, my belief that the *great majority* of fistulae can be so cured, and in support I quoted a series of consecutive cases in which the opening had been closed by a straightforward plastic vaginal operation. It would be presumptuous of me to suppose—and I do not do so—that similar results can be obtained in the very different conditions that may obtain in other countries; nevertheless, the trend of my argument is unaltered, and is supported by Mahfouz's work in Egypt. There, also, cases are encountered which present problems of the greatest difficulty and complexity; there, also, many of the patients are debilitated by chronic disease; and there, also, the bladder is heavily infected with schistosomiasis. Yet Mahfouz was able to report after three hundred cases: "Of my last hundred cases I had 95% cured, 5% greatly improved."

(I apologize to Dr. Heyns for omitting the necessary second reference to this work; it is: *J. Obstet. Gynaec. Brit. Emp.*, 1930, 37, 566.) Excellent results have also been reported from India in a recent paper by Benion Thomas¹ of Madras.

I do not doubt that an unusually large proportion of the fistulae seen in native races such as the Bantu present features of special difficulty; but, although the patients seen in this country may conform to "a different clinical picture," Dr. Keen is wrong if he supposes that the cases quoted in my series were all of a simple nature. For example, more than half the patients had had previous operations—often multiple operations, six, eight, nine, and more—resulting in extensive and dense vaginal scarring. In several cases the fistula was adherent to the pubic ramus. In some the incontinence had lasted for many years—thirty-two in one case. In one the fistula was so large that the anterior wall of the bladder bulged into the vagina, and in another the bladder was completely everted and presented as a mass as large as a fist with the ureters spouting jets of urine from its surface. In several the cervix had sloughed off together with a variable amount of anterior vaginal wall; and in one the entire uterus had sloughed away (this patient² had been in labour for four days and had been delivered by the cranioclast). In one a radium burn had caused widespread destruction of bladder and rectum, resulting in the vagina's becoming a receptacle of both urine and faeces. In one the urethra had been torn from the bladder; and in two the urethra was entirely missing.²

It is with knowledge of these cases that I made the statement that the curability of vesico-vaginal fistulae is higher than is often supposed. Uretero-colonic transplantation—a formidable operation, although a godsend when alternative treatment is quite impossible—is but rarely required in fistula work; and this is also the opinion expressed by Mahfouz Pasha of Cairo. I am, etc.,

The Radcliffe Infirmary, Oxford.

CHASSAR MOIR.

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- ¹ *J. Obstet. Gynaec. Brit. Emp.*, 1945, 52, 262.
- ² *Proc. roy. Soc. Med.*, 1945, 38, 662.

Amenorrhoea during Internment

SIR,—Dr. Annie Sydenham's paper (Aug. 3, p. 159) on amenorrhoea during internment brings prominently before us the scantiness of our understanding of the aetiology of this type of amenorrhoea.

While it is generally recognized that change of environment, metabolic disturbances, and emotional shock may lead to amenorrhoea, the *modus operandi* of these causes is unknown. It is probable that the inhibiting factor operates at some point in the endocrine chain, but what this factor is, where it operates, and how it is brought into play are all matters of conjecture.

It may be of interest to record somewhat parallel observations made while I was attached to the hospital of a Yugoslav refugee camp in Egypt during the latter half of 1944. Unfortunately no statistics were compiled, so I can only record impressions. Even in these days when our lives are ordered by numbers it is to be hoped that impressions based on observations are pertinent. In any case, the existence of amenorrhoea in a large majority of the women in this camp cannot be doubted. The camp had a population of 30,000 refugees—women and children, and men of non-military age or fitness—who had arrived in Egypt in batches between Dec., 1943, and May, 1944. In taking menstrual histories from female patients the reply, with monotonous regularity, was of amenorrhoea since arriving in Egypt, or, and this particularly in girls in their teens, of one period only after arrival in Egypt and then no more. A Serbian doctor who had accompanied the first batch from Yugoslavia, and who acted as my interpreter, looked upon my routine inquiries for a menstrual history as a joke, for he had come to regard amenorrhoea as the normal condition. He attributed it to altered environment and climate. (With regard to climate, it would be interesting and instructive to know if any investigations were made on menstrual variations amongst British female auxiliaries serving in hot climates.)

As to aetiology: environmental and climatic change was operative in all cases. Emotional shock may be assumed to have been experienced by all. Gross malnutrition and severe physical hardship had been the lot of a proportion of this community before escaping from Yugoslavia. The distribution

of the sexes made for an abnormal social set-up. The majority of the married women in the age group under consideration were separated from their husbands; many were widows; more feared or presumed themselves to be widows. I had no opportunity for judging whether amenorrhoea was less prevalent among the minority who had their husbands with them, but among the pregnant it was noticeable that frequently the period of amenorrhoea exceeded the period of gestation.

One environmental condition having strong psychic influence struck me as a possible aetiological factor. The refugees were housed in large tents holding ten to twelve beds or mattresses packed close together on each side. Several families, including both sexes, would occupy one tent. During the early months, at least, washing facilities were very limited and ablutions took place in public. In discussing with camp officials (Yugoslav) the hardships they had endured, pride of place was given to lack of privacy; and as the outstanding example of this they instanced the difficulty experienced by women in washing sanitary towels—an operation performed stealthily by night. One wonders if outraged modesty had been an effective emotional cause in producing a welcome amenorrhoea.

Dr. Sydenham's statement, "Absence of menstruation was a convenience," very accurately describes the situation which existed in the Yugoslav camp.—I am, etc.;

Ipswich.

W. P. GRIEVE.

Rheumatic Fever

SIR,—Due probably to a poor choice of title, Dr. K. Douglas Wilkinson (Aug. 3, p. 174) seems to be under a misapprehension regarding the scope of my paper. I had hoped, however, that the subtitle would adequately indicate the nature of the contents. In fact the paper was a report upon the results of a convalescent centre, and the patients when admitted were convalescent. Many had been up-patients before transfer, and they came for a period of rest and a graduated return to activity. The first hospital to house the centre had been a country mansion taken over on the outbreak of war; the second hospital was a converted hydropathic establishment in the midlands. Neither offered laboratory facilities to make suitable investigations, even had they been worth while so late in the course of the disease. The nearest x-ray apparatus was some thirteen miles away, and needless to say x-ray examinations were made only in exceptional circumstances. Again, I think it most unlikely that any of the exciting appearances referred to by Dr. Wilkinson would have been seen at the stage of convalescence reached by these patients. Had it been possible for all rheumatic patients to be admitted under one roof from the outset of their illness such investigations as Dr. Wilkinson suggests would have been worth while. But they were scattered in small numbers throughout the country, and, quite apart from the problems of transportation, it is often and naturally difficult for a physician to relinquish a patient until pressure of bed space or a waning interest induces him to do so.

I am in entire agreement with Dr. Wilkinson that acute rheumatism is a very difficult subject, and my experience is sufficient for me to form an opinion on the question of allergy in the disease. Nor did I intend to convey the impression that I inclined to this belief, for as far as possible I have tried to keep an open mind on the subject. But when an authority like Coburn (1940) suggests that rheumatic fever is associated with abnormal immune response of the host due to heredity and environment, and discusses a state of sensitization of the reticulo-endothelial system in such an individual who does not handle respiratory infections with haemolytic streptococci in a normal manner, the opinion merits some consideration. This seems to me strangely like allergy, although it was perhaps rash of me to mention so controversial a subject. It may be better to regard the joint manifestations (which are not absolutely constant in rheumatic fever) as a non-specific reaction to the infection whether it be rheumatic, tuberculous, or due to a neurotropic virus. In invoking the effect of salicylates as his criterion for the specificity of the rheumatic joint manifestations it appears to me that Dr. Wilkinson is in danger of committing something akin to the logical fallacy of the undistributed middle. I suggest that the response of the joints is part of the general amelioration brought about by salicylates in much the same way that Sheldon (1946) found the joint

manifestations to subside with constitutional improvement tuberculosis.

Even the specificity of the Aschoff body seems no longer to be above suspicion. I realize that it is dangerous to draw from animal experiments, but it is interesting that Harr (1946), after the experimental pulmonary infection of rats with pneumococci and staphylococci, found typical Aschoff bodies scattered throughout the heart. Of greater importance are the findings of Baggenstoss and Rosenberg (1941) in twenty-five cases of rheumatoid arthritis at the Mayo Clinic. At necropsy rheumatic heart lesions were found in four cases and in seven of these there were typical Aschoff bodies. A history of rheumatic fever was obtained in only one of the cases.—I am, etc.,

Walton-on-Thames.

H. STUART BARDE.

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Deafness from Rubella in Pregnancy

SIR,—I have read with much interest the letter written by Dr. Muriel Barton Hall (May 11, p. 737) reporting a case of congenital cataract, heart disease, and deaf-mutism in association with an attack of rubella six weeks before conception of the child. In this connexion it may be mentioned that G (1941) described an instance of congenital cataract in a child whose mother had contracted German measles three months before pregnancy. Subsequently he (1944) recorded an example of deaf-mutism in which it was not improbable that the infection had preceded conception. My colleagues and I (1946) observed a doubtful case, and later (1946) two negative ones and postulated (1944) that the phenomenon could be explained on the basis of the known property of viruses of persisting in the tissues of the host for long periods of time after original infection. I hope therefore that other observers will be stimulated to record such cases, rather than to suppress them as Mr. Ivor Hughes (May 25, p. 813) would apparently like them to.—I am, etc.,

Adelaide, S.A.

CHARLES SWAIN.

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Psychological Reactions in War-blinded

SIR,—Dr. W. M. Harrowes' most stimulating article "Psychological Reactions in the War-blinded" (July 27, p. 129) is of great interest to all ophthalmologists who had to deal with such casualties in the recent war. The following observations on cases which were treated in a Mobile Ophthalmic Unit of the Eighth Army between 1941 and 1943 may be considered relevant.

Early Reaction to Loss of Vision.—The stoicism of the grossly mutilated young men—Briton, Frenchman, Greek, Syrian alike—was amazing. Heavily bandaged from the moment by their rescuers they might spend from one to three days jolting helplessly over the appalling desert tracks. Quietly they let the dressings be removed, but inevitably demanded immediate prognosis as to the final function. This had to be given them in absolute truth, as any half-truth or evasion seemed quickly to be appreciated. But the extraneous noises of the now distant battle (and no doubt their knowledge of the protective value of canvas shelter and sandbags) put limits to their self-control. It was found impossible to expect full co-operation under local anaesthesia, and a "general" had to be used. Mr. H. B. Stallard found that by the time they reached the Hospital they were sufficiently restored to co-operate under local anaesthetic. In the canvas shelter the quiet of the wounded man appeared in strong contrast to the restless equally heavily bandaged "psychiatric blind." Possibly the really genuinely injured man had solace in the knowledge for him the seemingly endless sandy existence was finished. Two remarks stand out in my memory: one man saying before operation, "For God's sake watch yourselves, I've syphilis." The other later in Sicily, when in the remaining a fly maggot had crawled out from the anterior chamber

patient thanked me for "getting rid of those wrigglers"—his sole remark.

Late Reaction to Loss of Vision.—I often wondered about the adjustment and final mental state of such men, with their very different outlooks: the regular soldier, the volunteer, and the conscript. The man wounded in the line of duty must have some consolation denied to the poor fellow who, disregarding warnings, finally "bought" one of these fiendishly effective booby-traps. So early in 1945 I wrote around to get details of men who had been evacuated through our unit. Unfortunately only a few answers were received, but I would mention with considerable gratitude the very comprehensive "follow-ups" received from St. Dunstan's (Mr. R. C. Davenport) and the institute at Temboni, Wynberg, South Africa. Beyond details of purely ophthalmic interest I did note the number of men doing well at massage. Yet these men had spent three years or so digging a fresh slit-trench daily. All I could think of was a slender historical thread passing back through the ages to the blind priests of Aesculapius. I was duly dealt with when it was pointed out that after passing a very stiff selection board they were trained and were often amazingly successful.

Tension.—One thing I remarked was that several of the men who had been injured by booby-traps had been noted as difficult in adjustment. Lack of education provided another handicap, along with sensitivity as to appearance.

Over-compensation.—An ex-member of the Special Air Service, trained for aggressive tactics, provided an excellent example, similar to Case 40.

Re-stabilization.—The reports on the South Africans who had gone back to their farms, so continuing their pre-war tenor of life with minimal upset, were interesting.

To conclude, can we ask Dr. Harrowes for a further article on these forty cases in, say, another five years? Much further adjustment will be demanded from these men when they no longer make a vivid impression on the national conscience, but have been relegated to the position of yet another "Good Cause," to be propitiated by yet another flag-day.—I am, etc.,

Catterick Military Hospital.

G. C. DANSEY-BROWNING.

Sale of Tinned Meat

SIR,—Does not the recent outbreak at Witham of an epidemic of salmonella gastro-enteritis, which was found, as reported by Dr. F. E. Camps (July 27, p. 131), to have been started by the infection of slices of tinned meat in a butcher's shop, clearly show the danger of the present method of distribution of slices of tinned meat? I suggest that the medical advisers of the Ministry of Health look into this matter. Surely it would be safer to restrict the distribution to *grocers*, who would sell the sliced contents of opened tins at their bacon counter? Butchers should be allowed to sell whole unopened tins, but not meat from opened tins.—I am, etc.,

Leitchworth.

H. H. KING.

Book Reviewing

SIR,—In his letter on book reviewing, Mr. H. Osmond Clarke (July 20, p. 102) may not be so right as he thinks he is. But with regard to the case in point (*Injuries of the Knee-joint*), a perusal of the book indicates that your reviewer has done his work well. There are pros and cons in this subject. The system of anonymity, whereby reviews are entrusted to men who are selected because of their experience and special knowledge of the subject, has the advantage of allowing them to write impersonally and impartially without being exposed to the polemics of those who may not see eye to eye with them—e.g., the "pompous," "pontifical," and "unjustifiably censorious" adjectives which Mr. Clarke uses. The point that some reviewers may have already retired from practice is not in their disfavour: they bring to their subject a wide knowledge and experience in it, and they have sufficient leisure to make themselves *au fait* with all that is going on and can give your readers the benefit of a balanced retrospect.—I am, etc.,

Edinburgh.

G. DOUGLAS GRAY.

SIR,—As an author and also a book reviewer I heartily endorse Mr. H. Osmond Clarke's suggestion (July 20, p. 102) that the names of reviewers or their initials be appended to all reviews in the *Journal*. A well-known critic once said that a

reviewer's work can be done in three cuts: "First, cut it open, then cut it up, then cut it altogether." This laconic advice was meant to apply more especially to novel reviewing. In the case of medical works the procedure is not quite so simple. An unbiased critic—for nobody should attempt to review a book by an author against whom he may cherish some animosity, due, perhaps, to some ill-founded rumour or otherwise—should seize upon the good points *before* he pounces, hawk-like, upon the omissions. The latter may be relatively unimportant, or they may be out of the scope of the book as conceived by the author. The value of the first look-over as being likely to yield a correct impression upon the reviewer reminds us of Swift's dictum when he said, "Criticism, contrary to all other faculties of the intellect, is ever held the truest and best when it is the *very first result of the critic's mind*." (The italics are mine.) To concentrate unduly upon the faults and shortcomings of a book is, as Mr. Clarke remarks, most unhelpful, whereas friendly criticism and suggestions for improvement in the next edition will always help to gild the pill.

One reason for the preponderance of reviews of American works, pointed out by other correspondents, may be that publishers in the U.S.A. may not have been so hampered by paper restrictions as their British colleagues; but I do think that British works should definitely have the pride of place in the review columns of the *Journal*.—I am, etc.,

Ringwood.

G. NORMAN MEACHEN.

SIR,—“Who killed John Keats?” It is generally believed that, as often before and since, it was the tubercle bacillus. But the author of the opening phrase of doggerel thought that the writer of the lacerating, unsigned notice in the *Edinburgh Review* of, I think, “Endymion,” played a part. They are both dead. One has gone through the narrow gate reserved for genius. The other may disport himself in the wide fields kept for the mugwump. It is not suggested that merit receives similar harsh treatment in your columns. The reverse is usually the case. But there is an *ex cathedra* atmosphere about the reviews in the *Journal*. It may be the fault of the reader, but it could be avoided entirely by an end of anonymity; and the name of the reviewer would increase or diminish the respect felt.—I am, etc.,

London. S.W.1.

E. GALLOP.

The London College of Osteopathy

SIR,—The advertisement in the *Lancet* to which Mr. W. E. Tucker (July 27, p. 141) calls attention raises an important question—what is the standing of the “London College of Osteopathy”? Leaving out any discussion on the theory or practice of osteopathy, I would remind any medical man who might be tempted to take advantage of the offer in the advertisement in the *Lancet* that the Select Committee of the House of Lords inquired very fully into the teaching of osteopathy in Britain, and found that the only existing establishment was the “British School of Osteopathy.” After an extensive examination of the claims made by the Dean of that school, the Committee stated: “The only existing establishment in this country for the education and examination of osteopaths was exposed, in the course of evidence before us, as being of negligible importance, inefficient for its purpose, and above all in thoroughly dishonest hands.”

No words could be stronger, and it is surely important to know if the “British School of Osteopathy,” which the Select Committee condemned, and the “London College of Osteopathy,” which the *Lancet* advertises, are one and the same. If not, has the “London College of Osteopathy” any better claim to be a teaching school?—I am, etc.,

London. W.1.

MORTON SMART.

Population Statistics in Palestine

SIR,—Dr. W. N. Leak's letter (July 20, p. 98) demonstrates what absurd conclusions can be derived from statistics when other important relevant data are not taken into account. His statistics showed that “in some parts of the country the (Arab) birth rate was no less than four times the death rate,” and the conclusion he naturally drew from his discovery was that “this rapid natural increase of the Arab population would certainly tax and probably overtax the resources of the country and lead

to scarcity and unrest." No account is taken of the primitive methods of land cultivation practised by Arabs; no consideration is given to the possibility of increasing the resources of the country by intensive cultivation of the soil made possible by the application of modern machinery and the use of water resources all previously undreamt of by the Arabs but now developed with such success by Jewish immigrants. Absorption of a portion of the population in industry, built up by Jewish enterprise, in the construction of roads, harbours, extension of the railway system, building, chemical works, etc., etc., is not even worthy of mention. No! The only conclusion drawn from his bare statistics on the political situation is that Jewish immigration, which has contributed most to the wealth of the country's economy, and has converted derelict waste land into fertile productive soil, must be stopped, because the Arabs might wrongly think that famine conditions, which might never arise, were due to Jewish immigration. I suppose Dr. Leak never thought of recommending another solution to check the phenomenal increase of the Arab population—i.e., the checking of Arab immigration from the adjoining territories of Syria and Transjordan? After all, Jewish immigrants have all been absorbed economically and do not breed as fast.—I am, etc.,

London, N.10.

I. S. Fox.

Colonial Medical Service

SIR,—I have followed the correspondence upon the conditions in the Service with much interest. A point that I do not think has been made sufficiently clear is that the Colonial Medical Service is not a service in any way comparable in organization with those of the Forces. The title connotes a very limited central control, by the Secretary of State, of the medical staffs of some 35 colonies and protectorates, varying from small islands to large territories, such as Nigeria; and a man entering the Service is in fact joining the staff of whichever territory he goes to, with its own local conditions of service. It therefore behoves him to choose his colony carefully.

Before the so-called unification of the Colonial Medical Service, certain colonies offered similar terms, and were grouped into such titles as the West African Medical Staff, East African Medical Service, Malayan Medical Service. Within each group salary scales, length of tours, retiring age, and pension rates, etc., were similar. The grouping still continues, though the titles are no longer valid. The advertisement for "His Majesty's Colonial Service" has recently been redrafted, probably as a result of the representation of the B.M.A., but in its new form (June 8, p. 9) it is still somewhat misleading. Senior members still smile at its attempt to paint a rosy picture. It states "... numerous posts are filled from within the Service for work in special branches . . .", and lower down, "There are large numbers of super-scale posts. . .". Candidates should appreciate that the "numerous posts" are in fact the super-scale ones for which he will be eligible, at the present rate of promotion, after approximately the fourteen years' service as a general field medical officer that "Ex-Africa" refers to (*Supplement*, June 1, p. 163).

The clinical side of the Service is of less importance to him than the administrative, and a young officer who has no special subject, or indeed possesses a higher qualification such as Membership, or D.A., is a positive embarrassment to his department, as all they want of a new arrival is that he will be a unit to post to an out-station in relief of another officer due for leave.

The Service history of an officer in one of the larger African colonies will illustrate the above. Joining with "Primary," he spent a tour as the only M.O. in an isolated station with little surgery. An application for study leave to complete the Fellowship was turned down. However, by devoting his entire normal six months' leave to work he obtained his F.R.C.S., the expenses and fees being borne by himself. He married and returned to duty. After a few months he was posted to a lonely military outpost where women were not permitted, and had perforce to send his wife "home." During his year there he performed one obligatory major operation. After thirteen years' service he was transferred as surgical specialist to another colony, where he served throughout the war years. Granted four months' leave in 1945 he applied for a period

of surgical rehabilitation, but was refused owing to "staffing difficulties" by his Government. Upon his return he appealed to the Colonial Office, but was informed that the Secretary of State could do nothing as he was bound by the wishes of local administration. Study leave, instead of being encouraged, is indeed rarely granted.

Speaking to a question recently in the House of Commons, Mr. Hall (as reported in the *Journal*) acknowledged that the terms for specialists were inadequate, but added that "he had recently made proposals to a number of Colonial Governments designed to remedy this defect. Some of the Governments had agreed to the proposals, others still had them under consideration"—a reply which demonstrates how unified the Colonial Medical Service is in fact.

"Another West Coast" (June 15, p. 931) is correct in advising the new entrant to concentrate on office work if he is to keep his eyes blue with medical headquarters. Accurate returns are more gratifying than the results of a clinical study. On the East Coast, senior medical officer and specialist are on the same salary, £1,100 per annum. The specialist, having chosen the professional side, has reached the highest he can go, but the S.M.O., whose work is mostly or entirely administrative, is still on the ladder to A.D.M.S., D.D.M.S., and finally D.M.S. up to a salary of £1,500 per annum. Transfers are becoming easier to obtain, but an officer offered promotion on transfer has to be very careful to keep within his "group" or he may find that he will have to serve five years longer than his previous agreement before being permitted to retire on a smaller pension than that to which he would have been entitled if he had remained where he was. It may thus pay him better to decline promotion.

The Colonial Medical Service will be a good career when it is truly unified, with uniform basic rates of pay for definite grades of officers throughout the Colonial Empire, terms of service being firmly controlled by the Secretary of State as they are in the Army, Navy, and Air Force.—I am, etc.,

"ANOTHER EAST COAST."

Re-education of Germany

SIR,—I, for one, am unable to muster up the faintest sympathy for the view expressed by Dr. Alexander Comfort (July 20, p. 104). If, during the coming quarter-century, the world is to avoid a third German aggression, the German people (physicians included) must have it ceaselessly dinned and drummed into them that they were the vanquished and not the victors; thus they may perhaps come to realize, at long last, that war does not pay. Enforcement of public recognition of our National Anthem is a very mild, but none the less a salutary, measure directed to this end.

At the risk of bruising Dr. Comfort's tender feelings, which are so very easily moved to "indignation," allow me to say that I rejoice to hear of firm action of this kind on the part of our forces of occupation; long may it be continued. As for the fear of dissipation of "accumulated goodwill," it seems that Dr. Comfort values German goodwill more highly than I do.—I am, etc.,

Cottingham.

NIGEL W. ROBERTS.

SIR,—Dr. Alexander Comfort (July 20, p. 104) takes upon himself to criticize, rather sweepingly, the sentence passed on a German doctor in the British zone who insulted our King by failing to pay that proper respect which should be shown at the playing of the National Anthem. He said that he did not know the German in question. Neither do I know Dr. Comfort. For my part, I was a soldier for six years and, my release notwithstanding, I continue to regard myself as such, and at the risk of offending Dr. Comfort's susceptibilities I feel bound to point out that I consider the sentence lenient.

Those of us who had the honour to be part of the original B.E.F., and who were thereafter made prisoner, had a perhaps exceptional opportunity of studying the German mind at closer quarters than were vouchsafed to others whose contact with the enemy was more remote. As such a one I consider that I am in a position to speak with some authority on questions related to the treatment of the German race.—I am, etc.,

CHARLES ILIFFE.

Bedale.

* * This correspondence is now closed.—ED., B.M.J.



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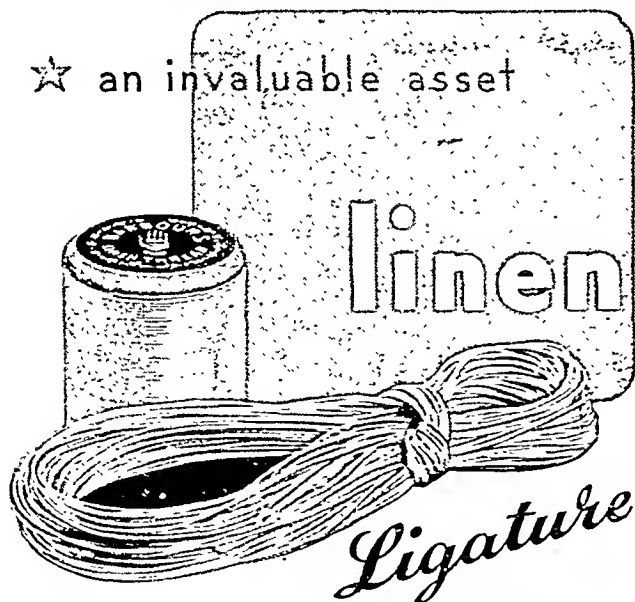
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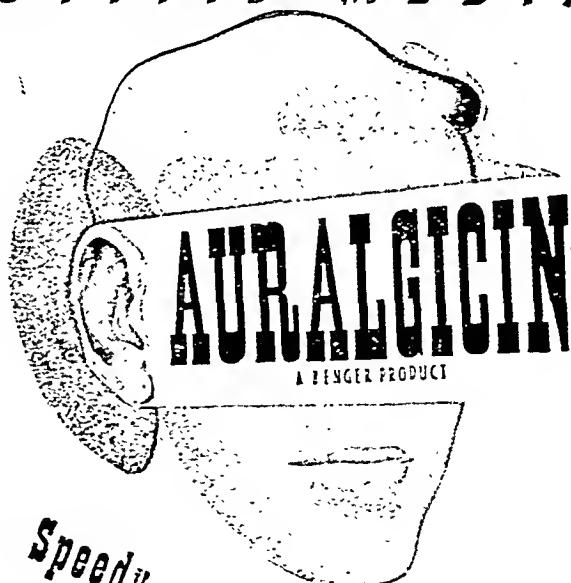
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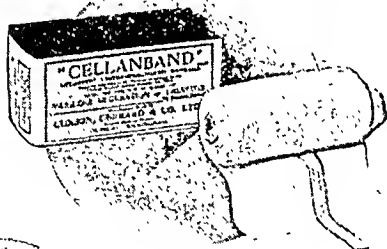
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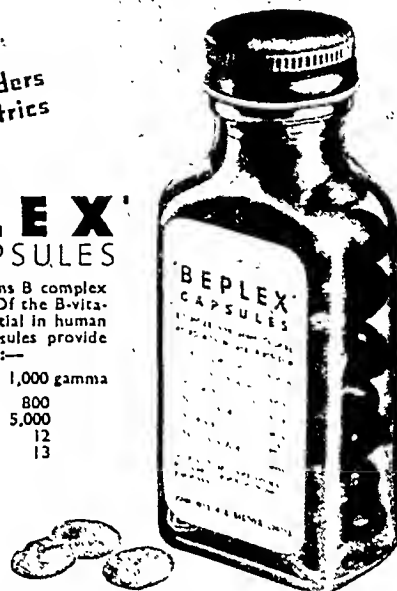
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Obituary

H. A. COLWELL, M.B., Ph.D., M.R.C.P., M.R.C.S., D.P.H.

Dr. H. A. Colwell died on July 22 at the age of 70. He was a medical scholar all his life, though he was for many years an executive medical officer in various capacities, and this scholarly attribute exhibited itself throughout his life in writing which reached a high level of distinction. His studentship at St. Bartholomew's Hospital showed Colwell to be a man well able to take all of the intellectual hurdles in front of him, and he qualified at London in 1900. A short spell of medical practice convinced him that his life's work was in other fields and he joined the staff of the cancer research laboratories of the Middlesex Hospital. His experimental work there with Prof. Russ was interrupted by war and the years 1916-18 found him serving in the R.A.M.C. as a major; he was a very valued officer for his all-round medical qualifications came into their own, and his knowledge of languages, both ancient and modern, allowed him to resolve many administrative difficulties on the spot. Enteric was rife in his district and he eventually became so ill that he was invalided to Malta for convalescence.

On returning to England he joined Robert Knox in radiotherapy at King's College Hospital, where eventually he was put in charge of the department. He resigned when he was about 60, and after that his leisure was devoted to writing, and it was during this period that his meticulous accuracy and wide knowledge were put at the service of the Oxford University Press. Colwell's medical writings may be said to begin with *Radium, X Rays and the Living Cell* (1915), written in collaboration with Russ. This book came at a time when it served the needs of the growing numbers of medical men and women entering the field of radiology. Colwell and Russ also collected the evidence of x-ray and radium damage since 1895, and in 1935 published *X-ray and Radium Injuries*. Colwell had an incisive pen at times, witness what he says on the subject of radium quackery. It was about the year 1935 that the unscrupulous were passing on to the public radio-active preparations to eat or drink or apply as beautifying agents. Colwell's comment was to the point: "One thing about such preparations is quite plain, if they are not radio-active as they claim to be they are fraudulent; if they fulfil that claim they are dangerous." He pleaded further that radio-active substances should be scheduled as poisons, but was careful to add that "it takes time to convince the legislative mind." His other writings include *An Introduction to the Study of X Rays and Radium* with Wakeley, and a very delightful contribution to quite another subject, *A History of Electrotherapy and Diagnosis*. His historical leanings were also shown in a memoir on Gideon Harvey.

He had a life-long interest in malignant disease; he served on the Council of the British Empire Cancer Campaign, and in 1935 was awarded the Garton Gold Medal and a prize of the British Empire Cancer Campaign for an essay on the "Biological Effects and Mode of Action of Radiations upon Malignant and Other Cells." Hector Colwell was a gifted man of rather retiring disposition; he was a beautiful pianist and no ordinary linguist. His friendships were few but were generally for life. His wife died in January of this year and he never recovered from this loss.

WILLIAM GEMMILL, Ch.M., F.R.C.S.

William Gemmill, joint professor of surgery in the University of Birmingham, died at his home at Edgbaston on July 28, almost at the moment of cessation of his active association with the University and with the staff of the United Hospital, Birmingham. He was appointed as assistant surgeon to the staff of the Queen's Hospital in 1920 and devoted himself for twenty-six years to the work of the Birmingham medical school, being appointed to the chair of surgery in 1932 on the death of Prof. William Billington. Born in Ayrshire, he trained at Edinburgh. He took the M.A. in 1901, graduated M.B., Ch.B. in 1905, and proceeded to the English F.R.C.S. in 1913, and finally to the Birmingham Ch.M. in 1933. In the

war of 1914-18 he was in charge of the surgical division of a general hospital in France. He had been a member of the B.M.A. for twenty-five years and was president of the Birmingham Branch from 1938 to 1943.

Gemmill was a man of great character and natural kindliness, with an outer crust of reserve and shyness which made him difficult to know. The more you knew him, however, the more he had to give, and his extensive practice in the Midlands was a tribute to the great personal esteem in which he was held by numerous practitioners and past students. He was a general surgeon in the best meaning of that term, with a broad basic knowledge of surgery and a wide experience in many fields. The war to some extent diverted his early training, and whilst it gave him a broad outlook, which only war can give, it probably prevented his specialized training in neurosurgery, in which he was always deeply interested. As a teacher he was at his best at the bedside, where his methodical examination, his acumen in grasping the salient points in a case, and his power of securing the confidence and co-operation of the patient gave his dressers a clinical lesson which they never forgot. He was wholly absorbed in his work and his patients and put himself so unreservedly at the call of practice that he found little time for writing or recreation. An annual holiday in his homeland, one felt, was for him something in the nature of a pilgrimage and to the last his dream was of retiring there—a dream to remain unfulfilled owing to his untimely death.

S. G. B.

Dr. T. DOUGLAS BROWN, a member of the British Medical Association for fifty years, died on July 17 at Bournemouth. He received his medical education at Glasgow, graduating M.B., C.M. in 1894. In 1904 he proceeded M.D. of Glasgow University, and he worked in Glasgow until 1914. During the war of 1914-18 he served as a Territorial medical officer, first as a captain, R.A.M.C., attached to the 9th H.L.I., and later as a major, and second-in-command of a field ambulance, and subsequently he was in charge of the Cambuslang and finally the Yorkhill military hospitals. On demobilization he settled in Bournemouth. His personal kindliness and sympathy, added to his professional knowledge and skill, soon made him one of the best-known medical practitioners in the area. In spite of a long illness, which he bore with great patience and fortitude, he continued to practise right up to a few weeks before his death. He was a fine practitioner, and through all his fifty years of practice he kept abreast of modern developments in medicine. He had a keen sense of humour and a kindly, gentle manner which endeared him to a large circle of patients and friends, who now mourn his loss. His widow helped and comforted him through the long period of illness and increasing weakness, and now has the sympathy of all who knew and loved him.

Dr. GEORGE MACKIE died on July 20 after several months of illness. He studied at Edinburgh, taking the M.B. in 1899 and the M.D. in 1922. He came to Malvern in 1902 as assistant to the late Dr. Brockatt, and immediately plunged into very busy practice, including attendance on the boys at Malvern College and the pupils of several well-known schools. During the war of 1914-18 he served in France in the R.A.M.C. with the rank of lieutenant-colonel, and was three times mentioned in despatches and received the D.S.O. In 1921 he received the Territorial Decoration. After an absence of ten years he returned to Malvern and again took up general practice. As County Director of the British Red Cross Society he gave of his best to that work in Worcestershire, and during the recent war was responsible for the organization and administration of the Worcestershire convalescent hospitals. In 1944 he was awarded the O.B.E. (Military Division) for his work in connexion with the Home Guard medical services in the county. Dr. Mackie was a man of many interests, and his ideas for the development of Malvern into a health centre for sufferers from rheumatic and cardiac complaints revealed imaginative and creative ability of the highest order. He will be missed by a wide circle of patients and friends, whose sympathy will go out to his widow, son, and daughter.

GEORGE RONALD PYM ALDRED-BROWN died suddenly at his home in Bath on July 26. He was 49 years of age, and by his untimely death Bath loses yet another of her young consultants. He was educated at Harrow and Keble College, Oxford, where he took his B.A.; he graduated M.B., B.Ch. at the London

Hospital in 1924. In 1938 he took his M.D. degree at Oxford. Aldred-Brown had served for three years in the 1914-18 war, as a captain in the Royal Field Artillery, and during this time the seeds of his illness were sown. He came to Bath from Dorset, where he had held the post of physician, pathologist, and bacteriologist at the Dorset County Hospital. In 1930 he was elected honorary physician to the Royal National Hospital for Rheumatic Diseases. In due course he became senior physician and chairman of the medical board. The war upset all the plans for the building of a new hospital, and was a keen disappointment to Aldred-Brown, who had worked so hard to make the project a success.

During the war years the staff of the hospital was greatly depleted, but in spite of physical disability Aldred-Brown carried on, and indeed will be remembered by many for the manner in which he planned and achieved the present rehabilitation and remedial therapy department. In 1945, after fifteen years' service to the hospital, he was elected an honorary consulting physician. Aldred-Brown was widely known for his interest in rheumatism and was chairman of the Bath International Conference on Rheumatic Diseases in 1938. He was a member of the International Society of Medical Hydrology and of the International League against Rheumatism. He contributed several papers to the more specialized journals. He was a keen golfer and tennis player. Aldred-Brown will be sadly missed by his patients and medical colleagues.

The Services

The Efficiency Decoration of the Territorial Army has been conferred upon the following officers: Lieut.-Col. (Temp. Brig.) A. A. Egger (T.A.R.O.), Major (Temp. Lieut.-Col.), J. V. Bradley, Hon. Major J. N. Martin, and Majors T. T. S. Hall, M.B.E., W. L. Kinneer, M.B.E., and W. G. Platt, R.A.M.C.

The following appointments and mentions in dispatches have been announced in recognition of gallant and distinguished services in Malaya in 1942.

C.B.E. (Military Division).—Brig. (Temp.) C. H. Stringer, D.S.O., O.B.E., late R.A.M.C.

O.B.E. (Military Division).—Lieut.-Col. D. C. Chopra, I.M.S. (since died).

M.B.E. (Military Division).—Major (Temp.) C. W. Maisey, R.A.M.C.

Mentioned in Dispatches.—Brig. (Temp.) C. D. K. Seaver, and Col. E. Percival, D.S.O., M.C., and V. H. Wardle, M.C., T.D., late R.A.M.C., Brig. (Acting) D. S. Middleton, Col. (Temp.) J. Bennet, Col. (Acting) J. Taylor, O.B.E., Lieut.-Col. J. W. Craven, M.C., T.D., Lieut.-Col. (Temp.) W. G. Harvey, Major (Temp.) H. M. S. G. Beadnell, M.B.E., Majors (Acting) P. R. Graves, M.B.E., and H. Henderson, Capt. J. E. A. Bartlett, M. H. Churchill, T. R. S. Cormack, E. K. Cruikshank, J. G. Jesson, J. A. Mark, W. H. McDonald, T. B. Smiley, M.C., and R. B. C. Welsh, R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died at Sea.—Surg. Lieut. Ian Mackenzie, R.N.V.R.

Died at Sea.—Capt. James McAllister, R.A.M.C.

Died in India.—Lieut.-Col. Michael Henry Wace, I.A.M.C.

DOMVILLE MEMORIAL GIFT

Trustees wish to elect, on or about Sept. 18, a recipient of the Gove Gift, the present value of which is £7 yearly, tenable for three years. The recipient must be a child of a deceased naval medical officer, in necessitous circumstances and under 15 years of age. Particulars of claims, with birth certificates, must reach the honorary secretary, Domville Memorial Gift, Haslar Hospital, Gosport, Hants, by Sept. 12. Further information regarding the Gift may be obtained from the same address.

NORTH PERSIAN FORCES MEMORIAL

The War Office announces that the North Persian Forces Memorial Medal will be awarded again next year after a lapse of nine years. This memorial was founded in 1923 by officers of the R.A.M.C. and the I.M.S. who served with the North Persian Forces during the war of 1914-18 to commemorate the services of those forces and to encourage the study of tropical medicine and tropical hygiene. The memorial takes the form of a silver medal and is awarded annually for the best paper by a single author on tropical medicine or tropical hygiene published in any journal during the twelve months ending Dec. 31 by any medical officer of under twelve years' service in the R.N., R.A.M.C., R.A.F., I.M.S., or the Colonial Medical

Service. Only officers on a regular or short service engagement in the R.A.M.C., R.A.F., and I.M.S. are eligible for the award. The award is announced in the latter part of the year following that in which the paper was published, provided that the memorial committee consider the paper to have attained the standard of merit justifying the award.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on July 27, the following degrees were conferred:

D.M.—C. W. Hope-Gill, R. C. Browne.
M.Ch.—S. F. Taylor.
B.M.—B.Cit.—G. N. Chandler, D. H. Brooks, J. N. Cozens-Hardy, R. H. Hardy, P. L. Pickering, J. M. K. Spalding, J. L. Hadley, P. S. Brown, B. McConkey, H. L. Backhouse, G. A. K. Missen, Margaret Lingard, Jean C. Ritchie, H. J. F. Cairns, P. M. de C. Williams, L. T. Cotton, A. G. Hayler, P. R. Clay, Gert L. Loewi, Diana Geekie, Marianne E. Rooih.
*In absence.

UNIVERSITY OF LONDON

William Charles Wallace Nixon, M.D., F.R.C.S., F.R.C.O.G., has been appointed to the University Chair of Obstetrics and Gynaecology tenable at University College Hospital Medical School as from Oct. 1.

Ronald Hare, M.D., has been appointed to the University Chair of Bacteriology tenable at St. Thomas's Hospital Medical School as from Oct. 1.

The title of Professor of Physiology in the University has been conferred on Walter Roworth Spurrell, M.S., F.R.C.S., in respect of the post held by him at Guy's Hospital Medical School.

The title of Professor of Clinical Pathology in the University has been conferred on Robert James Valentine Pulvertaft, M.D., F.R.C.P., in respect of the post held by him at Westminster Hospital Medical School.

The title of Reader in Pathology in the University has been conferred on Sigiberto Jose De Navasquez, M.D., in respect of the post held by him at Guy's Hospital Medical School.

The following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine)*: B. F. Gans, A. J. Glazebrook, W. W. Gooddy, J. F. Goodwin, P. Harvey, C. F. Hawkins, J. C. Houston, M. E. MacGregor, J. D. N. Nabarro, C. S. Nicol, D. W. Pugh, R. D. Tonkin, J. R. Trounce, B. G. Wells (gold medal), D. A. J. Williamson. *Branch II (Pathology)*: H. Caplin, G. D. Lumb, J. A. H. Wylie. *Branch III (Psychological Medicine)*: A. M. Edwards, P. H. Tooley. *Branch IV (Midwifery and Diseases of Women)*: Ursula M. Lisler. *Branch V (Gynaecology)*: G. H. Taylor, J. Watkins-Pitchford. *Branch VI (Tropical Medicine)*: M. S. Branson. *Branch IV (Laryngology, Otolaryngology, and Rhinology)*: C. McK. Johnston, J. B. Musgrove.

UNIVERSITY OF WALES

The following candidates at the Welsh National School of Medicine have satisfied the examiners at the examinations indicated:

M.B., B.Ch.—*Pharmacology*: Maureen M. Bassett, C. H. Burman, Sarah A. Chard, A. V. Coleman, D. P. Davies, G. J. Davies, F. J. Davis, Joan V. Davis, E. F. Griffiths, E. J. Hargadon, J. M. E. Hyde, E. G. A. Jackson, Marjorie L. James, J. H. Jones, T. D. Jones, D. M. D. King, Doreen M. R. Lewis, R. H. Lewis, C. S. Livingstone, Joan A. McLay, J. E. Mitchell, Lillian M. Morgan, M. A. Owen, D. Si. J. D. Rees, G. M. Reynolds, Frances M. Richards, J. M. Richards, Esme S. Rogers, Sybil H. Stephens, C. E. Stroud, Augusta J. Taylor, G. Thomas, J. D. Thomas, J. H. S. Wakella, J. A. Wilkinson. *Pathology and Bacteriology*: A. J. Dark, Marjorie J. A. Davies, D. W. John, H. E. Jones, Margaret O. Jones, Rosina E. Jones, J. G. Leopold. *Medicine*: G. E. Davies, Margaret E. Davies, Gwenllian M. Griffith, S. T. James, A. S. Jones, Mary Lawrence, R. Medicoit, Jean T. Smith, J. G. Tomkins. *Surgery*: T. J. Anthony, Norah C. Curran, C. H. L. Howells, Eluned K. Jones, H. T. Jones, Nest Jones, F. I. Powell, Myfanwy M. G. Prethero, B. F. Richards, Prudence K. Roberts, Mary Smith, Heather Stockdale, T. M. Warren, K. P. Williams. *Obstetrics and Gynaecology*: D. R. Bowen, Joan P. Ciantar, A. C. Coulthard, G. C. Davies, Janet Dean-Jones, G. S. Foster, C. Harvard, D. W. James, Margaret E. B. Jones, W. R. King, J. B. R. Lewis, L. T. Lewis, Constance A. M. Llewellyn, Margaret L. Morgan, Vivien J. Parker, L. T. Rees, G. G. Richmond, S. Solomon.
*With distinction.

UNIVERSITY OF DUBLIN

On July 3 the degree of Litt.D. (Stip. Cond.) was conferred on James Johnston Abraham, C.B.E., D.S.O., M.D., F.R.C.S., consulting surgeon to Princess Beatrice Hospital, London, S.W.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a quarterly comitia of the College, held on July 25, with the President, Lord Moran, in the chair, the following were elected officers for the ensuing year: *Censors*, G. E. S. Ward, E. B. Smith, W. Johnson; *Sir Adolphe Abrahams*; *Treasurer*, W. G. Barnard; *Registrar*, H. E. A. Boldero; *Assistant Registrar*, W. D. W. Brooks. The Registrar announced that Jacob David Judah was awarded the Murchison Scholarship for 1946. Dr. W. E. Hume was elected the representative of the College on the Council of King's College,

University of Durham. Dr. C. E. Lakin was appointed Harveian Orator and Dr. Janet Vaughan Bradshaw Lecturer, both for 1947. The following Lecturers for 1947 were also appointed: *Goulstonian*, Dr. F. Avery Jones; *Lumleian*, Dr. J. P. Martin; *Oliver-Sharpey*, Prof. F. C. Bartlett; *FitzPatrick*, Sir Arthur MacNalty; *Lloyd Roberts*, Mr. Harold Nicholson; *Humphry Davy Rolleston*, Dr. P. C. P. Cloake.

The following, having satisfied the Censors' Board, were elected Members of the College:

R. Al-Mankabadi, M.B., C. D. Anderson, M.B., D. A. P. Anderson, M.B., Abd-el-Hamid A. A. Aia, M.B., D. A. Ballantyne, M.B., H. S. Barber, M.D., G. Behr, L.R.C.P., R. C. S. Benson, M.B., T. S. L. Beswick, M.B., D. W. Beynon, M.B., E. J. Blair, M.D., Anne Bolton, M.B., N. R. Butler, M.B., J. E. Cates, M.D., F. E. de W. Cayley, L.R.C.P., M. Chittiers, M.B., J. W. C. Cochrane, M.D., W. H. R. Cook, M.B., I. S. Dalton, M.B., H. E. De Wardener, M.B., R. C. S. Dick, M.B., H. Droller, M.D., Margaret E. Edmunds, M.B., A. C. Eilthorn, M.B., G. R. Fryers, M.B., W. R. Gauld, M.D., J. A. L. Gilbert, M.B., A. Guedatarián, L.R.C.P., M. Hamilton, M.B., J. B. Heycock, L.R.C.P., G. E. Hosking, M.B., C. A. Houlder, M.B., A. M. Jelliffe, M.B., E. S. Jones, M.B., J. D. O. Kerr, M.B., P. D. C. Kinmont, M.B., S. C. Kusumgar, M.B., J. W. Lacey, M.D., D. R. Laurence, M.B., E. Leigh, M.D., D. C. Lewin, M.B., L. A. Liversedge, M.D., G. Lorrain, M.B., Flying Officer B. H. McCracken, M.D., R.A.F.V.R., A. J. S. McFadden, M.B., F. McL. McGown, M.B., Surg. Lieut. G. MacGregor, M.B., R.N.V.R., K. S. MacLean, M.B., Mary L. Muell, M.B., J. H. Moseley, M.B., B. Moshal, M.D., Major P. B. L. Muldoon, M.B., R.A.M.C., G. R. E. Taylor, M.B., C. S. Nicol, M.B., J. C. R. Nuttall-Smith, M.B., A. B. Pollard, M.B., M. B. W. Powell, M.B., Capt. S. B. Rampling, M.B., R.A.M.C., T. L. Reeves, M.B., F. Robertson, M.D., G. R. Royston, M.D., K. J. Samson, M.D., R. Semple, M.B., N. M. Shah, M.D., Sheila Sheehan, M.B., J. R. Sinton, M.B., J. B. Sloane, M.B., D. Stafford-Clark, M.B., R. P. Strat, L.R.C.P., J. A. Strong, M.B., H. J. C. Swan, M.B., N. G. Talwalkar, M.D., P. E. R. Tattersall, M.B., D. C. Thursby-Felham, L.R.C.P., H. Ulrich, M.B., G. C. Wells, M.B., D. A. J. Williamson, M.B., B. D. R. Wilson, M.B., C. Wilson, D.M.

Licences to practise were conferred upon 118 candidates (including 27 women) who had passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board and who have complied with the necessary by-laws:

A. R. L. Abel, Davida M. Adams, D. M. C. Ainscow, E. J. Allaway, Barbara M. Ansell, Constance M. A. Bahtin, M. E. Bailey, S. Balfour-Lynn, Joan A. Barrett, H. D. Beckett, E. I. Bieber, D. Bigley, D. K. Briggs, R. H. Broughion, H. Caplan, V. L. Cartledge, D. M. T. Cones, P. D. Crosbie, A. M. Davies, P. R. Davis, R. C. Davison, Rosemary Dearden, Mary M. Dickinson, Romola D. Dunsmore, D. R. Edwards, H. E. Foulkes, G. H. Fisher, D. P. Fitzgerald, I. Fletcher, Frances M. Fountain, R. O. J. Fry, J. D. Fuller, B. D. Grant, Dora Green, H. G. Griffin, I. R. Haire, P. H. T. Hall, F. A. E. Hamilton, G. J. L. Hamilton, R. E. Handforth, J. J. Hopkinson, R. J. Howat, Edna C. Howe, G. Hughes, G. C. Hunter, I. Jackson, P. D. C. Jackson, T. Jackson, Glyndwr Jeffreys, N. B. Jemalan, E. John, J. W. G. Johnson, Catherine M. E. Jones, C. W. I. Jones, D. W. Jones, I. S. M. Jones, Thelma D. Jørgensen, R. S. Kagan, R. C. Keane, G. W. Korn, Marjorie A. C. Kuck, T. D. Lambert, Gertrude Latner, K. Lawrence, R. M. H. Layland, M. B. Lennard, C. Levin, T. L. T. Lewis, R. I. T. Lindsay, Janet G. S. McDowall, E. P. Mackenzie, H. H. Margulies, Margaret A. Marten, T. C. H. Mathews, Gladys A. Meigh, G. S. Metters, J. R. Mikhael, Kate H. Miller, P. R. Miller, J. B. Moore, N. S. Moores, Marguerite F. E. Morford, C. P. Newcombe, W. Nixon, J. A. Noblett, L. W. Oxenham, J. Parkyn, J. Pavey-Smith, B. W. Perlow, J. I. Pugh, R. J. Randall, H. M. Rayner, G. A. Readett, R. Renwick, Beatrice E. S. Richards, J. P. R. Richardson, J. F. S. Robertson, K. W. Robinson, H. E. Robson, P. N. Robson, Rosemary J. M. Rose, B. L. L. Rygate, Jutta Scharfstein, D. Seymour, B. E. Shaipr, Dorothy M. Silvester, Patricia M. Stanwell, K. D. Stewart, Janet Sutherland, C. K. M. Thacker, Joan M. H. Thomas, J. Thompson, P. Timmis, L. Walkden, R. W. W. Watson, P. E. Webb, A. A. Weyman, J. L. Whitmore.

Diplomas in Public Health were granted, jointly with the Royal College of Surgeons of England, to the following successful candidates:

J. Besson, Phoebe Charlton, B. A. Coghlan, R. V. Coxon, Enid G. M. Cummings, H. S. Fraser, S. MacL. Fraser, A. A. Huse, J. P. Kennedy, A. A. Lewis, G. L. McLeod, Mary N. MacQ. Paulin, Mary Roland, R. G. Samuel, E. L. Tee, R. L. Worrall.

Diplomas in Anaesthetics were granted, jointly with the Royal College of Surgeons of England, to the successful candidates whose names were published in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of July 6 (p. 29). Diplomas in Laryngology and Otolaryngology, in Psychological Medicine, and in Tropical Medicine and Hygiene were granted, jointly with the Royal College of Surgeons of England, to the successful candidates whose names were published in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of July 27 (p. 143).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council, held on Aug. 1, with Sir Alfred Webb-Johnson, Bt., President, in the chair, Prof. G. Grey Turner was re-appointed as representative of the College on the Council of King's College, Newcastle-upon-Tyne, for a further period of three years. A gift of a silver bowl was received from Mr. W. E. Tanner. The thanks of the Council for assistance in the preservation and development of the Museum were given to Sir James Walton, Mr. Warren R. Dawson, and Prof. F. Wood Jones. Mr. I. Carnac Rivett was invited to attend meetings of the Council during the ensuing year as the representative of gynaecology and obstetrics.

Diplomas of Membership and Diplomas in Public Health were granted, jointly with the Royal College of Physicians of London, to the successful candidates whose names were printed in the report of the meeting of the Royal College of Physicians of London. (See list above.)

Medical News

The trustees of the Leverhulme Research Fellowships have approved the award of a grant to E. H. F. Baldwin, B.A., Ph.D., lecturer in biochemistry in the University of Cambridge, for research into the comparative biochemistry of nitrogen metabolism. Application forms for Fellowships and Research Grants may be obtained from the secretary of the Fellowships, 7, Bedford Row, London, W.C.1.

Lord Moran has been re-elected President of the National Federation of Personal Health Associations; Dr. John Hall, of Liverpool, chairman; and Mr. T. Crew, Leicester, hon. secretary.

EPIDEMIOLOGICAL NOTES

Typhoid Epidemic

The number of cases in the typhoid epidemic at Aberystwyth continues to increase. It was suggested in our account of August 10 (p. 206) that there were likely to be more cases at Aberystwyth and at other parts of the country in returning holiday-makers. Up to August 13 notifications had increased to 110, and there had been two fatal cases—one at Aberystwyth, and another at Llanelly. Cases infected at Aberystwyth, apparently on July 11, by ice-cream contaminated by the typhoid carrier who made it and sold it have now been reported from Northampton (5), Birmingham (5), Oldbury, Worcestershire (3), Manchester (2); at Shavington, near Crewe, and at Ilford, Essex, and other towns single cases have appeared. It seems likely that cases will continue to appear but with diminishing frequency at Aberystwyth and elsewhere.

The most heavily infected portions of ice-cream were consumed by local inhabitants attending church excursions and a youth rally and were not available on a large scale to the ordinary holiday-makers. The infection is of moderate severity only, but more deaths are expected. The suspected carrier is a urinary excretor. Up to the present *Bact. typhosum* has not been found in his stools after four examinations. The organism recovered from his urine belongs to Vi-bacteriophage Type C. Organisms of the same type have been identified from several of the patients.

Uncooked shellfish are said to have caused 8 cases of typhoid at Glasgow and 4 (one fatal) at Dublin.

Detection of Typhoid Carriers

The *Monthly Bulletin of the Ministry of Health and the Emergency Public Health Laboratory Service* (1945, 4, 224) contained a note on the detection of typhoid carriers. It is estimated that in 5% of cases of typhoid a raised titre of Vi-agglutinins persists for six months or more, and that 2% or more of patients become chronic carriers. Nine out of ten of the latter have permanently elevated Vi-agglutinin titres. The measurement of Vi-antibody is therefore a valuable indication of the carrier state.

"A chronic carrier may cease to excrete typhoid bacilli for no apparent reason and may resume doing so without any detectable alteration in his well-being. Epidemiological evidence, although not conclusive, suggests that the intervals of freedom may last for months or even years, but the Vi-agglutination test remains positive during these intervals. It is not proposed that any control, other than that afforded by the Public Health (Infectious Diseases) Regulations, 1927, should be exercised over carriers, and in this connexion the attention of medical officers of health is called to pp. 58-60 of the annual report for 1932 of the Chief Medical Officer of the Ministry.

"The method of detection is, before discharge from hospitals every typhoid convalescent should have a blood test for Vi-agglutinins. If they are absent no further action need be taken. If present (as might be expected in about one-half of the cases) a second test should be made three months later, when, if they are no longer present, nothing further need be done. If, however, Vi-agglutinins are present in a titre as high as, or higher than, before, two examinations a week for three weeks of the stools and urine, or, failing this, six examinations with as long an interval as possible between, should be made by selective cultural methods to find out whether typhoid bacilli are being excreted. If they are, the patient should be regarded as a persistent carrier; if they are not, it might be advisable to repeat the Vi-agglutination test three months later to see whether the titre is falling. Further action would depend on circumstances.

"As every case of typhoid fever owes its origin to a carrier (shedder) it is an obvious advantage to a medical officer of health to know at least some of the potential sources of infection in his district. By ascertaining the type of infecting

organism by the Vi-bacteriophage method, and by keeping a register of the names and addresses of the carriers thus typed, it may prove easier to trace the source of infection of fresh cases when they arise. The Emergency Public Health laboratories have been requested to do all they can to assist medical officers of health in making the proposals effective."

Heat-treatment of Ice-cream Mix

Draft regulations for the compulsory heat-treatment of ice-cream mix have been framed by the Minister of Health and circulated to various bodies for consideration, but no date has yet been fixed for bringing them into operation. Heat-treatment, it is proposed, shall not be necessary when ice-cream is made from a "complete cold mix powder" which is reconstituted with drinking-water and is frozen within one hour of reconstitution, but in other cases after the mix has been reduced to liquid form it must not be kept for more than one hour before being heated to 150° F. (65.5° C.) for thirty minutes or to 160° F. (71.1° C.) for ten minutes. The mix must then be cooled to 45° F. (7.2° C.) within ninety minutes and held at that temperature until frozen. The finished ice-cream must be stored at not more than 28° F. (-2° C.).

Anterior Poliomyelitis

There have now been 7 notifications from the Potters Bar area of Middlesex; the first of these cases, all in children, appeared on July 1.

High Barnet has had 6 cases over the last three weeks, 4 adults and 2 children, and 1 of the male patients has reached the stage of respiratory paralysis.

East Barnet has had 5 cases over the last five weeks, 4 children and 1 adult. In the first case the only sign at onset was paralysis of the soft palate. The most recent case, in a male adult, was a neurotic with a mild pyrexia admitted for general and neurological investigation. The diagnosis, which had not been suspected, was made only after a routine lumbar puncture.

Notifications in England and Wales during the six weeks ending Aug. 3, 1946, were 8, 9, 12, 10, 18, and 23. In the corresponding weeks of 1945 they were 8, 15, 12, 16, 22, and 21, respectively, and the upward trend expresses the usual seasonal rise. During the past week single cases have been diagnosed at Malden and Coombe Borough, Sutton and Cheam Borough, and Merton and Morden U.D. These figures are not unusual at this time of the year.

There have been more cases of poliomyelitis in the U.S.A. during the present year than in any year since 1934. Of the 380 patients in Minneapolis, Minnesota, 10% have died, and the incidence of the disease has risen sharply in ten other States.

At Dijon and nearby towns 15 cases of poliomyelitis have been reported recently.

Discussion of Table

In England and Wales a large increase in the notifications of diphtheria—61 cases—was recorded. Other large variations in incidence were increases in scarlet fever 58, and dysentery 30, and a decrease in measles 42.

The increase in cases of diphtheria in Lancashire 37 was mainly contributed by the county boroughs. There were 32 more notifications of scarlet fever also in Lancashire, and 22 more in Yorkshire West Riding. Although the total notifications of whooping-cough were 6 fewer than in the preceding week, there were considerable variations in local trends—increases in Lancashire West Riding 50 and Lancashire 32, and a decrease in Kent 35. The number of cases of measles rose in Lancashire 121 and Durham 46, and decreased in Surrey 64 and Middlesex 63. The rise in the incidence of dysentery was mainly due to the experience of London, where the cases rose from 4 to 27 (St. Pancras 14).

In Scotland very little change occurred in the returns of infectious diseases; there were fewer cases of acute primary pneumonia 15 and scarlet fever 12, and a rise of 7 in the notifications of diphtheria.

In Eire there was a rise in the incidence of diphtheria 7 and of enteritis and diarrhoea 7, with a fall in the returns for measles 12 and scarlet fever 15.

In Northern Ireland a decrease of 10 was reported in the figures for both diphtheria and whooping-cough.

Week Ending August 3

The notifications of infectious diseases during the week in England and Wales included: scarlet fever 940, whooping-cough 2,092, diphtheria 246, measles 3,540, acute pneumonia 356, cerebrospinal fever 44, dysentery 59, acute poliomyelitis 23, paratyphoid 7, typhoid 60.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 27

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	41	6	17	1	3	42	6	23	—	—
Deaths	—	1	1	—	—	2	—	—	—	—
Diphtheria	308	22	74	32	10	370	26	105	72	1
Deaths	2	—	—	—	—	4	—	1	—	—
Dysentery	90	27	29	—	—	226	24	77	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	33	9	1	—	—	35	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	61	—	—	—	—	75	—
Deaths	38	1	12	3	4	38	3	11	21	—
Measles*	3,741	478	161	58	2	2,581	129	62	32	1
Deaths	4	—	—	—	—	1	—	—	—	—
Ophthalmia neonatorum	72	6	16	1	—	63	3	19	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	14	1	1(A)	—	—	7	—	1(B)	—	1(C)
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, (influenza)† ..	363	18	2	2	3	322	20	1	—	—
Deaths (from influenza)† ..	1	—	—	—	—	4	—	—	—	—
Pneumonia, primary ..	—	—	125	22	—	—	—	111	9	—
Deaths	—	16	5	6	—	—	26	4	—	—
Polio-encephalitis, acute ..	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	18	—	2	2	—	22	5	—	2	—
Deaths	—	—	—	—	—	1	—	—	—	—
Puerperal fever	—	3	16	—	—	—	5	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia† ..	145	16	16	3	1	161	14	18	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	994	86	92	14	16	1,223	76	155	24	—
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	8	—	10	5	—	11	3	1	4	—
Deaths	—	—	2	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,468	166	29	44	14	1,092	55	19	52	—
Deaths	8	1	3	—	—	2	—	—	—	—
Deaths (0-1 year) ..	342	53	59	20	11	247	31	45	38	—
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	3,551	632	499	168	108	3,512	516	481	183	1
Annual death rate (per 1,000 persons living) ..	—	—	11.0	10.8	—	—	—	10.9	11.8	—
Live births	8,778	1378	1104	356	236	6,571	844	942	397	2
Annual rate per 1,000 persons living ..	—	—	22.2	22.8	—	—	—	18.8	25.6	—
Stillbirths	285	37	26	—	—	196	22	31	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	23	—	—	—	—	32	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the return are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Removal of Tattoo Marks

Q.—*What is the best way to remove tattoo marks?*

A.—The question of removal of identifying marks from the criminal has been discussed in medico-legal textbooks. There is no effective procedure except surgical treatment, although it is sometimes sufficient to change an inappropriate design by additional tattooing. The question has also been considered in connexion with the marks—for instance, on the face—from the admission of particles following motor accidents. Here plastic surgery may be required.

Treatment of Phlebitis

Q.—(i) *What are the modern treatment of phlebitis and its rationale? All the older textbooks advise immobilization for periods up to four weeks and stress the dangers of embolus. More recently there is a tendency to encourage early active movement in such conditions as phlegmasia alba dolens. A patient recently had a recurrence of phlebitis in the internal saphenous vein, beginning below the knee and spreading up into the thigh. It was advised that the limb be kept wrapped in a dressing of kaolin poultice and that the patient (a farmer) continue his normal activities. This seems so much the opposite of immobilization between sandbags for four weeks that I should be glad of an opinion as to the safety of the treatment and the probable period of incapacity.*

(ii) *An intelligent patient always demands an explanation. What is the modern view on aetiology in the absence of a history of typhoid, pregnancy, operation, varicose veins, trauma, or a streptococcal throat infection?*

A.—(i) For practical purposes "phlebitis" usually means a pathological process occurring in superficial veins of the lower limb, and in veins that are incompetent and varicose. There are naturally many other types, but their incidence is small when compared to the varicose type. The consensus is now in favour of ambulatory treatment in the majority of cases. The limb is enclosed in an adhesive bandage to well above the upper limit of the phlebitis. Moderate activity is allowed, and the supporting bandage is changed at intervals of about a week. When all pain, tenderness, and redness have gone the temporary use of a crêpe bandage is advisable before allowing unrestricted use of the limb. Ultimately treatment directed to the varicose veins themselves may be necessary—either injections or operation; but injections should never be carried out until at least six months have elapsed after an attack of phlebitis. This supporting treatment during phlebitis lessens pain, diminishes oedema, and therefore favours repair processes, and the moderate use of the limb improves the venous circulation and so lessens the risk of extension of the thrombosis. Clinical experience has shown the safety of this method. The local thrombus is adherent to the vein wall at the site of impaired nutrition, it is very irregular in shape, and the vein itself on the heart side is usually also irregular. Pulmonary emboli tend to come from extensions from the original thrombus of clot which is no longer adherent to the vessel wall. Bed may certainly lessen the risk of separation of a thrombus, but it will certainly favour the extension of thrombosis as the result of stagnation. In the case now quoted the recurrent phlebitis was probably associated with veins that were incompetent but un-

diagnosed as such, and therefore the treatment by support, as advised, was correct. Ambulatory treatment is not advisable where there is thrombosis of massive type in a completely incompetent internal saphenous vein, and ligation at the saphenous opening may be preferable in these. Neither does the treatment apply to those cases of infectious or bacterial thrombophlebitis associated with high fever. In most cases the period of relative incapacity due to phlebitis is determined by the extent of the process when the patient comes under observation, and it usually varies from three to six weeks. On the other hand, almost all clinicians still favour a prolonged period of immobility in conditions of deep thrombosis or phlegmasia alba dolens. In such cases the clot is massive, the veins are not irregular, the walls are healthy, and the thrombus is but lightly adherent.

(ii) Phlebitis in superficial veins in the lower limbs is almost always secondary to incompetence and varicosity. The thrombosis occurs at the site of thinning and impaired nutrition of the vein wall, and results from stagnation. At the local site the initial clot is adherent and irregular. Focal infection may play a part, but if it were an important part one would expect phlebitis to be much commoner in healthy, competent veins and in other situations. In a large number of cases this venous incompetence is overlooked. The phlebitis associated with typhoid, the puerperium, and operation is usually a deep thrombosis. Trauma or focal infection is more likely to lead to thrombosis in a varicose vein than in a normal one.

Diet and Renal Calculus

Q.—*A man of 46 with only one kidney (the other was removed in 1918) has twice had a renal calculus—one in 1933 and another last year. Cystoscopy and retrograde pyelography showed nothing abnormal, but the second stone was formed of oxalates. Both stones were passed "per vias naturales." What advice should be given—as to diet, for example—to prevent another stone forming?*

A.—The advice to avoid strawberries, rhubarb, spinach, and tomatoes is so well known that it does not merit repetition. However, it must be acknowledged that patients who never eat these substances form oxalate stones, and on seeking for the cause we are thrown back on to the statement that "gastro-intestinal upsets" can give rise to oxaluria. If this statement is analysed fully it seems most probable that the underlying cause of this alimentary upset is excess of carbohydrate in the diet, and patients who suffer from oxaluria should be advised to limit their carbohydrate intake.

Achondroplasia

Q.—*A patient aged 2 has achondroplasia. Has pituitary growth hormone any effect on the course of this disease? If so, what are the dosage and the period of treatment? Is there any danger in its prolonged use?*

A.—Achondroplasia is a congenital abnormality of bone cartilage formation arising in foetal life, and characterized by short legs and arms, a relatively long body, good intelligence, a big head and face, a square nose with a depressed bridge, and spade-like hands. Underlying endocrine defects have not been discovered, and in the writer's opinion this condition is unlikely to prove of endocrine origin or to be influenced fundamentally by endocrine therapy.

As regards the general question of the use of pituitary growth hormone, there is no danger from prolonged use. As, however, antibodies form in the blood after some weeks of injection it is advisable to separate the courses of treatment by intervals of two months. Even in dwarfism specifically due to a pituitary deficiency the writer is not impressed by the clinical results of the pituitary growth hormone, or at any rate by those preparations available to clinicians up to the present time.

Nail-biting in Adults

Q.—*What is the cure for adult nail-biting?*

A.—Nail-biting is in most cases the result of suppressed aggressiveness. It usually originates in early childhood, when the child, thwarted in every way and finding no other outlet, expresses it in this manner. Biting is fundamentally an aggressive rather than a nutritional form of behaviour; and biting

one's nails has the advantage over biting other things, in that one can feel the effect of the biting on oneself. It often occurs in moments of tension, such as during an examination. Exertion of will may be effective, but difficult because it is opposed by the basic and natural impulse to assert oneself. Only a very strong incentive to the exercise of the will is capable of overcoming the habit.

The natural cure is greater expression for normal assertive tendencies in life, work, and in relation to people; but the difficulty in this as in all the psychoneuroses is that it is no longer circumstances which thwart one but oneself. So that instructions to be more assertive in normal ways may be met by inhibitions in the patient himself, who, because of the early fears which made him repress his assertiveness, dare not express it now. The only adequate method, therefore, is by psychological treatment to discover the cause of the original aggressiveness and of its repression, and so release it for the normal uses of life.

Formates in Sweat and Urine

Q.—What is the hydrogen formate content of spirit of formic acid? It is stated in a dictionary of chemistry that formic acid appears in sweat and urine. Is this true? If so, is formic acid present in excess in the acid sweats of rheumatism?

A.—Spirit of formic acid is probably another name for spiritus formicarum. This contains 1% of formic acid in about 70% alcohol. It was formerly obtained by macerating ants. Formates appear in the urine, the normal daily excretion being 30 to 120 mg. Some part of this formate may be present as formic acid, but this is not known. Since formates appear in urine, they will almost certainly be present in sweat. It is not known whether formic acid is present in excess in the acid sweats of rheumatism.

Face-powder Dermatitis

Q.—A patient suffers from an acute erythematous dermatitis of the face starting about two hours after applying face powder—the condition becoming progressively worse in the next 24–36 hours. It appeared first about eight months ago, and sensitization must have taken place when face powder was used when the patient had a boil on the face. A so-called non-irritant powder has had the same effect. What are the constituents of face powder likely to cause such a reaction? Could it be due to the scent? Is any method of desensitization likely to prove successful? If not, can you recommend a substitute for the ordinary cosmetics?

A.—The constituent of face powder most likely to cause dermatitis is orris root. It is commonly used in face powders and has a delicate odour of sweet violets. Another but much less likely possibility is lycopodium; while other constituents are rice starch, arrowroot starch, maize starch, barium sulphate, bismuth salts, chalk, kaolin, kieselguhr, canolin, magnesium carbonate, stearate of zinc, talc, and zinc oxide. The most satisfactory treatment is elimination of the cause; orris-root-free powder is obtainable. Hyposensitization is tedious and should be considered only in exceptional circumstances.

Sunstroke and Heat-stroke

Q.—Why have topees and double-terais been discarded by both the Services and civilians in the Tropics? I met with many cases of both sunstroke and heat-stroke in Mesopotamia in 1916–18; this in spite of head-covering and spine-pads. Playing cricket, golf, or tennis without head-covering obviously reduced the player's stamina. Women in the Services, when they chose, walked about in Ceylon without any kind of hat.

A.—It is now believed that sunstroke really amounts to heat-stroke, and that insolation does not occur merely from the direct impact of the sun's rays upon the unprotected head or nape of neck. This is dangerous only when body cooling proves inadequate. Certainly experience has shown that it is possible to live and work in the Tropics with bare torso and no hat; indeed the incidence of prickly heat over the trunk is probably much lessened. Nevertheless, some may well consider that the pendulum has swung too far, and the present-day habit of undress in the Tropics may be nothing far short of a cult or a fad. Premature exposure of untanned skin to the tropical sun is certainly unwise, especially in those not in first-

class physical condition. In discarding spine-pads and topees an individual may be depriving himself of a certain measure of comfort, as well as a pleasing shade to the eyes against glare. It may be significant that the indigenes in desert countries usually wear clothing to protect both body and head. The effect of sunlight on the naked body is comparable to exposure to a source of radiant heat. Even in the Tropics a stoker in the boiler-room of a ship would hesitate to expose his bare torso to the radiant wild heat emanating from the engines. Although tanning of the skin protects against the painful effects of ultra-violet radiation, the body is rendered more sensitive to heating effects. Such a person absorbs more energy and will be heated more than one with a fair skin. This effect may be sufficient to tip the scales when the thermoregulatory body mechanisms are being strained. The interested reader may be referred to the recent monograph of H. F. Blum, "The Physiological Effects of Sunlight on Man" (*Physiol. Rev.*, 1945, July, 483), and also to D. B. Dill's *Life, Heat and Altitude* (Cambridge, 1938).

Incidentally one should be cautious of accepting the diagnosis of "sunstroke" in this country. Spontaneous subarachnoid haemorrhage from a leaking cerebral aneurysm is not infrequently so labelled.

Narcolepsy

Q.—Is there any effective treatment for a man of 55 who is subject to falling asleep suddenly without warning? It came on after the 1914–18 war, and prevents him from undertaking serious employment.

A.—This patient is evidently suffering from narcolepsy. The only effective treatment is amphetamine sulphate, which may be given in doses of 10 mg. two or three times a day, but the last dose should not be taken later than teatime lest it interfere with sleep at night. Marked hypertension would be a contra-indication.

LETTERS, NOTES, ETC.

Varicose Ulcers and Penicillin

Dr. MARGARET VIVIAN (Bournemouth) writes: One of your correspondents asks (Aug. 3, p. 183) whether penicillin has been successfully used for varicose ulcers, and so my own experience may be of interest. The patient had an ulcer in the middle of a tough scar half-way down the anterior surface of the tibia. The scar was originally due to an injury in the hockey field, and has been the site of varicose ulcers on two previous occasions. This time it started in 1939 with a slight abrasion, which spread rapidly until it was about 5 inches long and 2 inches wide. Various local applications were used without success, and the patient feared that he would carry this painful and indolent ulcer to his grave. In April, 1945, I was able to obtain penicillin cream, and immediately the ulcer became cleaner and began to heal. The only other treatment was the occasional application of lint soaked in a 1% solution of allantoin. The healing process was very very slow, and the final stage seemed interminable, but now, sixteen months after the first application of penicillin, the skin is whole.

Woolner's Tip

Dr. G. D. SUMMERS (Lincoln) writes: May a nephew of Thomas Woolner thank your correspondent for his kindly note (Aug. 3, p. 170)? Osler in his *Principles and Practice of Medicine* (8th Ed.) wrote of tophi under gout: "The student should learn to recognize, on the ear margin, Woolner's tip." Bland-Sutton used to speak similarly. Lovers of art among your readers may be interested to remember that Woolner was Rossetti's model for the angel Gabriel, Christina being the Blessed Virgin Mary, in "The Annunciation" in the National Gallery.

Duodenal Ulceration

Dr. ROSA FORD (London, W.1) writes: May I refer Dr. J. J. Kennedy (July 27, p. 136) to the work of F. A. Pickworth (*Proc. roy. Soc. Med.*, 1928, 21, 972) and P. Watson-Williams (*British Medical Journal*, 1928, 1, 931) on the aetiology of duodenal ulcer? Acting on their theory that infection from a remote septic focus is the cause of the ulcer, I once had the opportunity to treat a case (regarded as hopeless by a physician) by drainage of the nasal sinuses, with prompt and lasting success. A full report was published in the *Clinical Journal* (1945, 74, 190).

Remedies for Herpes

A reader has pointed out that in the answer to a question on the above subject published in the *Journal* of May 25, p. 822, no mention was made of the medical memorandum by E. S. Hawkes on contramine for herpes (*B.M.J.*, Sept. 25, 1943, p. 391).

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 17 1946

THE ETHICS OF CONTRACT MEDICAL PRACTICE

BY

A. G. BADENOCH, M.D.

It is an immemorial custom to return payment for any service rendered. Organized delivery of any service—for example, water-supply by a municipality, or letter-carrying by the Postmaster-General—does not alter this. The traditional method in medicine, notwithstanding ill-informed statements to the contrary about Chinese practice, is that the patient pays the doctor. Where the medical services rendered must of their nature be organized, and even to some extent compulsory, as in infectious disease treated by a local authority, the rule of payment still holds, though here payment is made through the rates. One great advantage of this is that the service is made available even to those who are too poor to pay rates, and may be imposed compulsorily on those who might be careless about disease likely to spread to others. In a similar way the law has power to intervene in the case of children whose parents might neglect their health. There is no such thing as a free medical service; all must be paid for, directly or indirectly.

Broadly speaking, in most health matters the onus is thrown on the individual to seek treatment for his ailments. This is well warranted by tradition and is a very sound attitude towards the matter. Until comparatively recently the individual was rightly regarded as the custodian of his own health. The growth of industrialism, with its highly urbanized and slum-housed population, created a demand for evolution of medical practice in the direction of compulsion. The miserably low wages paid to the workers, their concentration in slums that were both mind- and body-destroying (I make no mention of the soul), their separation in time and place from the healthy life of the countryside where illness and the doctor were untoward events rather than the everyday feature these have become, were factors that led the humanitarian-minded to press for some form of organized medical treatment by contract. On the other side, sickness-rates were rising and employers of labour were constantly faced with a problem of sickness-absenteeism that appealed to their charitable and their business instincts as something that must be remedied. The trend of the times pointed to its being palliated by an Act of Parliament; the result was Lloyd George's scheme of State-controlled medical insurance for wage earners.

Example of the Panel Service

This has now operated for nearly a third of a century, and we are able to assess some of its results. The demand for cheap and readily available doctoring that had given rise to the medical-aid clubs of the industrial centres was universally met all over the country. Doctors, at first somewhat loath, proved themselves fully co-operative. Though handicapped by a low scale of payment (which, indeed, has relatively remained about the level of the old sickness benefit societies), the panel doctors made an honest attempt to grapple with their growing lists of insured persons and, what is more significant, with the growing proportion of patients seeking medical aid. Their competence, industry, and even heroism need no advertisement here, though many sections of the Press have been strangely silent about their labours. It is perhaps relevant to remind readers that the expectation of life of the doctor is easily the lowest among the professions, in spite of his obviously favourable position *vis-à-vis* actual disease.

On the other hand, there is at the moment an outcry that the panel patient is not being fairly dealt with. It is, of course,

a *prima facie* case against any form of contract service that this is so. To say so is not to attack the panel doctor, but rather to rail against that very fundamental element in any craftsmanship that finds the pleasure in the work enhanced by the pay it brings. But we need not thus, with the ignorant, rail at anything or anybody. It would be a very inhuman doctor who did not find some consolation on thinking that the guinea in prospect did offer some small consolation for a broken night's sleep. It would be a very unusual man (and one perhaps culpably indifferent to the needs of his family) who did not attempt to offset the poorly paid drudgery of slum practice by having a number of patients who paid him on a more generous scale than the local insurance committee. Much of the present dissatisfaction, real or inflated, might have been prevented had successive Ministers of Health dealt more generously with the doctors. The public, like every other person or body, cannot expect a good service without paying for it.

An Unalterable Law

To receive due remuneration is honourable in any craft or profession. If the payment is direct, by case treated or by individual visits paid, it does enhance the doctor's pleasure in his day's work. This is incontrovertible, and as a law of human nature it is, I venture to say, unalterable. Only a perverted view of the dignity of service and the remuneration thereof, such as is gaining impetus from the sorry results of over-industrialization, would hope to have it different. This goes outside my title, but I am tempted to offer the solution and finish with this part of the subject: give every man adequate reward for his labour and, with very simple machinery to deal with the hard cases, the doctor will receive his, and receive it directly from his patient without the intermediary of approved society, local authority, or Ministry of Health. Whatever desperate remedies the desperate disease of "slum-dom" requires and may find, this should be kept before the medical profession as an ideal to be achieved at some future date.

Consider now the patient's side of the question. Does anyone wish to be a contract patient, whether of panel or State? The answer is nearly always negative, and the few affirmatives come from those who are so sunk below the poverty level that they know nothing else. I have been in practice for a quarter of a century among all classes, and I have never yet been approached by a patient, rich or poor, in sickness or in health, with the request that he and I should enter upon a private contractual arrangement for my medical services. I draw the conclusion that contract medical practice has been forced on the people by their sub-human circumstances and that they have accepted it only as the lesser of two evils. The free man likes to choose and to pay his own doctor.

One now enters on the delicate ground of the reaction of the individual patient to the medical contract he has, perforce, entered upon. I have been honest about the doctor; he gets an enhanced pleasure out of work that is paid in proportion to the amount of time and trouble he has expended. What about the patient? An equally honest answer may be given without hurting anybody's feelings. Fundamentally, the average patient is slightly ashamed of the business. That is how most people feel when they take the first step to avail themselves of a contract of this kind. They would prefer, as they may often be overheard saying, "to pay their way." Legally wrong, this is very human. From the outset the contract produces a sense of inferiority.

The Patient's Reaction to the Contract

A sense of inferiority is always a bad thing. Like everything that is bad of itself, it produces its results in different

ways according to the individual in and through whom it is operating, but its results are always bad, in varying degree. They are bad when a patient tolerates illness, even, severe illness, as many do, rather than trouble the doctor. They are bad when a patient pays twice over by going to a doctor outside the agreement and paying his fee. This happens much more commonly than some advocates of contract practice care to believe. It has even been provided for in the new Health Service Bill.

There is yet another bad result of this sense of inferiority. It works in a more subtle way than the foregoing, and may not be so immediately apparent as a result of it, any more than the aggressiveness of certain characters is always recognized by their companions as due to an "inferiority complex." It leads to a wrong attitude both to illness and to seeking its alleviation. It is a fruitful cause of lowering the mutual respect that should exist between doctor and patient. Put crudely, it may be clothed in the words: "I am entitled to it and I am going to have it." It is this attitude that leads to the crowding of the doctor's waiting-room and the swamping of his day's list with a horde of trivial minor complaints that absorb the time he would gladly spend on the more serious cases. Inevitably, it leads in the doctor's mind to a new approach to the problem of each individual new case, an approach that has deteriorated from the old sympathetic approach of the family doctor.

I do not mean that this sense of inferiority is the sole cause of that multiplication of minor maladies that we all know so well. But it must rank causatively along with slum conditions, enslavement in bad factories, rubbishy foods, and the absurd attitude to health suggested by advertisements of patent medicines. Most of these minor maladies could be alleviated, cured, or allowed to pass off with the exercise of a little domestic medicine, natural hygiene, and/or patience. And all these factors are increasingly lacking in those whose minds have been debauched by thirty years of industrialized mass-produced "medicine."

It is scarcely possible to over-stress the violence that has been done to the mass of our people by this faulty attitude to what is beginning to get lip service as positive health. It is this, and not any slackness, or incompetence, or unworthy discrimination on the part of the doctors, that is responsible for most of the disrepute into which "panel medicine" is falling. Whether an extension of the system to include 100% of the population is likely, when the system has had time to evolve, to produce improvement and not have the effect of levelling down the practice of medicine to a controlled uniformity is a question that should be answered, so far as it can be answered, from the evidence available from the past, and not according to the wishful thinking of any particular political ideology.

HEARD AT HEADQUARTERS

Good Hearing

Many praises were accorded during the recent A.R.M. to those responsible for the acoustics of the Great Hall. In former days the proceedings were frequently interrupted by complaints from members at the back of the hall that they could not hear what was said, and when the microphone was adjusted differently it might be that those within a yard of the speaker were unable to distinguish one word. These difficulties have now been overcome by a system which enables speakers to be heard with equal clearness at the Press table and in the back gallery. At the recent Representative Meeting there was not one complaint that a speaker was not fully heard.

Building Improvements

Another matter which has been put in hand by the energetic Building Committee under the chairmanship of Mr. A. M. A. Moore is the ventilation of the council chamber. Long meetings take place in that chamber, and as there is a tendency on the part of members of Council to appeal quite early in the day for the relaxation of the rule against smoking the physical atmosphere becomes obscure in inverse ratio, no doubt, to the clarification of the mental atmosphere. A firm of experts, after examining the present method of ventilation, has recommended

the installation of air shafts and ventilators at varying levels, so as to maintain a constant lateral movement of air. No mechanized devices such as noisy fans need to be employed, and there are no maintenance costs once the system has been installed. It is expected that when the new system is put in all the stagnant air and tobacco-smoke will be removed, and the chamber will be kept fresh for twenty-four hours of the day—not that Council meetings last as long as this.

Lighting in the Library

Yet another plan for the improvement of the amenities at B.M.A. House is the projected installation of table lamps in the library, with individual fittings to be controlled by the reader, thus bringing it into line with the best public and private libraries. It is also proposed to have a sectional form of shelf lighting. Fluorescent lighting has been fitted in the staff basement, and it is expected that presently it will be possible to introduce the same lighting into other rooms at present not well illuminated. Another service to members is under consideration. This is the rearrangement of the basement garage to provide free accommodation for members' cars during ordinary office hours and at other times by arrangement, together with a minor repairs service, for which the member will be charged at normal rates. Certain matters have yet to be discussed, however, before this can be brought into operation.

Correspondence

The Bill and the Capitation Fee

SIR,—Dr. S. C. Alcock (*Supplement*, July 27, p. 32) would have us believe that the inadequacy of the N.H.I. capitation fee, now as always, has a simple explanation. For twenty-five years, it would seem, the Insurance Acts Committee has been the acme of ineffectiveness and inefficiency. A curious accretion of timorous souls, its contacts with the Ministry of Health have amounted only to one long, dreary succession of failures. It has achieved nothing and therefore should be replaced by a more competent body.

If such is the case and I interpret Dr. Alcock aright, two questions demand immediate answer. Why has the insurance practitioner been so shockingly served over the years by his representatives on Panel Committees, on whom rests the onus of electing the direct representatives who form the majority of the personnel of the I.A.C.? And what is one to say of the negligence of the various bodies, Panel Conference and Representative Body included, responsible for the election of other members of the Committee?

The suggestion that another body, possibly led by counsel, should act for the profession in dealing with the Ministry is not new. It was turned down heavily when last considered. The I.A.C. is the executive of the Panel Conference, to whom it is responsible and whose policy it seeks to implement so far as lies in its constitution and in its powers. Without the confidence of the Conference it could not function or continue to exist. If at the present time it does enjoy that confidence such statements as "the I.A.C. had failed, as usual, so miserably" are of the greatest disservice to the profession, creating distrust and disharmony. The responsibility for the inadequacy of the capitation fee rests, as it has always rested, with the Ministry. To imply that the I.A.C. shares this responsibility is, in fact, to place the blame squarely on the shoulders of the injured party, the panel practitioner himself, since his chosen representatives have so signally failed to secure for him just payment. Dr. Alcock's indignation at the unjust capitation fee is shared by every panel practitioner, but his assumptions travesty the facts. Unfair criticism does not make for strength and is destructive of all effort for the common weal.

The present Minister has accepted the findings of the majority report of the Spens Committee—an official admission of the inadequacy of the N.H.I. capitation fee. It is perhaps not generally realized that it was largely at the instigation of the I.A.C. that the Spens Committee was set up. The report of a special meeting of the I.A.C. dealing with the latest develop-

nts appears in the *Supplement* immediately above Alcock's letter; it concludes with a resolution for action, passed, after long discussion, unanimously. May I finally draw attention to Dr. Alcock's suggestion that a future service capitation-payment will no doubt be influenced by the present capitation fee. Will it indeed, Sir? Any influence will be to the good if it confirms the profession a realization of the necessity for vigilant scrutiny of all financial terms, and the firm refusal even to consider inadequate remuneration. The time to make the stand is before the contract is signed—if it is to be signed at all.—I am, etc.,

High Wycombe.

D. J. B. WILSON.

The Public and the Bill

SIR,—Friday's *Times* leader, which throws the uncertain light inapt historical comparison unfairly on one aspect of our fight for freedom, again emphasizes the inadequacy of our press. Could we not have for lay consumption a monthly detachable supplement to the *B.M.J.*? Laid on the tables in our sitting-rooms, or even with its holder pages pinned to the walls, this supplement could present facts that the public needs to know and cannot find in the lay press. Surely Mr. Abel's nursery rhymes deserve a wider public. And no doubt he could also supply a comic strip of Basher the Brutal T.B. and the Beastly Band! But this is looking ahead to the days when the "*B.M.J. Monthly Supplement*" might be a popular family magazine giving scope to varied talents. At this stage of our story it is galling to see on the one hand misrepresentationounding and on the other hand truth buried between pages of technical dissertations in the *B.M.J.*—I am, etc.,

South Ruislip.

WILLOUGHBY CLARK.

Protection of Practices

SIR,—Dr. G. A. K. Steen's accusation (*Supplement*, July 20, 1946) leaves me cold. He should not have expected 100% success from a scheme which was obviously one-sided. All credit to those who tried to work it.—I am, etc.,

London, N.9.

M. P. K. MENON.

Medical Unemployment

SIR,—I feel I cannot let the letters from unemployed ex-service doctors published in the *Supplement* the last week or so go unanswered. I and my partner before the war and during the early war years had an assistant, and a practice that took all three of us to cope with it. Then our assistant was called up and for three years or more we struggled on doing not only our own work but that of a local man as an absent practitioner. Now we have been seeking another assistant for over twelve months.

We can offer £700 per annum, the use of a somewhat dilapidated car, and a house to live in, and if we can find a man who fits in with us we are prepared to offer a full third share in the practice. The house has just been rebuilt after being demolished by a bomb, and the garden is a mass of rubble—in an industrial population. We can get no British offers and have to have an alien assistant, who is single and lives out. It seems a queer thing that we who are tired and overworked cannot contact those who are seeking for a place to settle. But this practice means hard work amongst a very good type of artisan and labourer.—I am, etc.,

"PRINCIPAL."

SIR,—I can well sympathize with the opinions of "Unemployed Ex-Serviceman" and Dr. G. L. E. Thomas (*Supplement*, Aug. 3, p. 58), and can confirm all their statements from the light of bitter experience.

I was demobilized in August, 1945, and I am yet unemployed. I have applied for various posts advertised in the pages of the *B.M.J.* and did not receive the courtesy of a reply to one of them. I have come to the conclusion from my observations and experience in civilian life that in the Army you get employment, courtesy, and manners, because, I suppose, there is some authority to enforce the ordinary kindly relations between man and man. That contributed greatly to the winning of the World War II. We ought to try and win the peace by behaving

in a somewhat similar manner. The fact that there are unemployed ex-Service doctors is something that must cause grave anxiety in time to come. The remedy is simple. Ex-Servicemen should be employed as well as having priority over other candidates. I am not speaking on behalf of myself although I was a volunteer in H.M. Forces, but for all who wore the King's uniform at a time of agony and distress.—I am, etc.,

ANOTHER EX-SERVICEMAN.

SIR,—The professed aim of the Labour Government in introducing the National Health Service Bill is to provide better medical services, particularly in the industrial or poorer areas. The standard of medical practice in these areas leaves much to be desired, chiefly because of the paucity of doctors there. Whether the N.H.S. will improve matters remains to be seen. Years will pass before the N.H.S. can alter the present position. An increase in the N.H.I. capitation fee, say to 15s., would enable overworked practitioners to employ partners or assistants and so provide better medical services. That there is already serious unemployment among doctors returned from the Forces is indisputable.

I advertised for an assistant in the *B.M.J.* ("with or without view"), and I have been literally inundated with applications. The great majority were from men (and from women too) whom one would be proud to employ both because of distinguished war record and on account of academic distinction.

It is quite impracticable to answer but a few, much as I should like to thank each and all. If the B.M.A. has the interest of those returned doctors at heart it will push on with securing an adequate capitation fee before it allows itself to compromise with the Government on any other problem. I hope applicants will realize the position and that they, too, will join with the panel doctors, in their own interests, in trying to secure a fair capitation and so alleviate the pressing unemployment.—I am, etc.,

"M.D."

Domestic Help for Doctors' Wives

SIR,—Surely Dr. B. Richardson Billings (*Supplement*, July 20, p. 29) is unduly pessimistic about the future of doctors' wives under the National Service. The doctors have been asked to place their services and their surgeries at the Government's disposal; but no request has yet been made to the doctors' wives either to keep the said surgeries clean, or to attend to bells and phones.

If I am asked to work in the Government scheme, free, gratis, and for nothing, while my M.P. draws £1,000 a year for doing less, the answer will be in the negative.—I am, etc.,

A DOCTOR'S WIFE.

H.M. Forces Appointments

ROYAL NAVY

Surg. Cmdr. A. L. McDonnell has been placed on the Retired List. Acting Surg. Lieut.-Cmdr. G. J. Potts to be Surg. Lieut.-Cmdr. Temp. Surg. Lieut. G. M. Baird has been transferred to the R.N. Permanent List in the rank of Surg. Lieut.

ARMY

Col. J. G. Gill, C.B.E., D.S.O., M.C., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Major-Gen.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. R. N. Phease having attained the age for retirement is retained on the Active List supernumerary. Major (War Subs. Lieut.-Col.) D. A. O. Wilson to be Lieut.-Col. Short Service Commission.—War Subs. Capt. H. R. Vincent, from R.A.M.C., Emergency Commission, to be Lieut., and to be Capt.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Major F. R. Fletcher having attained the age limit of liability to recall has ceased to belong to the Reserve of Officers.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major E. White having exceeded the age limit has retired, retaining his rank.

War Subs. Capt. R. D. Guy to be Capt.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Major (now War Subs. Licut.-Col.) A. J. Watson to be a Consultant Surgeon, and has been granted the local rank of Brig.

To be Licuts.: W. R. M. Alexander, E. L. Dutta, S. A. M. Garibian, J. R. Edge, J. A. C. Edwards, J. F. Edwards, D. M. L. Evans, J. D. Hallissy, C. J. MacD. T. Jones, W. R. Jukes, J. D. Martin, J. M. U. Philip, J. M. Reed, M. McK. Shaw, J. B. Cavanagh, R. O. F. Hardwick, D. J. B. Johnston, A. I. Macleod, P. Pau, R. Schneider, S. Shubsachs, and J. Y. D. Wakcham.

Association Notices

SCOTTISH COMMITTEE

SESSION 1946-47

Election of three representatives by the Group of seven Divisions comprising Orkney, Shetland, Caithness and Sutherland, Inverness, Outer Islands, Ross and Cromarty, and Argyllshire.

In accordance with the Standing Orders of the Scottish Committee nominations for these three vacancies shall be in writing and may be made (a) by a Division, or (b) signed by not less than three members of the Group.

Nomination forms have been sent to the Hon. Secretaries of the Divisions in the Group, and can also be obtained on application to the Scottish Office.

If more than three members are nominated the election shall be by voting papers sent by post from the Scottish Office to each member of every Division in the Group.

Nominations should be sent to me at the Scottish Office, 7, Drumsheugh Gardens, Edinburgh, not later than August 31, 1946.

R. W. CRAIG, Scottish Secretary.

CONSULTANTS AND SPECIALISTS COMMITTEE

Part-time Consultants and Specialists

Notice is hereby given of the formation by the Council of an electoral roll for the election to the Consultants and Specialists Committee of five representatives of members of the Association who are engaged part-time in consultant and specialist practice. Members of the Association who claim to conform to this definition, including those serving with H.M. Forces, are requested to complete and return the appended form to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, not later than Monday, Sept. 2, 1946.

CHARLES HILL,
Secretary.

Aug. 3, 1946.

BRITISH MEDICAL ASSOCIATION

CONSULTANTS AND SPECIALISTS COMMITTEE

Part-time Consultants and Specialists

FORM OF APPLICATION FOR INCLUSION IN ELECTORAL ROLL

To the Secretary,
British Medical Association,
B.M.A. House, Tavistock Square,
London, W.C.1.

I wish to apply for inclusion in the electoral roll for the election of representatives of part-time consultants and specialists on the Consultants and Specialists Committee. I am a member of the Association and am engaged part-time

in the consultant and specialist practice of.....

Signed.....

Address.....

Date.....

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

WEEKLY POSTGRADUATE DIARY

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre, Edinburgh Royal Infirmary, Thurs., 4.30 p.m. Dr. R. M. Murray-Lyon, Aetiology and Diagnosis of Amoebiasis.

APPOINTMENTS

EAST HAM MEMORIAL HOSPITAL.—Honorary appointments. Physicians, A. C. M. Elman, M.D., M.R.C.P., Beryl E. Barsby, M.D., M.R.C.P. Orthopaedic Surgeon, L. Gillis, M.Ch.Orth., F.R.C.S. Ophthalmic Surgeon, I. Spiro, F.R.C.S. Dermatologist, C. C. Ryan, M.D. Assistant Physician, A. M. Stewart-Wallace, M.D., M.R.C.P. Assistant Surgeon, I. E. Zieve, F.R.C.S. Assistant Obstetrician and Gynaecologist, D. G. W. Clyne, F.R.C.S. Ed. Assistant Orthopaedic Surgeon, R. Parkinson, F.R.C.S. Refractor, J. Halperin, M.R.C.S., L.R.C.P., D.O.M.S. Anaesthetists, J. W. Kelsley, M.B., Ch.B., J. Ives, M.B., B.S., D.A., J. A. Lee, M.R.C.S., L.R.C.P., D.A., Mrs. Audrey Marsden, M.B., Ch.B., D.A., Mrs. Ursula Y. Hamilton Paterson, M.R.C.S., L.R.C.P., D.A. Ear, Nose, and Throat Registrar, L. E. Gardiner, M.R.C.S., L.R.C.P., D.L.O. Pathologist, E. H. Koerner, D.M.

RAMSGATE GENERAL HOSPITAL.—Honorary Consulting Urologist, E. Freshman, F.R.C.S. Honorary Consulting Dermatologist, H. A. Treble, M.R.C.P. MACPHERSON, IAN, M.D., M.R.C.P., Honorary Assistant Physician, General Infirmary at Leeds.

SEYMOUR-JONES, J. A., F.R.C.S., D.L.O., Registrar, Portsmouth and Southern Counties Eye and Ear Hospital.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BELLAMY.—On July 15, 1946, at Rankin Memorial Hospitals, Greenock, to Margaret (née Kinloch), wife of Richard Bellamy, M.B., B.Ch. (Licut., R.A.M.C.), of Bridge-of-Weir, Renfrewshire, a son—Peter.

CUST.—On July 21, 1946, at 25, Elvaston Place, S.W.7, to Frankie (née Lyons), wife of Norman Cust, M.D., a daughter—Nonie.

DAYNES.—On August 4, 1946, at Westminster Hospital, to Janifred (née Justham), wife of Dr. Guy Daynes, 48, Greycote Gardens, S.W.1, a son—Jeremy Guy.

GRETTON-WATSON.—On July 26, 1946, in London, to the wife of Dr. B. G. Gretton-Watson, a son.

KITCHING.—On July 30, 1946, at Lorna Lodge Nursing Home, Manchester, to Gwendolene Mary (née King), wife of Dr. E. Howard Kitching, of Belmont, The Avenue, Hale, Cheshire, a son.

PUDDICOMBE.—On August 4, 1946, at Woking, to Doris Marjorie (née Box), wife of Dr. R. T. M. Puddicombe, a son—Robert Eyre.

MARRIAGES

GALLOP—HARRISON OSBORNE.—On July 20, 1946, at Leckhampton, Captain Maurice F. Gallop, R.A.M.C., of Tunbridge Wells, to Nancie (Ann) Harrison Osborne, C.S.P., of Cheltenham.

MACKINNON—SEPTON.—On August 2, 1946, at Walkden, Donald MacKinnon, M.B., B.S.Lond., M.R.C.S., younger son of the late Dr. Ronald MacKinnon and Mrs. MacKinnon, of Oldham, to Kathleen Needham, only daughter of Mr. and Mrs. R. Septon, of Walkden, Lancs.

DEATH

MAYNE.—On August 6, 1946, at Plymouth, Mary Elizabeth, beloved wife of Cyril F. Mayne, F.R.C.S.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Mr. Guy Blackburn, F.R.C.S., at 51, Harley Street, W.1 (Langham 3711); Mr. T. Keith Lyle, F.R.C.S., at 42, Charles Street, Berkeley Square, W.1; Mr. G. C. Sawyer, M.S., F.R.C.S., at 6, St. John's Road, Leicester; Dr. J. D. Spillane, at 110, Cathedral Road, Cardiff.

LONDON SATURDAY AUGUST 24 1946

A STUDY OF PEPTIC ULCER

BY

HUGH GAINSBOROUGH, M.D., F.R.C.P.

Physician to St. George's Hospital

AND

ELIOT SLATER, M.D., F.R.C.P., D.P.M.

Medical Officer, Maudsley Hospital

The problem of peptic ulcer has engaged a good deal of attention in recent years because of its high incidence; it has been stated that 10% of all adult males suffer at some time from a peptic ulcer. The disability produced is considerable and accounts for much absenteeism in industry. The degree of disability is evidenced by the willingness with which the majority of patients have come into hospital for a lengthy period of treatment despite the associated financial difficulties.

Many theories have been put forward as to the causation of peptic ulcer, but the occurrence of this condition in man has not been satisfactorily explained. Two theories, however, are attractive: the first that peptic ulcer is due to nutritional deficiency, and the second that psychogenic factors are largely responsible for the disease.

McCarrison (1936) found that the incidence of peptic ulcer was 58 times as great in Southern India as compared with Northern India, corresponding to a very inferior dietary in the former. This was borne out by his experiments with rats fed on the native diets. Other animal experiments, such as those of Slive, Bachrach, and Fogelson (1940), using a modification of the Mann Williamson operation, suggest that a nutritional cause is important. But the degree of undernutrition in Southern India (and in the animal experiments) is not matched in the ulcer population as seen in this country, and, though in our observations it was practically impossible to assess the actual diet of the patients before the occurrence of ulceration, we could not obtain any evidence of gross deficiency.

Psychological Factors in Causation

On the other hand, the play of psychogenic factors alone has seemed unlikely to effect the initial occurrence of peptic ulcer, but nevertheless the role of such factors in the continuance of the condition and in relapses cannot be ignored. General clinical experience provides contradictory evidence: many patients with chronic recurring ulcers appear to be psychologically normal and to suffer no undue stress in their personal, financial, or industrial relations, but yet occasionally the occurrence of emotional reaction is sharply associated with breakdown. One patient, a plumber aged 50, has had five large haemorrhages, each one preceded by a period of great stress. He admitted it was "all his nerves," and he realized that he had an excessive emotional reaction to his difficulties. His sense of justice had led to overwhelming mental upset when he had troubles with his foreman, and he had on other occasions been equally disturbed by financial difficulties and when serious illness overtook his favourite son; in fact he foresaw the actual incidence of his last two haemorrhages. In his reaction to injustice he reminded one of Tom, the subject of Wolff and Wolf's (1943) researches. Tom could show similar emotional reactions, and when upset in this way there were both increase of the vascularity of his stomach mucous membrane and increase of acid secretion. Herein lies a possible mechanism

whereby emotional disturbance could cause exacerbation or relapse in peptic ulcer, given the individual tendency to produce such ulcers. It will be shown from our figures that treatment, though generally effective in healing a peptic ulcer, is followed in a large proportion of cases by rapid relapse in the class of patients observed. While in a few cases relapse is due to lack of co-operation and neglect of instructions given, or to difficulties in carrying them out in particular circumstances, such failure was not evident in the majority. If psychogenic factors are important, then clearly one could hardly expect good results if adequate social and psychological adjustments are not made. In individual cases this is sometimes very obvious, as, for example, in a middle-aged woman with a gastric ulcer who had relapsed twice and in whom a partial gastrectomy was recommended; however, while awaiting admission the ulcer healed rapidly, and in this period she had achieved both personal happiness and a freedom from financial worries which had beset her in her business throughout the war. Further, a young woman with a gastric ulcer near the cardia, which did not heal after two prolonged periods of treatment, achieved rapid healing after she married—though it must be reported that her husband promptly suffered a relapse of his duodenal ulcer.

Other authors have drawn attention to the importance of psychological factors in causing the onset of pain, perforation, or haemorrhage in cases of peptic ulcer. Thus Draper (1942) says that he has frequently observed the onset of these symptoms 1 to 10 days after severe financial loss, a business reverse, a sexual slip, a violent argument, or some personal frustration, adding, however, that very often such episodes were not followed by symptoms. Robinson (1937) attaches great importance to the bodily and mental constitution of ulcer patients, and concludes that "emotional conflict in an individual with ulcer diathesis is alone essential for the production of chronic gastric ulcer." Robinson (1938) believes that the mode of operation of these emotions is through the parasympathetic nervous system. This view is also supported by Necheles (1937), who associates gastro-duodenal hyperaemia with the liberation of acetylcholine by parasympathetic action. In his view "most ulcer patients are persons of the worrying, highly strung type." Further evidence is provided by Davies and Wilson (1937), who examined 205 ulcer patients and 100 cases of hernia, and found a very much higher incidence of psychogenic factors immediately preceding the onset of symptoms in the former than in the latter. Most of these took the form of a change of work, financial difficulties, or illness or misfortune in the family. Wilson (1939) comes to the conclusion that "in recurrent haematemesis and gastro-jejunal ulceration there is reason to believe that psychological treatment certainly offers at least as much hope of saving life as other therapeutic approaches, and, since it is probably directed to the basic disturbance, it may possibly prove more successful in the end." Epidemiological evidence tends to support these views to some degree.

Morris and Titmuss (1944) found a rise in the mortality from peptic ulcer in wartime, which reached its height in the last quarter of 1940, when air raids were severe. Illingworth, Scott, and Jamieson (1944) observed a similar rise in the incidence of perforation at the same time; they do not attribute it to air-raid stress but to the general effects of anxiety and overwork.

The Present Investigation

The original purpose of this investigation was the determination of the part played by psychogenic factors in patients with peptic ulcers. The formation at the Atkinson Morley Emergency Hospital of a small in-patient unit for the treatment of such cases gave us this opportunity. All patients admitted to this unit between February, 1943, and June, 1944, were interviewed (by E. S.). Among them were the present group of ulcer patients, frequently first diagnosed after the psychiatric interview. The patients were then followed up at St. George's Hospital, and it was thereby possible to estimate the results of treatment.

Patients were examined radiologically in the first instance, either at St. George's Hospital or as soon as possible after admission. They were treated, resting in bed, by dietetic methods similar to those used by Hurst; and were maintained on a diet of two-hourly varied feeds with the addition of ascorbic acid, and of sufficient caloric value, so that in fact the great majority of patients steadily gained weight during treatment. Suitable occupational therapy was provided. Healing was observed by repeated opaque-meal examinations at four-weekly intervals, and confirmed in some cases by gastroscopy, and only rarely were the x-ray and gastroscopic findings discordant. The average stay in hospital was 9 weeks. While in hospital the patient's home and working conditions were investigated and discussed with the almoner, and wherever possible advice was given as to necessary readjustments, and contact made with employers, disablement rehabilitation officers, and industrial medical officers. The social difficulties were very much in evidence; most of the patients were men engaged in industrial occupations, many on shift work; travelling time to and from work was considerable; canteen facilities left much to be desired, and wartime restriction of food rendered dieting at home difficult. In addition there was much anxiety because of bombing.

The patients were diagnosed as D.U. or G.U. if radiologically proved or if perforation had occurred, or else as clinical D.U. (C.D.U.) where the symptoms and history suggested this diagnosis, subject to confirmation either by a history of haemorrhage or by a satisfactory reaction to dietetic treatment. No diagnoses of clinical G.U. were made, and it was considered that G.U. was less likely to be missed radiologically; but in view of the analyses of symptoms it is possible that the C.D.U. group contained a few cases of gastric ulcer. Anastomotic and juxta-pyloric ulcers are treated in the discussion as duodenal ulcers, but the former are omitted in the calculation of the relapse rate. Of 72 men radiologically proved to have duodenal ulcer, 7 also presented at the same time a gastric ulcer; and 33 cases of men with gastric ulcer, 3 had also a duodenal

Symptomatology.—Differences in symptomatology were not marked between the D.U. and the G.U. cases. It is usually held that pain in G.U. occurs immediately or soon after a meal, whereas in D.U. it occurs much later. In our series 73% of the male D.U. patients experienced pain more than an hour after food, and all the females had late pain. The remaining D.U. patients had pain that was either early or continuous. In G.U. 82% of male and 75% of female patients had pain occurring late—i.e., over an hour after a meal. Nocturnal pain, also thought to be more characteristic of D.U., was found in 75% of male D.U. patients but also in 30% of male G.U. patients. Test-meal estimations by the alcohol method were done on a number of patients. In 75% of male D.U. patients a figure of HCl greater than 60 ml. N/10 NaOH was reached, whereas in only 30% of male G.U. patients was this figure exceeded. It seems clear that, although peptic ulcer could be diagnosed clinically with a reasonable degree of certainty, there is still a considerable margin of error.

Mode of Psychiatric Inquiry.—All these patients were given a routine psychiatric investigation (by E. S.). At the time of

this investigation it was not known what the final organic diagnosis would be. Standard questions of the type usual in psychiatric consultations were employed, relating to family history, childhood, school and work record, dominant personality traits, marriage and sex life, private worries, and neurotic symptoms. Psychiatric diagnoses were made where possible. Where there were indications for some psychiatric measure of treatment a corresponding suggestion was made. This proved necessary only in three cases. In the whole group of 130 males and 32 females a psychiatric diagnosis was made on 19 males and 10 females, as follows: chronic anxiety neurosis—mild, 5 males; 3 females; fairly severe, 2, 1; mild recent anxiety neurosis, 2, 0; mild hysterical reaction, 2, 0; chronic mild obsessional neurosis, 1, 0; minor mental defect with instability, 2, 1; psychopath—hysterical, 0, 1; paranoid, 1, 0; with ? latent homosexuality, 1, 0; chronic alcoholic, 1, 0; inadequate, 1, 0; compulsive adventurer, 1, 0. At first glance, therefore, we find approximately 15% of psychiatric abnormality, which is not greatly in excess of the 10% which some authorities believe to be the incidence in the general population.

Results

Diagnosis and Sex Incidence.—In the D.U. group there were 72 males and 12 females; in the C.D.U. group, 25 and 8; in the G.U. group, 33 and 12. In this series, therefore, 72% of the ulcers are duodenal and 80% of the patients are male. Although G.U. is relatively rather more common among the women, the difference is not significant. This distribution of the two types of ulcer between the sexes seems to be in accordance with the findings of others. In the mortality figures for England and Wales given by Tidy (1944), however, G.U. outnumbers D.U. for both sexes, and the proportion of males to females is near 2:1 than 4:1 as here. Discussing the statistics of St. Thomas Hospital, Tidy (1945) is inclined to doubt whether the preponderance of duodenal ulcer seen in private practice reflects the state of affairs in the country at large; and under sex incidence he gives for G.U. at all ages 2.6 males to 1 female, and for D.U. 8.4:1. On the other hand, in the 952 patients reported by Jones and Pollak (1945) from the Central Middlesex Hospital the ratio of D.U. to G.U. was 2.3:1; and of males to females was for G.U. 2.4:1, for D.U. 6.9:1. With these findings of ratios, within the limits of error of a small sample, are in substantial agreement.

The relative immunity of the female to peptic ulceration is a point of outstanding interest. Highly suggestive material has been published by Sandweiss *et al.* (1939). In one collection of 70,000 consecutive pregnant women only one active ulcer was found; in another group of 13,780 pregnant women there was no case of ulcer, although there were, for instance, 98 cases of appendicitis and 27 of cholecystitis. Among their collection of ulcer patients, 25 women underwent 52 pregnancies, but on one of them suffered from dyspeptic symptoms during the pregnancy. Collecting published reports of peptic ulcer in children, they found 52 males and 49 females—i.e., there was no comparative immunity of the female at this time of life. They also state that there is a high proportion of endocrine dyscrasias among women with peptic ulcer. The same authors report good results of treatment of ulcer with antuitrin "S".

As will appear from the table of psychiatric findings, our female patients formed a much more neurotic and emotionally unstable group than the males. This seems to suggest that, regarding liability to ulcer a woman must have a constitution altogether inferior to that of a man, and therefore in her case there is some protection afforded by biological and constitutional factors.

Age Distribution.—Taking all patients together, the mean ages (in years) for the males were: All D.U., 39.20 (D.U. 38.97; C.D.U., 39.84); G.U., 46.76. For the females they were: All D.U., 36.25; G.U., 52.75. The standard deviations were (for males): All D.U., 9.86; G.U., 9.50. The distribution of patients according to age was as follows:

Age	No.	Age	No.
Under 20 ..	0	50-54 ..	18
20-24 ..	8	55-59 ..	10
25-29 ..	10	60-64 ..	2
30-34 ..	33	65-69 ..	6
35-39 ..	26	70-74 ..	1
40-44 ..	30	Over 75 ..	1
45-49 ..	17		

from the age distribution it is possible to make a rough estimate of the proportion of the total liability to peptic ulcer which has been survived by a given age, as follows:

Age	Percentage Danger Past	Age	Percentage Danger Past
Under 20	0	50-54	82
20-24	3	55-59	91
25-29	8	60-64	94
30-34	22	65-69	97
35-39	40	70-74	99
40-44	57	Over 75	100
45-49	72		

These figures are of interest in themselves, and are also published because they were used to calculate the incidence of gastric disease in the first-degree relatives of these patients. Although the numbers are very small on which to base such an actuarial calculation, the much larger material published by very Jones yields almost exactly the same figures, as the age distribution in his cases and that in ours were very much the same. Our figures show no significant differences in the mean ages of the various groups (despite the big difference between male and female G.U. groups); but the G.U. patients as a whole are significantly older than the D.U. ones.

Marital State.—Of the male patients 12 were single, 115 married, and 3 widowed; of the female, 17 were single, 10 married, and 5 widowed. The deficiency of married women is very striking and is much too great to be possibly accounted for by chance ($P < 0.001$). This finding clearly fits in very well with the observations of Sandweiss *et al.*, which have been referred to above.

Income Level and Financial Stress.—Considerable importance was attached by Davies and Wilson to financial stress as a cause of peptic ulcer. Precise data on income were collected from 110 male patients in the course of psychiatric history taking. There were no significant differences between the clinical groups, and the mean weekly wage was £5 6s. 9d., with a standard deviation of 37s. One in six of the patients was therefore earning less than £3 9s., which is low. Inquiries on financial stress were made by the almoner, Miss Montgomery, from 87 patients. They were classified into those in whom there was no stress, those in whom there might have been some stress, and those in whom there was obvious stress. No significant differences were found between the diagnostic groups, but stress was significantly more frequent among the women ($P < 0.02$); of those recorded three-quarters had doubtful or certain financial stress, whereas this was true of only one-third of the men.

Family History of Gastro-duodenal Disorder.—In all patients a careful account was taken of ages of parents and sibs and any history of gastric or duodenal disease or indigestion. In many instances the patient was able to report that the relative had had "gastric" disease, for which there had perhaps been several admissions to hospital, with or without operation, and which in some cases had ended in perforation or death; but he might still be unable to say whether the cause was a gastric or duodenal ulcer. These cases were distinguished from those in which there had been a history of indigestion, however prolonged, where the symptoms might have been due to a functional dyspepsia. The former were diagnosed as "gastric disease" and the latter as "indigestion." If to every relative we assign a weight corresponding to the proportion of the risk of peptic ulceration he has outlived, it could be calculated from our data that we had observed the life spans of 126.5 fathers, 134.0 mothers, 127.7 brothers, and 148.7 sisters. The incidence of gastric disease could then be calculated as: in the fathers 9.5%, in the mothers 3.7%, in the brothers 6.3%, and in the sisters 1.3%. It is sometimes suggested that at the present time one out of every ten men can be expected to develop a peptic ulcer in the course of his life; but it is equally agreed that the proportion would not have been nearly so high a generation ago. The incidence of 9.5% gastric disease in the fathers of our patients, then, suggests the existence of a hereditary constitutional factor. It is fair to add that the incidence in the sibs is not so suggestive.

"Gastric disease" shows the same relatively higher incidence in the male sex in the relatives of our patients as in the patients themselves. It is otherwise with indigestion, which the patients frequently referred to as "gastric trouble," in respect of which there were slightly more female relatives affected than males.

Of our 130 male patients 20 had a family history of gastric disease, 19 of indigestion; of the 32 female patients the numbers were 4 and 11. This difference between the sexes is significant ($P < 0.02$). It is probably to be associated with the fact that the females as a group are more neurotic than the males, as will appear later.

Psychiatric Findings

These are given in the accompanying Table. At no point was any significant difference discovered between the male D.U. and C.D.U. groups; these were therefore treated together. At a few points there were significant differences between the groups D.U. and G.U., which will be mentioned as they arise. In all other points the only comparison made will be that between males and females. All differences were tested by χ^2 on the actual numbers observed: where a significant difference between the sexes was found it is indicated by italic type in the Table.

Percentage Incidence of Psychiatric Findings

	Males	Females
Family history of:		
Minor neurosis	19	28
Nervous breakdown, suicide	5	12
Childhood history:		
Minor nervous traits	11	34
Definite neurosis	3	10
Indigestion	5	16
School career:		
Lower than top standard	22	19
Average elementary	59	47
Higher education	19	34
Occupation:		
Unskilled	35	
Semi-skilled	28	
Skilled	19	
Clerical and other	18	
Work record:		
Poor	3	
Average	82	
Good	18	
Sex life:		
Undersexed	23	
Past history:		
Nervous symptoms	16	23
" breakdown	8	22
Personality traits:		
More energetic than average	42	41
Less	5	24
Mood over-reactive	18	41
" spontaneous swings	8	12
" predominantly depressive	5	12
" anxious	34	69
Inclined to irritability	20	19
" hypochondriasis	38	32
" obsessiveness	15	25
" hysteria	3	25
Schizoid and asocial traits	5	0
Bodily habits:		
Asthenic	32	
Athletic	58	
Pyknic	11	
Intelligence rated as:		
Poor	5	16
Average	73	47
Superior	22	37
Neurotic symptoms shown:		
Anxiety	16	22
Hypochondriasis	32	23
Psychogenesis found	8	37

Family History.—The incidence of a psychiatrically "positive" family history in all patients together is 25%. This is a much smaller figure than that obtained from neurotic patients, where it is invariably reported as over 50%; and it may be no more than that which would be obtained from a random sample of the population.

Childhood Neurosis.—A history of neurotic traits or of definite neurosis in childhood is much more frequent in the women than in the men ($P < 0.001$); in the men it is not likely to be more frequent than in the general population.

School Career; Intelligence.—The school careers of our patients are probably better than the average; and a purely clinical judgment on examination suggested that they were on the whole of rather superior intelligence. Draper (1942) says that a large majority of ulcer patients have good to superior intellects. Robinson (1937) considers that they are alert and intelligent, but memory and mathematical ability are poor. Factual data in support of these opinions are not given by either author. In point of school record, a significant difference ($P < 0.05$) was found between the D.U. and the G.U. patients, the latter doing less well on the whole.

Occupation and Work Record.—The occupations and work records of the females are not discussed, as they clearly could not be compared with the men. It seems probable that our patients would compare well with the average in occupational level. As reported by Slater (1943), the previous occupations of 2,000 neurotic soldiers were 33% unskilled, 38% semi-skilled, and 10% skilled. In this peptic ulcer group there were fewer in the semi-skilled and nearly twice as many in the skilled occupations. However, the population from which we drew our patients may not correspond with the background of the neurotic soldiers. Work records were classified as poor in those who had had much unemployment or had come down in life from the standards upheld by their parents, good in those who had advanced themselves. There can be no doubt that on the whole our patients were good workers and almost certainly superior to a general average.

Sex Life.—Of the male D.U. patients 27 had led a somewhat undersexed existence; of the G.U. patients, only 3. The difference is significant ($P < 0.05$). Without comparable material from the general population the patients as a whole cannot be regarded as abnormal in this respect. Sex problems and any source of worry in the sex life were found in only one of all the male patients. These findings entirely fail to confirm the contentions of Draper (Draper and Touraine, 1932; Draper, 1942), who believes that, morphologically, male peptic-ulcer patients show a feminine component; he says he has found an "inner sense of insecurity based on actual or supposed physical inferiority, including gynec emphasis," in 84% of them, and stresses worry over a sexual slip as a cause of symptoms. Robinson (1938), on the other hand, regards peptic ulcer patients as being rather more active sexually than the average and "strongly heterosexual."

Past Nervous Symptoms.—Inquiry was made about symptoms of a neurotic kind having been experienced in the past, and about a history of "nervous breakdown"—i.e., a non-organic illness with nervous symptoms involving absence from work of several weeks. Such a history was obtained with highly significant greater frequency from the females ($P < 0.001$). Taking the males alone, the figures cannot be regarded as unduly high.

Personality.—Personality traits are listed under a number of heads. It will be noted that an over-reactive mood and tendencies to anxiety and to a hysterical type of reaction are much more frequent in the females than in the males ($P < 0.01-0.001$). But the preponderant characteristics of the group as a whole, comparing them to what is met with elsewhere in psychiatry, are energetic disposition, and tendencies to anxiety, irritability, obsessiveness, and hypochondriasis. These traits fit in with a well-known psychiatric temperament type, the so-called "obsessional." These findings are in substantial agreement with those of other authors. Draper (1942) states that ulcer patients are conscientious to the extreme, high-principled, and ambitious. Robinson (1937) says they are active, driving, alert, intelligent, restless but easily satisfied, and their activity is ill sustained. The patient is not neurotic in any narrow sense; he is not hypochondriacal or prone to complaining, nor is he either an anxiety or a compensation neurotic. Emotional conflict rages within, protected from the outsider's gaze. There is a strong tendency to worry, and there are no safety-valves for pent-up emotion. Davies and Wilson (1937) describe the ulcer patient as showing more than usual tension; a worker, with an urgent, anxious compulsive quality, a tendency to worry, having an interest in activity and efficiency, liable to develop symptoms with any threat to his security.

From this evidence we believe that the "obsessional" type of personality must be regarded as rather more than normally susceptible to ulcer. But it must not be concluded that all ulcer patients are of this type. The obsessional type of personality is not extremely common, and the majority of ulcer patients do not conform to it.

Bodily Habitus.—In our material the diagnosis of type of bodily habitus was made, only in the males, solely on a visual impression, so cannot be allowed much weight. The impression was gained, however, that on the whole the patients tended to be of the asthenic type. This is in conformity with the findings of Robinson and Brucer (1940), who found that ulcer patients

had significant deficiencies in body weight, chest and abdominal circumference, compared with candidates for life assurance. These differences might, however, be caused by variations in degree of nutrition. In our series the patients at the time of admission to hospital were considerably under their best weight in times of health; the mean loss was for the men 15 lb. (6.8 kg.) and for the women 11 lb. (5 kg.). A general tendency among ulcer patients towards the asthenic or linear type of build is, however, also shown in the skeletal measurements taken by Feigenbaum and Howat (1935), though these authors are themselves sceptical of the interest of their findings.

Neurotic Symptoms.—Obvious neurotic features were not commonly found on examination in our series. A neurotic reaction to the illness was adjudged to be present in 13 patients—9 male and 4 female—and in 41 males and 9 females there was a good deal of hypochondriacal preoccupation. An exploration of psychogenic precipitating factors was conducted on a superficial level, and patients were asked to what external cause they attributed the onset of their symptoms. Most of them could give no reason, but 18 of the men suggested irregular meals, generally due to conditions of work, 9 worry over home and other affairs, 8 having to work in "fumes." The circumstances of their lives were discussed in some detail, and it was eventually concluded that psychogenic causes of worry were present in 10 males and 12 females. The relatively greater incidence in the females is highly significant ($P < 0.001$).

Results of Treatment

For the majority of patients the method of treatment appeared to be satisfactory. Steady healing was observed and a stay in hospital of from 6 to 16 weeks was required before healing was deemed to be complete. In a few cases treatment failed, and, following this, partial gastrectomy was done in 6 men for D.U., 4 men for G.U., and 2 gastroenterostomies were done for pyloric stenosis. A few patients left hospital with unhealed ulcers, which healed later. In calculating the relapse rate, only those cases were included in which the follow-up was satisfactory, and patients were omitted whose stay in hospital had been curtailed for various reasons and who relapsed so quickly that it was reasonably certain that complete healing had not occurred. The following figures were obtained:

Type of Ulcer	Sex	No. of Patients	No. of Patients who Relapsed within		
			6 months	12 months	18 months
D.U.	M	48	15 (31%)	24 (53%)	29 (59%)
	F	10	2 (20%)	4 (40%)	5 (50%)
G.U.	M	26	13 (50%)	15 (58%)	16 (62%)
	F	9	4 (44%)	6 (67%)	6 (67%)

Roughly speaking, well over half the patients had relapsed within a year of discharge from hospital. The numbers of the women are too small for statistical handling, but those of the males can be dealt with as in a life table, and on the number observed during any given month and the number who relapsed in that month a survival rate for that month can be calculated. Probabilities of survival can then be progressively multiplied. Dealt with in this way, the chance of surviving without relapse for 3 months after discharge from hospital is 73%, 6 months 62%, 9 months 55%, 12 months 42%, and 18 months 33%. The greatest risk of relapse occurs in the earlier months; one third of the patients can be expected to relapse within 4 months.

Clinical data were searched for indications of possible cause of the high relapse rate. Dividing the patients into two groups—those who recovered and remained well and those who failed to recover or relapsed—and noting the relative frequency of various clinical findings in these two groups disclosed no significant differences, with one exception. This was true of such medical findings as number of weeks of treatment, timing of pain, relief of pain, occurrence of pain at night, drinking habits, test-meal results, as also of all the psychiatric data. It is of particular interest that none of the psychiatric findings, not even the various indications of anxiety tendencies, had any prognostic meaning. The only item that was significantly associated with relapse rate was smoking. Of the 40 heavy smokers observed 22 recovered and did not relapse; of the 5 men known to be only moderate smokers or non-smokers, only

12 did as well. This is a difference between 55% and 24% and is significant ($P < 0.01$). It can, we think, be understood if it is assumed that heavy smoking is likely to aid in the production of peptic ulcer. Men who smoke heavily then subject their stomachs and duodenums to a special stress, and once this is removed (on the advice of the physician) stand a better chance than those who broke down without it.

Discussion

The largely negative results of the psychiatric investigation have to be compared with the findings and the beliefs of other authors. Draper (1942) attributes great importance to the physical reaction to the fear stimulus. Ulcers reflect a disturbance in the inner rather than the outer world, and the fear and guilt associated with sex are very important. Draper recommends that the ulcer patient should receive plentiful help from the psychiatrist. For that author, in fact, the ulcer patient is a neurotic patient. Fundamentally the same attitude is taken by Wilson. Davies and Wilson (1937) showed that there was an unduly high incidence of minor upsetting events, like change of job, etc., in the few days immediately preceding the onset of symptoms. According to Wilson (1939), the illness of the ulcer patient is precipitated by anxiety, and recovery depends on the underlying anxious state. Robinson (1937), on the other hand, protests against the tendency to regard the ulcer patient as neurotic, but he lays special stress on the importance of everyday worries as a cause of ulcer. Our findings are not in conflict with those either of Davies and Wilson or of Robinson. The psychiatrist received no impression that our patients as a whole were being subjected to anything out of the way in psychological causes of worry, nor that such stress as they did have to meet was dealt with in the patient's mind in an inefficient or neurotic way. It is true that in the course of the stay in hospital or during follow-up treatment individual patients sometimes revealed serious causes of worry about which they had been silent up to that point, even during the psychiatric interview. Psychiatric impressions formed during a single interview are therefore likely to provide an underestimate of the incidence of substantial sources of anxiety. The interpretation favoured by us is that the familiar stresses of everyday life were having a more than normally large effect on the vegetative nervous systems of constitutionally susceptible people. This seems to be the interpretation favoured by Robinson but not by Draper. From it we would not conclude, as Wilson does, that the preferred line of treatment is psychiatric, nor would we say that it is at all necessary that a psychiatrist should be called in to deal with more than a small proportion of these cases. No process of psychological re-education is likely to stop these men over-reacting in the autonomic field, and the ulcer diathesis cannot be easily alterable. On the other hand, it is clearly desirable that attention should be paid to sources of worry in the patient's life, and anything that is possible be done to correct them. In the great majority all that is feasible can be done by the physician or surgeon. If he can take some human interest in his patients, not only as stomachs and duodenums but also as individuals, and in their home affairs and personal problems, no more psychiatric expertness than the dictates of common sense will usually be necessary.

On the constitutional side, attention must be drawn to the pronounced differences between the male and the female patients. Two-thirds of the women (21/32) were considered to show a noteworthy deviation of personality from what is, from experience, regarded as the normal range; of the men, only one-quarter (34/130). Frequencies of family history of indigestion, of neurotic traits in childhood, of past nervous symptoms, of tendencies to over-reactivity of mood, to anxiety and hysteria, were all significantly more frequent in the females. We do not believe that this can be explained by a biased selection in gathering the material. It seems most probable to us that, compared with men, women are relatively protected by their constitution or by their mode of life against the development of peptic ulcer, and that therefore a greater degree of somatic instability is required for its development—an instability that shows itself in other visceral and psychosomatic fields. This hypothesis is in accord with the findings of Sandweiss *et al.* (1939). It is quite possible, as they suggest,

that this line of thought will indicate a method of treatment directed towards the underlying diathesis.

The results of treatment were disappointingly poor, and this may in part be attributed to the stress of wartime conditions—difficulties in feeding, long hours of work, bombing, etc.; but on the basis of previous experience it is doubtful whether these adverse conditions played more than a relatively small part in the results. The efficiency of the treatment as given seems hardly open to question as a method of healing peptic ulcers, because in the majority of cases recovery was achieved even under the conditions existing at the time. In any case, the time of treatment was such that few patients could tolerate an extension. The failure is in the prevention of relapses. The discharged patient probably carried out fairly well his instruction as regards diet and taking antacids, but the readjustment of the patient's work conditions and of his attitude to his social problems could only rarely be dealt with satisfactorily. For many reasons it was difficult to effect a change of occupation, even though the absence of unemployment during the war should have facilitated such changes. Where an individual was highly trained he was often unwilling to try a change of occupation, despite his awareness of the unsuitability of the conditions of work in his present employment. In some cases this was due to the risk of a lower level of earnings. Employers, too, could not always find other work for individuals for whom shift work produced obvious difficulties. On the other hand, a few patients did accept retraining under the Interim Scheme, and the resettlement appeared to be satisfactory. For example, the retraining, say, of a bus driver and his resettlement in a new job with better feeding conditions and no spread-over in hours of work seemed effective. In other cases resettlement in a new job with less responsibility and worry proved helpful. It appears from such cases that all the facilities of the Disabled Persons Act should be used to the full in the treatment.

In the group of women with G.U. it was obvious that the social stresses were of a different order. They were elderly, with an average age of 53, and their home and living conditions could not easily be changed. It has been noted above that in the group of women with peptic ulcer there was a marked scarcity of married women, and it is possible that for women living alone the management of nutritional requirements left much to be desired and the standards of family life were not reached.

The incidence of the disease is so high that the problem of providing hospital in-patient treatment is enormous, and many patients with a disabling degree of pain have difficulty in obtaining admission to hospital. At present the only alternative to medical treatment, including attention to the factors just discussed, would be the greater use of surgical methods. However, even if facilities were available it seems hardly justifiable to apply such a major surgical procedure as partial gastrectomy to more than a relatively small proportion of the cases.

Summary

A group of 130 men and 32 women with peptic ulcers, in addition to the usual clinical investigations, were also investigated psychiatrically and followed up after treatment for periods up to three years.

The ratio of D.U. : G.U. was 2.6 : 1, and the ratio of men to women was for D.U. 6 : 1 and for G.U. 2.75 : 1. This corresponds with the findings of other observers. In our series there was a very small proportion of married women.

The analysis of the family incidence of gastric disease and indigestion suggests the existence of a hereditary constitutional factor.

The preponderant psychological characteristics of the male patients as a group were their energetic disposition and their tendencies to anxiety, irritability, obsessiveness, and hypochondriasis. They tended to correspond with the obsessional personality type.

Actual neurosis was uncommon and the incidence of extraordinary causes of psychological stress was small. The stresses observed were principally those inseparable from an ordinary life 10-day.

The women showed a considerably higher incidence of constitutional instability than the men.

The results of medical treatment were disappointing, and on our figures one-third of the patients can be expected to relapse within four months. The failure was not as regards the healing of the ulcers but in the prevention of relapses after return to work.

consequently more attention should be paid in the follow-up period to the adjustment of work conditions, the use of resettlement facilities under the Disabled Persons Act, and the careful discussion with the patient of his social and psychological problems.

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BREAST MILK BANK IN MATERNITY UNITS*

BY

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The importance of breast milk feeding in the neonatal period and in early infancy has been convincingly demonstrated by statistical evidence comparing the mortality and the morbidity rate in breast-fed and in bottle-fed infants, and by studies dealing with the influence of nutrition on resistance to infection. Incidence of infection in infancy is estimated to be twice as high in artificially fed babies as in breast-fed ones, and the death rate ten times higher. Consequently, the obstetrician and the paediatrician alike are as interested in the promotion of breast-feeding as in the provision of breast milk for babies who cannot be breast-fed. These babies particularly are endangered by circumstances interfering with breast-feeding—e.g., prematurity, and illness in the mother or child. Artificial feeding involves an additional risk.

Much headway has been made in the establishment of human milk services, and efficient breast milk bureaux have been created in many places. These institutions receive their breast milk supply chiefly from paid donors, living sometimes in widely dispersed areas, and require, therefore, rather elaborate arrangements for the collection, control, and preservation of human milk and the medical and nursing supervision of the donors. They are hampered by the inconstancy of supply, which depends very much on the good will of the donors and a constant and costly propaganda. The problem, therefore, is how to avoid these difficulties and to provide a service easily accessible to any baby in need of breast milk.

Every maternity unit may be regarded as an ideal background for the creation of an efficient breast milk service. A considerable surplus of breast milk will be available if the rate of breast-feeding is kept at the highest possible level. "Breast-milk-mindedness" should be stimulated in the antenatal period and be continued during the lying-in period in the maternity unit. An attempt was made to realize this aim, and the appropriate arrangements and their results are outlined below.

Routine expression of the breasts after each feeding-time has been introduced in our hospital since February, 1944, as a means of reducing the most frequent causes of artificial feeding—i.e., engorgement of the breasts and disorders of lactation in the puerperal period. This has enabled us to collect from the lying-in mothers of the maternity units enough breast milk to maintain a breast milk bank continuously.

The milk bank has been supplied by two maternity units: Unit I (Queen Mary's maternity department), with 65, and

Unit II (maternity extension), with 16 beds. Unit I is reserved for pathological cases listed during the antenatal observation or admitted as emergencies. Unit II admits normal cases only. In 1945 there were 1,984 live births in both units.

Method of Collection of Breast Milk

Expression of the breasts is usually started on the second day after birth, and from that time is regularly performed after each feeding throughout the whole lying-in period. Only healthy mothers are taken as donors for the breast milk bank. Most of them have already undergone a full medical examination during their attendance in the antenatal department and associated diseases have been excluded. The mother's hands are thoroughly cleaned, her breasts washed with soap and water, and sterile covers spread, leaving only the breasts free. Mothers and the attending nurses wear masks. Breast pumps, if used, are sterilized, and the milk is collected in sterile containers.

Expression is carried out by a special baby-nursing staff under the supervision of a senior sister. It is best performed manually, and the mothers are encouraged to acquire the necessary skill themselves. Breast pumps are used in cases of considerable engorgement only, or where manual expression is not well tolerated.

The mothers are informed about the purpose of the procedure, and as a rule readily agree to the expression of the breasts and the use of the expressed milk for the benefit of any other baby in need of it. Thus they learn to appreciate the value of mothers' milk. Payment for the expressed milk is not considered, because the measure primarily benefits the health of the mother and her baby.

The amount of expressed breast milk collected is plotted daily, indicating:

Date	
Number of lactating mothers:	
(a) Up to four days after birth	
(b) Five and more days after birth	
Number of breast-fed infants	
Number of ill infants fed expressed breast milk	
Total amount of collected expressed breast milk	
Amount of expressed breast milk distributed to	
(a) Maternity units	
(b) Sick children's wards	

Preparation and Storing of Breast Milk

The expressed milk is pooled in the milk kitchen, which is devoted entirely to the breast milk service. After pooling, the milk is boiled for 5 to 10 minutes, then quickly cooled and kept in refrigerators (temperature 40° F., or 5.5° C.) until distribution. In general it is not stored for more than 24 hours. Any surplus beyond the demand of the maternity units is at the disposal of the children's departments of the hospital. In addition there is a certain equilibrium between consumption and supply (shown below in Chart I) that makes special provision for longer storage superfluous.

Bacteriological and Chemical Control

Twice weekly the milk is examined for its bacterial content. Samples are taken before and after boiling. No viable bacteria have been found in any of the samples after boiling.

Chemical analysis of the milk is carried out from time to time. Average specimens show:

	Before Boiling	After Boiling
Protein	1.8-2.2 g./100 ml.	1.5-3.0 g./100 ml.
Fat	2.7-4.6 ..	3.0-5.0 ..
Lactose	5.7-6.5 ..	6.2-7.3 ..

Thus the pooled expressed breast milk has a composition which is within the physiological limits of mature milk. The concentration of the breast milk constituents due to boiling depends on the duration it is boiled and the provisions against evaporation. Where concentrated feeding is indicated the process of boiling is accordingly extended.

The content of vitamin C in the examined specimens was: before boiling, 3.9-4.6 mg./100 ml.; after boiling, 3-3.4 mg./100 ml. The vitamin C content of breast milk decreases with the duration of lactation and that of expressed breast milk also with the duration of storing. When the boiling is of short duration the

* An extract was demonstrated at the meeting of the Middlesex County Medical Society on March 12, 1946.

ss of vitamin C is small. Nevertheless, ascorbic acid is administered to premature and sick babies to supply their higher requirements.

Principles of Distribution

1.—Maternity Departments

In general, the breast milk collected and boiled at one feeding-time is used at the next one. The milk is distributed to the following classes of infants:

1. *Premature Babies Until They Acquire Sucking Ability.*—Pare colostrum is made available for the first week. Later on, feeding with concentrated expressed breast milk is started if the baby cannot take the necessary quantity. When breast-feeding cannot be established at all, feeding of expressed breast milk is continued until the baby attains normal minimum weight (i.e., about 7 lb., or 3.2 kg.) Breast-milk feeding is the rule during the stay in the hospital.

2. *Babies During Their Own or Their Mother's Illness.*—The milk of acutely ill mothers is not used, though the danger of infection through the milk is remote, but expression of the breast is continued so as to stimulate lactation. Breast-feeding is restored when the conditions allow. For sick babies the milk is diluted, if necessary, with a 3 to 5% rice gruel, according to their digestive capacity. Full-milk feeding is restored as soon as possible.

3. *Babies Whose Feeds have to be Complemented* (e.g., in cases of hypogalactia and sucking difficulties).—Complementary feeding during the lying-in period is performed with breast milk only. This has proved to be a further stimulus in promoting breast-feeding because the importance of feeding with breast milk is thus continuously demonstrated.

4. *Babies Who Must be Weaned.*—Feeding with cows' milk is not started before the tenth day, and it is done only exceptionally, on indication.

3.—Sick Children's Wards

Breast milk is supplied after each feeding-time and stored at the children's departments in refrigerators until individual distribution. The milk is given to:

1. Babies under 3 months of age, during the acute stage of illness. They are fully or partially fed with expressed breast milk, according to their condition.

2. Premature babies admitted from outside or transferred from the maternity units. In addition, colostrum is made available for his group.

3. Older infants with a special indication—e.g., coeliac disease, severe infections, cows' milk intolerance.

Details of Collection and Distribution

The total amount of expressed breast milk collected from Feb. 22, 1944 (the establishment of the Breast Milk Bank), until April 30, 1946, was 6,147 pints (3,491 litres). Analysis of the figures of collection and distribution within the year 1945 (see Table) reveals various factors influencing the working of a breast milk bank, based on a certain number of donors and covering a wide range of emergencies.

Table showing Analysis of Expressed Breast Milk Collected and Distributed in 1945. (1 pint = 0.568 litre.)

Expressed Breast Milk	Amount (pints)		Number of Children Fed
	In 1945	Daily Average	
Total collected ..	3,446	9.44	674
Used in:			
Maternity units ..	2,129	5.83	577
Children's wards ..	1,241	3.41	97
Unused surplus ..	76	0.20	—

The number of infants fed with expressed breast milk during their stay in the maternity units was 577. All but 17 of them could be returned to the breast before discharge. Thus the efficacy of the applied measures is obvious. The rate of breast-feeding on discharge from the maternity units was 98.1%, of supplementary feeding 1.03%, and of artificial feeding 0.87%.

Examination of Chart I shows that the most striking features are:

1. *The Fluctuation of Supply.*—The amount of expressed breast milk collected weekly fluctuates between 44 and 86 pints (25 and 49 litres). (The daily collected quantities show a similar fluctuation between a minimum of 4 pints—2.3 litres—and a maximum of 17 pints—9.7 litres.) This may be explained by several facts. The number of fully lactating mothers necessarily changes from day to day. Between the third and the fifth day of lactation the surplus of milk available for expression is at its peak and declines naturally with the increasing demand of the sucking infant. The amount of expressed breast milk rapidly increases between the fourth and the sixth day, followed by stabilization at a level which is approximately half the highest amount. The quantity of fed breast milk shows

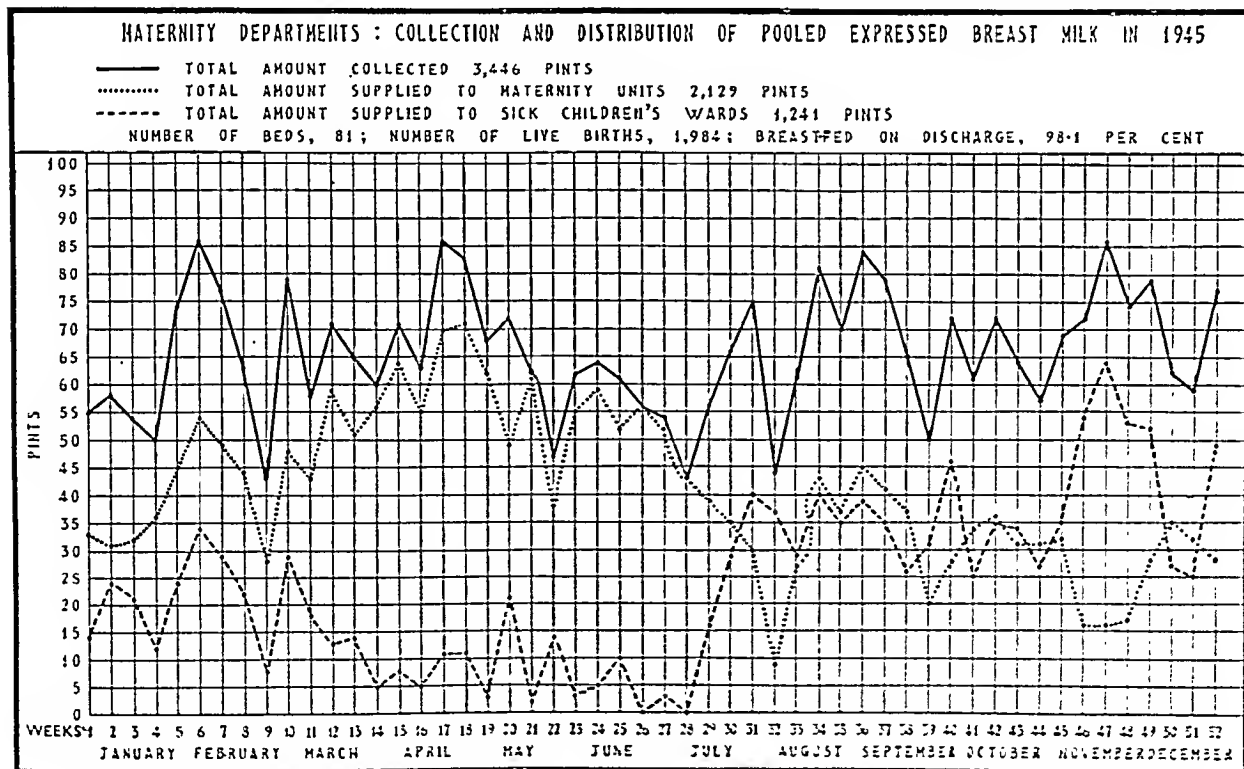


CHART I.—Showing the weekly fluctuation in supply and in distribution of expressed breast milk during the year 1945.

a steady increase until the tenth day. The curves intersect one another approximately on the fifth day after birth (Chart II). Parity also influences the available amount of breast milk. It is estimated that one in five multiparae produces more breast milk than in her

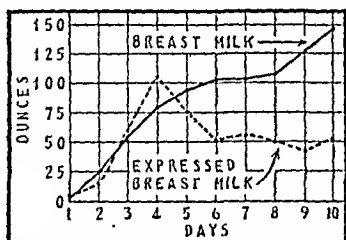


CHART II.—The relation between breast milk and expressed breast milk in ten mothers taken at random and observed during the first ten days after birth.

first lactation period (Chart III). The skill and the co-operation of the staff concerned with the expression is a further factor influencing the result. The pupil midwives in charge of the pro-

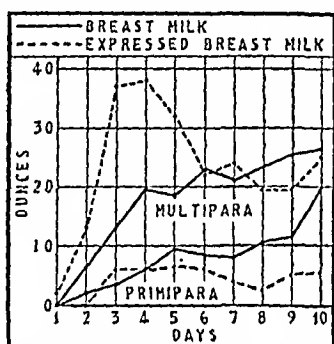


CHART III.—Demonstrating the course of the breast-milk and the expressed-breast-milk curve of a multipara and a primipara.

cedure change in groups fortnightly to three-weekly. Finally the irregularity of supply may be affected by the varying number of ill infants. They are removed from their mothers to the sick babies' wing and the whole amount of milk produced by their mothers is pooled.

2. *The Analogous Course of Consumption and Supply in the Maternity Units.*—The approximate daily requirement of expressed breast milk is known to the staff, and the assumption may be allowed that collection is stimulated by the demand. This relation implies that supply could, in emergencies, still be increased within certain limits. It is one of the principal advantages of this type of Breast Milk Bank with the donors on the spot.

3. *The Longer Peak Period in Some Months.*—The weekly collection of more than 70 pints (39.8 litres) lasted four weeks in August/September and in November/December, compared with only two weeks in other months. No proper explanation could be found for this fact. Seasonal influences may perhaps play their part.

4. *The Continuous Supply to the Sick Children's Wards.*—This depends on the available surplus beyond the needs of the maternity. Although the consumption in the sick children's wards is for short periods that in the maternity units, a continuous supply to both departments is possible, so that practically every day in the hospital in need of expressed breast milk can be fed with it.

The question of the reduced nutritive value of expressed breast milk must not be omitted. This is not the place to discuss the whole problem or to set out the arguments, but it should be emphasized that expressed breast milk remains the nutrition of choice in the neonatal period when breast-feeding cannot be established. Where feeding with expressed breast milk has to be continued for a longer period certain additions may become necessary to promote optimal development. At any rate, feeding with expressed breast milk ranks second to breast-feeding and surpasses any artificial feeding, however well "humanized" it may be.

Conclusion

Every maternity unit is a potential Breast Milk Bank. Simple measures that can be carried out within the daily nursing routine are required to create it: (a) Propagation of breast-feeding during the whole period of medical control

(antenatal period; lying-in period). (b) Avoidance of artificial feeding during the stay in the maternity department. (c) Routine expression of the breasts after each feeding-time; collection and pooling of the expressed milk. (d) Organization of distribution.

The advantages are: simple daily routine in collection and preparation; no special staff or financial measures are needed; the donors are on the spot; medical control is easy; adulteration and contamination of milk are excluded; the supply is continuous and adaptable to the demand and could be extended to out-patients. No ill effect has been noticed.

Breast milk banks in maternity units are a valuable step towards the organization of a comprehensive network of institutions for the supply of breast milk.

Summary

A Breast Milk Bank has been in operation at the West Middlesex County Hospital since Feb. 22, 1944.

The amount of breast milk collected from the lying-in mothers in two maternity units has been sufficient to supply the infants in the maternity units and the sick children's wards.

Until April 30, 1946, 6,147 pints (3,491 litres) of expressed breast milk were collected.

Details of the method of collection, preparation, and storing of the milk, of its bacteriological and chemical control, of the principles of distribution, and of the factors influencing the efficiency of the service are discussed.

An analysis of the figures for the year 1945 is given.

The value of breast milk banks of this type for the promotion of breast-feeding and for the building up of a comprehensive human milk service is emphasized.

My thanks are due to Mr. D. M. Stern, consultant obstetrician for generously giving me all facilities and help in performing the work, and to Dr. W. Broughton-Alecock, senior pathologist, and Dr. A. C. Spence and Mr. S. G. Wiener for carrying out the laboratory control. I am particularly indebted to Sister F. Gilham and the nursing staff working under her supervision. On their untiring co-operation and devotion to the task, disregarding the additional burden involved during difficult wartime conditions, has made the work possible.

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PAINFUL-FEET SYNDROME AMONG PRISONERS OF WAR IN THE FAR EAST

BY

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This account of a distressing and widespread condition seen among prisoners of war in the Far East, resulting from malnutrition, incorporates extracts from the recorded findings of a group of medical officers who, with me, formed the staff of a hospital for prisoners of war in Kobe, Japan, in 1944-5, and who were familiar with the syndrome and had in vain endeavoured to treat it in the several parts of the Far East which felt the weight of the Japanese advance. It will also try to correlate the condition with other diseases better known and associated with malnutrition, with special stress on deficiency of the more familiar factors of the vitamin B complex.

Within three months of the fall of Hong Kong, and later of Singapore, the Dutch East Indies, and the Philippine Islands, beriberi in its typical wet and dry forms became common. It was difficult to treat satisfactorily owing to the inability to give the requisite diet and to the lack of supplies of thiamine, and will not figure largely in this account. Deficiency of vitamins A and C, as revealed by numerous instances of xerophthalmia and mild scorbutic lesions, will also be excluded, as it is thought that the syndrome under review is not specifically connected with those particular deficiencies.

In each of the countries mentioned a condition developed among the men which was known universally and independently as "painful feet" or "electric feet," and often "hot" or "happy feet," the last-named, aptly suggesting the dancing movements and attitude of the sufferers. The term "nutritional neuritis" was also used in the early stages to give the condition a more scientific appellation.

The skin lesions of pellagra were widespread, and somewhat later in 1942 the serious nervous manifestations of this condition were prevalent; and, again, in 1943 and 1944 chronic debility with oedema and general emaciation due to hypoproteinaemia was responsible for severe morbidity and loss of life.

As the name "painful feet" implies and the synonyms suggest, this condition is ushered in by severe burning and aching of the feet associated with hyperaesthesia, raised skin temperature, and vasomotor changes in the feet, with general body-wasting. The condition was first seen three to five months after the Japanese occupation in the various countries of the Far East where large prison camps were established. The incidence rapidly increased in the next few months, and in general showed a substantial decrease in the end of 1942 and the early part of 1943. So far as can be ascertained only very few new cases made their appearance in Japan among prisoners who had been transported there from the South Pacific zones, though a number of old cases recurred or became aggravated during the first winter.

Incidence and Distribution

I give as a conservative estimate the figure of 2,000 cases personally witnessed among approximately 7,000 prisoners of war in Hong Kong between the months of May and December, 1942. In the Philippine Islands, in one camp, some 2,000 cases were reported among 7,000 men between July and December, 1942. In Bilbid Hospital, Manila, the census showed 300-odd cases among 800 admissions. In Java, 1.5% of a camp of 3,500 complained of this condition between October, 1942, and the following January. It was also reported to have been known in Malaya, but no figures are available.

No cases occurring in women in civilian internment camps have been reported, and no opinion can be given as to the question of sex incidence.

The syndrome occurred, to my knowledge, among British, Americans, Canadians, Australians, Dutch, Indonesians, and Portuguese, and is reported to have been common among Filipinos, but Chinese and Indian internees were segregated from the main camps, so that no authoritative statement can be made regarding the incidence among them. The great majority of cases were seen among men of military age, but a number appeared in older individuals, up to the age of 62.

Aetiology

During the period of internment, as this was the first occasion that I or my colleagues had seen or read of this condition, and as there were no adequate means of studying the cases on scientific lines, no definite cause could be attributed. However, certain observations were made, and the following theories as to the causation were suggested.

Protein Deficiency.—The greater part of the protein contained in the daily ration was derived from rice and green vegetables, and usually amounted to about 35–45 g. The minimal amount of protein needed for normal maintenance and tissue repair is probably 30–40 g. daily, provided that the protein contains appropriate amounts of the essential amino-acids. The proviso is also made that the rest of the diet should contain enough fat and carbohydrate to supply full energy requirements. Polished rice (which contains approximately 8% protein of low biological value), leaf vegetables, infrequent issues of meat or fish, and an occasional small ration of white bread provided the entire diet. The daily ration in Shamshupo Camp, Hong Kong, was: rice, 10–12 oz. (280–340 g.); bread, 5 oz. (140 g.); fish or meat, 2 oz. (56 g.); peanut oil, 1 drachm (3.35 ml.). This gave a total protein intake of approximately 40 to 45 g. on days when meat was provided, and a calorific value of about 1,500. This diet provided for a nine-hour working day of manual labour.

Fat Deficiency.—During this period the total daily fat intake seldom exceeded 10–15 g.

Vitamin Deficiency.—All the elements of the vitamin B complex were deficient, as evidenced in the camp by the enormous prevalence

of beriberi and of riboflavin and nicotinic acid deficiency lesions. Many of the painful-feet cases showed these lesions, yet many did not; again, many cases manifesting advanced riboflavin and nicotinic acid deficiency never developed painful feet. Yet, nevertheless, it was considered that this syndrome may have been due to one or other of the lesser-known or imperfectly "developed" factors.

Factor Contained in Grain.—In one specific instance, in Hong Kong, a group of prisoners of war who were separated from the main group and interned for upwards of three months in the civil gaol, and were fed on rice with a rich admixture of barley, did not develop painful feet; nor, so far as can be determined, was the disease present in the several hundred persons under detention at the time, whereas their comrades in the main camp, fed on a poor grade of plain frequently musty rice, did. Furthermore, out of a group of 14 cases which were transferred to Japan and in consequence changed to a good-quality grain plus barley, 13 cleared up within four to eight weeks. The fourteenth, an advanced case, did not, but continued to suffer from swelling and hyperalgesia of the feet (which were also usually livid and sweating) associated with anaesthesia along the distribution of the lateral cutaneous nerve of the calf and loss of ankle- and knee-jerks. In contrast to this, a colleague described the occurrence of some 40 cases of painful feet among 400 prisoners after their transference from the Dutch East Indies to Japan. It is conceivable that many of these were borderline cases in which the change of climate, and the low diet and exposure on the voyage, may have been the deciding factors in precipitating symptoms.

Toxic Theory.—The possibility that the syndrome is due to some toxic factor in old and musty rice must be borne in mind—a theory which is supported by the fact that such rice was consumed in every camp in which the condition occurred. However, in an officers' camp in Hong Kong, where similar rice was supplied, the condition did not occur; but better canteen facilities obtained at this camp, where tinned beef, fish, etc., could be purchased to augment the diet.

Minerals.—Blood chemical studies in which calcium and phosphorus estimations were made were reported to have been carried out on some cases among prisoners of war in the Philippine Islands, and deficiency of these minerals was ruled out as a possible cause.

To recapitulate, it is apparent that a basic deficiency is unquestionable, but a careful controlled observation is necessary to give a satisfactory solution.

Pathology

Owing to the absence of facilities for histopathological study, nothing was known of the pathology of this condition. Certain well-marked appearances were seen in a number of cases which later came to the operating table for amputation of gangrenous extremities (toes or feet). In these cases the skin and the subcutaneous tissue gave, on incision, the gritty sensation which is experienced on cutting dense fibrous tissue. Where the bones of the toes, for example, were exposed, slow necrosis of the exposed portions took place, otherwise the bone appeared normal.

The common complaint of shooting pains in the feet and lower legs, associated later with absence of deep reflexes, suggested a radiculitis of the posterior nerve roots. This will be considered later in conjunction with the association of the complaint with the nerve lesions in pellagra. It has also been suggested that the signs and symptoms can be explained on the basis of a true peripheral neuritis.

One is tempted to emphasize the vascular changes, and this aspect of the pathology of the condition portrays a similarity to Raynaud's disease affecting the lower limbs particularly, or erythromelalgia. In discussing the condition, Prof. Kinoshita, pathologist to Osaka University, who was intensely interested, admitted that late cases were seen among Japanese soldiers returned from the South Pacific, and that studies he had made indicated that the changes were primarily found in the vascular system. It is not clear if he investigated the possibility of changes in the spinal cord, but he found definite thickening of the vessel walls and narrowing or obliteration of the lumen of the small arterioles of the feet and legs. Any degenerative changes in the peripheral nerves were secondary to impaired nutrition.

Clinical Picture

Early.—The disease is normally ushered in by a progressively severe burning sensation of the soles of the feet, especially at the metatarsal heads, associated with redness, slight swelling,

hyperalgesia, and often sweating of the part. This stage was then followed by shooting pains along the dorsum of the inner border of the foot to the heel. The pains were more severe at night and during rainy weather. Sleep was interfered with and often impossible, the patient restlessly pacing the floor or seeking relief by exposing the feet to the cold or soaking them in cold water, or sitting in the typical squatting posture, massaging the feet for hours on end. The facies became pinched and drawn, and there was associated emaciation resulting from loss of sleep and depleted appetite. The pulse was usually rapid, but occasionally slow at rest, with marked tachycardia on the slightest exertion. In the earliest stages the gait assumed a typical attitude, with a wide base, inversion of the feet, and internal rotation of the leg and slight flexion at the knee-joints. The patient shuffles, and when standing he keeps shifting his position from one foot to the other, usually wincing with pain as each foot touches the ground. There is marked hyper-sensitivity of the soles of the feet. In uncomplicated cases the ankle- and knee-jerks and plantar response are present but usually weak. Those cases with concomitant beriberi neuritis complicated the picture by absent reflexes, painful calves, and a positive Achilles tendon sign and squatting test.

Later.—The signs and symptoms all become more aggravated, and mental changes depicting despondency, loss of memory, and general deterioration are noted. The feet begin to show definite circulatory impairment. They become pale and cold, and turn cyanotic when dependent, the cyanosis usually disappearing on elevating the limb. There is diminished pulsation of posterior tibial vessels. Continued exposure to cold eventually leads to gangrene, the great toe being the first affected; then it slowly spreads, and usually becomes self-limiting at the midtarsal joints. (Most, if not all, of the cases of gangrene were seen in Japan, where the added element of a cold climate was the deciding factor in bringing about the gangrenous change. This also came on very rapidly in the case of a number of men who were exposed to prolonged immersion in the sea when a Japanese ship transporting 1,800 prisoners of war was torpedoed off the China coast in September, 1942.) Healing was very slow in the great majority of cases, as it was in wounds and ulcers of any description, but these cases in particular would continue to heal and then break down in a very disheartening fashion.

Treatment and Prognosis

Treatment consisted of rest in bed, with warmth to the legs and feet, and symptomatic analgesia as required. A well-balanced mixed diet with full vitamin content was aimed at. No drug was found which caused any specific improvement. Basing the treatment on the belief that the underlying aetiology was a vitamin deficiency, various available vitamin preparations were used. These included thiamine, per os, parenterally, and intrathecally in some cases. Nicotinic acid, alpha-beta-gamma tocopherol (in the Philippines), vitamin B complex, brewers' yeast, and vitamins A, C, and D have all been used, with indifferent results. Nitroglycerin and histamine were used in an attempt to produce peripheral vasodilatation, with vocal results. Quinine is stated to have given symptomatic relief in some cases. Presacral sympathectomy was performed in five advanced cases by Japanese surgeons with no benefit whatever, and with fatal results in two.

The prognosis is good if the full diet as recommended can be provided. In the later cases, with gangrene, general improvement may be expected with an adequate diet; and under good nursing conditions and adequate diet the gangrenous stumps show a tendency to heal much more rapidly.

Discussion

This syndrome, since its first appearance in 1942, has given rise to energetic discussion among medical men who have had occasion to see and treat it. When the earlier cases appeared they occurred in hundreds, and the matter became of the greatest urgency. The camps were already rife with amoebic and bacillary dysentery. In Shamshuipo camp diphtheria was accounting for upwards of three to four deaths daily. True beriberi was widespread, and pellagra in one or all of its clinical forms was responsible for a huge morbidity. The painful-feet syndrome was usually complicated by one or

more of these conditions. When in the later months of 1942 its incidence was at its height, and in many cases was complicated by beriberi and by the nerve lesions of pellagra, it appeared to be a concomitant symptom of pellagra. The typical advanced case of this condition gave the following history and showed the following nervous changes.

Several months of painful feet; usually stomatitis; glossitis, in most cases preceded by serotol dermatitis, tachycardia of about 140 a minute; severe wasting; diarrhoea at intervals; numbness of a mask-like area of the face around the cheeks and lips, often described as being like a "dentist's injection." Within a few days are experienced numbness of the lower chest wall and upper abdomen, and a feeling of constriction encircling the chest below the nipples and of the upper abdomen. Later, numbness extends to the thighs and legs, with weakness of the leg muscles, loss of sense of touch, and heat and pain in the legs and scattered areas of the abdomen and lower chest wall. Deep touch sense is present. All deep reflexes, cremasteric and abdominal reflexes are absent, and there is loss of the normal flexor plantar response. A well-developed extensor response was seen in some very few cases. In some instances tingling sensations of the fingers and numbness and weakness of the forearms and hands were complained of.

It might be timely here to mention that it was possible in the camp in question to transfer only a very few patients at very infrequent intervals to a hospital on Hong Kong Island where better nursing facilities and food were available. A few of these cases thus survived. Also, this period was marked by the providential arrival of Red Cross parcels and bulk foods so that tinned beef, butter, cheese, cocoa, and ghi were available. A small daily issue of a yeast-flour suspension was also made. This latter had been provided for some months, but the small quantity available and the doubtful efficacy of flour as a medium for the yeast culture rendered its value open to question. This diet, and the arrival of Japanese preparation of nicotinic acid "pellagrin," marked the turning-point in what truly was a nightmare, and many patients began to show gradual improvement. Others who were not so fortunate as to derive the benefits of care in hospital before the arrival of the food became rapidly emaciated, and death followed from right-heart failure. I was transported to Japan at this time—January, 1943—and am unable to give any account of the follow-up of these cases.

In November, 1942, a series of these advanced cases were demonstrated to a number of medical men to show their great similarity to subacute combined degeneration. Some exhibited the posterior-column changes weeks before the pyramidal tract involvement became evident, and vice versa.

It might be suggested that the "painful-feet" symptom is a radiculitis of the posterior nerve roots, the disease affecting the pain-sensibility fibres in the posterior roots and the pain being referred to the skin, muscle, and bones of the extremities. It would appear that the pellagrinous process would concentrate on these structures, in many cases without spreading to or affecting the posterior columns. When the columns become involved and degeneration starts the pain and hyperalgesia disappear.

The absence of an extensor plantar response in the great majority of instances when other evidences of pyramidal damage were present was perhaps due to a concomitant early peripheral neuritis affecting the legs in those cases which had shown the painful-feet syndrome.

Summary

The widespread occurrence of a distressing and serious syndrome among prisoners of war in the Far East, affecting the feet, with accompanying constitutional signs and known as the "painful-feet" syndrome, is described. Owing to the lack of laboratory facilities, diagnostic aids, and controlled investigation, no satisfactory conclusions were reached as to the exact aetiology, but, from the study of a very large number of cases from the onset, the syndrome would appear to be the result of a deficiency of a factor or factors in the vitamin B complex closely allied to the P.P. factor, but primarily affecting the peripheral arteries of the lower extremities, or possibly be due to a toxic factor in old musty polished rice, associated with a low protein intake and reduced vitality.

The appearances in the early stages, when redness and swelling of the feet were the predominant signs, are similar to those of erythromelalgia as first described by Weir Mitchell. It clearly is not an angiocarcinosis and is not associated with a neuropathic diathesis.

The disease is amenable to treatment by replacement of the deficient elements in the diet, but otherwise is rapidly progressive, ending in death or serious crippling deformities.

FACIAL PALSY ACCOMPANYING ACUTE MASTOIDITIS

WITH COMMENTS ON CHEMOTHERAPY IN
ACUTE SUPPURATIVE OTITIS MEDIA

BY

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Pre-operative facial palsy occurs in about 2% of all cases of otitis media, acute and chronic, but is a much more common complication of chronic or acute-on-chronic otitis media than of acute otitis media *ab initio* (Kettel¹). Presumably, therefore, his complication of acute mastoiditis is comparatively rare. Apart from the four cases now presented, I have only once previously seen a similar case of facial palsy resulting from acute mastoiditis, but have met with the condition three times following an exacerbation of chronic otitis media.

Reports of Four Cases

Case 1.—This patient was a girl aged 5½ years. On Sept. 12, 1945, she complained of headache, but had had no previous ear trouble. On Sept. 14 epistaxis occurred, and on the 15th there was slight left otorrhoea. Next day a pulsating left aural discharge, a tender mastoid process, a partial left orbicularis palsy, and complete paralysis of the lower left face were recorded. Cortical mastoidectomy on Sept. 16 revealed a grossly infected cellular mastoid containing much pus; the sigmoid sinus and dura were both exposed and found healthy. The wound was closed with dependent tube drainage. On Sept. 25 the facial palsy was resolving, and by Oct. 6 recovery was complete. The tympanic membrane and the hearing were then normal.

Case 2.—A boy aged 19 months, when admitted on Sept. 12, 1945, had had left otorrhoea for three days. No history of earache was at this time reported by the parent, whose intelligence, however, was below the average. The left tympanic membrane was thick and red, with anterior perforation. Otorrhoea was profuse, and there was complete left facial palsy (of three days' duration). Cortical mastoidectomy revealed an extensively diseased mastoid containing much muco-pus. On Oct. 17 left facial palsy was still present, but with slight furrowing of the left brow on crying. The tympanic membrane and the operation wound healed. A further follow-up was unsuccessful in spite of several requests to attend as an out-patient.

Case 3.—A boy aged 9 years, admitted Oct. 6, 1945, had had left otorrhoea for two weeks, and left complete facial palsy for one week. There was no history of previous ear trouble. Left cortical mastoidectomy revealed a very necrotic mastoid. The wound was closed with tube drainage, but was reopened on Oct. 27 because of the onset of a low but swinging temperature due to some pocketing of pus. On Dec. 21 the palsy was beginning to recover and the tympanic membrane and the operation wound had healed. Hearing normal. By Jan. 11, 1946, recovery from the facial palsy was complete.

Case 4.—Mr. A., aged 36, attended hospital on Nov. 5, 1945, for left acute suppurative otitis media with otorrhoea. He was treated with a sulphonamide—2 g. daily for five days. The otorrhoea ceased, but some deafness persisted. There had been no previous ear trouble. On Dec. 24 left otalgia followed coryza, and next day there was left otorrhoea. On the 26th the "left side of the face went stiff." Examination on Dec. 28 revealed muco-pus in the left meatus. Deafness was marked, but he had no mastoid tenderness. The temperature was normal. There was complete left facial palsy. Pus was present in both sides of the nose. Cortical mastoidectomy on Dec. 29 revealed a grossly infected cellular mastoid (thick cortical bone) with a deep abscess cavity in the tip containing about a teaspoonful of thick pus under pressure. In the antral region the lining membrane was markedly swollen. A bipp pack was inserted and the upper part of the wound sutured. On Jan. 1, 1946, progress was satisfactory, but the facial palsy was still complete. By Jan. 5 the palsy was beginning to recover in the brow and orbicularis region, and on the 8th recovery was almost complete. On Jan. 22 the patient had quite recovered from the facial palsy, the tympanic membrane was normal, the operation wound had healed, and hearing was normal.

Comment

Faradism was not employed in any of these cases, chiefly because its repetition ruins the morale of children, however painstakingly given, and its value seems doubtful in this type of case. Case 3 showed perfect recovery after nearly eleven weeks of complete paralysis. Splints of any kind were dispensed with for reasons similar to those given above.

Case 4 illustrates one of the pitfalls of sulphonamide therapy in otitis media; there are many others, which are easily

explained by the usual pathological and anatomical changes resulting from the bacteriostatic action of the sulphonamide, which, while localizing the infection of a sensitive and accessible organism, in some cases leaves a focus of living though temporarily attenuated bacteria, while in others a focus of devitalized tissue, incapable of offering any effective barrier to a new infection, remains.

That the latter condition obtained in Case 4 is obvious. His course of a sulphonamide actually or apparently cured the otitis media by Nov. 10; but another attack on Dec. 24 led to an advanced mastoid infection, with a large tip abscess and a facial palsy, within five days, as found at operation on Dec. 29. This infection travelled rapidly by preformed pathways—i.e., those laid down five or six weeks previously.

The position of sulphonamide therapy in otitis media is difficult to assess,² and, as in other forms of treatment, the decision to use or not to use it in any individual case rests as a rule with the general practitioner. He will have to make this decision himself, and, if he decides to administer a sulphonamide drug, then it is as well to bear in mind the possibility that a subsequent relapse or reinfection may with considerable rapidity lead to dangerous complications—perhaps more serious than a facial palsy.

In these cases the infection may be compared with that of a mechanized army advancing over suitable country with supply dumps in abundance already laid down and perhaps a few useful hardened veterans (the sulphonamide-fast bacteria), who have survived the previous rout and have since been lying low, to assist it.

Probably it will prove wiser to reserve chemotherapy for cases which show a tendency to spread outside the mastoid process or which are part of a general septicaemia from some other focus; such cases are best treated in hospital, where all necessary investigations can be made and penicillin be conveniently given, with appropriate surgical intervention if necessary.

Summary

Four cases of spontaneous facial palsy occurring as a result of acute mastoiditis are described; three showed complete recovery at varying intervals after the Schwartz operation; the fourth could not be followed up.

The position of sulphonamide treatment in cases of acute suppurative otitis media and acute mastoiditis is discussed.

I am much indebted to Mr. J. W. MacLaggan, Mr. F. Watkyn-Thomas, and Mr. A. Ryland—under whose care Cases 1 and 3, 2 and 4, respectively, were admitted—for giving me the opportunity of operating upon and subsequently looking after these interesting cases.

REFERENCES

- ¹ Kettel, Karsten (1943). *Arch. Otolaryng.*, 37, 303. (Quoted in *British Medical Journal*, 1943, 2, 752.)
- ² *J. Laryng.*, 1945, 60, 298. (*Proc. roy. Soc. Med.*, Sect. Otol., March, 1945.)

TREATMENT OF PEDICULOSIS CAPITIS WITH D.D.T. EMULSION

BY

A. D. FRAZER, M.D., D.P.H.

Investigators of its toxicity agree generally that D.D.T. is practically safe when applied externally as a dried powder or in dilute solution (see *Journal*, 1945, 2, 260). Repeated contact with concentrated solutions is dangerous, but early warning of intoxication is to be expected in anorexia. Scobbie (1945) found that in the treatment of pediculosis capitis the nearest approach to an ideal was D.D.T. emulsion, which killed the lice and persisted in the hair long enough to kill all the larvae. She did not find any toxic reaction or irritation of the scalp or skin after its use. In spite of a fairly large number of publications agreeing generally with the above findings, there still seems to be a fear of possible danger in the use of D.D.T. for pediculosis, and in consequence it is not widely favoured. The experiences of a Nottingham clinic may be of interest, therefore, as during the last eighteen months over 400 patients have been treated without ill effect. At first a 4% solution of D.D.T. in liquid paraffin was used, but since March, 1945, the emulsion found so successful by Scobbie has

been substituted. The formula* is as follows: D.D.T. 2%, naphtha 15%, emulsifying agent 5%, water 78%.

Method of Treatment

Before treatment is started the female patients are advised to bring a scarf or square of material in which to tie up the hair. The emulsion is a clear, colourless fluid, but after application the hair becomes lank. The turban hides this and permits the patient to go home without embarrassment.

A jaconet cape is spread over the shoulders to protect the clothes, and the emulsion is thoroughly worked into the hair and scalp with a two-inch (5-cm.) paint-brush. The patient is then free to go home, and is directed to wash the hair before attending the following day. At this visit nits are removed with a nit-comb. Usually one combing is sufficient, but if the hair is heavily infested two or more may be needed.

At first, observation was maintained for three weeks before the patient was discharged as cured, but with experience of 100% success this period was gradually decreased, until now attendance is excused as soon as all the nits appear to have been removed by the comb—i.e., usually on the second visit. As the majority of patients are sent from antenatal clinics, factory ambulance rooms, and schools, observation is maintained elsewhere, and the fact that these patients are not referred back upholds my belief that cure is indeed obtained.

Observers have found that contact with the emulsion kills lice in about half an hour, and this was confirmed by personal test. Lately, therefore, the hair has been washed one hour after treatment and the usual combing carried out then. So far as one can judge from a small series, this speedy method appears to be as successful as the longer one.

No signs of intolerance have been found, except that in one case, where the woman had extensive impetigo as well as pediculosis, the nose, forehead, and eyelids were inflamed and swollen the next day. This reaction disappeared in a few days.

When the scalp is secondarily infected, the pediculi are attacked first. Treatment is given as described above. On the second day, when no live lice are present, the hair is cut as required and the septic area attended to. This makes the task of dealing with such cases much less unpleasant for the nursing staff and reduces to a minimum their chance of picking up pediculi from the patients.

Summary

Treatment of pediculosis capitis by means of an emulsion of D.D.T. is described. Success is claimed for over 400 patients. No intolerance was experienced in the uncomplicated cases. One patient with secondary impetigo had a brief inflammatory reaction.

The method of treatment is rapid and easy. Washing of the hair before treatment is unnecessary, this saving contamination of towels. From the point of view of the nursing staff the method is the least unpleasant of all previously tried.

I wish to thank the nursing staff, and especially the sister in charge, for their interest and co-operation in this work.

REFERENCE

Scobbie, Elizabeth B. S. (1945). *British Medical Journal*, 1, 409.

* Kindly supplied by the makers as "liquid derbae."

The first number of the *British Medical Students' Journal* has recently been published under the editorship of Mr. P. D. Wall. It is designed to appeal to medical students throughout the British Isles, to present them with articles of topical, social, and scientific interest, and to foster international co-operation. The present number differs from the form planned for its successors in being devoted to an account of the World Students' Congress at Prague in November, 1945, and contains an interesting summary of the medical situation in Czechoslovakia as it existed during the winter 1945-6. The shortage of fuel, food, clothing, etc., was severe, the normal food ration for nurses, for example, being equivalent to 1,600 calories a day; and many drugs were unobtainable, particularly those developed in the Western countries since 1939. An interesting comment on housing is provided by the following note: "Houses—25,000 destroyed in E. Slovakia alone. Homeless—200,000 homeless. All but 20,000 housed by November. The remainder housed by the end of November." The next issue of the *B.M.S.J.* is promised for the beginning of October. The price is sixpence to members of the B.M.S.A. and allied organizations, one shilling to non-members.

Medical Memoranda

Criterion for Conservation of the Bowel in Strangulation

Most standard surgical works give sundry criteria of viability of a strangulated portion of bowel, tacitly assuming that if these are satisfied the bowel should be conserved.

CASE HISTORY

A woman aged 51 years, who had had a hysterectomy for fibroid, a year previously, was operated upon by me on Oct. 19, 1945, for strangulation due to a band. The acute symptoms were of 48 hours' duration. A single band was found, strangulating a loop of lower ileum; there were no other adhesions. The loop was freed and, after rather prolonged efforts at revival, pronounced viable, and returned to the abdomen. Convalescence was uneventful, and the patient went home 16 days after the operation.

I was asked to see her again on Nov. 16—i.e., exactly four weeks after the operation. She had the same train of symptoms as before, of 12 hours' duration, but on this occasion a fixed mass was palpable in the lower abdomen. At laparotomy the mass proved to be composed of the coils of a loop of lower ileum all closely matted together and quite inseparable. There were no adhesions elsewhere in the abdomen. A short-circuiting lateral anastomosis was performed, there being just enough ileum below the affected loop to allow of this. The patient again made an uninterrupted recovery, and went home 15 days after the operation. She has remained well since.

COMMENT

There can be little doubt that the matted coils found at the second laparotomy were those of the loop that had been strangulated and conserved on the first occasion. Equally certainly the loop cannot have been fit to be returned, and it may be pertinent to remark that many surgeons would not have done so. It is undeniable, however, that the loop was viable, since it was found, living, a month later.

Two possibilities suggest themselves: (i) That there was a localized non-viable portion that did actually perforate, the perforation subsequently becoming sealed. Against this are the facts that convalescence was uninterrupted and that the adhesions found later were very strictly localized. (ii) The matting was due to organization of exudate from a very seriously damaged but still viable portion of bowel.

Any peculiar liability of the patient to form adhesions may be excluded, since there were none elsewhere.

Two points of interest emerge: (a) In assessing the fitness or otherwise for conservation of a strangulated loop a higher standard than mere viability must be adopted. The bowel must be capable of recovering without such outpouring of exudate as may lead to adhesion formation. (b) Adhesions strong enough to cause obstruction were formed in 28 days exactly. Though this is not very remarkable, such observations are always useful, since precise information as to such time intervals is often required in medico-legal cases, and is rarely forthcoming.

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Spinal Analgesia in an Infant 11 Days Old

The following case may be thought interesting enough to put on record.

CASE REPORT

An infant 10 days old was admitted to the Fleming Memorial Hospital for Sick Children, Newcastle-upon-Tyne, on May 8, 1946, with pneumonia. It apparently also had a patent ductus arteriosus. On the next day abdominal distension developed, and a mass being palpated in the right hypochondrium, a diagnosis of intussusception was made, and an operation was decided upon.

Spinal analgesia appeared to be the method of choice in such a case. The patient was placed on his side on the operating table, which was inclined 15° head up, the child's head being depressed on to his left shoulder. Spinal puncture was performed between L4 and 5 with a gauge 17 hypodermic needle, and 0.5 ml. of "light" nupercaine (1 in 1,500) was injected fairly rapidly without barbotage. The needle was withdrawn and the patient turned on his back, the head-up inclination of the table being maintained for a further 2 minutes, when it was levelled. No vasopressor was used. After 10 minutes analgesia was only just suprapubic, and a further puncture was made. The technique was the same as before, save that a fine Pitkin spinal needle (22 G) was used, as the sharp hypodermic needle made the transfixion of the theca difficult to be perceived, and its narrow bore impeded the flow of C.S.F. The second dose of "light" nupercaine was 1 ml. Analgesia appeared immediately, and extended above the costal margin. Laparotomy

is performed, the analgesia proving adequate, and the infant showing only slight resentment when the subphrenic region was explored. Unfortunately, the condition was not found to be amenable to surgery. There was a congenital atresia of the colon: the mass which had been palpated in the right hypochondrium proved to be greatly enlarged liver. (It must be remembered that the abdomen is greatly distended and examination had been difficult.) Half an hour after operation the patient was remarkably well, and the general post-anaesthetic condition was most satisfactory. Unfortunately, death ensued 24 hours later; necropsy revealed: (1) consolidation of the bases of both lungs; (2) a greatly enlarged liver containing a number of pyaemic abscesses (the result of an umbilical infection); and (3) partial atresia of the large bowel throughout its whole length, with intestinal obstruction.

COMMENT

Although this infant died, the case was, from an anaesthetic point of view, completely satisfactory, and the anaesthetic, far from contributing to the cause of death, permitted an abdominal operation to be performed without any apparent change in the child's condition. The chief interest lies in the dosage employed. The records of spinal analgesia in infants are scant;undy (1942) advises 1 mg. of procaine per pound of body weight, but such a method of assessing dosage is open to obvious criticism. If analgesia be desired to extend up to the fourth thoracic segment, in order to block the splanchnic nerves, as is usually recommended for upper-abdominal operations, it would seem that, with the technique described above, 1.3 ml. would be a suitable dose for an infant of the age of a fortnight or less.

M. H. ARMSTRONG-DAVISON, M.B.E., M.D., D.A.

REFERENCE

Lundy, J. S. (1942). *Clinical Anesthesia*, p. 237, Philadelphia.

Vesical Calculus complicating Procidentia

As I understand that vesical calculus is rare in women, this report of a case, discovered in a patient of 84 nine months after an operation for prolapse, may be of interest. I have seen only one other case, which was caused by two silk sutures which had been passed into the bladder at a vaginal hysterectomy one elsewhere. I have come across a reference to one in an older patient (aged 93), and treated more correctly by incision of the bladder through the vagina, and Prof. Chassar Moir (1942) recently recorded a similar instance. I also remember Mr. O'Sullivan showing a patient at the Royal Society of Medicine with procidentia complicated, I believe, by 13 calculi. The correct treatment is presumably to remove the stone from below. The fault in the following case lay in not suspecting it. The moral is to x-ray the bladder in long-standing cases prior to operation.

RECORD OF CASE

Mrs. X. had since the age of 28 complained of prolapse. Her trouble was of 55 years' standing, for she was 83 when I first saw her. For a year the prolapse had been complete, and as it was no longer controllable by pessaries she sought surgical relief. She had at some disturbance of micturition for a year; it seemed to be retention with overflow. Her blood pressure was 190/130, but she was pronounced by Dr. Norman Hill to be "as fit as anyone of 83 could be."

On Oct. 1, 1942, I performed a Le Fort's operation on her, pentothal, gas, and oxygen being given by Dr. Langton Hewer. Four days later she developed a urinary infection, which failed to respond to citrates but which was ameliorated in fourteen days with calcium mandelate. She was up in three weeks, and after another month, during which time she had several mild colds and an attack of rheumatism in the left ankle, she left hospital. The *B. coli* was still present in the urine.

Nine months later her doctor wrote to say that for some time he had had haematuria and strangury, and to ask me to take her again. She was admitted in August, 1943, attributing the inconvenience to having caught a cold on her way home. Though now in her condition was as good as previously; the anatomical result of the operation was satisfactory. On Aug. 12 Dr. Organe gave her gas-and-oxygen, and by the cystoscope I at once located the stone. I thereupon did a suprapubic cystotomy and removed a calculus weighing 1½ oz. (49.6 g.), and measuring 2½ × 1½ × 1½ in. (6.7 × 4.1 × 3.1 cm.). The suprapubic catheter was out in fourteen days, and she left hospital after eight weeks. In February of this year she was reported to be very well and free from symptoms, passing urine normally. X-ray examination of the stone shows well laminated composition. There is no foreign-body core, and I presume it to have been formed by long-standing partial retention of urine.

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Moir, Chassar (1942). *J. Obstet. Gynaec. Brit. Emp.*, 49, 169

Reviews

FUNDAMENTAL PROBLEMS OF THE ORGANISM

The Directiveness of Organic Activities. By E. S. Russell, D.Sc., F.L.S. (Pp. 196; illustrated. 8s. 6d.) Cambridge: The University Press.

When vitalism passed out of fashion, biology became completely mechanistic. Dr. E. S. Russell is not at all surprised at this, because man, having won his great triumphs through machinery, has a natural tendency to adopt a mechanical explanation. It suits his mental outlook, for he is *Homo faber* (his behaviour gives him no right to be termed *Homo sapiens*). It is only natural that the study of structure became the first aim of biology. In this way a solid body of information was built up, but the field naturalist was at a discount. Indeed, MacBride went so far as to call T. H. Huxley a "necrologist" rather than a biologist. By the turn of the century the inadequacy of this approach was recognized and function has been intensively studied. Even here, too, everything had to be fitted in with the rigid physico-chemical laws known at the time. A good many biologists found this procrustean bed very uncomfortable. Moreover, that all the adaptations of life could be explained as due to the piling up of a vast series of chance variations seemed to them to present a cosmogony as unacceptable as that of the book of Genesis. Free lances like Samuel Butler might talk of "unconscious memory" but for a professional biologist to express belief in the inheritance of acquired characters is to court ostracism.

Dr. Russell provides us with a partial escape from the dilemma. He points out that the mechanistic explanation leaves out of account all that is distinctive of life—the directiveness, orderliness, and creativeness of organic activities—and completely disregards its psychological aspect. Rejecting both the mechanistic and vitalistic hypotheses as equally inadequate, he tackles the fundamental problems presented by the organism as a living and developing whole, striving to complete its life cycle. He illustrates his thesis by a number of fascinating examples of the way in which the organism adapts itself to changes in environment. As Cannon wrote—"the wonder increases when we realize that the [organic] structure itself is not permanent but has been continuously broken down by the wear and tear of action and as continuously built up again by processes of repair." The unstable and self-regulating organization reached in the development of the living organism is, therefore, something totally different from a stable equilibrium which is the natural end state of an inorganic system. "Life is a dangerous adventure; inorganic processes tend towards stability."

This in barest outline is the author's view; he is aware that it is likely to arouse strong differences of opinion, but all must agree on the exceptional interest of the book and on the excellence of the examples chosen to illustrate his contention.

CARDIOVASCULAR DISEASE

Cardiovascular Disease in General Practice. By Terence East, D.M., F.R.C.P. Second edition. General Practice Series. (Pp. 193; 40 illustrations. 12s. 6d.) London: H. K. Lewis and Co. 1946.

This second edition of Dr. Terence East's manual appears eight years after the first. It is particularly welcome, for it is the most practical, up-to-date, and well-balanced short book on the subject. The war years have seen important new developments in the therapy of cardiovascular disease, and in this volume will be found reference to thiouracil, to ligation of the patent ductus, and even to the extensive sympathectomies still under trial for hypertension. In spite of the limited scope of the book—it has only 191 pages—the author has found room for consideration of certain problems commonly encountered in general practice, such as heart conditions in the middle-aged and elderly, the relation of heart disease to pregnancy, the question of athletics, and lesions of the peripheral arteries and veins. Dr. East has naturally omitted any treatment of electrocardiograms from a work of this size, but he gives an account of the indications for the use of this instrumental method of investigation and the kind of information to be gained from it. By economy of phrase and avoidance of theoretical discussion

a readily understandable and practically useful work has been achieved and certainly many practitioners of medicine will derive from it help in both diagnosis and treatment.

HEALTH INSTRUCTION

Health Instruction Yearbook, 1945. Compiled by Oliver E. Byrd, Ed.D. Foreword by Walter H. Brown, M.D. (Pp. 344. \$3.00 or 18s. 6d.) California: Stanford University Press; London: Oxford University Press.

This year book, compiled by Prof. Oliver E. Byrd, is the third annual volume of the series, and is intended for teachers, students, doctors, nurses, and others concerned with problems of health. It consists in an analysis of 316 articles which have appeared in various American scientific journals during the twelve months preceding publication, and it forms a readable and instructive reference book.

In the introductory chapters, which relate to health as a social problem, it is maintained that inhabitants of the U.S.A. are "far away the best-fed people in the world," and that their average length of life in 1943 was 64½ years. The chapter on nutrition describes in considerable detail the recent investigations on vitamins, especially on the vitamin-B complex. Diets deficient in this vitamin cause men first to lose their willingness and then their ability to do hard physical work. The chapter on heredity discusses the Rh factor, and records the opinion of one investigator that the discovery of the factor in 1940 is perhaps the most significant single discovery hitherto made in medical genetics. It is stated that 11% of all the marriages in the U.S.A. are potentially dangerous in terms of incompatibility (father Rh-positive and mother Rh-negative). The chapter on infection and immunity refers to the unique law passed in 1943 by the State of Alabama which requires all civilians between the ages of 14 and 50 to have their blood examined for syphilis. In the three counties in which the blood-testing programme has been completed, 2.2% of the whites and 20.5% of the negroes were found to be infected. One investigator points out that the world "missed the boat" by almost seventy years in respect of the insecticide D.D.T., the use of which would have saved millions of lives. It is maintained that, under American development, it has proved to be one of the greatest medical advances of the war and possibly of all time.

Subsequent chapters of the book deal with such topics as diet-forming substances, safety, family health, school health, occupational health, and there is a final chapter on trends and possibilities. This is of special interest at the present time as it discusses the Wagner-Dingell Bill, which was introduced in Congress in May, 1945. Its provisions include compulsory health insurance for all persons covered by Social Security, and a 10-year Federal State maintenance of hospitals, health centres, and clinics.

PRINCIPLES AND PRACTICE OF SURGERY

Principles and Practice of Surgery. By W. Wayne Babcock, M.D. With the collaboration of members of the Faculty of Temple University. (Pp. 1,331; 1,141 engravings and 8 coloured plates. 60s.) London: Henry Kimpton.

Wayne Babcock is a surgeon with an international reputation, and his *Textbook of Surgery* was widely known and appreciated. Using this book as a basis he has now produced, with the help of 37 collaborators, an enlarged book entitled *Principles and Practice of Surgery*. All these writers are members of the Faculty of Temple University, Philadelphia; by thus choosing his team from a single school the chief author has tried to avoid the duplication and confusions so commonly found in books of multi-authorship. The volume is intended to "supply the student and practitioner with a working knowledge of common and rare surgical conditions occurring not only in the United States but throughout the world."

Viewed in a broad way it may be said that the book fulfils its object in its 1,300-odd pages, but we cannot help feeling that the inclusion of so many rare diseases has led to serious curtailment of the space available for the commoner conditions, and so one gets the impression of a lack of balance. Thus although such conditions as the Klippel-Feil syndrome, Hand-Christian-Schüller disease, polyostotic fibrous dysplasia, receive attention, Russell's viper venom is not mentioned in the treatment of haemophilia, nor excision of the patella in the treatment of fracture of that bone, nor Helfet's aluminium acetate treatment of osteitis deformans—yet these are much

commoner conditions. One could cite many more examples where common conditions are inadequately described and dismissed in a short paragraph while rarer diseases receive more attention. There are also places where the language is ambiguous (a serious defect in a book intended for students), and there are uncorrected misstatements. For instance, in discussing post-spinal headaches it is noted that they have been ascribed to a dural leak "proved not to be due to sharp needles"; the uninitiated may well inquire what this really means. Then lymphopathia venereum is differentiated from lymphogranuloma inguinale, though on the preceding page they are said to be synonymous. The freezing point of sea water is given as 1.9° C. in a description of immersion foot there is no mention of neurectomy in the treatment of Morton's metatarsalgia; thiouracil is not noted for thyrotoxicosis (but there is a reference in the bibliography); and Pancoast's name is mentioned but not his disease.

All these are perhaps rather small points, but they are deliberately noted here to show that the book needs rather more careful editing; the certainty of further editions will provide an opportunity for this. There is, however, a lot more to be said in favour of the book; in particular those sections which contain Dr. Babcock's personal contribution—e.g., rectal and vascular surgery—can be praised. The illustrations (there are over a thousand of them) reach a very high standard and are exceptionally useful—the few coloured plates are among the best we have seen, and the reproduction of all is beyond criticism. Indeed the whole format is good, and there is a forty-page bibliography and a full index (so essential in a book of this character) at the end.

To sum up, our impressions are that the book is a very fine production; the editor has made a valiant attempt to reduce the whole of surgery, including all its aspects such as operative technique, materials, etc., into the compass of a single volume of reasonable size. If the effort has not been 100% successful it is due to the enormous scope of modern surgery rather than to any defect on the part of the authors.

Notes on Books

A small book, *Curare-Intocostin*, published by E. R. Squibb and Sons, New York, contains a very useful account of the recent literature on curare, and in particular of its use in shock therapy and in anaesthesia. Intocostin is an extract of curare which is standardized by a method said to be very accurate, but which appears from the description given to be a rough method only. The solution is injected slowly into the ear vein of a rabbit and a dose is determined which just prevents the animal from raising its head; this dose is expressed per kg. body weight. This is the only information on this very important matter which is given in a book of 291 pages. There is no statement of the number of animals used, and no evidence presented to indicate the accuracy attained. This is a serious omission. The need for curare in shock therapy is considerable; thus Easton and Sommers state (*J. nerv. ment. Dis.* 1944, 99, 236) that in a series of 800 cases treated with metrazol (leptazol) there was a fracture incidence of 26%, and that in the 209 cases of fracture 535 vertebral bodies were involved. It is therefore not surprising that they think that curare should always be used as a supplement. The maximum curare effect is reached in two minutes after intravenous injection. The best dose is one which produces weakness of the neck muscles so that there is great difficulty in raising the head from the pillow. After a smaller dose there is insufficient protection of the long bones and spine, and after a larger dose there is respiratory arrest.

Introduction to Present Day Psychology. By Dr. CURT BOENHEIM (Staples Press, Ltd., 12s. 6d.) is based on 24 lectures given under the auspices of the W.E.A. in Reading University. Prof. Wolters in a foreword praises its clarity of writing and its eclectic approach. The author has naturally paid greatest attention to his own work in child guidance, dealing at length in the first part, "Psychology," with play, perhaps to the detriment of other highly important subjects, and in the second part, "Applied Psychology," with child guidance, leaving other chapters on psychiatry, general medicine, industrial psychology, and delinquency to be sketched in somewhat perfunctorily. On the whole the book is free of technicalities, except in the chapters dealing with the psychological theories of Freud, Jung, and Adler, where it is inevitable that some technical terms should be used. For those who wish to learn anew something of this complicated subject Dr. Boenheim's introduction is to be commended.

BRITISH MEDICAL JOURNAL

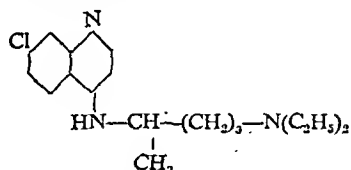
LONDON

SATURDAY AUGUST 24 1946

NEW AMERICAN ANTIMALARIAL
COMPOUNDS

paludrine is the new British antimalarial compound.¹ Now that the wartime censorship has been raised it is possible to describe the new American antimalarials. When Japan entered the war and supplies of quinine were cut off a search for new compounds was begun under Government auspices on the vast scale congenial to our transatlantic neighbours. More than 14,000 compounds were examined at a cost of almost £2,000,000. During this work much knowledge was gained about the best ways of using mepacrine (atebrin) and about the biology of the malaria parasite. The main attention of the American investigators, however, was directed to the finding of new and better antimalarial compounds; the results of their work are now being made public, and two types of drug show particular promise.

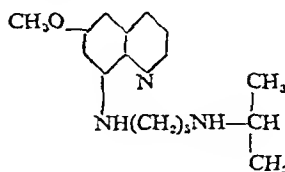
The first group includes chloroquin, or resochin, also known as SN 7618, which is 7-chloro-4 (4-diethylamino-1-ethylbutylamino) quinoline.



This compound has an interesting history. When the Allied Forces occupied Tunis in 1943 they found that a secret German preparation called sontoquin (later renamed 11) had been sent there for trials against malaria. Workers at the I.G. Farbenindustrie had synthesized sontoquin before the war; but it was considered to be little better than mepacrine, and its further development was conducted half-heartedly. Supplies of sontoquin were taken to America and Britain, and the chemical formula was determined. Clinical trials in the U.S.A. of one of its derivatives—chloroquin—showed that it had important advantages over mepacrine. Large-scale trials confirmed this; mass production was begun, and if the war had continued another year chloroquin would probably have displaced mepacrine as the main antimalarial in use among the American Forces. Its absorption, excretion, and distribution in the body resemble those of mepacrine, but it is colourless and does not stain the skin. It completely suppresses malignant tertian malarial infection, and adequate treatment of clinical attacks produces radical cure with complete elimination of the parasites from the body.² All

signs of benign tertian infection are suppressed so long as administration of the drug continues, but when this ceases relapse usually occurs. In order to suppress malaria in soldiers it is necessary to give 0.1 g. mepacrine every day. The same results may be obtained by giving a single dose of 0.25 g. chloroquin weekly, which is important as reducing the time-consuming supervision of drug-administration to one-seventh of its previous level. In its general properties chloroquin challenges comparison with paludrine. One or other of these two compounds will almost certainly replace quinine and mepacrine; comparative tests in field trials are now taking place. Chloroquin has been tried on a much wider scale than has paludrine, but in many ways paludrine seems to be the more promising of the two.

Neither chloroquin nor paludrine can effect a radical cure of benign tertian malaria. All clinical symptoms disappear during administration of either drug, but on withdrawal a relapse usually appears sooner or later. It is hoped that radical cures will be brought about by means of another new American compound—SN 13276. In 1943 there was much controversy over the merits of pamaquin (plasmoquin). Earlier work by Sinton in India had suggested that a combined course of pamaquin and quinine was more effective than any other remedy in sterilizing benign tertian infections. Owing to the absence of controls this work was open to other interpretations, and in addition pamaquin was unpopular because it was apt to produce toxic reactions. The Malaria Committee of the Medical Research Council instituted comparative trials of pamaquin plus quinine and of mepacrine. These investigations were carried out by Kelleher and Thompson. They were statistically satisfactory, and the cases were followed up successfully. During the following six months about 30% of the patients treated with mepacrine relapsed, as against only 10% of those treated with pamaquin and quinine. This proof of the value of pamaquin was communicated to the American workers, who instituted a very extensive study of the plasmoquin (8-aminoquinoline) series of compounds to find a more active but less toxic derivative. The most promising compound to emerge from this study is SN 13276.



Therapeutically it is as active as pamaquin in avian infections but is less than half as toxic to laboratory animals. In man a thrice-daily dose of 20 mg. SN 13276 is as well tolerated as 10 mg. pamaquin given in the same way. Volunteers in an American prison who were infected with the virulent South-West Pacific strain of *P. vivax* and treated with full doses of the new compound (plus quinine) appear to have been completely freed from the infection. Further trials are being undertaken in the U.S.A. and in Britain; until these are completed it is not possible to make a true assessment.

¹ *British Medical Journal*, 1946, 1, 919.

² *J. Amer. med. Ass.*, 1946, April 20.

The war has caused much suffering and destruction. It has, however, led to great improvements in our means for controlling and treating malaria. The scientific skill and the capital invested in the American wartime programme of malaria research will yield a good dividend of improved health in the years to come.

DISABLED PERSONS ACT, 1944

In last week's *Journal* Sir Reginald Watson-Jones drew attention to the recent Order of the Minister of Labour that the quota of disabled persons employed in industry shall be raised from 2% to 3%. Sir Reginald points out that this increases the number of disabled persons to be employed by 150,000. He also states that this is an answer to the criticism made in a recent leading article¹ that the "typical Civil Service approach to the problem . . . does not even achieve its object, since it merely means that the 2% will be made up of those with flat feet and subject to bronchitis." This statement was meant to illustrate one of the snags of the Disabled Persons Employment Act and to exemplify what, in fact, is happening apparently in many factories.

Under the Disabled Persons Act, 1944, a register of disabled persons is kept at the local offices of the Ministry of Labour and National Service. The main condition for registration is "a substantial handicap to employment and work which is likely to last for at least six months." All employers with 20 or more workers are required to employ a quota of registered disabled persons—formerly 2% and now 3% (incidentally, 2-3% of 20 is an awkward kind of person to employ). "An employer," to cite from the report of the B.M.A. Rehabilitation Committee,² "who has less than his quota may not take on a non-registered person without a special permit from the Minister, and a registered disabled person may not be discharged from his employment without reasonable cause if the discharge would bring the employer below his quota." Vacancies in certain occupations specially suited for disabled persons may not be filled by unregistered persons without a permit from the Minister. The larger industries have always found employment for disabled employees and have gone to much trouble to fit the job to the man. The variety of processes in a large industry facilitates this. In this country the small factory is the rule and the large factory the exception. The employer of, say, 250 men or fewer has a smaller variety of jobs to suit different forms of disablement and is, moreover, reluctant to have his labour controlled by a Government Department. He wants, in other words, to choose his own man for the job to be done. In order to avoid what he regards as the danger of having labour dumped on him the small employer has in many instances sought to satisfy his quota of disabled employees out of persons already working for him. For example, a man may be doing a whole-time job satisfactorily in spite of the disability of a hernia controlled by a truss: he can now qualify for the register. Such examples could be multiplied. By encouraging such workers to be registered

the employer is doing something which is humanly understandable but does not contribute to the solution of a difficult problem, and once one employer in a big industrial area starts doing this other employers follow suit. This, at least, seems to be the experience of practitioners working in industrial areas, and it serves no purpose to blink the fact. The reaction of the Ministry of Labour is to increase the quota, and it presumably can go on increasing the quota until it achieves its aim. If we are to be fair to the employers we should recognize that their objection is not to the employment of disabled persons but to what they regard as possible interference with their selection of labour. There is, in fact, a problem, and we suggest that it will not be solved by stepping up the percentage of employed disabled persons.

The hard core of the problem is the employment of those whose disablement is so serious that economic employment is difficult to find. In one form of disability—namely, tuberculosis—a solution has been found in the Papworth Village Settlement. The Ministry of Labour has established the Disabled Persons Employment Corporation, which has now been in existence for a year. No doubt building and other obstacles have made it impossible for the Corporation to set up more than three factories in this time. It is, nevertheless, only a small beginning, and we may hope to see a more ambitious programme unfolding during the next twelve months. Such a development is surely the real solution to the real problem at a time when every available ounce of manpower is needed if this country is to hold its own in a world rapidly becoming industrialized. In the meanwhile we may note with satisfaction that Disablement Rehabilitation Officers are now receiving medical training in hospitals in London and in Manchester and that Regional Consultants have been appointed to supervise the results of their work. We would repeat the final sentence of the leading article in the *Journal* of June 29: "Perhaps industrial medicine will be judged more on its success or failure in placing individuals in industry than on any other aspect of its work." If the Rehabilitation Service is to succeed then it must be based on the principles formulated by the B.M.A.'s Rehabilitation Committee—namely, (1) Unity of control at the centre, (2) Unity of control in the region, (3) Continuity of care, (4) Effective liaison between general practitioner, hospital staff, and industrial medical officer, (5) Co-operation between medicine and industry, and (6) Close contact between hospitals and rehabilitation centres, convalescent homes and vocational training centres.

H. G. WELLS

One of the curious things about the tributes to H. G. Wells in the days after his death was the range of ages of the men who said how profoundly he had influenced those of their generation. Men in their early forties and men in their early seventies said the same thing. It was a remarkable testimony to a man who throughout a long life retained a youthful zest for living and learning and teaching. For Wells was a teacher as well as a prophet. He possessed that rare quality among teachers—an intense desire to make other people think things out for them

¹ *British Medical Journal*, 1946, 1, 990.

² *Supplement to the British Medical Journal*, 1946, 1, 189.

lives, not to accept the edicts of authority without challenge. Wells was the great challenger.

The medical profession owes him much, if only for his insistence on the importance of biology. An educational stem that neglected biology was for him an infuriating anachronism. It was symptomatic of his function as a teacher that *The Outline of History* was followed by *The Science of Life*: the story of man and then the story of living things. These two volumes—the second written in conjunction with his son, G. P. Wells, and Julian Huxley—gave the growing mind a “world picture.” And for Wells any mind worth anything was always growing. He had little sympathy with the sterile pessimism of the twentieth century intellectual who croaked disaster with morbid elish. Yet he foresaw the possible eclipse of the species *Homo sapiens* if man lost his adaptability, and was aware of the parallel of the reptiles which lost their position as the foremost animals of the earth in the Mesozoic period.

In relation to the medical profession Wells was the antithesis of his contemporary, Bernard Shaw. “I do not like waiting medical men,” he wrote in a preface to a book written by two doctors. “My friend G. B. Shaw does.” His scientific training and profound interest in biology saved him from the facile attacks so often made on doctors by men whose gift for the pen is equalled by ignorance of that branch of applied biology which we call Medicine. Wells was aware of the ambivalent attitude of the sufferer to the healer. “It is in the nature of man,” he wrote, “to be rebellious against his medical director.” Yet he did not hesitate to criticize when he felt that criticism was called for. He thought the medical profession erred in being reluctant to listen to the unorthodox healer. “One other conspicuous fault the medical profession has, it does not advertise.” By this he did not mean personal advertisement. “But I think that it might respond much more generously and effectively to the common desire to know what is being discovered, what is being practised and why.” The alternative to this secret conspiracy on the part of the medical profession was, as Wells saw it, “a vast amount of misleading pseudo-information in the press that simply fertilizes the soil for the advertisements of patent specifics.” And he added this to his store of wise sayings: “Communicative doctors make intelligent and helpful patients, and the more that treatment becomes collaboration the better for both practitioner and client.” Wells suffered from diabetes, and it was characteristic of him that he identified himself with the interests of the Diabetic Association so that doctors and diabetics could collaborate the better. Already over 70, he took his D.Sc.Lond. with a thesis “On the quality of illusion in the continuity of the individual life in the higher metazoa, with particular reference to the species *Homo sapiens*.”

“H.G.,” as he was known to a multitude of friends, hated cant and pomp and reverence for authority. This extraordinary man saw himself as the ordinary man writ large—a man with a passionate desire that all other ordinary men should see life in all its intricacies with the same dazzling clarity with which he saw it.

CAVAL LIGATION FOR THROMBOPHLEBITIS

When pulmonary infarction follows thrombophlebitis in a lower extremity, it is always tempting to close the door to further embolism by femoral ligation. Since, however, it is usually not the frankly thrombosed limb that is the source of the pulmonary embolus but its apparently more normal fellow, it is wise, if ligation is done, to tie both femoral veins. Even this is not a final solution of the problem of embolus prevention, for often, at the time when operation is performed, the thrombotic process has already extended into the pelvis, and would require ligation of the common iliac, which Homans¹ has indeed advised and performed. Logically, the most satisfactory site of ligation for the prevention of embolism would be at a level above the confluence of the veins of the two lower limbs, but the surgeon's hand is stayed from caval ligation by fear of its danger. In cases of repeated infarction from puerperal pelvic thrombophlebitis the conflict between desire to establish caval occlusion and dread of its consequences is particularly sharp.

Lower,² in 1669, showed that experimental caval ligation is fatal if performed above the entry of the renal veins, compatible with life if performed below that level. In 1911 Pleasants³ recorded 8 cases of caval ligation, and Ochsner and DeBakey,⁴ in 1941, were able to comment on 48, performed chiefly for puerperal pelvic thrombophlebitis. Collins, Jones, and Nelson⁵ reported 41 cases of pelvic thrombophlebitis proved at operation or at necropsy; in 8 of these the inferior vena cava was ligated, with one death. Gaston and Folsom⁶ have described in detail two cases of thrombophlebitis of the lower extremities in which the inferior vena cava was successfully ligated. Both patients suffered from a mottled cyanosis and from venous distension of the lower limbs for a few days after operation, and from a pitting oedema of the legs. In the case of one patient, a woman of 49, the oedema resolved completely after four months; in the other, a man of 71 with calcified arteries in the lower limbs, a minimal oedema persisted for three months. In the second case, the pressure in the veins of the foot was measured at intervals after the ligation; on the third day after operation it was 380 mm. of water, falling to 300 on the fifteenth day.

It seems usual, therefore, for the collateral venous circulation to compensate for a ligated inferior vena cava. But the operation is likely to be regarded only as a last line of defence in patients who suffer from thrombophlebitis associated with frequently repeated pulmonary embolism. The selection of suitable patients remains a matter of the greatest difficulty, and opportunity for the justifiable performance of caval ligation will seldom arise. To sustain the patient during the dangerous early post-operative period, when the venous collaterals are strained to capacity, Gaston and Folsom recommend swathing of the feet, tight elastic bandaging of legs and thighs, the early use of oxygen, and adequate plasma replacement of the oedema fluid, which may be rapidly withdrawn from the circulation after the ligature is applied.

PERIPHERAL NERVES IN PERNICIOUS ANAEMIA

It is well known to neurologists that changes may occur in the peripheral nerves in cases of subacute combined cord degeneration, and that treatment may be followed by clear-cut clinical improvement. The extent of these

¹ Surg. Gynec. Obstet., 1944, 79, 70.

² Tractatus de corde, 1669, London.

³ Johns Hosp. Rep., 1911, 16, 363.

⁴ New Engl. J. Med., 1941, 225, 297.

⁵ Med. Surg. J., New Orleans, 1943, 95, 375.

⁶ New Engl. J. Med., 1945, 233, 222.

changes and the frequency of their occurrence have been debated. We read in the outstanding paper by J. S. R. Russell, F. E. Batten, and J. Collier¹ that there were severe peripheral nerve damage in one case, mild changes in two, but no abnormality in three others. J. G. Greenfield and E. A. Carmichael² removed portions of the anterior tibial nerves of living patients with pernicious anaemia, and found a reduction in the myelin sheaths, particularly around the large nerve fibres. Probably the earliest reports of such peripheral changes were those made by C. van Noorden³ and by Eisenlohr.⁴ A recent paper by J. B. Dynes and J. W. Norcross⁵ has put the incidence of peripheral nervous lesions at about 23%. Still more recently, D. B. Foster⁶ found degeneration of peripheral nerves in the post-mortem study of four fatal cases of subacute combined spinal cord disease, and in the biopsy examination of one further case. As might be expected, the changes were less in those cases in which liver extract had been administered. The last observation illustrates the great regenerative capacity of peripheral nerves. In this connexion we may also note the findings of C. Berry, C. Neumann, and J. C. Hinsey,⁷ who found that in experimental cases injured nerve trunks were capable of regenerating normally, even in the presence of a severe thiamine deficiency.

PENICILLIN IN BRONCHIECTASIS

The success of resection of the lung for bronchiectasis confined to one or more lobes emphasizes the unsatisfactory nature of the treatment available for patients with bronchiectasis of less favourable distribution. It is not surprising, therefore, that the efficacy of penicillin in a variety of infections should have raised hopes that it might be of value in these cases. Preliminary work by Mutch and Rewell⁸ has shown that inhalation of the mist produced from solutions of penicillin by a nebulizer can cause a bacteriostatic concentration of the drug in the blood. An even more effective concentration may be produced by this means at the surface of the respiratory mucosa. The results obtained by penicillin therapy in bronchiectasis vary from case to case and even in favourable cases may not be long lasting. The bacterial flora of bronchiectatic cavities includes potentially pathogenic organisms sensitive to penicillin—for instance, *H. influenzae* and some of the Friedländer group; and in chronic infections organisms previously sensitive may become penicillin-resistant. Moreover, intercurrent respiratory infections, epidemic or otherwise, might be expected to undo any good results obtained by penicillin treatment.

Bobrowitz, Edlin, Bassin, and Woolley⁹ have recently published a preliminary report on the treatment of 12 patients with multilobar bronchiectasis. Penicillin was applied in a variety of ways: by intratracheal injection after local anaesthesia of the larynx, by the inhalation of nebulized solutions, by intramuscular injection, and by combinations of these methods. Intratracheal injection twice a day of a dose varying from 50,000 to 150,000 units, dissolved in 10 to 20 ml. of saline solution, resulted in a very high penicillin concentration in the sputum, and a concentration in the urine which indicated in one case that over 30% of the total dose had been absorbed, but a low and variable concentration in the blood. After inhalation the concentration in the sputum, though bacteriostatic,

was much lower, and penicillin was demonstrated in the blood inconstantly and also at a much lower level than was found by Mutch and Rewell. The duration of treatment varied from four days for some of the patients treated by intratracheal injection to 115 days for one still under treatment by both this method and inhalation. The clinical results were claimed to be favourable. In 9 of the 10 patients whose sputum was foul before treatment the odour cleared up within a few days of beginning any form of penicillin therapy. It returned soon after the cessation of treatment in most of them, and in the two cases in which the sputum remained free from odour the follow-up was no more than one month. The volume of sputum was considerably reduced during treatment—in most instances by more than 50%. Bacteriologically the data are rather incomplete. As expected, the number of Gram-positive organisms and of pus cells diminished considerably during treatment, but usually increased again when treatment was discontinued. The authors recognize the frequently transient nature of the improvement observed but suggest that long-continued inhalation may help some chronic cases of bronchiectasis. They stress also the probable value of intratracheal penicillin as a preparation for lung resection in bronchiectasis.

An aspect of this problem which may merit further investigation is the possibility of help from penicillin in those cases of bronchial dilatation associated with pulmonary atelectasis, which have been shown to be reversible if the atelectasis can be relieved before the bronchi have been permanently damaged by infection. In any case which may fall into this group the result of intensive treatment by continuous postural drainage and breathing exercises must be observed before the condition is pronounced to be a permanent bronchiectasis. It may be found that penicillin by inhalation, or by intratracheal injection, is a valuable addition to the therapeutic measures available to the physician faced with a problem of this sort.

THE HOSPITAL "DOMESDAY BOOK"

The surveys of Hospital Services in England and Wales, which have lately been published in the form of Blue Books and have been reviewed from time to time in these columns, are summarized in a booklet issued by the Nuffield Provincial Hospitals Trust and printed at the Oxford University Press. It is not an easy task to condense into 20 short pages the work of ten teams of surveyors, but by representative quotations it is shown that the surveyors, all of them men experienced in hospital work, either on the clinical or on the administrative side, were virtually unanimous on three main defects in hospital services—namely, inadequate accommodation, shortage or ill-distribution of specialists, and lack of co-ordination. Not all the surveyors commit themselves to estimates of deficiency of beds in their areas, but, by applying to the three areas where no estimates are given the average of the other surveyors, the conclusion is reached that the total estimated deficiency for all classes of beds—acute general, maternity, tuberculosis, infectious diseases, and chronic sick—is approximately 98,000. If infectious disease beds are left out of the reckoning—and there are surpluses in many areas in this category—the existing total of 225,000 beds needs to be increased by more than 40%. The fact that available beds fall short by about one-third of the estimated total of accommodation required raises the question how far the State will be able to meet immediately the newly assured right of all the population to hospital treatment.

¹ *Brain*, 1900, 23, 39.

² *Ibid.*, 1935, 58, 483.

³ *Charité-Ann.*, 1891, 16, 217.

⁴ *Dtsch. med. Wschr.*, 1892, 48, 1105.

⁵ *J. Amer. med. Ass.*, 1943, 122, 586.

⁶ *Arch. Neurol. Psychiat.*, Chicago, 1945, 54, 102.

⁷ *J. Neurophysiol.*, 1945, 8, 315.

⁸ *Lancet*, 1945, 1, 650.

⁹ *New Engl. J. Med.*, 1946, 234, 141.

HEALTH IN H.M. PRISONS

The report of the Commissioners of Prisons and Directors of Convict Prisons for the years 1939-41* departs considerably from the form of its predecessors, for it covers a period of unprecedented difficulty and disturbance. As the summer of 1939 wore on the preparations for meeting enemy attack were amplified and the prison populations were moved from areas judged to be specially liable to attack. Over 2,000 prisoners and Borstal inmates, with the whole of their personal property and records, were transferred in three days almost without incident. When the expected air raids did not come and the normal inflow of prisoners continued, the drastic adjustments necessary had a disturbing effect on the discipline of some provincial prisons. The sudden influx, when the danger of invasion became acute in 1940, of many hundreds of alien internees and of persons detained under Regulation 18b presented problems which, in their novelty, multiplicity, and urgency, were for a time almost overwhelming. The prison staffs had to keep these persons separate from ordinary prisoners and apply different rules to them, to take care of large quantities of miscellaneous and sometimes valuable property, and also to struggle with the language difficulty. The air raids threw a heavy burden on all members of the staffs and tested their courage and endurance to the utmost. Liverpool prison had eight direct hits in one night and was evacuated, and few other prisons escaped damage and casualties. The behaviour of the prisoners locked in their cells was on the whole remarkably good. Against the inevitable feeling of helplessness was set the fact that a prison cell is one of the best forms of air-raid shelter. During the years under review thirty-nine men and four Borstal boys were killed by enemy action—a small proportion of a total population that was never below 8,000.

The Medical Commissioner, Dr. J. C. W. Methven, reports a sharp increase in the number of deaths in local prisons from natural causes. Of the twenty-seven deaths that occurred in 1939, most were caused by serious heart disease and cerebral haemorrhage. As he points out, many prisoners are suffering on admission from neglected chronic ailments, which are made worse by their method of living and which lower their resistance to acute illness. This being so, it is surprising that the death rate in prisons remains lower than that of the population as a whole. In 1941 five men committed suicide, but there were no special features about the cases and the Medical Commissioner believes that the increase in number was fortuitous.

The number of persons remanded to prison for mental observation has increased very considerably. Prison medical officers are well qualified for this work and welcome it, but it necessitates many hours of patient investigation. Dr. Methven repeats the request made in previous reports that magistrates' and justices' clerks should assist medical officers by sending the fullest particulars of the prisoner and their reasons for wanting a report. All too frequently they send nothing more than a request that the prisoner be kept under observation and a report submitted at the end of the remand period. The number of persons certified insane in local prisons shows a steady decrease, which in the Commissioner's opinion bears some relation to the increase in the number of cases remanded for mental observation. The number of prisoners in convict prisons treated in and out of hospital shows a steady decline, and he believes that payment for work and the greater interest shown in prison industries are largely responsible.

Special Problems

The Medical Commissioner regards it as unfortunate that statistics of the incidence of venereal disease and body infestation were not collected after 1925. They would have been invaluable during the early war years. They are now being collected, however, and will be published in future reports. Much attention is paid to venereal disease, and infected prisoners are carefully treated by modern methods. The number of women prisoners requiring treatment for infested heads has increased substantially, and the depleted nursing staffs have done much hard work for which they deserve praise.

Many medical activities unfortunately came to an end when war broke out. The medical department particularly felt the

closing of the surgical unit at Wormwood Scrubs, where Mr. G. O. Chambers had performed an impressive list of operations in 1938-9. If possible, prisoners requiring surgical treatment were sent to outside hospitals; where this could not be done the small theatre at Lewes prison was used. Similarly, the psychiatric work at Wormwood Scrubs ceased with the transfer of Dr. W. H. de B. Hubert to the Army and Dr. H. T. P. Young to another prison. Some medical officers with special qualifications for psychiatry tried to assist prisoners, but in spite of their efforts psychiatric treatment virtually ceased. It has since been resumed, and Dr. Methven promises an account of the work in the next report.

When civilian rationing was introduced the whole scheme of prison dietary was recast; instead of an arrangement of set meals, a ration scale was drawn up for each prisoner in strict accordance with the civilian ration scale. The change was an improvement on the whole, for the addition to the rations of such adjuncts as curry powder, herbs, and dried fruit, or fresh fruit in season, enabled the cooks to serve the rations in more palatable form and with greater variation. Few complaints have been received from prisoners, and their general health and body weight have been maintained. The work of reconditioning and improving kitchens has gone ahead, and the standard of meals has improved.

U.N.R.R.A. ACTIVITIES

Czech Psychiatrist's Study Tour

U.N.R.R.A. is sponsoring an effort to introduce into some European countries which were shut off from contact with Western medicine during the war a knowledge of recent medical progress. One example of this in the field of psychiatry is the recent visit to this country of a Czech psychiatrist and neurologist, Dr. Eugen Vencovsky, of Pilsen, who has been spending six weeks in Great Britain as the guest of U.N.R.R.A. studying the more advanced methods now employed in mental hospitals. From this country, under the same auspices, he has gone to Paris for two weeks and to Zurich for one. His time here was spent mostly at Crichton Royal, Dumfries, and at various mental hospitals and clinics, including the Maudsley, in and around London. He was also enabled to attend the recent annual meeting in Edinburgh of the Royal Medico-Psychological Association. Dr. Vencovsky has taken the opportunity of studying particularly recent methods of neurosurgery. He explains that with the invasion of Czechoslovakia early in 1939 all work of a research or experimental character in mental hospitals was forbidden, and psychiatrists, like others, were restricted to the routine medical service. They had no opportunity of extending their knowledge. Having studied developments in this country, Dr. Vencovsky is returning to acquaint his colleagues in Czechoslovakia with his observations.

Medical Help for Yugoslavia

A country in which U.N.R.R.A. has carried out some of its most intensive work is Yugoslavia, and the results of it are now visible in a lessening of child malnutrition and disease. Dr. Eleanor Singer, a young London practitioner who attached herself to U.N.R.R.A. two years ago for work in Yugoslavia, has lately returned on leave from Sarajevo and described some of her experiences at an U.N.R.R.A. press conference. She stated that the number of war orphans in Yugoslavia was computed at 88,000, and that there were in addition nearly half a million children who had lost one parent. In Bosnia rickets was almost universal, and to this was added dysentery and other intestinal infections, as well as tuberculosis—a state of affairs which, when combined with a shortage of foods, drugs, and beds, heavily weighted the scale against the sufferers. Much has already been done, however, to ameliorate the situation. In Sarajevo alone there are fifteen orphanages, and at these and at the clinics Yugoslavian girls and women are being trained particularly in maternal and infant care. Maternity homes have been established in which homeless women are taken a month before their confinement and kept for at least three months afterwards, during which time they are instructed in the care of their children and also, if illiterate, are given some primary education.

* Cmd. 6820. 1946, London: H.M. Stationery Office, Pp. 180, 3s.

Correspondence

Health Service Bill

SIR,—The Health Service Bill, having passed its Third Reading in the House of Commons, can suffer no alterations of its text unless, as is improbable, the Lords pass amendments, which again have to secure the assent of the Commons. In these circumstances I submit that any further "negotiations" are futile. The sole decision to which the profession must come is whether or not they, as individuals, will accept service under the Act. I derive the most encouragement in the present position from the concluding words of the Minister (*Hansard*, July 26, 1946, columns 475-6). He said that "without the co-operation of the great medical profession the scheme is bound to fail," and he at last realized that "the House of Commons only passes Bills but it is the men and women outside who can make them living realities." He has seen the red light.

I have received during the last few days a statement from a surgical colleague in Canberra which gives the following information as regards the position of the medical profession in Australia, faced with exactly the same menace as confronts us now. He writes (July 7, 1946) that an Act embodying the socialist aspirations for a State Medical Service was passed some years ago by the Socialist Government. "Although passed, it was never brought into operation (the italics are mine), the most important reason being that the doctors woke up to the threat to their freedom and repudiated, and almost broke up, the B.M.A., which had negotiated an agreement, secretly, with the Government. . . . The reaction was such that a Royal Commission was appointed to consider the whole matter, but the Act was dropped without a report being published."

Another attempt was made later by indirect methods. "An Act was passed which gave the Minister power to enter into contracts with doctors to provide medical services. This power really made the Act an Enabling Act on which a socialized medical service could have been built up by regulation. The Victoria Branch of the B.M.A. challenged the Act and the High Court found it *ultra vires*."

The Australian Socialist Government is, I submit, much more firmly established than our present Socialist Government. The profession in Australia is, I further submit, less well organized than here. The B.M.A. has now enlisted practically the entire active profession in its membership, precisely because the profession wishes to present a united front in refusing to accept service in the conditions threatened by the Bill. The Representative Body has given the clearest lead on policy to the Council, and the fullest authority to the Chairman to make the statement which he is recorded as having made at the meeting: "Now we have come to the time when one side or the other is to give way. A conflict is inevitable. The matter is entirely in our own hands; there are no other doctors but doctors who are qualified. We are in the strongest possible position for ensuring that what we think is best for the public will be carried out."—I am, etc.,

House of Commons.

E. GRAHAM LITTLE.

SIR,—May I give my support to the proposals outlined by Dr. Victor Russell (June 1, p. 846) and Flight-Lieut. J. H. Bergin (Aug. 3, p. 176)? The latter asks why has the New Zealand scheme never been really publicized. The answer must lie with the Medical Planning Committee who never thought fit to bring it to the notice of the profession as a whole.

B.M.A. policy towards the National Service Bill must have been formulated from information furnished by the canvass carried out by the Institute of Public Opinion. I well remember that no opportunity was given then for expressing views on an alternative medical service. It has been taken for granted all along that general practitioners were well satisfied with the panel system and would only accept some extension of this to include dependants. But, I ask, is this really so? Up to date most practitioners have earned as much and often much more than their panel fees by private practice, and are now coolly asked to give this up. Anyone with experience of colliery practice knows what this means—crowded surgeries in which it

is impossible to practise even the rudiments of medicine. If this is the type of freedom envisaged by Principle A then I consider it largely illusory and not worth taking strong action against the Government for.

It has been forgotten that the capitation system was only accepted under protest in 1911 as the only workable makeshift to cover a section of the population who were unable to pay a doctor for attendance previously. I feel sure that we should all work better if we felt we were being paid for each item of service rendered, or in other words for the work we actually do. The duty of the Government is to assist the public to have the best medical attention regardless of lack of means, and this is assured by the New Zealand scheme without controlling the medical profession or the wage earner. If at this stage we refuse to work the National Service Bill and offer only private practice as an alternative we thereby hit the working man very hard. He will not be able to have attention unless we are prepared to give it gratuitously. There is nothing immoral in paying for what one gets, and to my mind it does ensure that the patient-doctor relationship is preserved in a manner quite impossible in the so-much-a-head system.

There is now to be a referendum or plebiscite of the profession. I call upon the B.M.A. Council to include in their questionnaire a request to every practitioner asking which he prefers: a capitation system, a salary, or payment per item of service as under the New Zealand scheme. Doctors unfamiliar with the latter have seen a similar scheme in a small way in payments for service under the Midwives' Act. So far I have not heard any adverse criticism of this scheme.—I am, etc.,

St. Asaph.

A. H. HOLMES.

* "General Practice in New Zealand" appeared in the *Supplement of Nov. 18, 1944* (p. 115); "In New Zealand To-day" was published on Aug. 11, 1945 (p. 42); and "Free Hospital Experience in New Zealand" on Sept. 22, 1945 (p. 70).—Ed., B.M.J.

SIR,—The National Health Bill has now had its Third Reading in the House of Commons. This means that there is no possible chance of any major modification, and it means a good deal else besides. First, that the British Medical Association, now led by my friend Dr. Guy Dain, has once more proved itself a dismal, useless failure; the Minister of Health quite obviously never intended to negotiate, was never interested in negotiation, and merely carried out the policy of his party. Given an adequate majority Pink Socialism dictates just as much as Red Russia. In the second place it means very considerable changes in the future. The number of general practitioners will have to be very considerably increased, both in order to cope with the great increase in calls on their time, and with the number of consultations and the number of certificates which will be required under the new Act. Thirdly, at least three times as many consultants and specialists will be required because everyone who is ill will demand a specialist's opinion, and no general practitioner will dare to open an abscess or treat a severe case of measles, because if anything should go wrong he will be attacked by the officials who supervise him.

Then again, the position in hospitals will change. The number of beds, the number of nurses, technicians, and workers of all types will need considerable expansion, for many more patients will be dealt with and many more forms will be required, as in peacetime Army or Navy medical services. It is proposed that nurses should work a 48-hour week, so that a huge increase in the number of nurses is foreshadowed, and it seems hardly probable that doctors will work longer than 48 hours a week. More than this, the practitioner who in the past has made £800 or £900 a year is to get more, but the able, hard-working, more highly qualified, more successful doctor who may have made as much as £3,500 is to get less, and can anyone be so blind as to fail to see that the incentive to work hard and to do good work is going to be removed. It means that doctors will be less efficient, will not be proud of their profession, will tend to resemble their peacetime counterpart in the Services, do as little medical work as possible, and that poorly. (I will not suggest for a moment that there are not very good men in the Services even in peacetime, but such men rapidly obtain executive positions and early promotion and cease to practise their profession.)

As a learned profession medicine is dead. Whether you like it or not it has been killed by a pink giant, but I am afraid that the practitioner of the future is going to be a poor stick. He will

work a service which is comparable to the telephone service, he will choose neither where to live, what type of practice to engage in, nor whom to work with. He will be selected for special education at the age of 11, he will have the benefit of a free education, he will probably speak B.B.C. English, he will call himself doctor even if he possesses the diploma M.R.C.S., and he will not resemble his predecessors in knowledge, interest in his patients, or capacity. He will work much shorter hours and will retire much sooner, and what his income may be will be of no moment; but medicine as a profession, as an honoured profession, as a learned profession, and as a profession which can offer great help to many friends among the public, is dead.

There is an old Army saying which is worthy of note: "What happens to your patient is of no importance providing your returns are correct."—I am, etc.,

Birmingham.

K. DOUGLAS WILKINSON.

SIR,—Your correspondents, Drs. H. H. Sanguinetti and R. S. V. Marshall (Aug. 10, pp. 206 and 207), complain that the Council does not give a lead to the profession. This feeling is not confined to your two correspondents but seems to be fairly widespread among the general body of practitioners, and until recently has had in my opinion a certain amount of justification.

I feel, however, that the statement by Chairman of Council at the Annual Representative Meeting answers the complaint. It may be argued that this is not so as it does not state what action the Council intends to take *vis-à-vis* the Minister of Health, but what it does do is to put the issues clearly before us. The machinery of a democratic body such as the B.M.A. works from below up, and it is for its members, through their Representatives, to instruct the Council what to do. There is not much good leading until you are assured that those you lead are prepared to follow you. Divisional meetings are often poorly attended, and while the Representative is able to put forward at the Representative Meeting the views of those who do attend, how is he to gauge the views of those who are not there? It is for this reason that the plebiscite is being taken. It is to be remembered also that the whole of our profession (not only the B.M.A., which comprises the large majority) is involved, and that it is the Negotiating Committee and not the Council who will receive and act on our instructions.

One significant statement was made at the Annual Representative Meeting by Chairman of Council. Unfortunately it was not reported in your otherwise excellent and accurate account of the proceedings. Dr. Dain said that he felt it had been a mistake to discuss the question of compensation with the Minister even though it had been clearly stated it was being done "without prejudice." Here, to me at any rate, appears to be the lead for which your correspondents are looking.—I am, etc.,

London, S.E.3.

WM. GUNN.

The Plebiscite

SIR,—Dr. E. D. Broster's letter (Aug. 10, p. 206) is most timely and offers a constructive way in which to approach the problem of the new Health Service. The profession must keep before them the general principle underlying the scheme—the principle of direction, regimentation, and official interference throughout one's professional life.

The scheme should be rejected completely and utterly for one reason and one only—that the whole conception of it is alien to our British ideas of freedom and fair play.—I am, etc.,

London, N.W.10.

R. M. AYTON-ORMISTON.

SIR,—As one of those directly responsible for the motion to have a referendum (as I prefer to call it) I would like to answer Dr. E. D. Broster's letter (Aug. 10, p. 206). The reason why a referendum is necessary soon is that the Council have no longer a mandate to negotiate. They had a mandate to negotiate in the general framework of the Bill to try to get it altered so as to conform with the principles which were considered essential to the freedom of the profession. There were no negotiations; the Minister would not negotiate. There were discussions, but these did not make the Minister amend his Bill in any essential way.

The present position is that the Bill is as good as law, and it contains many things that the majority of the profession apparently do not like. The Minister will shortly proceed to fill in the padding of the Bill, namely the terms and regulations, and

the Council has no mandate to negotiate upon these from the profession. Dr. Broster will find that it was decided that a referendum should be taken soon on the simple issue as to whether there should or should not be negotiations with the Minister on terms and regulations. It is too early yet to ask whether the profession is going to *refuse service*, but a refusal to *negotiate* if carried to its logical conclusion would mean this.—I am, etc.,

Cambridge.

ALEX. BROWN.

SIR,—In his recent statement the Chairman of Council makes it clear that the opinion of all registered medical practitioners will be consulted concerning the question as to whether or not further negotiations should take place with the Minister. I consider that the answer to this question might be misleading. Many practitioners in favour of the new Bill might nevertheless answer in the negative. In view of the Association's attitude to the Bill and its cumbersome statement of irrelevant principles they might desire that the negotiations concerning the working of the new scheme should be left to other bodies.—I am, etc.,

King's Langley.

P. DUPRÉ.

Government Salaried Service

SIR,—The letter of Dr. C. F. C. Parkinson (Aug. 10, p. 208) is extremely apposite. The brief experience of those of us who left the E.M.S. after three months of war to volunteer for one of the Services was enough to impress upon us for all time that the Ministry of Health, as agents of the Treasury in their financial dealings with doctors, are absolutely unscrupulous and capable of even the shabbiest and most petty forms of dishonesty for no better reason than that advisers can apparently be found to assure them that doctors will stand for this kind of treatment.

Dr. Parkinson omits only one detail of this shameful and discreditable story: even during the first three months of the war, while the newly drafted E.M.S. medical officers were still organizing their sector hospitals, a circular reached them from some minor Machiavelli in the Ministry informing them that at the time of their engagement (some six weeks or so before, on the outbreak of war) the Ministry had not appreciated that they were under contract to their parent hospital; and that since the Ministry would not dream of interfering with this 'contract' (which in the case of my own teaching hospital had never existed at all, there being no salary for resident appointments before the war) their later engagement at £350 per annum in the E.M.S. should be considered as cancelled.

The intended effect of this one-sided repudiation of a freely negotiated contract was an economy: the saving of all salaries to junior E.M.S. doctors while their services were retained free by misrepresenting their previous agreement with their own hospital. The effect actually produced was an outburst of incredulous indignation so unexpected and alarming to the Ministry that an immediate retreat was considered expedient. This took the form of a second circular letter naively dismissing the first as an error. But how temporary was this enforced return to straight dealing, how prompt, whole-hearted, and successful was the subsequent official counter-attack designed to evade both spirit and letter of the original contract, can be judged from the facts in Dr. Parkinson's letter.

The moral of this sordid tale is simply that, since doctors are not disposed to strike, they owe it to the public as well as to themselves to ensure that no further opportunities are given to the Ministry of Health to dishonour freely negotiated agreements.—I am, etc.,

Bognor Regis.

D. STAFFORD-CLARK.

Scotland's Health Service

SIR,—Mr. C. W. Key, Parliamentary Secretary to the Ministry of Health, declares: "The powers the Minister has are all powers of a kind which has been enjoyed by Ministers in relation to medical and other benefits under the National Insurance scheme." Yet the principle of the old Act with its sharing of responsibility is not identical with that of the new Act. The people are generally opposed to the original scheme upon at least three grounds: (1) the personal relation between patient and doctor; (2) want of modern scientific benefits—e.g., x rays; (3) official callousness and inexcusable delays.

The drafting of the new Scottish Act should not be carried out either by English or Scottish officials, so long out of vital touch with the clinical problems that matter, but by a special committee of Scottish surgeons and physicians from the four Universities and under the auspices of the Principal of Edinburgh University. This committee would ensure: (1) Free choice of doctor, in or out the scheme. (2) A profession trained by anatomical and surgical experts to operate upon their own patients (not permissible under the English Act). (3) Complete external and internal diagnosis and treatment appropriate to every Scots patient, peasant or millionaire. Extra benefits to the patient to be effectively provided by the officials concerned. (4) Abolition of backstairs and petticoat methods of control. (5) Liberty of the young doctor to buy a house and settle wherever he likes to earn his livelihood. (6) Triennial or quinquennial revisions of the Act.

The chief supporters of central control are from members of the profession who have not handled a clinical case for years. They never realize it is the patient who calls in the doctor, and expects him, like Nelson, to do his duty. He entrusts his life and the lives of his family to a personality. A cogwheel routinist poorly trained and unconcerned except to fill up pretty forms is absolutely no use to the Scots patient. He will expect in the Scottish Act to see some approximation to Sir Hartley Shawcross's dictum: The individual must transcend the State. To secure this, two methods are essential: (1) a return to the individual visit as before 1912; (2) a distinction between Sherlock Holmes the clinician, and Louis Pasteur the administrator. Each must be accorded his proper place in the Scottish National Health Acts of the future, but Louis must serve Sherlock, not control him. The Secretary of State for Scotland has the chance of a lifetime to provide socialism to our people.—I am, etc.

Glasgow.

A. TURNBULL.

Emergency Bed Service

SIR,—The many London doctors who made use of the Service during the war must often have wondered just how long it would continue to work only by day. It was of course always intended that a 24-hour service should be provided, and prior to the war this was done. Wartime difficulties, however, made this impossible to maintain, and for many years the Service has closed at 10 p.m. Indeed, at one time it had to close at "blackout" as the windows and curtains had been blown away.

Now that it is possible to obtain the necessary staff and to run the office free from enemy interference the committee have decided to resume the full 24-hour service, and from 9 a.m. on September 1 it will be available to doctors day and night throughout the year.

The Service continues to deal with all acute and urgent cases, including fevers, but owing to the prevailing shortage of beds in London it often takes considerably longer to find a bed than it did before the war, and it is quite impossible to deal with a case not in absolute need of immediate admission. Subject to these limitations every possible assistance will be given to doctors.—I am, etc.,

London, E.C.2.

R. E. PEERS,
Secretary.

Voluntary Hospitals Emergency Bed Service.

The Outbreak of Smallpox in Middlesex, 1944

SIR,—The report on the outbreak of smallpox in Middlesex in Feb., 1944, by Drs. W. H. Bradley, J. O. F. Davies, and J. A. Durante (Aug. 10, p. 194), is very welcome even though a little belated. It affords a striking illustration of the efficacy of modern methods of dealing with an outbreak of highly virulent smallpox, even when the circumstances appear to be highly favourable for spread, without recourse to mass vaccination of the general population. Much credit is due to the medical authorities who dealt with the outbreak so efficiently and successfully. One only wishes the report could have been made public earlier so that it could have been an encouragement to other authorities, where somewhat similar outbreaks have occurred, to refrain from rushing into mass-vaccination campaigns with all the attendant risks to life and health which such campaigns inevitably entail.

There are certain aspects of the outbreak as detailed in the report which deserve stressing:

(1) The initial case, the cause of the outbreak, was a soldier

arriving from Gibraltar. He had been well vaccinated in infancy and successfully revaccinated in Sept., 1942, i.e., less than eight months previously. The attack, as we should expect, was highly modified, and the case was diagnosed as chicken-pox. We are told if the case was seen by any doctor with previous experience of smallpox, but in view of the serious consequences likely to follow any mistake in diagnosis it certainly seems desirable that any case presenting symptoms which might possibly be smallpox, especially in soldiers returning from the East, should be referred to an expert or, if this is not feasible, should at least be isolated effectively. In this case we are told that the patient was allowed to be up and about, visited other parts of the hospital, and had his hair cut by a barber in company with a number of other patients.

(2) The failure of successful revaccination to protect completely for even eighteen months is certainly surprising and rather disconcerting. It illustrates the limitations of vaccination and affords a warning against over-confidence in its efficacy.

(3) Four out of the eleven cases in the outbreak occurred in nurses, and one of these, who had never been vaccinated, died. The other three had not been vaccinated since childhood. This certainly suggests that all nurses, like all doctors, ought to be protected as far as possible by repeated vaccinations. Case 11 makes the same observation applicable to ambulance drivers.

(4) At the same time it is noteworthy that among those members of the nursing staff who had never been vaccinated there were several who did not contract the disease although they were brought close in contact with it. This supports the view that smallpox does not "pick out" the unvaccinated to the extent that used to be taught at one time.

(5) In spite of the failure of comparatively recent vaccination to protect the initial case the outbreak affords evidence of the power of vaccination, even though performed in infancy many years before to modify an attack and make it milder.

(6) The outbreak also supports the contention that vaccination, even though only performed in the incubation period, does diminish the severity of an attack.

Admittedly, the number of cases dealt with in the outbreak was too small to justify any very dogmatic assumptions.—I am, etc.,

Leicester.

C. KILLICK MILLARD.

Socialism and the Pay-bed

SIR,—I have read the letters of Mr. H. I. Deitch (July 1, p. 139) and of others on this subject and agree entirely with many points they raised. I should be the last to suggest that any person who needs a private ward should not have one; I doubt this will one day be possible on medical grounds. At the same time I do not see why those who wish to pay for such wards should have to submit to interference with the use of their money. To attempt such interference smacks of National Socialism on the German model.

I do not understand how Mr. Deitch is able to exclude a sick person from hospital however excellent his reasons. As far as I know all sick poor may demand hospital care if they wish. The measures he took seem to be admirable, but not the superintendents are as resolute in defending their staffs as the other patients from contact with objectionable people. It is unfortunately true that in some places local politics colour these matters quite a lot. Many doctors, and even schoolmasters, will say that it is professionally advantageous to have politics of the colour to please one's employers. This is dangerous, as we have countless examples in the shape of revolutionary France, Nazi Germany, Communist Russia, and so on. In each and every case the mixing of politics with professional or technical activities has proved harmful and productive of inefficiency.

I did not suggest, and I do not believe, that sensitive and refined people are only found in one class. I have been a patient in private and public wards and do not mind either provided that obnoxious behaviour can be immediately checked without fear of any political repercussions.—I am, etc.,

Colchester.

G. C. PETHER.

SIR,—If your correspondent, Dr. Ian C. Gilliland (Aug. 1, p. 211), could know the chorus of approval reaching me from far and near which has greeted my original letter (June 2, p. 968) on this subject he would be even more "surprised." I shall not myself answer his questions about the definition of desirable genes and their transmissibility. If he sincerely wishes information on these subjects there are numerous works of accredited authors which will supply his need much more fully than would be possible in a short letter. The following may

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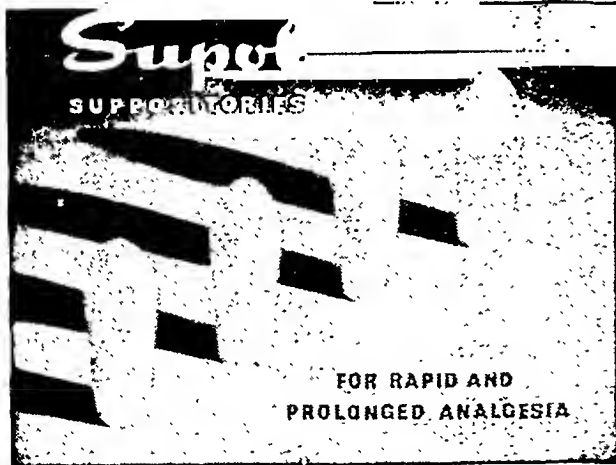
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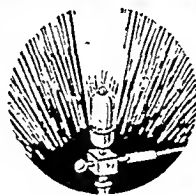
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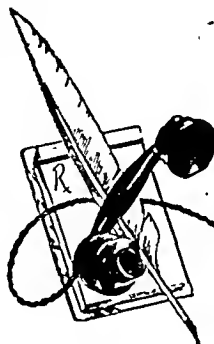
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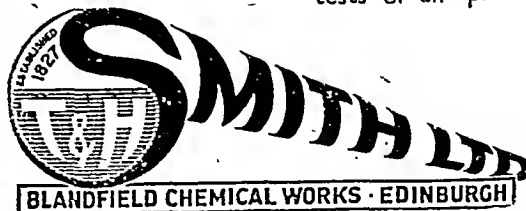
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recommended: *Applied Eugenics*, Popenoe and Johnson (Macmillan); *World Population*, Carr-Saunders (Oxford); *Introduction to Human Genetics*, Fraser Roberts (Oxford Medical Publications).

However, I must in self-defence point out that he has craftily transferred the word "acquired" from paragraph 2 of my letter to the last paragraph, thereby making it appear that he has suggested that acquired characters are transmissible—a most evident pitfall which even I should know how to circumvent. On this subject too there is a voluminous and easily available literature. Prof. Arthur Thomson's book *Heredity* contains an admirable summing up of the evidence for and against such transmissibility.

Again, Dr. Gilliland writes: "The contention of the whole medical officers of the Middlesex County Council is that privacy should be obtainable on medical grounds." Nobody could question this, but this was not the contention of these medical officers. Their contention was that "patients should receive extra privacy, etc., solely on medical grounds." The word "solely" has been conveniently omitted. It is the essence of the question. A sound case would not require bolstering up by such tricks.

This correspondence is degenerating to the plane of personalities and obloquy, and that is not owing to any disagreement on the subject of genetics, which, though a comparatively new science, is sufficiently established for our present elementary needs. The anger of my critics is aroused because I have dared to touch with hands irreverent the socialist shrine, which of course I should have known to be sacrosanct. Let me therefore in an attempt to retrieve the discussion from mud-slinging briefly reaffirm the basic principle for which my first letter was written. This principle, the premise from which all legislation would in my opinion do well to start, is the effect of such legislation on the quality of future human stocks. The discovery, preservation, encouragement, and propagation of our best stocks, wherever found, without reference to financial or social status—that "real aristocracy of natural intellectual endowment, character, rectitude, social desirability, and service not the class usually referred to as aristocrats, who may or may not be desirable eugenic types"—is surely an objective in which all political parties could unite. Such enlightened policy would be of inestimable service to society in the near future and in remote generations would be capable of producing in the race a quality undreamed of by the many. Moreover, the higher the general standard of the population the more likely is it to produce those exceptional variants on whom the direction and advancement of the community so largely revolves. It is almost certain that the human faculties have not reached anything approaching their highest expression and greatest development, even with such outstanding men as Shakespeare, Isaac Newton, Darwin, Einstein, etc. It is also certain that many factors—e.g., misguided political adventures not confined to any one party—perpetually weigh the scales in the opposite direction. Of this dysgenic action numerous examples will occur to everybody, but among them (in order to avoid home politics) may be instanced the elimination and destruction of intellectuals by the Germans in the over-run countries, a similar process in the early days of the Soviet Union, and of course war itself. Legislation leading to betterment of humanity is good, and legislation leading to deterioration is bad.

If these simple truths and ideals could be grasped by politicians, and better still by the community, would it be too much to hope that a complete re-orientation of political objectives might result? It is to a consideration of these facts that one would presume to invite the profession in order to urge their leadership in this biological matter so easily grasped by ourselves, so little understood by the general public. Unless they do so the serious danger of racial deterioration faces us.

And where does "Socialism and the Pay-bed" come in for reference to all this? Simply that the proposed rules for the use of the pay-bed constitute just one of many political pin-pricks, some large, some small, militating against the interests of the better eugenic types which I have previously defined and leading to their discouragement. (On the differential birth rate much has been written. The Galton lecture by Mr. C. J. Bond can be read with profit and a précis is printed in the *Journal*, 1928, 1, 315.) Though my critic complains that the

connexion between the two is not evident it will be clear to the majority, and a little unbiased reflection should clarify it for him also. To the above attitude the terms "snobbishness" and "bigoted" seem singularly inappropriate. Concerning itself solely with the interests of future generations it appears completely altruistic and unselfish and is indeed the truest form of service to the community, far transcending that doctrinaire socialism which is admittedly devoted to the narrow interests of a single class and which as at present practised is, I repeat, dysgenic and antisocial in many of its aspects.—I am, etc.,

Grasmere

JAS. B. MACALPINE.

*This correspondence is now closed.—ED., *B.M.J.*

Nutrition of Far Eastern Internees

SIR,—I think I can assure Dr. C. Romer (Aug. 3, p. 176) that nocturnal diuresis among Far East internees was not due to any specific factor in rice. In the summer of 1940 at an officers' camp in Germany the same phenomenon was noticeable, beginning immediately after arrival at a permanent camp following a rather tiring march of two weeks on very poor rations, and continuing in most cases until the arrival of Red Cross parcels and a consequent increase in protein intake. In this case the diuresis was attributed by the P.O.W.s variously to the potatoes or the watery vegetable soup, which, with bread, constituted most of the diet; while I do not think that rice was ever included. Stools also were very bulky.

In referring to a low protein intake it is perhaps worth noting that in the first six weeks of this poor diet there were three clinical cases of acute attacks of gout (in each case in men who had previously had gout) to the intense indignation of the victims, who felt that it was an unfair imposition in the circumstances. It is only fair to add that Bavarian beer was available.—I am, etc.,

Hereford.

A. F. STALLARD.

Shock Treatment of Bronchial Asthma

SIR,—I am in complete agreement with Dr. E. M. Fraenkel's remarks (Aug. 3, p. 174) on the shock treatment of bronchial asthma. I have paid particular attention to the treatment of this condition for some considerable time and I have come to the conclusion that it is one of the diseases which demands individual attention and analysis more, perhaps, than any other and that it is most inadvisable to dogmatize on the merits of any particular form of treatment. It has been my experience that a method of treatment which might give very satisfactory results in one patient might prove equally disappointing in another.—I am, etc.,

London, W.1.

E. S. FENNELL.

Reiter's Disease

SIR,—I have read with interest the article on Reiter's disease by Flight-Lieut. W. P. U. Jackson (Aug. 10, p. 197). While in charge of cases of bacillary dysentery in the Middle East I encountered a combination of polyarthritis, urethritis, and conjunctivitis more than once in patients admitted with acute diarrhoea and showing a bacillary exudate on microscopical examination of their stools. As severe diarrhoea is apparently a feature of Reiter's disease it must be difficult at times to distinguish this from bacillary dysentery complicated by the same triad of symptoms.—I am, etc.,

Grays, Essex.

R. N. HERSON.

SIR,—In the *Journal* of Aug. 10 (pp. 197 and 199) are two notes on Reiter's disease by Flight-Lieut. W. P. U. Jackson and Dr. F. Wrigley. These authors state that the aetiology of this disease is unknown.

Actually there is a very similar syndrome—characterized by conjunctivitis or iritis, arthritis, and urethritis, often associated with colitis (although the colitis may be absent)—which constitutes a well-known but uncommon sequel to bacillary dysentery, generally of the Shiga or Flexner type. This post-dysenteric syndrome may begin two or three months after an attack of dysentery.

In my experience a Service patient was sent to the laboratory for examination of the discharge from his urethra. We observed

that he had conjunctivitis, so this discharge was examined also. Both results were negative so far as venereal disease was concerned. The patient later developed arthritis. Much later his history was inquired into. Then it was found that he had been discharged "cured" from a hospital after being an in-patient with an attack of "dysentery" some three months previous to visiting us with the urethral discharge.

It is easy to miss pertinent items of medical history when the patient presents himself (or herself) with symptoms that have a steep venereal "slant."—I am, etc.,

Epping.

FRANK MARSH.

Ligature of the Cord

SIR,—There appeared in your columns a few months ago a number of letters on ligature of the cord. Your correspondents emphasized the necessity for double ligature. It is interesting, therefore, to note what may happen when the parturient woman ignores all the complicated modern machinery of antenatal and natal care and leaves it all to Nature. At one time or another most practitioners will have been called to a woman in labour where pregnancy has been concealed and where no preparations of any kind have been made, and has perforce to be midwife as well as accoucheur. Few, however, can have had the experience of such detachment as I have found in one family in my practice.

About 6 a.m. on Feb. 13, 1943, I was called to the house of P. X., a legless ex-soldier, who with his aged and bedridden wife occupied the ground floor only of his house. The upstairs rooms, unused and uncare-for for years, were thick with undisturbed dust and dirt. In the midst of all this his grand-daughter A. X., an unmarried girl of 20, had delivered herself of a fine boy some hours before. The placenta had been expelled and the cord had been torn across about 2 in. (5 cm.) from the umbilicus, and no ligature had been applied. There was no bleeding and the baby was vigorous and showed no sign of past loss of blood. The perineum was intact. No preparations of any kind had been made. Mother and baby were sent into hospital and the puerperium was uneventful.

On Oct. 8, 1944, I was called to the house of T. X., father of the last case (A. X.). His newly married second wife, G. X., had given birth to a daughter. The baby was vigorous. In this case, though the placenta had been expelled, the cord had not been tied. No preparations of any kind had been made, and both mother and child were sent to hospital, where the puerperium was uneventful.

On April 8, 1946, Mrs. K. Y., a married daughter of T. X., was delivered under exactly the same conditions. Her husband knocked up my assistant, requesting an ambulance to take her to hospital.

On April 15, 1946, at 6.40 a.m., I was again called to A. X., who was reported to have a retained placenta. She had delivered herself unattended about 11 p.m. the previous night and had divided and tied the cord with tape. Even the placenta had been expelled when I arrived. There was a good contraction, and no evidence of haemorrhage. Again there were no preparations, and mother and baby were sent to hospital.

It is difficult to understand why these three women should flaunt accepted practice and braved my, by no means needless, horror and indignation. They should have suffered from toxæmia of pregnancy, disproportion, malposition, obstructed labour, torn perineum, puerperal haemorrhage, puerperal sepsis, and possibly a number of other unpleasant complications. The infants should have been asphyxiated or died from haemorrhage from the cord. Orthodox obstetricians will understand how disappointed I felt to find that there was not even a minute tear of the perineum.—I am, etc.,

Preston.

F. M. ROSE.

The "Intractable" Vesico-vaginal Fistula

SIR,—Surely Drs. O. S. Heyns and P. Keen (July 20, p. 99) are reading more in Prof. Chassar Moir's letter (May 18, 1946) than he actually wrote? He deplored undue pessimism and unnecessary resort to transplantation of ureters, and both writers agree with him. But it is surely unjustifiable to assume that because Prof. Moir has had 100% success in repair by the vaginal route he therefore believes that all cases can be cured so. I am unable to read any such suggestion into his letter.

If figures are to be quoted, however, let us remember that percentages are misleading in small series and that "difficulty" is as hard to assess as pain. While difficulty may vary from country to country it is probable that in a series of thirty or more unselected cases in any one country the difficulties would be comparable with other such series in the same country.

The larger the series the more likely are the cases to be selected though not by the surgeon himself but by his friends who send him their problems. How cases may on the average vary from country to country there must be few surgeons who say. I have felt that most of my cases, all seen in Madras, were very difficult, but I am unable to say how they compare with those in the Bantu. I feel that sufficient information rarely offered when series of cases are presented. Th. Dr. Keen has transplanted eight cases in ten years, and Muri (1943), has transplanted some sixty cases over a number of years. But what we need to know is what percentages are of all the cases seen? Again, Dr. Heyns has transplanted "some cases of fistula," but where repair *per vaginam* has been impossible, so, frequently, has transplantation as well. Where transplantation has been possible repair *per vaginam* could be effected "without difficulty." Thus he finds that with inoperable fistula transplantation is very often impossible to. But when does he regard a fistula as inoperable? I regard them as inoperable when about half the lower border of the fistula consists of the periosteum of the pubis. I have hitherto needed to do only six transplantations, and none was difficult. But these were not the cases which had the most scarring of the vagina (and presumably the most adhesions in the pelvis) they were the cases where the fistula happened to be low and bounded by bone, and without urethras. High fistulae, with dense scarring in the vagina, no recognizable cervix, and quite immobile—and far more likely to have had pelvic peritonitis—were all repaired from below.

I think it is sufficiently obvious that we are talking to some extent at cross purposes, and I therefore suggest that we present our figures on a definite plan. This will clear up what difficulties can be cleared up, and as for assessing degrees of difficulty we must be content to wait until we can see cases in other countries. It is no great matter if one surgeon has 5% more cures than another; what does matter is that difficulties in understanding one another should be reduced as far as possible.

Dr. Heyns makes the point that loss of vaginal tissue and the urethra are the complications which militated most against success. I have elsewhere (Thomas, 1945) classified fistulae: juxta-cervical, mid-vaginal, or juxta-urethral, and shown that the high juxta-cervical fistulae and the mid-vaginal are more easily repaired than the low juxta-urethral, although they may be extremely difficult. The following suggestions are made with this point in mind, and are illustrated by figures from my own series.

The total numbers of fistulae seen, excluding those due to cancer and lymphogranuloma, may be set out as follows:

TABLE I

	J.C.	M.V.	J.U.	Total
Cases seen	22	6	30	58
Obstetric	21	6	30	57
Radium burn	1	—	—	1
Surgical trauma	—	—	—	—
Totals	22	6	30	58
Refused treatment	1	—	3	4
Submitted to treatment	21	6	27	54
Repaired by vaginal route	20	6	17	43
Failures	1	—	10	11

TABLE II.—Analysis of Failures

J.C. Pulled out her catheter, and had residual pin-point fistula, but did not return	1
J.U. Refused second operation	1
Refused transplantation of second ureter after successful first stage	1
Refused any transplantation	1
Successful double transplantation	3
Death from transplantation	2
Successful colpocelesis	1
Complete failure (inoperable V.V.F.) and failed R.V.F.	1
	11

1. To arrive at percentages (and one must admit they have much the same attraction as have those of Wisden, and perhaps about the same practical value) we must in assessing the "cure rate" neglect patients who refuse a second operation when they might well have been cured by one, and of course those who refuse treatment at all. Of 54 cases, one refused a second vaginal operation, and another (the J.C. case) failed to return. Thus of 52 cases 43 were repaired: 82%.

2. To assess the "total relief rate" we must add to the repairs

ose relieved by transplantation or colpocleisis. The cases refusing liefl operations should not be included. Thus, of 54 cases, 4 refused ther a second vaginal operation, or a relief operation, leaving 50 ses. Of these, 43 were repaired, 3 underwent successful trans- lantation, and 1 colpocleisis, giving a total of 47 cured or relieved, 94%.

3. Percentage of cases relieved only, out of the total of those ilicved and cured:

$$\frac{\text{cases only relieved} \times 100}{\text{cases cured and relieved}} = \frac{4 \times 100}{47} = 8.5\%$$

4. Cases complicated by the presence of other fistulae should be rded as it may give some idea of the severity of the condition. hree cases had an associated uretero-vaginal fistula: in each the V.V.F. was repaired; in one a nephrectomy was necessary; and n the other two the offending ureter was transplanted into the igmoid. The three cases were complicated by a recto-vaginal fistula: ne had both fistulae repaired, another had the R.V.F. repaired, and oth ureters transplanted (V.V.F. inoperable), and the third had n inoperable V.V.F. in which several attempts to cure the R.V.F. alled.

5. One's criterion of inoperability and how many the series ncluded (3 cases).

6. Number of cases treated previously operated upon elsewhere nd how often: 11—9 once, 1 twice, and 1 four times. These include wo of my failures and nine repairs:

7. Successful cases which required more than one attempt: one in his series had two vaginal operations; all the other successes bealing it my first attempt.

Would not records on these lines do much to enable workers to avoid avoidable misunderstanding? It is doubtful if further information could usefully be offered, short of supplying full case notes.—I am, etc.,

Bournemouth.

G. BENION THOMAS.

REFERENCES

- Murray, H. E. (1943). *J. Obstet. Gynaec. Brit. Emp.*, 50, 347.
Thomas, G. B. (1945). *Ibid.*, 52, 262.

Lice in Hospital

SIR,—After six years spent with a relatively non-verminous military population it is depressing to realize that one's own people can be indifferent to the louse. This realization focused attention on the prevalence of lice, and the noting of verminous patients on admission to hospital during the past two years makes it possible to deal with true figures. Patients examined have all suffered from notifiable disease and may be considered a fair cross-section of the Lanarkshire population, since all grades of society find themselves at times in an isolation hospital. No distinction was drawn between head and body lice, since it is reasonable to regard these as the same insect. Nits have been taken as evidence of lousiness.

Tabulation of the available figures show:

TABLE A.—Gross Figures: Louse Infestation

Year	Total Admissions	Verminous	Clean	% Verminous
1944	1,983	566	1,417	29%
1945	1,895	670	1,225	35%
1946 (Jan. and Feb.) ..	394	119	275	30%
Total	4,272	1,355	2,917	32%

It would appear that approximately 1 in 3 of the patients admitted were lousy on leaving their homes.

TABLE B.—Age and Sex Incidence (1944, 1945, 1946, Jan. and Feb.)

Sex	Age Group	Verminous	Clean	% Verminous
Males	0-4.9	130	413	24%
	5-13.9	253	559	31%
	14-17.9	22	104	18%
	18+	21	529	4%
Females	0-4.9	142	303	32%
	5-13.9	494	375	57%
	14-17.9	63	54	54%
	18+	230	580	28%
Total		1,355	2,917	32%

The relatively high incidence in children of both sexes in the pre-school age group suggests neglect on the part of parents, and the incidence among adult women indicates a lack of personal cleanliness which cannot but be reflected on their children. The female figures are all bad, and it is depressing

to note the condition of school-age children (males 31%, females 57%). These figures seem to demonstrate a certain futility in the present methods of eradicating lice in schools. They indicate, too, the chance a clean child has of acquiring lice. Lousiness among adolescent girls at as high a rate as 54% is an ill augury for the mothers of the future. The reasonable figures for adult males cannot be due to lack of available infection, but undoubtedly short cropping of male hair creates an uncomfortable environment for the louse just as the apparently untouchable and unwashable "perm" provides a secure retreat. When the problem is considered honestly there is no real reason why anybody in this country should harbour lice, and it seems apparent that apathy, indifference, and laziness are the real reasons why British lice still flourish.

In the County Hospital, Motherwell, dichlorodiphenyltrichloroethane (D.D.T.) as a 5% dust in talc has been used to control these vermin. A simple dusting with the powder on admission suffices to kill the lice, and as nits hatch out the still effective powder destroys the nymphs. No toxic effects have been observed, and in these days of nursing shortage D.D.T. saves much time and obviates embarrassing scenes with female patients. The good uses of D.D.T. have been seen on a large scale abroad, and there seems no reason why the 5% dust, applied perhaps once a month to school-children, should not reduce the present verminous condition to infinitesimal proportions. D.D.T., being stable and effective for several weeks, should take care of renewed infestation in the home. In schools the dust could be applied rapidly, economically, and without offence, by the use of a dust-gun.—I am, etc.,

Weston-super-Mare.

JAMES MACRAE.

Rheumatic Fever

SIR,—When Dr. H. S. Barber reads Dr. K. Douglas Wilkinson's letter (Aug. 3, p. 174) I hope he will not feel too crushed and discouraged. Nearly 20 years ago, when I was doing some work on allergy, the late Dr. Oriel, whose work on the biochemical aspect of allergy was well known, told me that he had evidence which convinced him that the articular symptoms of acute rheumatism were an allergic response.

Dr. Wilkinson wants Dr. Barber to explain the response of acute rheumatism to the salicylates. Asthma, which I prefer to regard as a syndrome rather than a disease, is distinguished chiefly by bronchospasm. There are various causes of bronchospasm, and I and many others have observed the response of the allergic variety to acetyl-salicylic acid. Some patients have even made the discovery for themselves.

I have no doubt that Dr. Barber will probably answer Dr. Wilkinson in detail.—I am, etc.,

Brookwood.

H. M. STANLEY TURNER.

Achromotrichia in Tropical Malnutrition

SIR,—I was interested in Dr. William Hughes's article on achromotrichia in African children (July 20, p. 85) as I have recently seen similar types of depigmentation of hair and skin in Europe. I should explain that I am an Army M.O. with administrative charge of a Civilian Internment Camp. The internees are here pending investigation of their part in the Nazi régime, etc. Many of them are considerably undernourished, and recently I have seen four cases with the following points of similarity:

(1) All were males over 55 years of age and had been in a poor state of nourishment previous to arrest.

(2) On the backs of the hands, the wrists, and front of the neck the skin was thickened, brown, and there was a flaky desquamation. Two of the men showed snow-white patches in these brown areas.

(3) The tongue was rather red and quite smooth. There was no pain or burning taste.

I wondered if this might be a pre-pellagra stage, although there were no signs of C.N.S. involvement or diarrhoea, etc. Large doses of vitamin B₃ and increased diet had no effect. Unfortunately vitamin B₃ is not available.

I have noticed several cases of depigmentation of a patchy type in the hair. It cannot be pulled out painlessly though. The German doctors here consider this to be a symptom of anxiety rather than malnutrition.—I am, etc.,

B.A.O.R.

E. ROEBICK.
Capt. R.A.M.C.

Pleural Shock or Cerebral Air Embolism

SIR,—It is true that when a clinician describes a patient as being in a state of "shock" he is not diagnosing a specific disease but is employing a convenient label to attach to a clinical syndrome—i.e., to a fairly clearly defined group of symptoms and signs. Unfortunately it is true to say that the diagnosis of "shock" in general is so loosely and variously employed that it may fail to give an outsider an exact indication of how ill the patient is, or of what symptoms and signs he would display to the bedside observer, or of what treatment he would require. I quite agree, however, that it is rather difficult to differentiate between "pleural shock" and "air embolism" (July 20, p. 94) during a thoracic manipulation on seeing these conditions for the first time. Once seen, however, one realizes that one may be dealing with one of two complete and separate conditions.

Needless to say that air embolism may arise as a complication of pleural puncture, but it is hardly possible that so-called "pleural shock" is always due to air embolism and not to a pleural reflex. Air embolism sometimes resembles pleural shock in its manifestation, but it is quite different in its origin. It results from the entry of air into the pulmonary veins and its passage as emboli to the coronary or the cerebral arteries. Death may be immediate, or there may be epileptiform fits, hemiplegia, or profound unconsciousness. In rare cases it may be survived. Air embolism should be extremely unusual if it is always ascertained that the pneumothorax needle is within the pleural cavity by the characteristic oscillation in the manometer.

As I have had the opportunity to make observations upon such cases I would venture to submit these three accounts and the following comments as having bearing upon your annotation in the hope that they may prove of interest in particular to those clinicians who do not accept the difference between the two conditions. The following are the descriptions of the cases: on each occasion I happened to be an eyewitness to the attacks.

Case No. 1.—This occurred in a middle-aged man who was admitted to the hospital with chronic bronchitis, emphysema, and fibrosis of the lung. He constantly complained of severe pain in left side of chest, not responding to medical treatment. To relieve the pain a small artificial pneumothorax was performed at the site of maximal intensity. As soon as a few ml. of air had been introduced into the pleural cavity the patient's pulse slowed down markedly; the blood-pressure fell to 90/70; he became restless, extremely dyspnoic, and he died within a few minutes, apparently from syncope. Necropsy did not reveal any air entry into the circulatory system.

But "pleural shock" as a reflex phenomenon can be better demonstrated by the following two reports:

Case No. 2.—A young man of 28 suffering from severe emphysema had developed a spontaneous pneumothorax. The symptoms were very dramatic: sudden pain in the affected side, very severe cyanosis, and cyanosis (i.e., cardio-respiratory embarrassment) were the main features. The physical signs coupled with the radiological findings showed a large spontaneous pneumothorax from a ruptured bulla. During the attempted withdrawal of air from the pleural cavity to mitigate cardio-respiratory embarrassment signs of severe syncope appeared, together with slow pulse, fall of blood pressure, and cold sweating. The aspiration had to be abandoned.

Case No. 3.—A female patient aged 45 was admitted to hospital for investigation and observation of her lung condition, which proved to be an abscess in the upper part of the left lower lobe. Three days after admission she was suddenly seized with an excruciating pain in the left side of the chest in the precordial region. She developed severe cyanosis, cough, and dyspnoea. The pulse became rapid, and she lay motionless, suffering from great pain. The breathing became shallow and frequent. Only later, about three hours after the attack, did physical investigation reveal a large pleural effusion as a result of rupture of the abscess into the pleural cavity. X-ray examination showed an air- and fluid-level, and aspiration yielded pus. Following the first aspiration the patient immediately collapsed, the pulse became slow, and the blood pressure fell to 80/60.

All three cases are characteristic in their uniform reaction, course, and symptomatology, with the exception of the first one, who succumbed, whereas in the two latter ones recovery was immediate after discontinuation of the procedure. Although the cases discussed were not always associated with artificial introduction of air into the pleural cavity, analogy can and should be drawn in order to explain syndromes arising during

damage to the pleura, characterized with marked slowing of the pulse, pallor, faintness, and, above all, profound fall of blood pressure, which may occasionally lead to a fatal syncope.

Pleural shock.—The cardio-vascular reaction is apparent due to a pleural reflex, since a similar effect upon the heart rate and blood pressure can be induced in animals by stimulating the pleura. It is more commonly seen as mentioned above when the chest is punctured for the withdrawal of fluid or rather than during the induction of air in the production of pneumothorax, a fact among others which argues against its being due to air embolism. Injury to the visceral pleura or the underlying layer of pulmonary tissue appears to be a factor essential for the production of this type of circulatory collapse. This may also explain "pulmonary shock" as a common occurrence when spontaneous pneumothorax occurs in the course of treatment by artificial pneumothorax—i.e., rupture of the lung tissue owing to increasing tension upon adhesions. I noticed also that the reactions occurred chiefly in nervous patients and if the pleura is not anaesthetized.

If the descriptions and suggestions just made are taken into consideration immediate "pleural shock" would turn out to be closely related to the reflex vaso-vagal syndrome, or fainting attacks, associated with slowing of the heart and peripheral vasodilatation and fall of blood pressure, with a result of syncope and, very rarely, death.—I am, etc.,

Hitchin.

D. GUTMANN.

Clinical Pathology and General Practice

SIR,—All are agreed (Dr. S. C. Dyke, July 20, p. 95) that family doctors need facilities for simple laboratory tests. How are they to be provided? First, it is utterly useless to suggest that teaching hospitals or universities shall do this work. They are already understaffed and overworked. Their loads must be reduced so that they may undertake relatively more teaching and original investigations.

Possible methods are: (1) That the Association of Clinical Pathologists organize a service to cover the whole country. Much of the private consulting work is already undertaken by members of this Association, which, however, is not big enough yet to tackle the whole population. (2) That family doctors themselves be trained to do much of the work. Personally, I regard this as the best solution, but clearly each doctor would be able to deal with fewer patients, and the nation would need more doctors. (3) That practitioners' own dispensers be trained in clinical laboratory methods. (4) That the Pharmaceutical Society organize a clinical pathological service to cover the whole country. (5) That trained laboratory technicians do the work for practitioners or groups of practitioners. The difficulties of this arrangement are to guarantee a livelihood for technicians and to see that a good standard of work is maintained in relative isolation. (6) A combination of (1) and (4). (7) If the National Health Service materializes, that family doctors refer their clinical pathology to the pathological departments in their local Health Centres. The great advantage of this would be ease of consultation between practitioner and pathologist. The great danger would be that in time Health Centres would be flooded with routine work and practitioners might become less self-reliant.

In writing these notes I have not forgotten the excellent work done by the E.M.S. Pathological Service.—I am, etc.,

Chelmsfield.

G. A. HARRISON.

Nomenclature of Chemical Compounds

SIR,—I would like to draw attention to the frequency with which an element is blamed for the toxicity of one of its compounds through lax nomenclature. For instance, poisoning by any of the compounds of mercury is often referred to as mercurial poisoning. Similarly, but less frequently, this applies to the compounds of lead, arsenic, chromium, and other elements.

This may seem a small point, but I believe it is very misleading and often causes false impressions. I have heard surprise expressed that mercury fulminate or mercury bichloride or calomel did not cause the classic symptoms of stomatitis, tremor, and erethism; but the surprise should rather be if similar symptoms were produced, for it is almost the same as expecting chlorine poisoning from common salt.

There are always exceptions. Some substances are easily broken down or are acted upon in the body so as to cause symptoms related to their components; whilst others, apparently by coincidence, may have similarity of action. In the vast majority should be treated as separate entities, the slightest change in structure being likely to cause profound differences in their reaction. This is well illustrated by some of the organic compounds in which even an isomeric change may mean the difference between life and death. May I therefore offer my plea: chemical names in full when referring to toxic compounds.—I am, etc.,

London, S.E.18.

A. L. LEIGH SILVER.

Psychology in the Child's Education

SIR,—What a shame that Dr. Ellis Stungo should be accused of supporting Nazism as a result of his letter (June 15, p. 930). I am sure that in discussing the Educational, Scientific, and Cultural Organization of U.N.O. he is much more imbued by the spirit of Sir Galahad than by that of Adolf Hitler, and if the holy grail does not after all consist of the simple manoeuvre of teaching psychology in the classroom, nevertheless he has emphasized the fact that education is failing in many quarters to justify its literal translation of "leading out" in us a knowledge of ourselves. I agree with the criticism that the teaching of psychology directly to children is as likely to create introversion as it is likely to "educate." No expert psychiatrist would present his patient with the facts of his neurosis face to face. He "leads out" the patient's insight and allows him to educate himself gradually—so with the teacher and the pupil. Literature teaches children psychology: the Brontës, Shakespeare, Barrie were all good teachers of psychology; and, as Dr. Stungo says, religious instruction teaches psychology.

I think the variety of opinions expressed in this correspondence should emphasize that psychiatrists as a group should be the last people to teach anyone. We can give information; we can educate our neurotics along the lines of psycho-analysis; but our banner carries the motto "*Quot homines tot sententiae*."

We can do a lot of good in providing the teachers with the information they want to know, subject to their own discretion, and there is no lack of desire for that. The four child guidance clinics of which I have the honour to be in charge deal with the teachers of a county, a county borough, and part of another county in the vicinity of London, and I find that the teachers are not only well informed psychologically but are keen for more psychiatric information and direction in the disposal of their abnormal pupils. In Glasgow, I understand, there is an extensively organized relationship between chosen teachers who visit the corporation clinics and the child psychiatrists.—I am, etc.,

Kingston-on-Thames.

JOHN A. McCLUSKIE.

SIR,—The recent letters on the above important subject are of interest, but we must realize in spite of one of the letters that there is a yawning gulf between this subject and that of planning the world's future. There is no doubt that psychology must play its part, important but limited in extent; but just as Dr. Ellis Stungo suggests that there must be a careful selection of teachers—and no doubt many other admirable leaders—so also he should be the first to admit that there must be a careful selection of psychiatrists. If one is going to psycho-analyse every action and word of every child and adult with regard to the past, present, and future, then we shall never have the time even to psycho-analyse the numerous daily actions and words of the psychiatrists themselves. We must have the best men available in a subject of such vital importance and so far little understood. No doubt we have these men available, and rightly acclaim them, in the leading figures of international psychiatry, and also in the very first-class men that we ourselves possess.

Everyone must heartily agree with Dr. D. W. Winnicott (June 29, p. 998) that the "... real source of good citizenship is in the life of the child in his own home," but would disagree with Dr. Ellis Stungo as to how this is to be attained. And if indeed we have the wrong leaders Dr. Winnicott may be perfectly correct when he asks—and it is a question that must be answered—"why is it that when we start planning we so easily start on the wrong foot?"

I most certainly agree with Dr. Michael Fordham (July 13, p. 62) that teachers should be left to their own jobs; and there

was never anything more true than Dr. Fordham's words, "it is useless to talk on the subject [of behaviour] unless they themselves are good citizens." Otherwise and in plain English it is just hot air and a pure waste of time of all concerned.

Psychiatrists undoubtedly, and rightly so, must play their share like everyone else in building the new world, but they, like other leaders, must be carefully selected. By all means let us all pool our knowledge and learn from each other. But before that I would suggest that it would be beneficial for some of our psychiatrists to sit for a long time in humility (for that is the true essence of greatness and character) before the teachers and other responsible leaders who have already proved themselves and their worth, and who have "stability, character, intelligence, aptitude, freedom from prejudices, and rigid social, political, or religious attitudes," before attempting to plan for the new world.—I am, etc.,

Leyton, E.10.

A. LIONEL ROWSON.

* This correspondence is now closed.—ED., B.M.J.

London College of Osteopathy

SIR,—The question whether medical men should or should not study osteopathy does not, it seems to me, depend upon whether the basic principles agree with our—notoriously fickle—theories but upon whether it works. And I myself, in common with thousands of sane people, medical or not, have indubitable proof that osteopaths will frequently cure or relieve conditions which orthodox practitioners have either failed to cure, or consider incurable, or for which unnecessarily drastic treatments and anaesthetics are used. In short, medicine and surgery can learn something from osteopathic methods which will be of benefit to our patients.

The neat circular of the London College of Osteopathy is a decent and dignified statement of their case, and does not claim to oust medicine, surgery, pathology, and the rest from their place. It is not a substitutional, but an additional, form of therapy. Admittedly, part of the reason why the grocer's boy or the untrained "nature" healer can dub himself an osteopath with impunity is the fault of the osteopaths for not in the past presenting an objective case. But the fact that the medical profession has turned up its nose at the method is responsible for driving many people into the hands of the unregistered—and, in view of the present lack of control, of the unskilled and incompetent. Thus I suggest directly the contrary to what Mr. Tucker (July 27, p. 141) wishes: that the medical man should disarm the unregistered practitioner *not* by ignoring what is good in his methods (and skilful osteopathy *is* good, and is carried out by men as fully trained as our American colleagues in the profession) but by incorporating them in the field of therapy. We should hear much less, then, of the real quacks, and, besides, confound those who—with some justice—charge the medical profession with obscurantism where new methods are concerned.—I am, etc.,

London, S.W.3.

L. J. BENDIT.

Book-reviewing

SIR,—A review of any book should indicate whether in the opinion of the reviewer the book is informed and accurate. In books on specialist topics a fellow specialist is the best judge, and his specialist standing does not imply that he is necessarily a worse critic of style and presentation. Unfortunately, however, a specialist usually has social contacts with his fellows, and adverse criticisms may therefore lead to some degree of ill-feeling, since scientists have no greater ability to separate reason and emotion than other people. Thus the practice of leaving reviews unsigned is, I think, a good one.

Some of your correspondents imply that anonymous contributions are less authoritative than signed ones. This should not be so—anonymous contributions in any journal should have all the authority that the journal itself commands. The better the journal the better the talent at its command. Reviews should have equal authority with the leading articles, which are still almost universally anonymous. The growing habit of printing the names of correspondents and critics lessens the responsibility of the editor, who increasingly becomes a nonentity. This may be good enough for *Punch*, but I hope it will not be good enough for the *British Medical Journal*.—I am, etc.,

London, W.1

PETER C. WILLIAMS.

Dried Sera as Controls

SIR,—It is a standard immunological technique to include in a series of antibody determinations a serum of known potency. On general principles this would be especially necessary in the Wassermann reaction, which involves so many variables. It is generally agreed that known positive and negative sera should be included with each batch of tests, but it is sometimes difficult to ensure that these sera are available when required. It was considered that freeze-dried positive sera of known potency might form a useful standardized reagent for this purpose.

Positive sera were obtained from two known syphilitics and the serum distributed in 0.5 ml. amounts in small glass tubes, dried from the frozen state, sealed in an atmosphere of dry nitrogen, and stored in the refrigerator. Immediately before use the serum was reconstituted by the addition of 0.5 ml. distilled water. These sera have been used by us during the past twenty months and have been found to be stable and to act as useful controls in the Wassermann reaction. There appeared to be a slight loss in complement-fixing antibody during the first month, but no further loss in potency was detected during the test period.

It would be a considerable help in controlling and correlating results if dried standard sera for complement fixation tests were available. Similar sera may prove of value in other complement fixation tests—e.g., for *N. gonorrhoeae*, *Br. abortus*, and *M. tuberculosis*, where known positive sera are less readily available.—We are, etc.,

J. C. COLBECK.
H. PROOM.

Wellcome Research Laboratories,

The Population of India

SIR,—Dr. B. H. Kirman (June 8, p. 890) finds it "fantastic, inhuman, and unscientific to describe India's problem as an excess of population," but no one with knowledge can deny that *the relation between the population and the food supply* is a real problem. The Government, by means of imports, distribution, rationing, and price control, has done much to avoid widespread famine and disaster, but what I tried to point out in my letter (May 25, p. 811) was the fact that the disproportion between the food supply and the size of the population is realized acutely when seen in particular cases. I come across the problem daily in my medical practice, children being brought for medicine when their immediate and vital need is food. I quoted in my letter one such case, where the birth of the fifth child so strained the family resources that it was directly responsible for the death of the previous two, and I could quote many such cases. For instance, another patient, aged 10, weighs 29 lb. (13.2 kg.), and her younger brother, due to calcium deficiency, has rickets even in a land of abundant sunshine. They are members of a family of five children whose father earns Rs.30–Rs.40 (£2 5s.–£3) per month.

Another child were born at present it could only be at the expense of those already finding life and health precarious. An increase in grain imports would not help this family, who cannot afford even to draw their full ration (10 oz. or 280 g. rice per head per day—1,000 calories approx.).

In January, 1945, I did a survey of health and diet of five families earning Rs.18 per month. I found that two families, consisting of two adults only, were getting 1,700 and 2,100 calories per intake unit. Those with children were getting 1,200 to 1,400 calories per intake unit (Stiebling scale). Protein varied from 23 to 40 g. per day and calcium 0.08 to 0.2 g. (standard requirement 0.6 g.). In both cases the intake was lowest where it was most needed, in families of growing children. Health varied correspondingly. These are the facts, a problem for those who have to face them in practice.

I agree with Dr. Kirman that this situation cannot be remedied "by efforts on the part of Europeans—no matter how well meaning—to alter the marital habits of the Indian peasant." My plea is this, that there should be made available for poor parents who care for the well-being of their children the knowledge that at one part of the menstrual cycle only is conception likely to occur, and that if they abstain from intercourse during that period they may be able to avoid further undermining the health of the children they already have by annual additions to the family. This knowledge will become available for such people only in so far as it is absorbed into local lore

and tradition. It cannot be forced on them by foreigners. I believe, however, it would be readily accepted and applied by them if all Indian doctors, especially women, and welfare workers who really care about them told them the facts.—am, etc.,

Travancore.

(Mrs.) A. W. MEGAW BROWN.

Obituary

Dr. CRAWFORD SMITH CRICHTON died suddenly at his residence in Redhill, Surrey, on July 20, aged 64. He was the son of J. S. Crichton, M.D., of Arbroath, and was born in that town. From the Arbroath Academy he went to Edinburgh University, where he qualified M.B., Ch.B. in 1903. After graduation he acted as house-surgeon at Noble's Hospital in the Isle of Man, and was later assistant medical officer at Bexley Asylum. He then assisted Dr. Spencer Palmer at Redhill, whom he succeeded in 1912. During the war of 1914–18 Dr. Crichton served in the R.A.M.C. on the Western Front; being sent home in 1917 as surgeon to the Redhill War Hospital. He was subsequently medical officer to the Poo Law Infirmary at Redhill, and when this became the County Hospital he was appointed visiting surgeon, a post which he held at his death. He was also senior surgeon to the East Surrey Hospital, medical officer to the St. Anne's Institution and district medical officer for Redhill.

Dr. Crichton was a man of strong personality, unlimited energy, and great administrative capacity. These qualities were combined with great clinical ability, and it is not surprising that he held the highest posts and had enjoyed most of the honours open to a medical man in his district. He had been chairman of the medical staff of the East Surrey Hospital for some years, a former chairman of the Reigate Division of the B.M.A., and a past president of the Surrey Branch. He was president of the Surrey Medical Benevolent Society and a member of the Surrey Hospitals Divisional Council. It is only his passing which has brought full realization of the scope and quality of his activities. A fine surgeon, he was a brilliant example of the general practitioner who has developed specialist interests, a leader in all professional affairs, and an outspoken opponent of all encroachments on professional liberties. His loss will be keenly felt both by the profession and the public.

K. W.

Dr. JOHN ALEXANDER WILSON died suddenly on July 30. He qualified M.B., Ch.B. Glasgow in 1909. His service in the Glasgow Public Health Department goes back to the second decade of the century, when he was transferred from the central laboratory to the tuberculosis service, then in its infancy. He was awarded the O.B.E. in the first world war for the laboratory work he did in association with the late Sir John Rose Bradford. In 1929 he was appointed Physician-Superintendent of Glasgow's new hospital for children at Mearns Kirk. He also became the senior lecturer on clinical tuberculosis at Glasgow University. At Mearns Kirk, Dr. Wilson combined the functions of physician and administrator with marked success. At the beginning of the recent war the hospital was more than doubled in size to about 1,200 beds for the treatment of naval sick and wounded.

Sir Alexander Macgregor writes: I know of no man of whom it can be said with greater truth that his work was his life. He loved his hospital and everyone in it; he was rewarded by the deep affection and esteem of staff and patients alike. His happy disposition made him a popular figure, especially with his child patients. As a superintendent he was friendly and accessible, his success being in large degree due to the high personal standard of work and conduct he set for himself, which acted as a stimulus and example. He never lost his scientific outlook. His interest in bacteriology, which was his first love, led him to spend most of his spare time in the hospital laboratory, investigating, among other subjects, the incidence of human and bovine tuberculosis, and preparing a remarkable series of pathological specimens for teaching purposes. He knew the art of clinical instruction, and his bedside demonstrations were enriched by his wealth of experience and enlivened by his keen sense of humour. In spite of a lingering illness, he carried on, brave, kind, and thoughtful for others to the end.

HERBERT HARLAND RAW, one of the best-known local medical men, died at Whitby, Yorkshire, on Aug. 5 at the age of 68. He was the son of the late Rev. John Frank Raw, of Danby, and through his mother was first cousin to the late Sir Stanley Woodwark, F.R.C.P., and the late Dr. C. S. Woodwark, of Grimston. He was a student contemporary of both his cousins

St. Bartholomew's Hospital, and qualified M.R.C.S., L.R.C.P. in 1901. Almost immediately after qualification he settled in practice at Whitby, where his mother and most of his ancestors had been born. He became in time almost, but not quite, the ozen of the local profession. He was medical officer to the post Office, to Trinity House, and to the Whitby Institution, local police surgeon, and honorary surgeon to the cottage hospital. During the first world war he served with the R.A.M.C. for our years, mostly on hospital ships but also in Mesopotamia and Persia. In Whitby he will long be remembered for his interest in local affairs and his successful efforts in connexion with housing schemes and public health. He was elected to the urban council in 1922, and served as chairman in 1926; during his membership he did much for maternity and child-welfare. For ten years he was divisional surgeon to the local St. John's Ambulance Brigade. Some years ago he was joined as junior partner by Dr. R. N. P. Wilson, and later by Dr. Cedric Cone. On his retirement in July, 1945, after prolonged ill-health, he resided at Captain Cook's house in Grape Lane, Whitby, which he had purchased some years previously. Dr. Raw is survived by his widow, two sons, and one daughter. He had been a member of the British Medical Association for many years and in 1936 was chairman of the Scarborough Division.

VERNON THORNE THORNE, born in 1904, was the son of Dr. Richard Thorne Thorne and grandson of Sir Richard Thorne (Thorne, K.C.B., F.R.S., F.R.C.P., both of Bart's and the latter on the teaching staff of the hospital. Educated at Marlborough and Caius College, Cambridge, he entered Bart's in 1926 and took the M.R.C.S., L.R.C.P. in 1930. He graduated M.B., B.Ch. two years later and joined his father in general practice at Woking. After three years he decided to join the Colonial Medical Service and so he obtained the D.T.M.&H. in 1936 and chose Nigeria as his colony. When the war broke out, failing to secure his release to join the R.A.M.C., he continued with his duties in Nigeria and the British Cameroons and worked exceedingly hard for long-extended tours of duty. He became seriously ill in March, 1945, and was invalided home in June of that year suffering from a tropical form of chronic endocarditis. After three months in hospital he returned to his home, where he died on August 5. He was married at St. Bartholomew's the Great in January, 1938, and leaves a widow and daughter.

On July 22 LUDOVICUS CORNELIUS JOSEPHUS BOECKX died in Fulham at the age of 71. He was born in September, 1874, at Antwerp, the seventh of the eight children of Louis and Coleta Faes. Educated at Malines, he studied medicine at Louvain University and graduated with distinction as M.D. in 1897. After filling a hospital appointment at Louvain he returned to Antwerp, where he served on the staff at St. Camille and St. Mary's Hospitals. When Antwerp fell to the invading German forces in 1914 he escaped to England, whither his wife and family had preceded him. At that time foreign refugee graduates were being admitted to the British Register without further ado, and Boeckx settled in London, where he had a practice in South Kensington and also consulting-rooms at Fulham. He never returned to practise in Belgium, having too clear an insight into German cruelty and mentality to risk a return to his native land; and events proved the prudence of this decision. Of recent years he worked in Fulham only, where he devoted much of his time to specializing in the treatment of venereal diseases. He only relinquished work quite lately, when overtaken by illness. He married, in 1900, Elizabeth Grange of Antwerp, who survives him with their two sons and two daughters, all of whom are married.

H. R.

By the sudden death at the age of 71 of ERNEST WARDLAW MILNE on Aug. 4 at New Barnet, the Barnet district lost one of its oldest active practitioners. Milne took his M.B., B.Ch.B. at Glasgow in 1900 and had practised in Barnet since 1906. From his early days he was intensely interested in ophthalmology and in later years this speciality took an increasing amount of his time. He served with the B.E.F. in 1916 and during the recent war with the Home Guard and on medical boards. Throughout his extraordinarily active life Milne succeeded in retaining a zest for keeping abreast of the latest work in medicine—and he combined this with a keen psychological insight and a determination to do all that he was physically capable of doing for the welfare of his patients. It is understandable, therefore, that he built up a large practice quite apart from his eye work. In his younger days he excelled at tennis, was a keen follower of Rugby football, and an enthusiastic fisherman—like the true Scotsman he was. Amateur theatricals at one time took such leisure as he had,

and in more recent years social welfare, in particular the religious side, attracted his deep and sincere interest. If one had to select one characteristic above all others it would not be his natural zest for life, his energy and sense of humour, nor his interest in all aspects of medicine, but his strong belief in the inherent goodness of the ordinary man. During twenty years' close association with him not one unkindly criticism of anyone can be remembered—albeit he had strong beliefs and never failed to express them clearly. Milne joined the B.M.A. in 1911 and was chairman of the Barnet Division in 1929. He leaves a son in practice and a married daughter, and the attendance at the funeral must have shown to his widow and family how widely loved he was in the district to whose interests he can be truly said to have given a life of service.

Medico-Legal

A HERBALIST FINED

The recent prosecution of Mr. Albert Lindley Payne, of Shipley, for pretending to be a registered medical practitioner has particular interest in view of the probability that the Medical Act, 1858, will be revised. Section 40 lays down that any person who shall wilfully and falsely pretend to be or take or use the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner or apothecary, or any name, title, addition or description implying that he is registered under the Act, or that he is recognized by law as a physician, or surgeon, or licentiate in medicine and surgery, or a practitioner in medicine, or an apothecary, shall upon summary conviction for any such offence pay a sum not exceeding twenty pounds. As the reported cases on the Section show, these words leave plenty of room for ambiguity and evasion, and the joint recommendations just published by the three defence societies (*Journal*, July 6, p. 21) ask that the forbidden designations should include abbreviations of recognized medical qualifications, the courtesy title of "Dr." when associated with the healing art, and any other common description generally accepted as indicating a registered practitioner.

Mr. Payne was summoned for using the letters M.B. implying that he was registered, also for issuing two certificates purporting to be medical certificates and carrying out two medical examinations, thereby implying that he was registered. The prosecution, instigated by the London and Counties Medical Protection Society, showed that Mr. Payne had displayed a placard outside his house describing him as a herbal practitioner. The word "medical" in front of "herbal" had been painted out—according to Mr. Payne some time ago; the placard also offered massage, manipulative surgery, and artificial sunlight. A woman witness said that she went to Mr. Payne's house and was ushered into a room full of medical instruments. She complained of being run down, and Mr. Payne examined her with a stethoscope, gave her some medicine to take three times a day, and wrote her a certificate signed with his name followed by the letters M.B. and some others that were indecipherable. An inquiry agent was next sent to the house, and Mr. Payne met him in a white coat. This witness said he had complained of a duodenal ulcer (this was true), and Mr. Payne, after examining him, also with a stethoscope, drew a sketch of the ulcer and gave him four bottles of medicine, three packets of powder, and a certificate of which the signature was followed by the letters M.B. and some other letters. The woman witness admitted that she had seen Mr. Payne's certificate showing that he was a member of the British Herbalists' Union.

Mr. Payne said in his defence that he had practised for some twenty years but had never pretended to be registered. He was well known and highly respected, and no complaint had ever been made against his character. As a member of the British Herbalists' Union he placed the initials M.B.H.U. after his signature. He saw about 3,000 patients a year and manipulated damaged bones and joints. He admitted that he had never told the woman witness that his certificate was not a medical certificate, and said that his certificates had been accepted for exemption from fire-watching. He called witnesses who said that they had never thought he was registered. The magistrates found all the four charges proved (two charges relating to two

patients each) and imposed a fine of £1 on each, with no order as to costs. The Bench may have had in mind, among other authorities, the case of *Jutson v. Barrow* (1936), in which the use of the words "manipulative surgeon" by an unregistered person were held by the High Court to be a breach of the Medical Act.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In a Congregation held on Aug. 3 the following medical degrees were conferred:

M.D.—*In person*: A. M.-M. Payne, G. E. Burton, P. T. Cooper, R. McL. Todd, K. G. Bergin, A. C. Thackray, E. M. Darmady, J. Murray.

M.B., B.Ch.—*By proxy*: G. L. Leathur, W. D. Mail, J. S. Rivers, O. C. A. Scott, H. C. Churchill-Davidson, P. S. Davis, E. C. Glover, M. K. Towers, J. Vallance-Owen, R. J. Williams, W. R. Wardill, J. R. B. Dixey, T. C. Gibson, K. E. Jefferson, P. Rhodes, I. W. Whimister, A. G. Jessiman, S. Vakil, D. M. C. Ainscow, W. McC. Edgar, J. B. Frost, M. Henning, E. M. James, D. V. Milward, D. R. Smith, D. R. Wallace-Jones, D. B. Wallis, H. Whimister, E. H. W. Burt, D. J. Crockett, L. Haas, P. S. Hall, D. R. Morgan, H. W. Trusted, A. C. Franks, J. G. Selwyn, M. Shirley, W. van't Hoff, J. W. Coleman, K. E. Marsh, R. J. D. Temple, D. K. Briggs, A. W. I. Hall, J. S. Swallow, G. S. Andrew, W. J. Hay, C. Melver, E. P. G. Michell, D. T. Milnes, A. H. Littlewood. *In person*: A. V. G. Bibby, B. H. Brock, P. L. M. M. Ormerod, H. B. Whitmore, J. A. Bulleid, L. D. E. Cullington, C. E. D. Taylor, R. Randall, S. L. Heitherington, J. D. Lever, R. H. G. Lyne-Pirkis.

Titles of degrees were conferred by diploma on the following members of Girton and Newnham Colleges during July: C. M. E. Jones, M.B., B.Ch. (Girton); G. A. Meigh, M.B., B.Ch., Mrs. M. H. Miller, M.B., B.Ch., and Mrs. A. M. P. Pantin, M.B., B.Ch. (Newnham).

The E. G. Fearnside Scholarship has been awarded to Lionel Wolman, M.B., B.Ch.

UNIVERSITY OF EDINBURGH

Richard White Bernard Ellis, M.D., F.R.C.P., director of the Department of Child Health at Guy's Hospital, has been appointed to the Edward Clark Chair of Child Life and Health in the University, in succession to Prof. Charles McNeil, M.D., F.R.C.P., who is due to retire on Sept. 30.

UNIVERSITY OF LONDON

Ian Aird, Ch.M., F.R.C.S.Ed., has been appointed to the University Chair of Surgery tenable at the British Postgraduate Medical School as from Oct. 1.

Benjamin Stanley Platt, M.Sc., Ph.D., M.B., Ch.B., has been appointed to the Chair of Human Nutrition tenable at the London School of Hygiene and Tropical Medicine.

The following have been recognized as teachers of the University in the subjects indicated in parentheses: *Middlesex Hospital Medical School*; Dr. D. Slome (Physiology). *Westminster Hospital Medical School*; Dr. R. M. Haines (Pathology, Morbid Anatomy and Histology). *British Postgraduate Medical School*; Dr. Mary Barber (Physiology). *St. Thomas's Hospital Medical School*; Dr. H. H. Haines (Anatomy).

Appointments of house-physician and junior assistant medical officer at North-Middlesex County Hospital have been approved for the purposes of the M.D. examination (Branch I).

An additional examination for the Diploma in Public Health will be held in March, 1947. The following have been added to the areas approved for the purpose of instruction in public health administration for the Diploma examination: Metropolitan Borough of Stepney, Municipal Borough of Twickenham.

Major R. G. Gayer-Anderson, R.A.M.C. (ret.), who died on June 16, 1945, left as a bequest to the University his collection of classical antiquities. The bequest has been accepted, and the collection, which was formed almost entirely in Egypt, will be housed at University College in close proximity to the College's collection of Egyptian antiquities.

London Hospital Medical College

The following entrance scholarships have been awarded at the London Hospital Medical College: "Price" Entrance Scholarship in Science, value £100, H. O. Phillipson; "Price" University Scholarship in Anatomy and Physiology, value £100, E. W. P. Jones (Emmanuel College, Cambridge); Open University Entrance Scholarship, value £100, D. S. H. W. Nicol (Christ's College, Cambridge) and P. G. J. Stevin (Jesus College, Cambridge) (equal, scholarship divided).

UNIVERSITY OF SHEFFIELD

Prof. Colin Pantton Beattie, M.B., Ch.B., D.P.H., has been appointed Professor of Bacteriology in succession to Prof. Wilson Smith, who recently left the University to occupy the Chair of Bacteriology at University College Hospital Medical School, London.

COMBINED HOSPITALS UNIVERSITY ENTRANCE SCHOLARSHIPS

The following awards have been made:

St. Bartholomew's Hospital: R. P. Holmes, Trinity College, Cambridge (Scholarship); J. G. Widdicombe, New College, Oxford (Exhibition).

Guy's Hospital: J. G. Armstrong, Queen's College, Oxford (Exhibition); the Scholarship was not awarded.

St. Thomas's Hospital: E. H. R. Ford, Clare College, Cambridge and J. B. Self, Gonville and Caius College, Cambridge (Scholarship jointly); the Exhibition was not awarded.

The Services

DEATHS IN THE SERVICES

Col. HUGH MURRAY MORTON, C.B.E., D.S.O., R.A.M.C., retired died, aged 73, at Berwick-on-Tweed on August 7. He had a distinguished career and saw much active service. He was born in Cumberland and educated at the Grosvenor College, Carlisle, and at Edinburgh University, where he graduated M.B., C.M. in 1896. After holding an appointment as house-surgeon in Carlisle, he entered the Army Medical Service, as it then was, in 1898 and served in the South African war from 1899 to 1902, when he took part in the Relief of Ladysmith and in the campaigns in the Orange Free State and the Transvaal. He was awarded the Queen's medal with five clasps and the King's medal with two clasps. Later he served throughout the first world war of 1914-18, first in the Gallipoli campaign from the initial landing to the evacuation, and subsequently in Egypt and Mesopotamia. He was A.D.M.S. of the 13th Division in Mesopotamia 1916-19 and was awarded the D.S.O. in 1917 and the C.B.E. in 1919, together with the 1915 Star and other medals. After his retirement he lived at Berwick-on-Tweed, where his wife survives to mourn his loss. He had been a member of the British Medical Association since 1897.

AIRBORNE MEDICAL SOCIETY

It has been decided to form a permanent Airborne Medical Society. Membership will be open to all medical and dental officers who are entitled to wear the maroon beret. Particulars may be obtained from the honorary secretary, Mr. Guy Rigby-Jones, M.C., F.R.C.S.Ed., 63A, Belsize Park Gardens, London, N.W.3.

Medical News

The Medical Women's International Association will meet in London in September. The London Association of the Medical Women's Federation will hold an evening reception for the council and delegates at the London School of Medicine for Women (8, Hunter Street, W.C.), on Thursday, Sept. 19, from 8 to 10 p.m. It is hoped that as many as possible of the members of the London Association will attend. Over fifty delegates are expected from all parts of the world. Those who wish to be present are asked to inform the hon. secretary (Miss Josephine Barnes, F.R.C.S., 7, Wimpole Street, W.1) before Sept. 15.

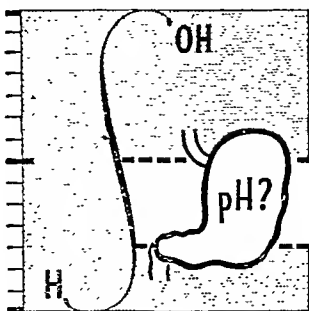
The meeting of the London County Council on July 2 had before it the recommendations of the General Purposes Committee on salaries. The Committee took note of the Government's White Paper on departmental salaries issued in September, 1945. It recommended that the salary of the Medical Officer of Health of the L.C.C., Sir Allen Daley, should be increased to £3,500 a year, this recommendation being personal to the present holder of the office and to be reviewed when the time comes to make a new appointment. The figure of £3,750 is proposed as the salary of the Clerk of the Council.

A quarterly meeting of the Franco-Anglo-American Medical Society will be held at 11, Chandos Street, Cavendish Square, London, on Tuesday, Sept. 10, at 2.30 p.m., with Lord Horder in the chair.

A clinical meeting of the Medical Society of the L.C.C. Service will be held at Queen Mary's Hospital, Carshalton, on Wednesday, Sept. 4, at 3 p.m. Demonstrations of the work in the various units will be given, and discussion on selected subjects will follow.

The annual general meeting of the London Association of the Medical Women's Federation will be held at B.M.A. House, Tavistock Square, W.C., on Tuesday, Sept. 24, at 8.30 p.m., when Dr. Henriette A. Lohr (Amsterdam) will speak on "Medicine in Holland under German Occupation."

The next meeting of the Zoological Society of London for scientific business will be held on Tuesday, Oct. 8, at 5 p.m.



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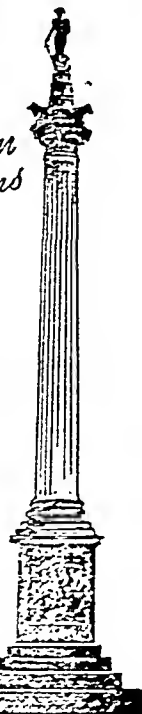


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CIRCULATORY DISORDERS without congestive failure, e.g., Varicose veins	Vitamin B ₁ in high doses has been found to relieve pain.	VITAMIN B ₁ (Aneurin Hydrochloride). By injection or by mouth. 10 mg. or more daily.
SECONDARY EFFECTS Hepatic Diseases obstructive jaundice Ulcerative Colitis.	Low prothrombin is here associated with defective absorption of vitamin K from the absence of bile salts in the intestine. Where fat absorption is defective.	VITAMIN K. One tablet daily with bile salts. VITAMIN K. One tablet daily.

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The Minister of Health, Mr. Aneurin Bevan, has approved the appointment of Mr. H. Symon to be Under-Secretary (Housing) in the Ministry, and of Miss Enid Russell-Smith to be an additional Under-Secretary, Health Services Division. Mr. Symon succeeds Miss Evelyn Sharp, who has been appointed Deputy Secretary of the Ministry of Town and Country Planning.

The following officers were elected at the annual general meeting of the Central Council for Health Education: *President*, Lord Woolton; *Vice-presidents*, Sir W. Allen Daley and Dr. Charles Hill; *Chairman of Council*, Mr. Henry Lesser; *Vice-chairman*, Dr. E. K. Macdonald; *Honorary Treasurer*, Mr. E. G. Savage.

The Secretary of State for the Colonies has selected Dr. J. W. P. Harkness, Director of Medical Services, Nigeria, to be Medical Adviser to the Comptroller for Development and Welfare in the West Indies.

In our advertisement columns this week the Royal Melbourne Hospital is inviting applications for the appointment of pathologist to the hospital, at a salary of £1,500 per annum.

The Council of the British Dental Association, meeting in London on Aug. 14, unanimously rejected the proposals relating to dentistry in the National Health Service Bill.

EPIDEMIOLOGICAL NOTES

Typhoid Epidemic

In the week ended Aug. 3 notifications of the enteric fevers were the largest for five years. This increase was due, of course, to the outbreak of typhoid originating at Aberystwyth on July 11. Up to Aug. 21 notifications in Wales had increased to 124, and there had been only two fatal cases—one at Aberystwyth and another at Llanelly. There are now 11 cases infected at Aberystwyth in hospital at Birmingham, and a man of 75 has died. Another death was at Tredegar. Other cases have been reported from Shropshire (3), Hereford (3), and Merthyr (2). The total number of cases in hospitals all over England remains uncertain, but the outbreak appears now to be on the decline.

There are 27 cases of paratyphoid B, including 22 children, in the Halifax Isolation Hospital at Northowram. The precise origin of this outbreak is not yet known.

Anterior Poliomyelitis

The mild seasonal outbreak of poliomyelitis which began last month still persists. Altogether there have been 19 cases, at Barnet, East Barnet, and Potters Bar. Hendon has had 13 cases with 1 death in the last 8 weeks; only 3 of the cases were adults; 3 cases have also been reported from Wembley.

The most recent epidemic in the U.S.A. is in Colorado, where 210 cases have been notified, 104 of them in Denver.

Discussion of Table

In *England and Wales* infectious diseases were less prevalent. There were decreases in the incidence of whooping-cough 376, measles 201, diphtheria 62, scarlet fever 54, and dysentery 31. The only increase was in the notifications of typhoid 52.

A fall in the incidence of whooping-cough was general throughout the country, but the decrease was greatest in the North and especially in Yorkshire West Riding 78 and Lancashire 73. The chief changes in the incidence of measles were decreases in London 102, Kent 58, Durham 52, Lancashire 52, and Warwickshire 43, with a rise in Middlesex 56. The local trends of scarlet fever fluctuated, and the largest variations were an increase in the number of cases in Staffordshire 25 and a decrease in Middlesex 21.

Notifications of diphtheria reached a new low record, which was 1 less than the record of a fortnight ago and 100 less than the lowest weekly return of 1945. The largest decreases during the week were those of Lancashire 27, Glamorganshire 11, and Warwickshire 11.

In *Scotland* the only changes of any size in the notifications of infectious diseases were an increase of 42 in cases of scarlet fever and a decrease of 63 in the notifications of measles. The rise in scarlet fever was general throughout the country.

In *Eire* a fall was recorded for measles 24, diarrhoea and enteritis 13, and diphtheria 9.

In *Northern Ireland* an increase of 13 cases in whooping-cough was reported from Belfast C.B.

Week Ending August 10

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 707, whooping-cough 1,910, diphtheria 243, measles 3,299, acute pneumonia 298, cerebrospinal fever 34, dysentery 84, acute poliomyelitis 18, paratyphoid 13, typhoid 89.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 3.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	44	5	15	—	3	39	1	15	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	246	18	69	23	15	360	14	103	50	10
Deaths	1	—	—	—	—	8	—	—	—	1
Dysentery	59	8	28	—	—	324	30	56	1	—
Deaths	—	—	—	—	—	—	—	—	2	—
Encephalitis lethargica, acute	1	—	1	—	—	—	—	—	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	25	6	6	—	—	33	11	7
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	48	—	—	—	—	26	—
Deaths	36	6	7	30	1	53	8	8	22	1
Measles*	3,540	376	98	34	15	2,190	113	57	26	7
Deaths	1	—	1	—	—	—	—	1	—	—
Ophthalmia neonatorum	72	7	15	—	—	74	10	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	7	—	1(B)	—	2(B)	3	—	5(B)	1(B)	2(B)
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	356	26	1	1	3	234	16	3	—	2
Deaths (from influenza)† ..	4	1	—	—	—	5	—	—	—	—
Pneumonia, primary	—	138	12	—	—	—	119	12	—	—
Deaths	19	3	9	—	—	12	—	9	—	7
Polio-encephalitis, acute ..	1	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	23	1	—	3	1	21	3	3	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	5	20	—	—	—	4	18	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	146	10	14	1	—	145	16	8	—	—
Deaths	1	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	940	82	134	20	14	1,232	65	181	17	32
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	60	1	7	4	1	7	2	1	1	2
Deaths	—	—	1	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,092	159	35	41	27	1,072	46	25	29	6
Deaths	7	—	—	1	—	5	2	—	1	—
Deaths (0-1 year)	357	50	51	45	10	302	41	51	60	17
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,802	537	517	166	95	3,731	545	502	199	163
Annual death rate (per 1,000 persons living) ..	—	—	11.4	10.6	—	—	—	11.5	12.5	—
Live births	8,367	1250	1004	506	234	6,736	869	531	376	271
Annual rate per 1,000 persons living	—	—	20.2	32.4	—	—	—	16.6	24.3	—
Stillbirths	265	37	25	—	—	200	11	29	—	—
Rate per 1,000 total births (including stillborn)	—	—	27	—	—	—	—	34	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Essential Hypertension

Q.—*A single woman suffers from a severe form of hyperpirosis (B.P. 260/110). This was recognized nine months ago; the symptoms were loss of weight and strength, headaches, and attacks of indigestion with or without vomiting. The case was considered unsuitable for renal sympathectomy, and she was treated medically with potassium thiocyanate and luminal 1 gr. (65 mg.) twice daily and rest. She has improved and ceased to lose weight, and can do a half-day's office work, though her B.P. is still high (225/100). Can you suggest any other treatment?*

A.—So far as can be judged from the data given, this patient is suffering from essential hypertension. If the investigations showed little or no impairment of renal function the hypertension cannot be of the malignant type; moreover, a patient who has had malignant hypertension for at least nine months would not be showing improvement in her condition. Do the age and the circumstances in this case indicate any menopausal element in the aetiology? If so, it would be worth while to try ovarian substitution therapy. There are no known medications which can be relied upon to lower blood pressure for more than brief periods. The only operative treatment available for patients found to have no unilateral renal lesion is the extensive sympathectomy advocated by Smithwick. The results to be expected from this operation depend upon the pulse pressure being relatively low. As good results are likely only when the pulse pressure is about half the diastolic pressure this patient would be unlikely to benefit. Treatment in the present will therefore consist in an appropriate regimen and automatic remedies, coupled, if the renal function is at all reduced, by a restriction of protein in the dietary. The prognosis depends upon the age and the cause. The younger the patient the worse the outlook; conversely, if the patient is, say, 50 years of age and at the climacteric the prospect is correspondingly more hopeful.

The Tobacco Habit

Q.—*Is there an effective cure for the tobacco habit? What is the method advocated by advertised "cures"?*

A.—The "tobacco habit" is due to a composite of motives, often opposite ones. The obvious physiological advantage is that by the paralysis of nerve-endings it soothes the organism when in a state of excitation. On the psychological side a youth usually takes to smoking because he feels it to be big and manly, or the girl because it is sophisticated and grown up, a gesture of emancipation. But analysis of these cases proves that there is a more fundamental and opposite motive of smoking, and that is a sucking tendency. Many men, will, therefore, suck their pipes when they have no tobacco, and a straw if they are without a pipe. It is a movement away from life, and a return to infantile life. The cases of chain smoking we have analysed (see *Journal*, 1945, 1, 793) all reduce themselves to a regression to oral erotic tendencies in infancy, which were arrested in development because of the feeling of lack of love, the sensuous pleasure being resorted to as a substitute for the mother's breast and a solace for the loss of love. The

"soothing" qualities of smoking so often ascribed to the effect of nicotine on the nerve-endings is probably more often due to this reversion to an infantile solace.

We have no first-hand knowledge of the use of the advertised cures; but there is no reason why some drug which so affects the tongue and palate that the tobacco is made distasteful should not succeed, just as some men find smoking distasteful when they have a bad "cold." It does not cure the cause, but by breaking a vicious circle for the time being it may enable the victim to overcome it. The same applies to suggestion—mode of treatment which is unfortunately dying out in the face of the more radical analytic treatment, but which has its very definite uses in psychotherapy.

Respiratory Murmur

Q.—*Can you explain why the respiratory murmur can be heard much better in some normal patients than in others irrespective of the thickness of the chest wall?*

A.—The cause of the normal respiratory murmur is not exactly known, but it probably consists of two elements. (1) Vibrations produced by the air passing through the glottis; these are transmitted along the bronchial tree and become fainter towards the periphery. (2) Vibrations produced by the air passing from the small terminal bronchioles into the larger air sacs. The position of the vocal cords influences the volume of the respiratory murmur, and so does the depth of respiration. Variations in these two factors, particularly in the depth of breathing, account for the differences in the respiratory murmur in normal individuals. It must also be remembered that emphysema suppresses the respiratory murmur, and that some degree of emphysema is very common, especially in later life.

Specks before the Eyes

Q.—*What is the cause of floating specks before the eyes, and is there any remedy? A patient describes them as "small finger-prints." I believe they are technically called "muscae volitantes."*

A.—Floating specks before the eyes are usually due to a liquefaction of the vitreous and are caused by the conversion of the normal colloid gel into a sol. The cause of this change may be due to physico-chemical factors, enzymic digestion of the protein bases of the gel, or a degeneration as in senile and myopic eyes and after contusion of the globe. There is no real remedy, though a mixture with 2 gr. (0.13 g.) of potassium iodide in it may be given by mouth twice a day for a month or so. Improvement has been reported after such treatment, but may be due to the "specks" having moved to a position where they are no longer noticed by the patient. Proper correction of errors of refraction also tend to make the "specks" less distinct to the patient. Any focus of sepsis should be sought out and dealt with to prevent further possible vitreous changes.

Should Women Wear Corsets?

Q.—*Apart from aesthetic considerations, what are the general and specific indications for wearing corsets? What is the authoritative view on designs and materials, and at what age should children or young women be introduced to the practice? I would also appreciate a note on how far brassières and suspender belts are recommended as articles of wear.*

A.—In my opinion, apart from aesthetic considerations, there are no general and specific indications for the healthy female to wear corsets. In later life, and after abdominal operations or repeated childbirth, women often state that the support afforded by a corset is helpful and reduces fatigue. But it seems a pity that so many women become dependent on a corset support when massage and remedial exercises would be of more benefit.

It is well to point out that the modern idea of a "corset" is very different from the old. The modern "foundation garment," if well made, and especially if made to fit the individual for whom it is intended, is comfortable to wear and has no disadvantages of undue pressure or restriction of movement. It is such a help aesthetically in so many cases that it is to be recommended, especially in the late thirties and onwards. Earlier, nothing of this kind should be required, but many

olescent girls and young women are advised to wear brassières. With the brassière a narrow hip suspender belt can be worn to support stockings if required. Should a corset be thought necessary for younger women the corselette type is often recommended—to be worn over the vest and not next to the skin, and washed frequently.

These matters are discussed in health education courses in schools and colleges, but it is helpful for women school medical officers to have a word with individuals at school medical inspections. More notice is taken of this individual advice than of that given in lectures or classes.

Meulengracht Diet

Q.—What are the details of the Meulengracht diet for haematemesis?

A.—Meulengracht in 1934 reported his experiences of "the treatment of haematemesis and melaena with food" (*Acta med. scand.*, 1934, *Suppl.*, 59, 375). The details of his regimen, which are set out below, are given in his article, and repeated in later papers: *Lancet*, 1935, 2, 1,220; *Wien. klin. Wschr.*, 1936, 49, 481.

From the day of admission the following diet is taken:

- 6 a.m. Tea; bread-and-butter.
- 9 a.m. Oatmeal with milk; bread-and-butter.
- 1 p.m. Dinner: Main dish (meat or fish balls; *timbale*: broiled chops; omelette; meat, fish, or vegetable *gratiné*; mashed potatoes; vegetable *purée*), with either soup (vegetable soup or cream of vegetables) or sweet (stewed apricots, apple *purée*, gruel, rice or tapioca pudding).
- 3 p.m. Cocoa.
- 6 p.m. Bread-and-butter; sliced meats; cheese; tea.

Only white bread is served, and milk can be taken between meals if desired. The patient is allowed to eat as much as he wishes, and the average calorie value is about 2,300. An alkaline powder (sod. bicarb. 15 g., mag. subcarb. 15 g., ext. yoscyami 2 g.; one teaspoonful t.i.d.) and iron (ferrous lactate 0.5 g. t.i.d.) are administered from the first day. The patient is allowed to move about freely in bed, and usually starts to get up after two or three weeks. The average period in hospital in Meulengracht's patients was five weeks; on discharge they were advised to continue the medicines for six weeks and the diet for six months.

The Meulengracht regimen in its original form has probably not been widely used in this country, although the principle on which it is founded now commands general assent. The excellent modification by Witts is followed in many hospitals; full details can be found in this *Journal* (1937, 1, 847). Avery Jones (*ibid.*, 1939, 2, 332) has stressed the importance of an adequate intake of fluid and salt for these patients—a point neglected by Meulengracht.

Syphilis: Criteria of Cure

Q.—A patient of 56, who was cured of G.P.I. by malaria 20 years ago, now has a normal C.S.F. but the blood W.R. is + +. He is free from symptoms and signs other than fixed pupils and absent knee-jerks. Is further antisyphilitic treatment indicated, and, if so, what?

A.—No further antisyphilitic treatment is indicated: a normal cerebrospinal fluid so long after apparently successful treatment is the best possible guarantee of arrest of the disease. The positive blood Wassermann may be ignored. See a paper read by Dr. W. D. Nicol and Dr. Maevé Whelen before the Medical Society for the Study of Venereal Diseases, April 27, 1946 (in the press).

Puberty Epimenorrhoea

Q.—A healthy girl of 18 has her periods at three-weekly intervals, with no increased flow, pain, etc. Is there any known cause for this periodicity, and what modern treatment is recommended?

A.—There is not necessarily anything wrong with this patient, for a regular cycle of anything between 21 and 35 days is usually regarded as being within normal limits and peculiar to the individual concerned. Nevertheless some degree of

epimenorrhoea, clearing up spontaneously a little later in life or after pregnancy, is not uncommon in young girls. Sometimes it is associated with mild hypothyroidism or with pelvic congestion due to sedentary habits, chronic constipation, or sexual excitement. Often, however, there is no obvious cause, and it is assumed to be a mild functional disorder situated primarily in either the pituitary or the ovary. A small regular dose of thyroid is one of the best treatments for puberty epimenorrhoea, but it is doubtful whether any treatment at all is required in this case.

INCOME TAX

"1½ Years' Purchase"—Basis

IGNORAMUS inquires what precisely is the basic figure which is taken in the case of the sale of a practice at "1½ years' purchase"?

* In general parlance the phrase implies 1½ times the gross receipts of the practice. For example, if the gross receipts have been £2,400, the expenses £900, and tax has been paid on the balance of profit (£1,500) to the amount of £600, "1½ years' purchase" would mean 1½ times £2,400—i.e., £3,600.

Increased Share in Practice

A. M.'s share was increased from 1/3 to 1/2 as from April, 1945. On what basis should he pay tax for 1945-6?

* The practice is assessed as a unit on the basis of the profits for the previous year, but that assessment is divisible between the partners according to their shares for the actual year. In A. M.'s case he is liable to account for tax on one half of the assessment for 1945-6.

Purchase of Share in Practice

J. W. purchased a third share in a practice as from March 1, 1946. How should the tax assessed for the year to April 5, 1946, be divided between himself and the out-going vendor of the share?

* J. W. will be liable to account for tax on one third of 36/365 of the gross assessment on the practice. He can, however, deduct therefrom any allowances or reliefs due to him for 1945-6 and not allowed from any other item of his income.

"A practitioner starting in a practice" cannot claim the "cash basis" concession; but as the practice is the unit to be assessed, and is presumably not being treated as "new," the question does not arise in J. W.'s case.

First Year of Assistantship

B. H. is about to commence as an assistant in general practice at a salary of £x a year, and will have to find and run his own car and rent a flat. The practice is carried on at a central surgery.

* He will be able to claim the "initial" and depreciation allowances on the car, and the cost of upkeep of (but not the original outlay on) such instruments, etc., as his service agreement requires him to provide. As regards the rent of the flat and such general expenses as telephone, domestic service, wages, etc., he can claim to deduct the additional expense attributable to professional use, but on that basis he is not likely to obtain a substantial deduction.

War Damage Contribution

J. owns the freehold of a house which has been requisitioned by the Ministry of Health and converted into flats. As a result, the assessment on which War Damage contribution is payable has been increased from £40 to £120. The amount of compensation received for the requisitioning of the property is £90 per annum. Is J. liable to pay the increased contribution?

* Yes. The liability attaches to the direct contributor, i.e., the person who has a proprietary interest subsisting in the property, and J. apparently owns that interest. War Damage contributions turn on ownership, not on the way in which in any particular year the income from the property is shared. There are exceptions to this rule. Where there are tenancy rights extending over a period of years, the direct contributor can claim a partial indemnity from his tenant, but on the facts quoted this does not assist J.

Non-resident Appointment: Car Expenses

F. asks whether the cost of running a car between his residence and a hospital, at which he holds a whole-time non-resident post, can be deducted for income tax purposes?

* No. The rule is strictly construed, and the expense of travelling between the residence and the place where the duties of an appointment are performed is not regarded as incurred in the performance of those duties.

Absence Abroad: War Loan Interest: Car Transactions

T. F. was abroad in the Army from Jan., 1941, to Jan., 1945; and from Jan., 1941, to Aug., 1943, his wife was domiciled in Northern Ireland, his house being let furnished. Can he claim exemption on War Loan Interest?

** On the facts stated it would seem that T. F. was "domiciled" and "ordinarily resident" in the United Kingdom, and therefore is liable to tax on the War Loan Interest.

Claims can be made for the "initial allowance" and "depreciation allowance" on both cars bought by T. F. since demobilization. The claims for the car bought in Jan., 1946, will be for the financial year for which tax is assessed on the profits made in the period which includes April 6, 1946; the claims for the car bought on May 16, 1946, will be for the financial year for which tax is assessed on the profits of the period including that date.

Car Transactions

G. H. bought a car for £350 in 1938 while in practice. He sold his partnership share in March, 1940, stored the car, and joined the R.A.M.C. He was released in Feb., 1946, and recommenced practice in Aug. or Sept. The present estimated value of the car is £650. Will the future depreciation allowance on the car be based on its cost (£350) less the allowances given so far, or can the value be substituted in calculating the allowance? If the former, may it not be advisable to sell the present car before recommending practice?

** The depreciation allowance is intended to give relief in respect of the wastage of capital sunk in buying the car, and the capital amount on which the allowance is calculated will therefore be based on the amount expended and not on any estimate of present value. From an income tax point of view it would seem advisable for G. H. to sell his present car before recommending practice, but obviously other factors enter into his decision. For instance, if he holds the car for another year or so both the "balancing charge" and the cost of a new car might be materially less than at present.

A. R. bought car "A" in 1938 for £205, was called up in Aug., 1939, and sold the car for £145 in July, 1942. At the same time he bought car "R" for £320. He resumed practice on Oct. 1, 1945. (a) What, if anything, can he claim in respect of the transactions, and (b) what allowance can he claim for the period after Oct. 1, 1945?

** (a) As the sale and purchase took place during the discontinuance of the source of income to be assessed, there appears to be no basis for any claim to a deduction for the money then spent.

(b) Depreciation allowance can be claimed on car "R," for the half year from Oct., 1945, at 20% plus one-fifth, i.e., 24% per annum, and for the year 1946-7 at 25%. With regard to the capital basis, A. R. cannot put it higher than £320, the actual cost of the car—the income tax authorities may claim to put it at £320 less the national wear-and-tear allowance for the period from the date of purchase to Oct. 1, 1945.

P. (a) bought a car in 1935 for £140 and sold it in March, 1946, for £100, the written-down value then being £8. Is a "balancing charge" due? And (b) bought a car in March, 1946, for £371. Can he claim an "initial allowance" for 1946-7?

** (a) No—the car having been sold before April 6, 1946; (b) the car must be regarded as having been acquired on April 6, 1946, the first day of 1946-7, and accordingly the initial allowance is due for 1947-8, not 1946-7.

C. R., referring to the reply to "Equity" (July 13, p. 76), asks what is the effect of a "balancing charge"?

** Tax is payable on the amount of the charge, ordinarily as part of the professional profits, at the rate of tax appropriate to the vendor of the car for the year of liability.

Military Pay: Deduction for Cost of Books, etc.

C. R. asks, "What relief can medical specialists in a military service claim in respect of medical journals and books, subscriptions to learned societies, and home telephone which the service require all specialists to have installed in their homes?"

** The matter is governed by the Schedule E rule which forbids the deduction of expenses unless they are incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." The rule is interpreted by the revenue authorities as forbidding the deduction of the sort of expenses indicated unless they are required to be incurred by the terms of the service agreement. C. R. seems to have some claim for the use of his telephone; the position with regard to the other expenses is more doubtful. An appeal can be made to the Income Tax Commissioners for the employing department, and an appeal to the High Court can be lodged against their decision.

LETTERS, NOTES, ETC.**Sites for Intramuscular Injection**

Dr. J. E. O'N. GILLESPIE (Dublin) writes: In the reply to query on sites for intramuscular injection (July 27, p. 147) stated that "experience shows the safe area of the buttock to be far and away the best site in the body for intramuscular injection. I think that the lateral aspect of the thigh is, in general, by far away the best site for intramuscular injection and that the use of this site should always be taught to medical students and nurses. Your respondent points out, injection can be given there with danger; but he adds that it is usually more painful than if given in the buttock. I doubt if this be so, although I cannot produce evidence to support my view. The risk of injury to the sciatic nerve when the injection is given in the buttock is real; although obviously it implies lack of knowledge on the part of doctor or nurse.

Effects of Sweets on Teeth

Miss MARY THOMAS (Oxford) writes: I have been interested in correspondence on the effect of sweets on teeth because my grandmother, who was born about 1854 and died at the age of 76, a fixed habit of always eating a small piece of chocolate the thing at night after getting into bed, and had the most perfect teeth throughout her life of anyone I have known. As a matter of routine she went periodically to the dentist, but was never given treatment as she never needed any. This unusual degree of dental health was not transmitted to any of her seven children or eleven grandchildren, all of whom have quite ordinary troubles with their teeth. It is possible that this may be due to dietetic causes. My grandmother was a child crops were still grown by wholly organic farming methods, and it is contended by many modern authorities that the food produced in this way has more vitality, and that those who eat it have greater resistance to disease, than food grown with artificial, chemical fertilizers, as has for many years now been accepted farming practice. Nutritionists would find the recent published *Humus—and the Farmer*, by Friend Sykes, of absorbing interest in this connexion, since he gives the results of his experiments in organic food production, over many years, upon the health of plants, farm animals fed on such food, and on his own health. Among other things he says that the formation of teeth on his teeth ceased completely after eating whole-wheat bread made from grain produced on his farm by organic methods only, for three or four years. He considers that by organic methods of farming, i.e., use of natural manures—a correct rotation of crops and proper tilling of the soil—England could easily produce enough food to feed the whole of her population, and that such food would be of a much higher quality than we eat now.

R.A.M.C. Reunion Dinners

Mr. T. J. DALY (1, Lancashire Road, Bishopston, Bristol) writes: In various sections of the press one reads of reunion dinners, meetings being planned or suggested. Due to the exigencies of a very few Army medical officers could lay claim to any one particular unit. Changes of locality, units, and personnel were experienced quite often by the vast majority. The object of this letter is to effect the formation of an association to enable ex-Forces medicals to perpetuate the comradeship and brotherhood fostered during service. It would not be the intention to hold one reunion dinner, say, in London, where only the fortunate ones can assemble, but to arrange such affairs in regional centres throughout the land. Should any of your readers be interested in this suggestion, I will gladly furnish fuller particulars of a tentative scheme to launch this idea.

In Aid of the Grenfell Mission

Though the claims upon the charity of doctors are as numerous as they have ever been, we would nevertheless draw their attention to an organization particularly deserving of their sympathy and generosity. The Grenfell Mission continues its work of health education, and welfare among the poor of Newfoundland and Labrador; its hospitals and nursing stations in remote places are sole means of bringing help in time of distress to the people and its schools provide the only education to be had by children in isolated settlements. It needs funds urgently. Doctors can help by purchasing their Christmas cards from the Grenfell Association in this country. This year a number of attractive cards in colour are available at 10d. each, and in black and white at 5d. each; a pocket calendar at 7d.; coloured postcards in packets of 6 for 2s.; sepia postcards at 2d. each. For philatelists there are packets of Dominion, Colonial, and U.S.A. stamps, 24 per packet at 1s. They should be obtained from the Grenfell Association, 66, Victoria Street, London, S.W.1, or from Miss Howat, c/o MacLay & McIntyre, Ltd., 125, Buchanan Street, Glasgow, C.1.

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IMPENDING HEALTH LEGISLATION IN U.S.A.

Health Bill before Congress

Last November President Truman sent a message to Congress outlining a National Health Programme. He pointed out that millions of United States citizens had no opportunity to achieve or enjoy good health and no security against the unequal economic incidence of sickness. One-third of the men examined for military service had been rejected as unfit, and more people died annually in the United States from preventable diseases than had been killed or had died from injuries during the war. The benefits of medical science, said the President, were not available equally to all. People with small incomes did not command the same medical attention as those who were better off; rural areas were less well served than the towns. He drew particular attention to the unequal distribution of doctors. In proportion to its population the United States has more doctors than any other large country in the world, but large areas are under-doctored. About 1,200 counties in various States, covering a population of some 15 million, have no local hospital or at least none which meets even the minimum standards of the national professional associations.

The President's Programme

The programme submitted by the President contained five basic provisions: (1) federal aid grants for the building of hospitals and health centres throughout the country; (2) extension of maternity and child welfare services; (3) extension of public health services; (4) the establishment of a national science federation for promoting medical research and professional education; and (5) compensation for loss of earnings due to sickness. With regard to this last it is explained that about nine-tenths of such loss is due to illness or accident not directly connected with employment, and therefore not covered by the system of workmen's compensation. The President also suggested in general terms what amounts to a system of compulsory health insurance on a wide basis. At present only about 3 or 4% of the American population are insured for any comprehensive medical care. The President had in mind a scheme which would provide medical services, including hospital and specialist, and also dental care, on payment of a contribution equal to 4% of the first £600 of the insured person's annual earnings. Those so insured should remain free to choose their doctors, and doctors to accept or reject their patients, and freedom to treat and be treated outside the system should be conserved. The President described the American people as the most insurance-minded in the world and not likely to be frightened off a scheme of national health insurance by talk, already current, of "socialized medicine."

Content of the Bill

On the same day as this message was received by Congress, two senators, Wagner and Murray, introduced a new Health Bill embodying a compulsory insurance plan for the nation. The Bill is said to be the idea of Isidore S. Falk, research director of the Social Security Board, and Michael M. Davis, a member of the Political Action Committee of the big industrial workers' association known as the C.I.O. Senator Wagner declared that the Bill was the result of constructive suggestions by many outstanding medical authorities as well as other organizations interested in improving the national health. But it was not denied that no representatives of the American Medical Association had been consulted, although that body includes 125,000 doctors. *The Journal of the American Medical*

Association promptly complained that "typical of the kind of government that the bureaucrat would force on the American people is this technique of consulting the advisers who are known in advance to be in complete agreement with the persons whom they are supposed to advise, and of studiously avoiding anyone who might offer a contrary opinion. This is government by minority with a vengeance."

The Bill is in two parts, or "titles" as they are called in America. The first part consists of three sections, one of them proposing federal grants to States for public health services, another proposing grants for maternity and child welfare services, and the third proposing grants for the medical care of needy persons. The second "title" is the more controversial. It proposes to make available personal health service benefits to insured employees, their specified dependants, and certain other individuals. It does not appear that it is intended to cover 100% of the population; the figure of 80 to 85% is mentioned. Personal health service benefits mean general and special medical and dental benefits, home nursing, laboratory services, and treatment in hospital. Broadly speaking, general medical benefit is represented by the services of the family practitioner, while special medical benefit means the services of consultants or specialists, which will ordinarily be available only on general practitioner advice.

On the administrative side the Surgeon-General of the Public Health Service at Washington will be the head of the service, assisted by a national advisory medical policy council consisting of 16 members, appointed by the Surgeon-General, its chairman; from panels submitted by professional and other organizations. It will be the council's business to advise on general policy and administration, including professional standards and designations, and methods and arrangements. The Surgeon-General will also be responsible for the panels of practitioners accepting service and the lists of persons eligible for benefit. The payment of general practitioners, and of specialists also, may be on a fee-for-service basis, a capitation basis, or a full or part-time salary basis, or a combination of any of these. The method of payment is to be determined in each local area. It may be according to a national scale or may take account of exceptional regional conditions.

Opposition to State Medicine

The proposals have aroused some fierce opposition in the medical profession in the States—opposition which may seem to us, accustomed for a generation to State compulsory health insurance, and now facing a greater revolution in health services, somewhat extreme, but American social history and the freedom of the American medical profession must be borne in mind. The *Journal of the American Medical Association* declares that this is worse than "socialized medicine," the term which President Truman deprecated, it is "State medicine." The Government would collect the funds available, manage the service, and distribute the payments. It is pointed out that the free choice which is said to be ensured is largely a chimera, for the Bill provides that the Surgeon-General, who will be at the head of the service, can limit the number of patients a doctor may see, and provide other doctors when too many patients make the same selection.

A forthright leading article in the *J.A.M.A.* declares that by this measure the doctors of America will become "clock-watchers and slaves of a system." This, it says, is the kind of regimentation which led to totalitarianism in Germany. The prime consideration is deduction from the pay of the worker and taxation of the employer so that the Government can do for the people of the United States most of the things which the people have been accustomed to do for themselves.

¹ At present fewer than half the counties in the States are provided with a full-time public health service.

Actually, however, the method of contribution or tax is not raised in the Bill. An earlier Bill, introduced by the same two senators, did propose a tax or contribution to be levied on employees, employers, and self-employed persons in order to finance the compulsory sickness programme. The new Bill now before Congress, which presumably supersedes the first, imposes no such taxation, merely laying it down that the service will be financed by appropriations from the general fund. The original proposal was 3% on wages, one half to be contributed by the employer and, the other half by the employee. The opponents of the Bill see in the dropping of these proposals an attempt to by-pass the congressional committees which in both the Senate and the House have jurisdiction over any legislation imposing taxes. The reply of the promoters is that it has been done merely to expedite public business.

The Bill in Committee

After its introduction into the Senate the Bill was referred to the Senate Committee on Education and Labour, of which Senator Murray, one of the promoters, is chairman. Here it has received a close examination. The method followed in Senate committees, unlike that in the Standing Committee of our own House of Commons, is to hear statements and take evidence from outside witnesses. The proceedings began with long declarations by the supporters of the Bill, in which they denied that the measure would destroy private practice in medicine, fetter the doctor, or upset the voluntary hospital position. The proceedings have not been without acerbity. A good deal of uneasiness has been shown over the position of the Surgeon-General. Witnesses against the Bill have said that the medical profession will be placed under the direction of one man, who will become a dictator. To this Dr. J. W. Mountin, Medical Director of the Public Health Service, replied that the Surgeon-General is appointed by the President, his appointment has to be confirmed by the Senate, he is under the control of the administrator (Minister) who sits in the Government, a report from his department has to be made to Congress annually, he has to come before it for his appropriations, and if anything went wrong and any substantial body of citizens, or even a small number of citizens, made a complaint Congress would very quickly transmit it to the Surgeon-General and call him to account. On the general merits of the Bill Dr. Mountin said that the critics had paid too much attention to certain details and too little to the underlying philosophy. "Heretofore the individual has had to finance his own cost of illness out of his own pocket. This is an attempt to change that process, and, so to speak, lift the cost of illness off the pockets of sick people and place it on the broad shoulders of society." Representatives of several national organizations have given evidence.

Platform of the A.M.A.

Meanwhile, the American Medical Association has announced a programme to improve the health and medical care situation in the United States. It begins by stressing the importance of nutrition, housing, and preventive medical services and the need for health and diagnostic centres and hospitals and a maternity service. It calls for a medical care plan, the costs of which would be met by a voluntary non-profit prepayment system. A body has been already set up to be known as Associated Medical Care Plans, Incorporated, the "members" of which are the various services which conform at least to the minimum standard laid down by the A.M.A. Council, and also permit transference from one service to another. It is pointed out that the medical profession in each area must assume responsibility for the medical services included in the benefits, and at the head of the principles which each such plan must embody are free choice of doctor and the maintenance of the confidential and personal doctor-patient relationship. At present it is estimated that 75% of the population receive no prepaid medical care at all, and only 4% receive any complete care under voluntary health insurance plans. Most of the present medical prepayment organizations give a service limited in coverage and scope, though some special evidence relating to services operating in Washington and Oregon is being, or has been, presented to the Senate Committee; the services in those States are said to approach what is desirable on a national scale.

The reply of the promoters of the Bill is to point out the shortcomings of private or voluntary insurance, the non-

eligibility of large numbers of people, the fact that the plan meet only a section of health needs, the weighting of schemes by the unhealthy and those who anticipate illness, the overlapping and duplication and tendency to high administrative costs which characterize such schemes. According to one witness before the committee, there is no hope of voluntary insurance schemes fulfilling of themselves a comprehensive exclusive medical care programme. But the A.M.A. thinks that along such lines, given the efficient organization and uniformity which a central body could ensure, there is an alternative to a State scheme to which, both from the public and the professional point of view, there are deep-rooted objections.

INTERNATIONAL MEDICAL CONFERENCE

The medical profession of Great Britain has been fortunate during the war years in that its professional and scientific activities have been much less interrupted than has been the case with professional associations on the Continent. The Council of the British Medical Association has taken the view that the Association should give a lead in bringing together the national medical organizations of the various countries. In June, 1945, an unofficial conference was held at B.M.A. House to explore means of continuing the fellowship built up during the war between doctors of different nationalities. Delegates from Belgium, France, Holland, Yugoslavia, Poland, and the United States stressed the need for an international medical organization. The B.M.A. has therefore called an International Medical Conference in conjunction with *L'Association Professionnelle Internationale des Médecins*. The purpose of the Conference is to promote international medical relations, and this may best be achieved by an association of the national medical bodies for the advancement of medicine, including cultural and social aspects, and the promotion of international good will and understanding.

International Policy

The medical profession throughout the world must recognize and accept its responsibility for the world's health. It is especially important at this moment that doctors should be keenly aware of the power, duty, and responsibility of the profession in the international as well as the national sphere. British doctors can give a lead to the whole medical world and encourage doctors in less fortunate countries to exert their influence to avert dangers to world peace and health. The failure of German doctors to attempt to combat the Nazi ideology led to both professional and national debasement, and their own profession became disintegrated.

The attitude and standards of a country's doctors permeate the whole of its social fabric. There is no need for them to engage in politics; they can play their part through service, example, and persuasion. They can promote the recognition of the importance and dignity of the individual and of liberty of thought and action; they can spread knowledge of the basic principles of a healthy and happy life—sound family life, adequate nutrition, good housing, sound mental health, the right use of leisure, the right attitude to environment, and the prevention of disease. They can, in short, help to make the health of the peoples a primary object of international policy. If British doctors will take the initiative, they will not only raise British prestige, but they will help medicine throughout the world to take up its responsibility as a powerful force for peace, health, and security.

Immediate Problems

The immediate problems of international medicine are to rehabilitate the medical profession in European countries and to improve the standards of health of the peoples on the Continent. The solution of the second problem is to a large extent dependent, as a long-term policy, upon the solution of the first, and there is here a great opportunity for the British profession to help its colleagues. The destruction of German and Austrian medical facilities, organizations, and prestige has left a void in Europe. Before the war doctors in Norway

Sweden, Denmark, Holland, Switzerland, and other countries habitually visited German medical institutions, received German medical journals, were conversant with German medical literature, and generally profited by recent work in Germany. This source of assistance and inspiration has now wholly disappeared and the doctors in the liberated countries in western and northern Europe are anxiously looking for an alternative. As English is widely spoken in these countries it should not be difficult for Great Britain to fill the gap.

Between the two great wars, pioneer work in international medical relationships was carried out by the A.P.I.M. During the war this body was no longer able to function, and the time has now come to review and enlarge its work, which will be complementary to that of the new world health organization now being shaped by U.N.O.

Among the activities of an international medical body would be the exchange of teachers, and students, and books, with provision for postgraduate courses and appointments. The two new abstracting journals, *Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics, and Gynaecology*, which are to be published in four months' time by the B.M.A., should be of the utmost value in this connexion.

The possibility of a special publication for the international medical body may be considered. The whole subject of an international medical organization will be explored by the Conference to be held at B.M.A. House from September 25 to 27. The following countries have already intimated their intention of being represented: Australia, Austria, Belgium, Bulgaria, Canada, Czechoslovakia, Denmark, Eire, France, Hungary, Netherlands, New Zealand, Norway, Palestine, Peru, Poland, South Africa, Spain, Sweden, Switzerland, and the United States of America. The British Medical Students' Association will also be represented. In addition to the formal meetings there will be a dinner at the Savoy Hotel. The Minister of Health is giving a luncheon reception, and Sir Alfred Webb-Johnson, president of the Royal College of Surgeons, has arranged for the delegates to visit the Middlesex Hospital.

HEARD AT HEADQUARTERS

Friendly Societies and the Doctors' Case

Appreciation of the doctors' case shows itself in rather unexpected quarters, as, for instance, in the High Court of the Ancient Order of Foresters, the second largest friendly society in the kingdom, meeting the other day at Tunbridge Wells. The member of the Executive Council who introduced the discussion on the National Health Service Bill, Mr. E. J. Hicks, who will next year be High Chief Ranger, said that from close touch with the members of the Order, numbering nearly half a million on the voluntary side, it was evident that there was widespread sympathy with the doctors' position. The doctors of the future, he said, would be directed just like the "Bevin boys." Nobody liked direction, and although we had all been pushed hither and thither during the last six years the process became no more agreeable with repetition. Their sympathy was with the doctors, said Mr. Hicks, because they knew how essential was the personal relationship between doctor and patient. Doctors often failed, not because their skill was lacking, but because the patient's trust was not forthcoming. "We believe that the best system is the one we have had for many years past. I am not saying that everything in the medical service was exactly as it ought to have been, but it did give freedom." The Foresters, while welcoming on the whole the National Health Service, were troubled by its effect on certain operations of the friendly societies, notably juvenile medical benefit, which will become a redundant service.

The Minister of Health has made a regulation under the National Health Insurance (Medical Benefit) Regulations providing that a chemist shall not dispense a prescription requiring the manufacture by him of a preparation of penicillin for parenteral injection unless he holds a licence for that manufacture under the Therapeutic Substances Act.

Correspondence

The Representative Body and Regional Boards

SIR,—The antic behaviour of the Representative Body is sometimes more reminiscent of a tribal gathering than the deliberations of a democratic body, evolved after nearly a quarter of a century's experiment. The emotional flash-point of the R.B. is at times so low that any instance of fifth form buffoonery can elicit the loud laugh that speaks the vacant collective mind. And any opportunist hot-head with a persuasive tongue can talk the R.B. round into voting against its better judgment.

A remarkable instance of this folly was the passage of the amendment outlawing the regional boards (Aug. 3, p. 56). This irrelevant amendment to a perfectly sound resolution became a resolution after the second attempt to suspend standing orders. Judging by the figures quoted the required three-quarters majority obtained did not represent a third of the total R.B.; there must have been numerous abstentions and absences. But the effect of this fantastic resolution, so-called, if rigidly implemented, will be to hamstring the labours of the Negotiating Committee over the past two years, and to remove from the hospital-planning agencies that authoritative medical influence we have all been working for. Moreover, the wording of the resolution is so comprehensive that it excludes as well the university representatives, the professors of medicine and surgery, and the deans of medical faculties. Are these men likely to sacrifice the interests of their university on the regional boards at the dictation of the R.B.? Incidentally, is the B.M.A. to legislate for every medical practitioner? Surely it is assuming powers that properly belong to the G.M.C.

This resolution not only cuts off our nose to spite our face, but hands it on a plate to the Minister. If the medical profession and universities won't play ball on the regional boards, who will be jumping with glee?—the local authorities and the trade union movement.

No; the sooner this unhappy resolution lies accumulating dust on the table, the better. And to prevent such incidents in the future the machinery of the R.B. must be re-devised. The report of the agenda committee in response to the Winchester resolution was a model of democratic theory, but in practice the procedure is not working efficiently. The R.B. is too large a body to sustain collective responsibility for more than a few hours, and it must be protected from its tendency to lapse into tribal mass hysteria by tightening up the standing orders and adapting these so that the loophole of suspension of standing orders does not arise.—I am, etc.,

Bristol.

FRANK BODMAN.

Delayed Release of Specialists

SIR,—We wish to urge in the strongest terms the speeding-up of the demobilization of specialists in the Forces. Under the present circumstances specialists will not only be released months after general-duty medical officers, but will also suffer a considerable delay as compared with ordinary combatant officers. It is appreciated that there must inevitably be unevenness in the pace of release in different categories of the Services, but we feel that insufficient effort is being made by the Central and Local Medical War Committees to recruit specialist replacements. Our experience of recent "short lists" suggests that a considerable number of candidates of military age have never had war service, and it would seem unfair that such people should not only have escaped war service but should be successful in obtaining specialist appointments in view of their unbroken civilian service.

Considering the present dissatisfaction among specialists we wish to make the following recommendations: (1) That detailed lists of specialists who for medical or other reasons have as yet carried out no war service be made by Central and Local Medical War Committees. Where medical reasons have been responsible for exemptions or postponements these be revised in the light of the less exacting peacetime conditions. (2) That the responsible military authorities be urged (a) to revise their existing military establishments and thus limit their specialist requirements, and (b) to expedite the training of suitable regular Army officers to fill specialist deficiencies.—We are, etc.,

TWO SPECIALISTS.

Medical Unemployment

SIR,—I thoroughly endorse the remarks of "Unemployed Ex-Serviceman" and Dr. G. L. E. Thomas (Aug. 3, p. 58), and other returning or unemployed doctors in previous issues. It would be interesting to know how many of us are in this predicament. There are many to my knowledge, and some are beginning to look beyond medicine for a livelihood. This serious situation cannot be given too much emphasis and publicity.

After serving in the R.N.V.R. from Sept., 1939, to Feb., 1946, I got married on demobilization, and have since been living on steadily diminishing capital. Countless letters in reply to advertisements for assistants or partners have brought no reply, and those to business or industrial firms, or for other appointments, have brought the reply regretting that the vacancy has now been filled. It seems impossible to buy a suitable practice without involving oneself in debt for life in order to buy the house. Few of us expect any particular gratitude for our war service, but it must be known that most of us suffered financially, and the aftermath appears to be ruination.

It is astonishing to find speedier demobilization of Service M.O.s being urged. Those still in the Forces are more fortunate than they seem to imagine. Whilst sympathizing with those alien doctors still in this country, it does seem that our own people should be entitled to prior consideration. Most Service doctors were no more in favour of the National Health Service than were our colleagues at home, but now there must be few of us who do not anxiously await its advent at the earliest possible moment.—I am, etc.,

"EX-R.N.V.R."

Association Notices**CONSULTANTS AND SPECIALISTS COMMITTEE***Part-time Consultants and Specialists*

Notice is hereby given of the formation by the Council of an electoral roll for the election to the Consultants and Specialists Committee of five representatives of members of the Association who are engaged part-time in consultant and specialist practice. Members of the Association who claim to conform to this definition, including those serving with H.M. Forces, are requested to complete and return the appended form to the Secretary, B.M.A. House, Tavistock Square, London, W.C.1, later than Monday, Sept. 2, 1946.

CHARLES HILL,
Secretary.

Aug. 3, 1946.

BRITISH MEDICAL ASSOCIATION**CONSULTANTS AND SPECIALISTS COMMITTEE**
*Part-time Consultants and Specialists***FORM OF APPLICATION FOR INCLUSION IN ELECTORAL ROLL**

To the Secretary,
British Medical Association,
B.M.A. House, Tavistock Square,
London, W.C.1.

I wish to apply for inclusion in the electoral roll for the election of representatives of part-time consultants and specialists on the Consultants and Specialists Committee. I am a member of the Association and am engaged part-time

in the consultant and specialist practice of.....

Signed.....

Address.....

Date.....

POSTGRADUATE NEWS

A special two weeks' postgraduate course in cardiology will be held at the Liverpool Heart Hospital (Oxford Street, Liverpool) from Monday to Friday, Sept. 16 to 20, and Monday to Friday, Sept. 23 to 27, at 3.30 p.m. and 4.30 p.m. each day. The fee for the course is £1 1s., and applications to join should be sent to the secretary of the hospital. Details will be published in the diary column of the *Supplement* for the appropriate weeks.

A series of postgraduate lectures will be given at the Victoria Hospital, Blackpool, on Thursdays, at 8 p.m., from Sept. 12 to Dec. 12, both dates inclusive. Details will be published in the diary column of the *Supplement* week by week.

Twelve lectures on "The Psychology of Delinquency," part of the University of London Extension Courses, will be given by Dr. Alan Maberly at the Institute for the Scientific Treatment of Delinquency (8, Bourdon Street, Davies Street, London, W.) on Wednesday, at 7 p.m., beginning on Oct. 2. The fee for the course is £1. Full details may be obtained from the general secretary of the institute.

A 14-day general refresher course will be held at Addenbrooke's Hospital, Cambridge, beginning on Monday, Oct. 14. The course is open to medical officers released from H.M. Forces and to national health insurance practitioners, who will receive the same allowance as are allowed to medical officers released from H.M. Forces. Further particulars and forms of entry may be obtained from Dr. A. C. D. Firth, Trinity Hall, Cambridge (Tel.: Cambridge 5047).

WEEKLY POSTGRADUATE DIARY

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre Edinburgh Royal Infirmary, *Thurs.*, 4.30 p.m. Dr. J. D. S. Cameron, Treatment of Amoebiasis.

APPOINTMENTS

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Visiting medical staff appointments. *Director of the Department of Radiology*, L. G. Blair, M.R.C.S., L.R.C.P., D.M.R.E. *Physician to Out-patients*, P. R. Evans, M.D., F.R.C.P. *Director of Department of Physical Medicine*, B. F. Kiernander, M.B., B.S., D.M.R.E. *Physician to Department of Psychological Medicine*, Eleanor M. Creak, M.D., D.P.M. *Dental Surgeon*, T. Craddock Henry, M.R.C.S., L.R.C.P., L.D.S. *Anaesthetists*, D. Aserman, M.D., D.A., B. G. B. Lucas, M.R.C.S., L.R.C.P., D.A.

CLARKE, H. OSMOND, F.R.C.S., Honorary Surgeon and Assistant Director of Orthopaedic and Accident Department, London Hospital.

DAVIDSON, J. ROMANES, M.D., Medical Superintendent, Orphan Homes for Scotland and Colony for Epileptics, Bridge of Weir, Renfrewshire.

HANNESON, HANNES, M.R.C.S., L.R.C.P., Medical Superintendent, Croydon County Borough Sanatorium, North Cheam, Surrey.

Branch and Division Meetings to be Held

ISLE OF WIGHT DIVISION.—At Nurses Home, Royal I.W. County Hospital, Ryde, Sunday, Aug. 25, 2.45 p.m., Combined Clinical and Medico-Political Meeting. Dr. Charles Hill: The Present Position. All practitioners are invited to attend.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BROWN.—On August 10, 1946, at Sutton Coldfield, to Jean, wife of Dr. J. W. Brown, a son.

CAGNEY.—On August 6, 1946, at Margate Maternity Home, to Mary (nd Darlow, M.B., Ch.B.), wife of D. J. Cagney, a son.

MURPHY.—On August 8, 1946, at 2, Trafalgar Avenue, S.E.15, to Doctor Edward Graham and Mary Patricia (née McHugh), a son.

OWSTON.—On August 7, 1946, at the Bromhead Maternity Home, Lincoln, to Ethel Winifred Owston, M.B., Ch.B. (née Sharrard), wife of Philip Owston B.Sc., a daughter—Winifred Joy.

MARRIAGES

GANGULI—BLACKMORE.—On July 14, 1940, at South Kensington, London. Amiya Nath Ganguli, M.B., B.S., D.C.H., to Mme. Violetta Blackmore.

HOWARTH—HOPKINS.—On July 16, 1946, at Llanid, Frank Hugo Howard M.A., M.B., B.Chir., Major, R.A.M.C., to Lucy Gwendoline Irene Hopkin

SPRIGGS—BUTLER.—On July 27, 1946, at St. Paul's, Wednesday, Richard Spriggs, Inspector, Somalia Gendarmerie, to Clarice Butler, M.B., Ch.B.

DEATHS

MORTON.—On August 7, 1946, at Kirkland, Berwick-on-Tweed, Colonel H. S. Murray Morton, C.B.E., D.S.O., R.A.M.C. (retired), dear husband of H. S. Morton.

NISSE.—On August 14, 1946, at 106, Teignmouth Road, Brondesbury, N.W., Bertram Sidney Nisse, M.D., M.R.C.P. Deeply mourned.

RAW.—On August 5, 1946, at Whitby, Yorkshire, Herbert Harland Raw, M.R.C.S., L.R.C.P., aged 68.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 31 1946

TOBACCO AND ULCER DYSPEPSIA*

BY

R. A. JAMIESON, F.R.C.S.

C. F. W. ILLINGWORTH, F.R.C.S.

AND

L. D. W. SCOTT, M.R.C.P.

It is a common practice to advise patients suffering from peptic ulcer to use less tobacco. This advice does not appear to rest on any secure basis, and it therefore seemed useful to find out if any relationship could be demonstrated between smoking habits and the severity of dyspepsia. The following observations form part of a follow-up survey of patients who had suffered acute perforation of a peptic ulcer from one to five years previously (Illingworth *et al.*, 1946). These patients were recalled for interview and were closely and persistently questioned. Our data are therefore as exact as we could make them. Of the 473 patients questioned 451 were men and 22 women. Their ages ranged from 20 to 64 years at the time of the follow-up; patients beyond these age limits were excluded, as their financial state might unduly influence their consumption of tobacco.

Two methods of inquiry were followed. First, we sought a relationship between the consumption of tobacco and the severity of symptoms during the twelvemonth prior to the follow-up. Secondly, we tried to determine if those patients who had reduced their tobacco consumption after perforation had less dyspepsia than those whose smoking was unchanged or increased.

Cigarette Smoking and Severity of Symptoms

Table I shows the relationship between cigarette consumption and the severity of symptoms during the twelvemonth before questioning.

TABLE I.—Number of Patients (aged 20–64 years) by Cigarette Consumption and by Severity of Symptoms

Severity of Symptoms	Cigarette Consumption per Day		
	0–10	11–20	21 or More
None	98 (84.3)	71 (78.3)	19 (25.4)
Mild	68 (71.3)	71 (66.2)	20 (21.5)
Severe	46 (56.4)	55 (52.5)	25 (17.1)

$\chi^2 = 10.82$, P less than 0.05.

The figures in parenthesis are the numbers of cases which would be expected if cigarette smoking were independent of the severity of symptoms. It is seen that more light smokers were symptom-free and more heavy smokers had severe symptoms than would occur if smoking and dyspepsia were unrelated. Statistical analysis shows that these differences would arise by chance less often than once in 20 such experiments, and it can be inferred that there is indeed a relationship between cigarette smoking and the severity of symptoms.

Pipe Smoking and Severity of Symptoms

Table II gives a comparison of the consumption of pipe tobacco and the severity of symptoms in the same way. It will be seen that the differences between the observed values and the expected values are to the advantage of the pipe smokers. Thus fewer non-smokers were symptom-free and more heavy

smokers were symptom-free than would be expected if there were no relationship between pipe smoking and severity of symptoms. The differences are not large, and statistical analysis shows that this result might occur by chance about once in 10 such experiments. It can be inferred that the evidence is suggestive of an association between pipe smoking and mildness of symptoms.

TABLE II.—Number of Patients (aged 20–64 years) by Consumption of Pipe Tobacco and by Severity of Symptoms

Severity of Symptoms	Pipe Tobacco Consumption per Week		
	None	1–2 oz. (28–56 g.)	3 oz. or more (85 g.)
None	159 (165.0)	13 (12.3)	16 (10.7)
Mild	139 (139.5)	11 (10.4)	9 (9.1)
Severe	117 (110.5)	7 (8.3)	2 (7.2)

$\chi^2 = 7.26$; P just exceeds 0.1.

These results are in sharp contrast. Heavy cigarette smoking seems to be associated with severe symptoms, but pipe smoking with mild symptoms. Tobacco, as such, can hardly be responsible for this finding. Several explanations could be offered: it might be that cigarettes are harmful because of the saltpetre they contain; or it might be that cigarette smokers differ in constitution from pipe smokers. We believe, however, that the correct explanation is the simple one that older patients tend to have mild symptoms and as a group comprise few cigarette smokers and many pipe smokers. The evidence on which these statements are made is given below.

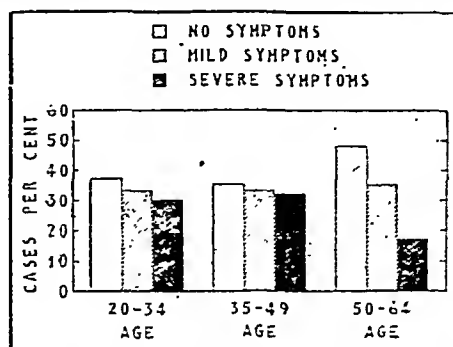


FIG. 1.—Relationship between age and severity of symptoms in patients suffering perforation 1–5 years previously.

TABLE III.—Relationship between Age and Severity of Symptoms in Patients suffering Perforation 1–5 years previously (See Fig. 1)

Severity of Symptoms	Number of Patients		
	Age 20–34 years	Age 35–49 years	Age 50–64 years
None	45 (37.5)	74 (35.1)	69 (48.7)
Mild	39 (33.2)	70 (33.2)	50 (35.1)
Severe	35 (30.2)	66 (32.2)	24 (17.2)
Total	120 (100.0)	210 (100.0)	143 (100.0)

* This investigation was carried out under the auspices of a Committee on Sickness Records set up in Glasgow by the Nuffield Provincial Hospitals Trust.

It is seen from Fig. 1 and Table III that the symptoms in the group aged 50-64 years are milder than in the younger age groups. Thus 48% of the older patients are symptom-free, as against 35% of the younger, while only 17% of the older group have severe symptoms, as against 30% of the younger.

Again, it is seen from Fig. 2 and Table IV that cigarette consumption is less in the group aged 50-64 years than in the

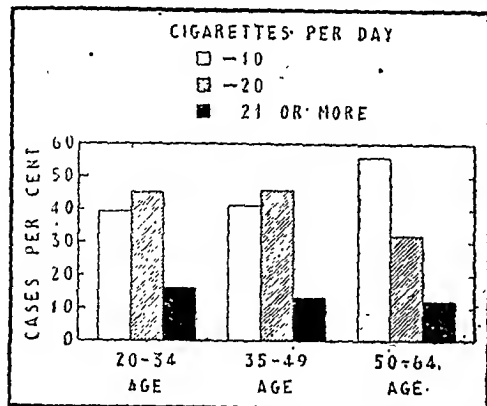


FIG. 2.—Relationship between age and cigarette consumption in patients suffering perforation 1-5 years previously.

TABLE IV.—Relation between Age and Cigarette Consumption in Patients suffering Perforation 1-5 years previously (See Fig. 2)

Cigarettes per Day	Number of Patients		
	Age 20-34 years	Age 35-49 years	Age 50-64 years
-10	47 (39%)	85 (41%)	80 (56%)
-20	54 (45%)	97 (46%)	46 (32%)
21 or more	19 (16%)	28 (13%)	17 (12%)
Total	120 (100%)	210 (100%)	143 (100%)

younger age groups. Thus 56% of the older patients are light smokers, as against 40% of the younger, while only 32% of the older group are moderately heavy smokers, as against 45% of the younger.

TABLE V.—Relationship between Age and Pipe Smoking

Age	No. of Pipe Smokers
34 years	6 (among 120 patients)
39 "	20 " 210 "
44 "	32 " 143 "

Lastly, it is seen from Table V that the oldest group includes many pipe smokers, for no fewer than 32 of our total of 58 pipe smokers belong to the age group 50-64 years.

We conclude, therefore, that the relationship between smoking and dyspepsia is unlikely to be one of cause and effect; and we suggest that cigarette smokers tend to have severe symptoms because they are in the main young,* and that pipe smokers tend to have mild symptoms because they are in the main old.

Change in Smoking Habits and Severity of Dyspepsia

If smoking were harmful to patients with peptic ulceration, then it should be possible to show that better health is enjoyed by those who have reduced their tobacco consumption than by those whose smoking has been unchanged or increased. Tables VI and VII provide the data necessary for cigarette smokers and pipe smokers respectively. In these tables the severity of symptoms refers to the twelvemonth preceding examination, and the change in tobacco consumption refers to the difference between the consumption before perforation and that at the time of examination.

* We have verified that the data of Table I can be regarded as homogeneous if age is allowed for, thus: using the same classification for patients aged 20-49 years, $\chi^2 = 6.48$, P about 0.2; and for patients aged 50-64 years, $\chi^2 = 3.48$, P about 0.5; the combined value of $\chi^2 = 9.96$, P about 0.3.

TABLE VI.—Number of Patients (aged 20-64 years) by Change in Cigarette Consumption and by Severity of Symptoms

Severity of Symptoms	Cigarette Consumption		
	No Change	Increased at Follow-up	Decreased at Follow-up
None	124 (125.8)	17 (12.1)	47 (50.1)
Mild	104 (105.5)	10 (10.4)	45 (43.1)
Severe	85 (81.7)	4 (8.5)	37 (35.8)

$$\chi^2 = 4.88, P \text{ about } 0.3.$$

It is evident from Table VI that there is little difference between the observed numbers of patients and the numbers which would be expected if changes in cigarette consumption and severity of symptoms were unrelated, and statistical analysis indicates that this result might occur by chance once in every three such experiments.

TABLE VII.—Number of Patients (aged 20-64 years) by Change in Consumption of Pipe Tobacco and by Severity of Symptoms

Severity of Symptoms	Consumption of Pipe Tobacco		
	No Change	Increased at Follow-up	Decreased at Follow-up
None	169 (170.2)	7 (5.1)	12 (12.7)
Mild	143 (143.8)	3 (4.4)	13 (10.8)
Severe	116 (114.0)	3 (3.5)	7 (8.5)

$$\chi^2 = 3.44, P \text{ about } 0.5.$$

Table VII shows, in the same way, that there is no evidence that increased pipe smoking is harmful. The difference between the observed and the expected numbers could easily be the result of chance. It must, however, be conceded that the number of pipe smokers in the investigation is too small to carry conviction.

It can be concluded that neither in the case of cigarette smoking nor in the case of pipe smoking is there any evidence that changes in tobacco consumption influence the severity of symptoms.

Comment

We are aware of the possible criticism that our data are biased by self-selection, on the ground that patients with severe dyspepsia may smoke little while those who are symptom-free have nothing to restrain them from smoking as heavily as they wish. Self-selection of this kind (light smokers tending to be selected from among the severely dyspeptic, and heavy smokers from among the symptom-free) might obscure the relationship we set out to investigate.

However, the importance of self-selection is probably not great, for the following reasons:

(1) If self-selection were important, it would be reasonable to expect a non-homogeneous distribution in our tables, whereas it has been shown that the distribution is homogeneous when age is allowed for.

(2) In our tables dealing with alterations in tobacco consumption (Tables VI and VII) it will be seen that smoking habits are relatively stable. Thus the majority of patients either smoke as much as before perforation or remain non-smokers. Of the few who have indeed altered their smoking, there is no evidence that it is those with severe dyspepsia who are smoking less or those without dyspepsia who are smoking more.

Summary

A group of 473 patients who had suffered acute perforation of a peptic ulcer were recalled for examination and were closely questioned about their smoking habits.

Heavy cigarette smoking was associated with severe symptoms, but pipe smoking with mild symptoms. It is suggested that the relationship between smoking and severity of symptoms is indirect and depends upon age: symptoms tend to be severe in the young and mild in the old; and cigarette smokers are in the main young, while pipe smokers are in the main old.

There was no evidence that increases or decreases in tobacco consumption influenced the severity of symptoms.

REFERENCE

Illingworth, C. F. W., Scott, L. D. W., and Jamieson, R. A. (1946). *British Medical Journal*, 1, 787.

ELECTRO-CONVULSION THERAPY IN 301 PATIENTS IN A GENERAL HOSPITAL*

WITH SPECIAL REFERENCE TO SELECTION OF CASES
AND RESPONSE TO TREATMENT

BY

DALTON E. SANDS, M.R.C.P.Ed., D.P.M.

Deputy Medical Superintendent, Sutton Emergency Hospital

In this country psychiatric patients have rarely been treated in general hospitals under exactly the same conditions as other medical or surgical cases. Some indication of the possibilities of this branch of psychiatry has been given already (Sands, 1943), and the results bear comparison with any in general medical wards (James, 1945). One of the chief methods of physical treatment employed—convulsion therapy—has been the subject of numerous reports during the last nine years. Most of these have been from the mental hospital point of view—concerned mainly with the results, risks, and technical modifications appropriate to the more severe states of psychotic depression. The majority of depressions in general hospital psychiatric wards are of a different pattern (see later), requiring an altered plan of treatment. Before treatment they need special attention to differential diagnosis for the elimination of all those conditions whose superficial resemblance enables them to be covered by the term “depression.” Excepting a few—e.g., Stockings, 1944; Frank, 1945—most publications discuss the effects of convulsion therapy with little regard for the wide range of conditions involved. Since only a section of the total range of depressive states can be specifically treated by convulsion therapy, errors are not infrequent, with aggravation of illness and waste of effort. The issue is further confused by the profuse descriptive terminology linked with varieties of depression. Labels such as melancholia, reactive or endogenous depression, psychotic, psychoneurotic, agitated, involutional, psychopathic, anxiety depression, etc., are some of those encountered.

Concerning the question of diagnosis, textbooks necessarily stress the characteristic qualities of each reaction type, and unwittingly one comes to expect the illness in “pure culture” as it were—e.g., either schizophrenic or depressed. In actuality, the patient usually presents no full-fledged symptom-complex running true to a particular reaction type. Like the human society of which he is an individual member he shows but one phase in the evolution of a process, even if a pathological one. In the early stages of the process several abnormal personality trends may be apparent, and in different situations and times differing impressions will be gained of what may ultimately prove to be the main diagnosis. Later, as the evolution of the illness proceeds, condensation of the clinical picture tends to occur, narrowing down to one rather obvious reaction type. Perusal of the early records of a chronic case will often demonstrate this process of diagnostic “purification,” the complicated and uncertain diagnosis of recent illness moving, sometimes regressing, towards the single pathological type. In all cases incapable of early recovery this process is going on in greater or lesser degree. It is essential to recognize it in order to understand many of the clinical effects of convulsion therapy in those early cases of a few weeks’ or months’ duration which are the special concern of this paper.

Depression in a mental hospital patient is generally characterized by radical personality change and considerable inaccessibility. The diagnostic field is covered, to a large extent, by manic-depressive, recurrent, and involutional types, depressed G.P.s, pre-senile and arteriosclerotic psychoses, and occasionally early schizophrenias. By contrast, the subjects of depression seen in the general hospital or out-patient department in an earlier or milder phase of the same pathological process retain more of their original personality and are more accessible; questions of certification infrequently arise, and socially all are treated on the same footing as medical or surgical patients. Table I shows the different trend in

diagnosis of the general hospital depressive states. Less than 25% can be diagnosed as “manic-depressive, involutional, or recurrent.” The majority either are simple, endogenous, or reactive states or are associated with neurotic or psychopathic complications. A few are pre-schizophrenic. Generally their personalities remain well preserved and questions of certification hardly arise. The response of these patients to convulsion therapy, while often as satisfactory as in the more advanced psychotic depression, soon showed the need for special care and some reorientation in diagnosis and case selection. In 1934 Lewis, writing on the less advanced forms of depressive illness at the Maudsley Hospital, said, “Pure syndromes and reaction types are less and less often found as more careful examination of the patient and his illness is made.” One of the consequences of such difficulties is that many of the cases admitted to military mental hospitals as depressive psychoses are often not psychotic but acute reactive neurotic disturbances (Stockings, 1944). Conversely, in a neurosis centre it is not uncommon to find cases admitted as neurotic proving to be less severe forms of psychotic depression, even allowing for those termed neurotic for administrative reasons. A similar situation prevails with civilians.

However, such apparent contradictions and multiple patterns of reaction are natural enough, remembering the possibilities of pathological and non-pathological variations in the personality; but from the therapeutic aspect it is imperative to decide which is the dominant pattern or personality deviation responsible for the maintenance of the patient’s illness and which are of secondary significance. The mere intensity of symptoms is no reliable guide. In deciding, we need, more than ever, all relevant knowledge of the personality prior to breakdown, and of the transition from normal to pathological responses. The practical importance of all this is seen when a few convulsions clarify the uncertain diagnosis rather too drastically. Instead of the usual remission there may be further depression, confusion, anxious or hysterical symptoms, incontinence, or no demonstrable effect at all—not because the method is useless, but through the psychiatrist failing to perceive the mental pathology of his patient. The truth is that in this direction treatment has outstripped diagnosis and is likely to be more accurate than the clinician in doubtful cases.

Owing to the frequent finding of neurosis and depression in the same patient and the intractable nature of the chronic neurotic, attempts have been made to treat the neuroses with electric convulsion therapy (E.C.T.). The literature on the subject is conflicting, and most of the results are by way of an appendix to larger series of figures for the psychoses. Moriarty and Weil (1943) quote 14 authors for 130 cases of all forms of neurosis, of whom 28% were classified recovered, 61% improved, and 11% not improved. They concluded that these results were encouraging, and stated that 10 out of 20 of their own cases remitted with the additional assistance of psychotherapy. They were of the opinion that the better appetite, sleep, and affective gain wrought by E.C.T. paved the way for subsequent psychotherapy. In 1945 the same authors quoted 42 unclassified neurotics treated by E.C.T. and psychotherapy; of these 38% remitted, 55% improved, and 7% were unchanged. Pacella and Barrera (1943) thought that metrazol made neurotic patients worse, especially the obsessional compulsive group, and emphasized the need for psychotherapy in patients given E.C.T. Osgood (1944) draws attention to the difference in opinion about the value of E.C.T. in neuroses, while Bennett (1943) reported on 11 E.C.T.-treated cases, all showing some improvement. Kalinowsky *et al.* (1944) believe that the usefulness of this treatment in psychoneurotic conditions is not yet established. Smith *et al.* (1943) regard the treatment as of doubtful value. Frank (1945) found the post-convulsive automatism of psychoneurotics and psychopaths to be dramatic, to be covered by amnesia, and to be an expression of subconscious memory material. He observed that this “catharsis” did not seem to help. The outstanding impressions from these reports are the poverty of the results compared with those usual in psychotic depression, and the stress laid on the use of psychotherapy in the few favourable reports—a contrast to the perfunctory allusions to psychotherapy in discussing E.C.T. in psychotic depression.

* Patients were accommodated in one ward, sometimes two, of the general hospital block, separate from the military neurosis unit.

From the many varieties of mental disorder encountered at a neurosis centre I have selected 301 cases treated by myself or my colleague Dr. Shorvon with convulsion therapy, composed of neuroses (80), minor psychotic depression (134), and some having elements of both (87).

TABLE I.—Incidence

	%	No.
Minor psychotic depression:		
Simple endogenous	30.8	68
Reactive	7.2	16
Recurrent	8.1	18
Manic-depressive	5.0	11
Involutional	9.6	21
Depression with neurosis:		
Anxiety	9.6	21
Hysteria	13.1	29
Obsessional	9.0	20
Depression with depersonalization	3.1	7
Depression with psychopathic personality	4.5	10
Total depressions		221
Neuroses:		
Anxiety	35.0	28
Hysteria	37.5	30
Obsessional	27.5	22
Total (all cases)		301

The chief features of this sample of patients are: (a) They are representative of the largest section of psychiatric practice. For every major psychosis there are many of the above minor types. (b) Neurotic symptoms occurred to a greater or lesser degree in half the total number. (c) Genuine manic-depressive types were uncommon, but short-term emotional instability was relatively frequent. (d) Depression was often associated with psychosomatic, depersonalization, or psychopathic symptoms. Though listed as a leading feature of only 7 patients, depersonalization was a complication to some degree in at least 21 others. (e) The response to E.C.T. tends to be more variable than in the severer psychotic states seen in mental hospitals owing to the association of other reaction types with depression. The main clinical groups react to convulsions in an individual way that is often of assistance in diagnosis—more so than earlier reports led one to expect.

Primary Neurotic States

1. Obsessional Neurosis.—Since the use of convulsion therapy the treatment and prognosis of this group depend more than ever on deciding whether the depressive aspect of such patients represents the primary factor in a psychotic depression or a secondary one in a severe obsessional neurosis. A full psychiatric examination will settle the matter in many instances, but psychiatrists will be familiar with the intermediate type in which the relative proportion of obsessional neurosis and depression cannot be definitely assessed. The mere intensity of such obsessional or depressive symptomatology as the patient displays is no reliable guide, for patients tend to insist on the primary nature of the obsession (Lewis, 1934). Their misleading insistence has led to unjustifiable claims for the successful treatment of obsessional neurosis by E.C.T. The following example from a case in this series originally diagnosed as obsessional neurosis illustrates the difficulty. The patient presented strong obsessional symptoms of 16 years' duration. Her father and one brother had obsessional personalities. Her condition was such that four experienced psychiatrists considered her suitable for leucotomy and unlikely to respond to E.C.T. None the less, she improved so much on a course of convulsions that after receiving six she was discharged and shortly returned to work. It may be objected that a more carefully taken history would have elicited a point in the illness where depression set in, but it could not be found even where a predisposition to do so existed. She partly relapsed after a year. Table II shows the results of treatment in two groups of neurotic and psychotic patients, both having strong obsessional compulsive thoughts.

The disparity in results is obvious. Only 3 obsessional neurotics showed much improvement, compared with 17 out of 20 cases of obsessional depression recovered or much improved. Besides depression, four of the obsessional neurosis cases were complicated by anxiety and two by schizophrenic

features. The follow-up finding that 5 out of 13 cases of obsessional neurosis could be considered recovered after twelve months is in agreement with those who believe that this form of neurosis has a less gloomy prognosis than is often thought to be the case. The effect of convulsion therapy on obsessional

TABLE II

	Obsessional Neurosis						Depression with Obsession					
	R	MI	I	NC	CR	Total	R	MI	I	NC	CR	Total
At discharge ..	0	3	10	9	0	22	11	6	2	1	0	20
After 6 months ..	4	2	6	1	0	13	6	3	1	0	2	12
After 12 months ..	5	3	3	1	1	13	4	4	0	0	0	8

R = Recovered. MI = Much improved. I = Improved. NC = No change. CR = Complete relapse.

neurosis was usually negligible. After 6 to 8 convulsion amnesia may lead to a temporary "sham" recovery. Some times a symptomatic improvement occurred for 12 to 24 hours after a fit. This temporary breaking up of the obsessional pattern occasionally paved the way for progress in psychotherapy—the combined treatment resulting in a better adaptation. Apart from early complaint of memory defect, the obsessional neurotic was singularly free from the mental complications seen in other types, to be discussed shortly.

TABLE III

	Anxiety Neurosis						Depression with Anxiety					
	R	MI	I	NC	CR	Total	R	MI	I	NC	CR	Total
At discharge ..	1	5	11	11	0	28	10	6	4	1	0	21
After 6 months ..	2	8	4	5	2	21	7	3	4	3	2	19
After 12 months ..	2	3	5	3	5	18	10	3	2	1	1	17

2. Anxiety Neurosis.—Of the 28 cases of anxiety neurosis listed in Table III 19 were associated with varying degrees of depression, 7 with obsessional symptoms, 6 with hysteria and 3 with depersonalization. The distinguishing features of their reaction to E.C.T. are: (a) more apprehension before treatment than any other group, treatment often becoming a focal point in their phobias; (b) exaggeration of somatic symptoms appears for a few hours or days. Aches and pains of a vague psychogenic quality occur in various parts of the body, and there is much unattached fear. These developments indicate that treatment should be stopped if the patient has not already refused to continue. There is every likelihood of doing more harm than good in attempting to treat anxiety states with E.C.T., and the contrasted results of Table III are obvious enough.

TABLE IV

	Hysterical Neuroses						Depression with Hysteria					
	R	MI	I	NC	CR	Total	R	MI	I	NC	CR	Total
At discharge ..	2	3	15	10	0	30	8	13	5	3	0	29
After 6 months ..	3	2	6	8	2	21	3	6	10	2	2	23
After 12 months ..	3	2	6	9	0	20	5	8	4	2	5	24

3. Hysteria.—In the 30 patients of this group conversion symptoms were sometimes present, but were not of a fully developed or fixed type. The majority showed some superficial depression, and the prognosis in general was poor. There were two forms of reaction to E.C.T.—a dramatic but transient improvement, and, more often, a flare-up of psychological and physical symptoms. Any new physical discomfort provoked by the treatment tends to be incorporated into the hysterical pattern. For example, slight nausea will tie them to a bowl for an hour or more in expectation of vomiting if allowed to do so, though in all other patients the liability to vomiting is rare in E.C.T. Similarly, old-standing hysterical pains such as backache become greatly exaggerated. It is true to say that such improvement as occurred in these hysterical neurotics was due to other treatment or could be ascribed to wrong diagnosis.

So far as primarily neurotic illness is concerned one can only conclude that convulsion treatment is best avoided. Neurotic patients complain of memory defect much earlier

id more insistently than do psychotics. In anxious or hysterical conditions the patient may be made temporarily worse. The effects of E.C.T. are not comparable with those of psychotherapy in neurosis, where Curran (1937) has reported definite improvement in from 60 to 70% of patients. Where complexity of psychotic and neurotic traits defies ordinary means of diagnosis it may sometimes be justifiable to employ a few well-spaced convulsions to give further information for the purpose of taking a more definite line in treatment.

Depression with Neurotic Complications

In this section the same personality deviations are considered—i.e., depression, hysteria, anxiety, and obsession states—but their relative importance in the aetiology is reversed. In these patients the principal reaction type is mild or moderately severe psychotic depression, while neurotic symptoms are of secondary aetiological importance. The latter were definitely present in one-third of the 221 cases. To a degree which depends on their development in the previous personality, these neurotic symptoms modify prognosis and treatment in their own characteristic way. When they are the outcome of comparatively minor neurotic traits in an otherwise well-adjusted personality they disappear as the depression is benefited by treatment. Alternatively, the more closely neurotic utilities in the previous mental make-up approach the status of chronic symptoms the less satisfactory will be the final effect of E.C.T. on an intercurrent psychotic depression.

Accurate information about the previous personality of a patient suffering from depression and neurotic symptoms will enable one to forecast the extent of recovery after treatment. If the previous personality has been well adjusted, having no more than mild neurotic trends, then the depression and neurotic symptoms, however florid, are likely to respond to treatment. But if the personality has been definitely handicapped for a long time by neurotic features; then, though the depression may remit, the neurotic symptoms will subside only to persist at their former level in the personality. Although an infinite variation prevails in the ratio of psychotic to neurotic activity, we must endeavour to decide which is the dominant pathological deviation. Failure in this respect may leave the illness not merely unchanged but worse after E.C.T., as already noted.

Obsessional symptoms are the only neurotic complication having any favourable effect on the outcome of a psychotic type of depression. The immediate results are as satisfactory as in uncomplicated depression; patients were not prone to the mental complications seen in other neuroses, and the relapse rate was the lowest for any of the larger clinical groups. These last two factors are no doubt a corollary to the rigidity usually imposed on the personality by obsessional qualities, and recall the influence of the obsessional mechanism in preserving the personality of the schizophrenic patient (Stengel, 1945). Subjects with depression complicated by neurosis complain of memory defect earlier and more often than purely psychotic types. Obsessional depressive patients notice this forgetfulness more than any other group treated by E.C.T.

Where recent anxiety symptoms complicate depression they do not materially affect the result. Such patients are more apprehensive of E.C.T. and may need premedication. Sodium amytal 3 to 6 gr. (0.2 to 0.4 g.) half an hour before treatment, or 3 ml. of 10% sodium amytal intravenously immediately beforehand, will not prevent the fit, though a small voltage increase is sometimes required. This modification is also useful for temporary post-convulsion restlessness or excitement.

The presence of hysterical symptoms in a case of depression means a more unstable constitution. In 29 patients of this type 9 had partly or completely relapsed in six months, and 12 in a year. Immediate results compared unfavourably with other depressive states with or without neurosis, so that this was the only group in which recovered cases were exceeded by any less satisfactory category. Even so, the contrast with the primary hysterics in results is very striking. This contrast is most obvious in Tables II and III, and one is tempted to infer that where a case considered to be primarily neurotic has shown considerable gain with E.C.T. the diagnosis is probably wrong.

The depressions with secondary neurotic symptoms, having a combined "recovered-much improved" rate of 76.5%, compared well with 77% for all other depressions shown in Table V.

TABLE V.—Depressions (Endogenous, Reactive, Involutional, Recurrent, Manic-depressive, and Psychopathic)

	R	MI	I	NC	CR	Total
On discharge ..	59 (54%)	25 (23%)	20 (18%)	5 (5%)	0 (0%)	109
After 6 months ..	41 (45%)	20 (22%)	20 (22%)	1 (1%)	9 (10%)	91
After 12 months ..	44 (60%)	12 (16%)	9 (12%)	4 (6%)	4 (6%)	73

The results in these mild or moderately severe psychotic cases differ little from other published reports. Their condition, on discharge, of 77% recovered and much improved, 18% improved, and 5% unchanged, is in keeping with the 47 statistical reports collected by Ziskind *et al.* (1945), in which 2,777 cases were divided into 69% recovered and much improved, 18% improved, and 13% unchanged. One patient committed suicide three months after discharge.

Relapses

Since relapse is sometimes considered to be frequent, its incidence was fully examined, and is shown in Table VI.

TABLE VI.—Relapses (6 months to 4 years)

	No. of Patients	Partial Relapse	Complete Relapse	Total Relapsed
Depression:				
Endogenous ..	68	7 (10.3%)	8 (11.7%)	15 (22%)
Reactive ..	16	0 (0%)	4 (25%)	4 (25%)
Recurrent ..	13	9 (50%)	3 (16.6%)	12 (66%)
Involutional ..	21	2 (9.5%)	4 (19%)	6 (28.5%)
Manic-depressive ..	11	1 (9%)	1 (9%)	2 (18%)
Psychopathic personality ..	10	0 (0%)	0 (0%)	0 (0%)
Anxiety ..	21	4 (19%)	3 (14.3%)	7 (33.3%)
Hysteria ..	29	7 (24%)	5 (17.2%)	12 (41.3%)
Obsession ..	20	2 (10%)	1 (5%)	3 (15%)
Depersonalization ..	7	1 (14.3%)	2 (28.5%)	3 (42.8%)
Total ..	221	33 (14.9%)	31 (14%)	64 (28.9%)

Of all relapses, half occurred within the first 6 months, approximately a quarter more within a year, and the remaining quarter within four years. If out-patient observation is maintained for six weeks after discharge many incipient relapses can be curtailed by further treatment. The 25% relapse rate for reactive depression is misleading if one does not allow for the fact that the personal problems of all the patients represented in the percentage could not be appreciably alleviated, and demanded an exceptionally high degree of adjustment. The unfavourable effect of neurotic features on the incidence of relapse has been noted elsewhere, obsessional depressions excepted. The high relapse rate of the recurrent group offers no hope of convulsion treatment limiting their constitutional liability to subsequent attacks. The case with which these recurrent cases become depressed is usually paralleled by their rapid response to a few fits. Remembering that all these patients were subject to frequent bombing and other wartime stresses, the general relapse rate is probably not excessive. In the largest single group of endogenous depression only one out of every eleven relapsed completely.

Indifferent Results

To assist in case selection 52 depressed patients discharged "improved" or with "no change" were examined for factors which might have contributed to these unsatisfactory results.

(1) *Treatment was insufficient* in 14 cases on account of physical handicaps, refusal to complete the course, or the presence of strong delusional symptoms in the depression. In the latter cases, as Fitzgerald (1943) has pointed out, longer courses of fits are necessary than in simple depressions. Of the 5 cases of depression which made no improvement at all (see Table V) 4 had insufficient treatment owing to premature discharge. Of the 23 patients listed as "improved" 5 failed to complete their treatment, while no such failures were seen in the "recovered" and "much improved" categories.

(2) In 20 depressed patients severe chronic neurotic symptoms with hypochondriasis and depersonalization prevented full recovery. Such symptoms persisted even though depression was improved.

(3) *Psychopathic personalities* adversely affected progress in at least 5 cases.

(4) In 4 cases an early depression proved to be a temporary mask for *schizophrenia*.

(5) In 7 cases *persisting reactive stresses* remained undisclosed until several fits had been given. Such patients would improve for 12 to 24 hours, then relapse. This type of response should always suggest further search for reactive factors, such as homosexuality, marital infidelity, etc.

(6) *Over-treatment*.—In one of my cases two fits were enough to translate depression into mania. In a general hospital psychiatric ward such a complication is an impossible problem which may result in transfer to an observation ward, unless the attack is mild enough to be well controlled by a course of continuous sleep. The first sign of such a change is failure to sleep, so that in cyclothymic patients it is well worth while maintaining a sleep chart each night to give the first warning of the manic swing.

In the whole series other factors prejudicial to full recovery were:

(7) *Subshock*.—In 66 depressed cases which had one or more subshocks in their course the recovery rate on discharge was 21% less than that for the whole series. Although it is generally considered advisable to use the minimum current which will induce a fit, it is probably better to give 10 to 15 volts in excess of the minimum rather than strive for a margin so narrow that there is substantial liability to subshock.

(8) *Age*.—In 220 depressed cases there was no significant variation for age until after 60, when the expectation of recovery or considerable improvement with E.C.T. is half the corresponding rate for early or middle life.

TABLE VII.—Results According to Age Groups

Age (years):	Under 20	21-30	31-40	41-50	51-60	61-70
A. Recovered and much improved	10	47	42	35	21	4
B. Improved and no change	3	19	15	12	9	3
Ratio of A to B	3.3	2.5	2.8	2.9	2.3	1.3

Depersonalization

This fascinating symptom, of which so little is really known, was prominent in 20 cases, and occurred in a lesser degree in many others. So long as it occurs in an essentially depressive setting, it will clear as the depression responds to E.C.T., and in this respect depersonalization behaves like any of the classical forms of neurosis. Where severe it has an unfortunate habit of clouding the depression. The patients tend to make it their chief complaint, and the real diagnosis is obscured. Combined "recovered" and "much improved" percentage depressed depersonalization cases is not significantly less than the corresponding figures for endogenous depression.

There remain a few points on which, as a result of further experience, it is possible to write more conclusively.

The Correct Number of Fits

There can be no absolute rule about this, since the number has to be adapted according to the type of illness and its severity in each patient. Because individual requirements may vary from 2 to 15 fits at the rate of one, two, or three a week, it is inappropriate to think in terms of set courses after the practice of injections of arsenobenzol for syphilis. As a rule, schizophrenic cases require from 10 to 15 fits at the rate of three per week, dropping to two after the first two weeks. For most depressions a frequency of two fits a week is sufficient. When delusional symptoms are prominent (cf. Fitzgerald, 1943) a total of 8 to 12 fits is usually needed, while in depressions not so complicated the number may range from 2 to 8. The latter figure is suitable for some chronic obsessional states. In many cases it is better to give fits more frequently at first and space them out later, according to progress. The above numbers are based on the practice of giving one or two further fits after remission of symptoms has occurred, in order to minimize possibilities of relapse. In general, the more often fits are given per week the greater the incidence of confusional states, of forgetfulness, and of delta activity in the E.E.G. pattern. The number cannot be properly regulated and the above complications minimized without personal interviews after every one or two fits, because

individual needs cannot be foreseen more than one or two treatments ahead. The patient should be interviewed on day when no treatment is given, otherwise apprehension and mild confusion after the fit render co-operation doubtful.

Fractures; Pregnancy; Late Fits

The symptomless character of most of the compression spine fractures occurring after E.C.T., the absence of subsequent disability after over 10 years, and the finding of similar fractures in 10% of epileptics (Cook and Sands, 1941) have allayed much of the anxiety felt in the matter. Since it is obviously desirable to minimize the chances of these fractures, the effect of extension over a rolled blanket placed under the mid-thoracic spine while counter-pressure is exerted on shoulders and hips, as recommended by Furst (1940), was tried on 100 female patients. Fracture boards were placed under the mattress. The incidence of fractures was reduced to 4%, compared with the 14.7% noted in 1941 (Cook and Sands), when no restraint was used in a group of 143 cases, half male and half female. With the spine fully extended only minor degrees of compression were found in the 100 patients so damaged. All patients were radiographed before and after treatment. In some reports pain in the back has been the criterion for the use of x rays and the basis for subsequent figures of fracture incidence. This is misleading since the pain is sometimes of purely muscular origin in many spinal fractures of the simple compression variety due to fits are not accompanied by pain. Local tenderness over the site of fracture, with or without pain referred round the lower chest towards the epigastrium, aggravated by deep breathing and coughing, is the most trustworthy clinical sign. In the present series of 301 patients an impacted fracture of the humeral neck was the only other form of bony complication.

One patient was discovered to be three months pregnant during a course of 5 convulsive shocks. Another was known to be pregnant until her course of 8 convulsions had been concluded. Both pregnancies subsequently terminated in full-time healthy children.

No late fits suggestive of induction of an epileptic habit are known to have occurred in this group, in spite of a fairly comprehensive follow-up, nor was there any evidence of lowered threshold for the induction of fits in the later stages of a course. The E.E.G. abnormalities in a group of 100 patients examined by Dr. Denis Hill did not include the characteristic wave and spike of petit mal.

Commentary

One of the most interesting points about convulsion therapy is the consistency of its effects amongst the commoner mental illnesses, with the resulting illumination of diagnosis in doubtful cases. First, as between neurotic and psychotic states: although symptoms of both may often be found together, early cases, if convulsion therapy is given, it differentiates between them and emphasizes the gulf between their appropriate treatment. While the psychotic depression cases, with the withdrawal from reality and diminished awareness of the environment, thrive on the massive psychological and physical stimulus of the fit, the neurotics, with a pathological awareness of self and unstable and exaggerated emotional response to environmental change, are aggravated by such trauma. The results here and in other papers support this view. In the psychotic group itself (organic cases excluded) the efficiency of the treatment shows considerable variation, depending largely on whether affective or thought disorders predominate. Though results in the former are generally good, the latter do not show the same immediate specific response. Those conditions regarded as primarily disorders of thought—namely, the schizophrenias, paraphrenias, and paranoidias—have their own mode of reaction. There is usually no detectable response until 4 to 6 fits have been given; then some symptomatic improvement occurs coincident with forgetfulness of recent events, with mild confusion, and with dysrhythmia in the E.E.G. If the treatment is continued further, as advocated by some authorities, then after 10 to 15 fits appears the plateau type of over-politeness and emotional shallowness described by Frank (1945). In fact, a temporary sharp

improvement is maintained so long as some degree of disintegration of pattern of thought can be effected by the fits. Individual cases have often done well, particularly where a lively affective reaction accompanies schizophrenic thinking. Even so, as Sargant and Slater (1944) have pointed out, relief of the mood disorder may occur, leaving a pathological thought content uninfluenced. It is hardly surprising, therefore, that figures for large series of such patients are not to be compared with results in depressions, and in the long run are not better than those in controls. By contrast, in psychotic depression the patient may have recovered, or be well on the way to doing so, before discoverable abnormality of memory or E.E.G. can be found. Old people often respond well to E.C.T., although about the age of 60 or later it is not uncommonly found that, after dispersal of depression, senile changes remain in the form of narrowness and poverty of ideation, tendency to perseveration, and the use of a very limited range of words. In mania the effect is less dramatic, yet E.C.T. appears to exert a form of sedation on the manic symptoms, often most useful at the height of the illness. Neuroses, depressions with neurotic features, and reactive depressions have all been described as possessing characteristic reactions to convulsion therapy. It is certain that the careful observation of these reactions under in-patient conditions can give much useful information about the underlying psychopathology, duration of treatment, and prognosis—the very part of the treatment requiring a specialist's attention.

TABLE VIII.—Case Selection for E.C.T.

Favourable	Doubtful	Contraindicated
Psychotic depression with retardation, agitation, delusions, and neurotic or psychopathic complications	Schizophrenia	Anxiety neurosis
Depressed phase of manic-depressive psychosis	Paraphrenia	Hysteria
Recurrent depression	Paranoia	Neurasthenia
Involutional depression	Obsessional neurosis	Organic psychoses with syphilis or with arteriosclerosis
Reactive depression where reactive stress has faded	Idiopathic epilepsy	Pre-senile dementia
	Post-encephalitic	Post-traumatic syndromes
	Parkinsonism	Huntington's chorea
	with depression	

Regarding the whole problem of mode of action, it is difficult to escape the conclusion that a varying degree of personality disintegration and regression is required, sufficient to disorganize the recently acquired habits of feeling and thinking. The personality then employs long-established reflexes and patterns of behaviour to readjust at a slightly lower level, but not necessarily to stay there. Concerning the far more drastic procedure of leucotomy, Golla (1943) recalled the work of Sherrington and Graham Brown demonstrating the remarkable recuperative powers of even the severely damaged nervous system. Similarly, in the few weeks immediately following convulsion therapy this inherent recovery process is paralleled by a gradual disappearance of forgetfulness and of such dysrhythmia as was engendered in the E.E.G. Such a process could hardly be expected to flourish in the presence of a pre-existing organic cerebral pathology; and in fact, if a case of depression secondary to arteriosclerosis, syphilis, or pre-senile dementia is inadvertently given E.C.T. the usual recuperation is impeded or absent. In such cases not only may a permanent state of regression be inflicted but the organic deterioration may be accelerated. Incontinence of urine sometimes gives an early warning of this error.

The propriety of using psychotherapy with E.C.T. in depression has often been discussed (Moriarty and Weil, 1943; Osgood, 1944). It depends on the type of depression and how far it has progressed. Moderate psychotic depressions, such as can be treated under general hospital conditions or as voluntary cases, are frequently blended with neurotic complications. If treated by E.C.T. the psychotic depression clears and the relief may enable the neurotic element to make a spontaneous adjustment. If it does not, then psychotherapy is indicated, being often assisted by the previous dispersal of the depressive element of the illness. Selinski (1943) and Kalinowsky *et al.* (1944) have commented on the better accessibility to psychotherapy given to some patients by E.C.T. In this respect, severe certified depressions are no problem, since, obviously, strict psychotherapeutic techniques cannot be applied to an inaccessible patient, while in depression secondary to a

primary neurotic disorder E.C.T. is certainly to be avoided in favour of psychotherapy. These methods are complementary, and inadequate treatment is inevitable if all therapeutic effort is canalized in one or other direction for every case.

A final point should be made about the relation of E.C.T. and other physical treatment to terminology. There is a tendency to associate the term "psychotic" too exclusively with mental hospital types. It is sometimes overlooked that there are at least as many cases of psychotic-type depression outside such hospitals whose treatment is equally urgent—and more so, since they are usually without proper observation and exposed to suicidal risks. In some a well-integrated personality can survive the stress of a mild psychotic depression, while in others the relatively sound integration may conceal severe symptoms even from those in closest contact, so that the final tragedy surprises all concerned. These patients respond well to E.C.T., and give results comparable to any in general medicine; none the less, these findings should deter the inexperienced but enthusiastic therapist from "pressing the button" without a satisfactory preliminary investigation of those appearing to be depressed, otherwise definite harm may be done to the patient. Repeated careful psychiatric examination before, during, and after treatment is the most important aspect of convulsion therapy—more so than the careful management of the actual fits.

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TECHNIQUE FOR THE USE OF d-TUBOCURARINE CHLORIDE WITH BALANCED ANAESTHESIA

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The novelty of curare has passed, and the site of action, physiology, and pharmacology of the drug have been the subjects of many recent publications (see Gray and Halton, 1946). It is thought that a description of the methods employed in the administration of d-tubocurarine chloride (B. W. & Co.) in some 1,500 cases might be opportune. For the sake of brevity in the ensuing discussion d-tubocurarine chloride (B. W. & Co.) will be referred to as curarine.

Apparatus

Solutions of curarine and the quick-acting intravenous barbiturates are non-miscible. It is necessary here to correct a misunderstanding that may have arisen through a previous statement that curarine dissolves in excess pentothal solution. This is perfectly correct when applied to the pure crystalline powder. However, the solution now supplied by the makers

contains a harmless stabilizing agent which renders irreversible the precipitate formed with the barbiturates. To overcome this precipitation and to ensure that the intravenous needle will remain clear, in position, and under control during the operation three pieces of apparatus are suggested for use in the techniques described below:

1. A simple on-and-off tap (Fig. 1) with Record mountings. (Obtainable from M. & I. E. & Co., Ltd., London.)

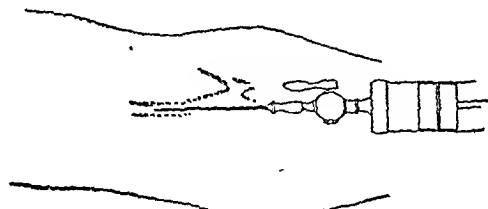


FIG. 1

2. A three-way tap mounted on a plate which can be strapped to the arm (Fig. 2). The tap itself may be detached from the plate for purposes of sterilization. One inlet is connected to an intravenous drip of saline, plasma, or blood. A Record syringe containing the solution to be injected is connected to the other inlet.

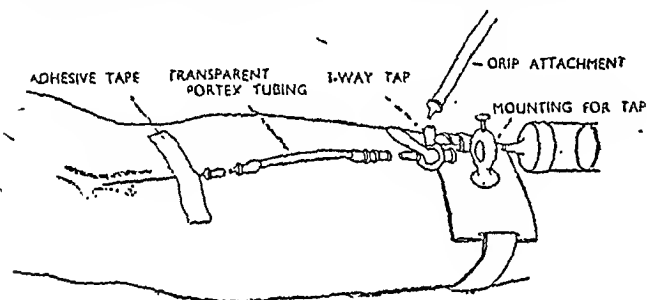


FIG. 2

The outlet is attached to two inches of fine-bore, transparent Portex tubing, which in turn leads to the needle (obtainable from Alexander Fowler & Co., Ltd., Liverpool).

3. The remote-control tap is described elsewhere by Gray and Osborne (1946)—a rather more elaborate method but having the advantage of ensuring perfect control with the arm in any position.

Premedication

Very light premedication is advocated. In these days of venous induction of anaesthesia there is no necessity for heavy sedation, and the respiratory depression it produces is harmful. For adults morphine gr. 1/6 (11 mg.) with atropine gr. 1/150–1/100 (0.4–0.65 mg.) has been the routine, but this is modified where age or the condition of the patient so demands. It has been found useful to substitute dilaudid gr. 1/32 (2 mg.) or pethidine 50–100 mg. when there is a history of excessive vomiting after previous anaesthesia. The time of administration of the pre-operative drugs is all-important: they should be given 1–1½ hours before the operation starts.

Technique of Administration for Short Procedures

This anaesthesia is suitable for all endoscopic investigations, but particularly for bronchoscopy and oesophagoscopy by virtue of the complete relaxation of the vocal cords and the pharyngeal sphincter. It is also of value in the re-suture of burst abdominal wounds. A single injection of 15 mg. of curarine is followed by a suitable dose of barbiturate, both given intravenously. In all cases under review 0.5 g. of pentothal or 0.75 g. of "kemithal" (Macintosh and Scott, 1946; Gordon and Gibbons, 1946; Halton, 1946) have been used initially.

The simple tap described above (Fig. 1) is connected to a needle size 15. A tourniquet is applied round the selected arm and venepuncture performed with the tap in the "off" position. Entry into the vein is confirmed by a reflux of blood when the tap is turned on. The tourniquet is released and three successive injections made: 1.5 ml. of curarine solution, followed by 2–3 ml. of sterile normal saline to wash through

the tap and the needle, and finally the barbiturate solution which should be given as quickly as the bore of the needle the syringe permit, the whole manoeuvre to be carried out clearly and speedily.

Satisfactory anaesthesia, indicated by complete relaxation of the jaw, speedily ensues. The pulse rate and respiration be under constant observation. The respiration ceases for 30 seconds to one minute and a half, but is usually restored before any degree of cyanosis or harmful anoxia can develop. Oxygen must always be administered. This is most easily through the side-tube on a bronchoscope, through a cat introduced into the trachea in the case of oesophagoscopy in other cases through a pharyngeal airway. At any cyanosis must be countered by the immediate institution of "aided respiration," described later.

The above dosage is applicable to adults of average age and in fair condition. In elderly patients there must be proportional reduction in dosage, and in children the dosage of curarine solution is 0.2 ml. (2 mg.) per stone (6.4 body weight). After doses of this order patients usually retain their protective reflexes and have full respiratory function seven to ten minutes; but should this not occur they are retained in the theatre until there is no fear of respiratory obstruction or depression.

Technique of Administration for Longer Procedures

This is essentially a balanced anaesthesia. After induction the patient is maintained in a light plane by means of an intravenous barbiturate. The curarine produces relaxation at the same time so reduces the amount of the barbiturate which has to be used that there is no delay in recovery. The addition of any of the inhalational agents is possible without causing laryngeal spasm. Their addition is useful when excessive manipulation or other factors arising during the operation demand a momentary deepening of the anaesthetic. Only minimal amounts of these agents are ever required. For very little experience the quantity of the barbiturate, curarine, and the inhalational anaesthetic can be so estimated that no excessive amounts of any single one of them produce a delay in post-operative recovery.

Control of respiratory exchange is essential in order to ensure that oxygenation is adequate and carbon dioxide elimination. This is best attained by use of a closed circuit. The circuit must be completely free from leaks, and the application of a mask to the face made really air-tight by packing gauze in the cheeks and the use of the Moreland Smith (1944) chin mask. When curarine is used in effective doses the tidal air is reduced. The inspiratory phase of the respiration must be amplified by rhythmic manual pressure on the re-breathing bag. This is "aided" rather than "controlled" respiration.

Adequate ventilation of the lungs is always possible through a pharyngeal airway of good design. Although endotracheal intubation under vision is simple when curarine is used, it is considered necessary only where the site and nature of the operation preclude the use of a mask, in thoracic operations when bronchial occlusion or suction drainage is required in cases of intestinal obstruction when there is a danger of regurgitation of abdominal contents. It is useful occasionally in operations on the gall-bladder in the very obese.

Dosage

The use of either the three-way tap or the remote-control device of Gray and Osborne greatly facilitates the repetition of intravenous injections required in these longer procedures.

Fifteen mg. of curarine are injected. When the patient is unable to keep his eyes open this is followed by either 0.5 g. of pentothal or 0.75 g. of "kemithal." After the lapse of a few minutes intubation under direct vision can be performed if necessary, or an airway can be inserted and the anaesthetic mask placed in position without cough or spasm. Before the skin incision is made 0.2–0.4 g. of pentothal or 0.4–0.8 g. of "kemithal" is injected, and in the case of abdominal operations this is fortified by 0.5–1.0 ml. (5–10 mg.) of curarine. When the case is one for thoracotomy the curarine is injected just before the opening of the pleural cavity. As a general

le slightly larger amounts will be required to control the diaphragm than will be found necessary in abdominal work. thoracoplasties curarine is used at induction, and again to control the diaphragm and excessive respiratory movements if apical mobilization is performed. During the operation slight movements or attempts at phonation, preceded by a rise in pulse rate, indicate the necessity for small increments of the barbiturate: these are in the nature of 0.1–0.2 g. of pentothal, or 0.2–0.4 g. of "kemithal."

A resistance to the inflation of the chest encountered by the end on the re-breathing bag is the first indication that more curarine is required. This is added in doses of 2–4 mg. It is commended that no curarine be given during the last twenty minutes of the operation, and the total dosage should not exceed 30–35 mg. The maximum amount of barbiturate that is used in long cases should not exceed 1.5 g. of pentothal or 5 g. of "kemithal." During the operation any approach to these maximal doses is anticipated, and a small amount of an inhalation agent, usually cyclopropane, is introduced into the circuit.

Experience has shown that this balanced technique results in far less post-operative morbidity than if the anaesthesia were either solely inhalational or solely intravenous.

Discussion

There is a rationale for the use of curarine. The drug should not be considered merely as an "aid" to anaesthesia, the last resort in a difficult administration; it is more—it is an integral part of the anaesthetic procedure. This is by virtue of four important properties: (a) it is quickly eliminated, leaving no toxic after-effects; (b) it produces relaxation as and when desired; (c) it abolishes laryngeal and bronchial spasm, making intubation of the trachea necessary only in selected types of cases; (d) because of the undoubted synergistic action with the anaesthetic agents the dose necessary to keep a patient asleep can be considerably reduced.

If these four properties are borne in mind, and if a correctly balanced anaesthesia is maintained, patients after long abdominal and thoracic operations are awake, in good vasomotor equilibrium, free from nausea, and able to exert their respiratory functions to the full. There is in consequence a smooth post-operative convalescence.

The drug may be given subcutaneously or intravenously. The first method need only be mentioned to be dismissed; it has no place in anaesthesia. When it is given intramuscularly the action is delayed for approximately fifteen minutes—often it is longer—and a maximum effect may not be seen for thirty minutes. It is obviously difficult to judge the injection so that relaxation will be present when and only when it is required. Furthermore, the duration of the action of the drug by this route is uncertain, especially when some degree of shock has reduced the absorptive functions of the circulation. In such cases there is a very great likelihood that the anaesthetist may be faced at the end of the operation with a patient whose respirations are laboured, who is unable to cough, and who is in urgent need of artificial respiration with oxygen. This is a very undesirable state of affairs, the proof of which lies in the proportion of post-operative chest complications seen when this technique is employed (Prescott, Organe, and Rowbotham, 1946). The same report advocated the use of an intravenous injection of curarine for induction with subsequent maintenance by the intramuscular route. This was tried early in the present series under discussion and abandoned for the reasons already given.

In conclusion, there are rare occasions when physostigmine, the physiological antidote to curarine, may be useful. It must be given in large doses and with atropine to prevent the undesirable parasympathomimetic effects. Prostigmin 3–5 mg. with atropine gr. 1/50 (1.3 mg.) has proved an effective combination.

There appear to be no real contraindications to the use of curarine provided that the administrator has a sound knowledge of the technique of its use and is familiar with the care of a patient in whom the usual signs of anaesthetic depth are absent, and where the natural process of respiratory exchange is impaired or completely abolished.

Summary

The technique of administration of *d*-tubocurarine chloride in some 1,500 cases is reviewed and the requisite apparatus described.

The rationale of its use is discussed and the various forms of parenteral administration assessed.

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SOME USES OF THROMBIN IN THE SURGERY OF THE EAR, NOSE, AND THROAT

BY

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In the surgery of the ear, nose, and throat many problems exercise the ingenuity and tax the patience of the surgeon. This paper is concerned with only two of these problems. The first is the control of bleeding, the second the healing of raw bony surfaces which have been deprived of their diseased covering by the removal of infected bone and granulations in the course of a radical mastoidectomy or similar operation.

Great reliance is commonly placed on the use of packing. Gauze is packed into one cavity to arrest bleeding; it is forced into another to control the overgrowth of granulations. Not only does the use of such a method frequently fail of its purpose, but also it favours continued infection and delay in healing. No evidence is needed of the discomfort such a gauze pack causes, or of the pain which its withdrawal inflicts.

The employment of thrombin enables the surgeon to dispense with packing in some situations where before it was essential. It is the purpose of this paper to indicate in what ways it can be so used.

Mellanby first prepared thrombin in 1933. The addition of thrombin to blood or plasma causes the formation of a clot. The ampoule in which it is supplied contains 5,000 Iowa units. One such unit is the amount of thrombin which will clot 1 ml. of standard fibrinogen solution in 15 seconds. With the ampoule containing the thrombin powder is another holding 5 ml. of sterile water, in which the thrombin powder is readily soluble. The rate of action of the thrombin can be varied by using more or less of the solvent. By using less solvent the surgeon obtains a fluid which clots plasma quicker than will a more dilute solution. It should never be injected into the tissues.

Control of Haemorrhage

The Throat.—Brisk arterial or venous bleeding does not respond to the action of thrombin (Ingraham and Bailey, 1944). Personal experience of its employment in tonsillectomy confirms this. An attempt was made to provide a firm clot in the tonsillar fossa by spraying the raw surfaces with thrombin solution after the larger vessels had been picked up and tied. This technique was followed in 166 tonsillectomies, but it did not, as had been hoped, prevent the occasional case of reactionary haemorrhage. Its use was therefore discontinued.

The Ear.—Thrombin has proved of great value in the control of oozing from small vessels. It is this bleeding which is such an embarrassment to the surgeon in the narrow field of the mastoidectomy wound. Constant oozing hides important bony landmarks, such as the torus of the external semicircular canal, and causes loss of time in the performance of the operation. After ligation of such vessels as can be picked up with a haemostat a few drops of the thrombin solution are run over the wound cavity. In a few moments a clot forms; this should be left undisturbed for 30 seconds or so. The outer layers of the clot can then be aspirated, leaving a fine film of clot over the whole surface.

* Thrombin, Topical, P.D., has been used in this series.

The Nose.—(a) Simple epistaxis is not easily controlled by the application of thrombin. A large unwieldy clot forms, and when this is detached fresh bleeding occurs. (b) After a submucous resection of the septum the two sheets of the nasal mucous membrane must be brought together to adhere, and so to obliterate the cavity left after removal of the distorted bone and cartilage. Usually both nasal fossae must be packed to keep these two sheets pressed together. By following the technique described below the need for packing can be avoided.

The operation is conducted under local analgesia, and consequently through a bloodless field. At the end of the operation the blades of a long Thudichum speculum are inserted between the two flaps of septal mucosa, and a few minims of thrombin solution are sprayed over the inner surfaces of the flaps. The speculum is withdrawn, and the blades, guarded with a few turns of moist gauze, are inserted on each side of the septum, thus pressing the mucous membranes together, when they will firmly adhere. The pressure need not be forcible, nor need it last more than a few seconds. If during the course of the operation the flaps have been accidentally torn, the edges of the tear can be spread in the position they should occupy. After moistening with thrombin, a short period of pressure will fix them in the desired position. No packing is left in the nose.

The contention that packing is necessary to keep the membranous septum straight is invalid. If the removal of bone has been adequately performed, the membranous septum will automatically assume a vertical position in the middle line. If the removal has been insufficient, no packing will correct the resulting deformity. Too much stress cannot be laid on the ill effects of nasal plugging. Even the most gentle packing inflicts abrasions upon this most vulnerable of membranes. By this technique damage to the ciliated epithelium is reduced to a minimum.

After the operation very little bleeding occurs; there is usually a blood-stained discharge for twelve hours. In only two of the 35 noses in which this method has been tried has bleeding been sufficient to call for post-operative packing in the ward. Reactionary swelling is very much less than when a pack has been employed, and the airway is consequently clear more quickly (Stevenson, 1944). Haematoma of the septum has not been seen.

Fixation of Skin Grafts by Means of Fibrin Clot

In performing a radical or modified radical mastoidectomy the surgeon aims at obtaining a smooth-walled bony cavity, lined throughout with skin, and possessing no recesses where infection may lurk and whence a troublesome discharge may subsequently issue. The achievement of this aim depends very largely upon the care with which all infected tissue is removed and upon the general shaping of the bony cavity. Only too often the surgeon's most meticulous care is wasted, as the cavity is left with hypertrophied granulations. These spring up and fuse with one another, so that there no longer exists one cavity, but several small pockets, separated by bands of organizing granulation tissue. Epithelization is delayed, sometimes indefinitely; and in spite of the most skilful and devoted after-care a surgical failure often results.

The introduction of the Thiersch graft was an important advance. If a skin graft can be persuaded to "take," the overgrowth of granulations is prevented and the interior of the mastoid cavity rapidly becomes covered with skin. Skin grafting is widely employed by aural surgeons, and to hold the graft in place the cavity is firmly packed with gauze or some other pressure dressing.

Split-thickness grafts of skin can be firmly fixed to their new beds by the precipitation of fibrin between the graft and its bed. This is brought about by the addition of thrombin to plasma. This technique has been employed in general surgery, and in the repair of extensively burnt areas, by Tidrick and Warner (1944), by Young (1944), and by Cronkite, Deaver, and Lozner (1944a, 1944b) amongst others. Young claims priority in the use of fibrin fixation alone without pressure dressings.

This method has been adapted to allow the fixation of skin grafts in the radical mastoidectomy cavity without the use of packing.

At the completion of the bony "exenteration," and of the cutting and suturing of the meatal plastic flap, great care is taken to secure haemostasis. The retroauricular wound is

sutured completely. A Thiersch graft is cut from a hairless area of the thigh. Bleeding from the donor area is stopped by running a little of the thrombin solution over it. The graft which should be about $1\frac{1}{2}$ by $1\frac{1}{2}$ in. (3.8 by 3.8 cm.) square is spread on tulle gras, raw side uppermost. Young states that washing the graft in saline removes coagulable elements from its surface, and no attempt should be made to wipe off any drops of blood or serum. The surface of the graft is the coated with plasma. This is the ordinary stock plasma of the "bank," and is sent up fresh on the day of the operation.

The graft is left to soak in the plasma while attention again turned to the mastoid cavity. All excess clot is removed by aspiration, and the interior is dusted lightly with a sulphuramide powder. Whatever powder is used, only the lightest dusting is permissible, as too much may act as a barrier to the early vascularization of the graft.

The skin graft and its attached tulle gras are cut into two or more pieces, depending upon the shape of the cavity to be covered. Before laying these grafts in place the excess of plasma is shaken off and a few minims of thrombin added both to them and to the surface of the bony cavity. The tailoring of these pieces of skin is admittedly difficult, but is made much easier than it would otherwise be by the fact that each piece can be stuck accurately in its allotted place like a postage stamp. A few moments' pressure with a narrow strip of gauze suffices to fix the graft in position, when the pressure can be relaxed and the gauze withdrawn. The process is then repeated with the next graft. Several small grafts are deliberately employed rather than a large one. A single graft lying in a complex cavity tends to fall into folds and creases, so that air spaces form beneath the graft. These dead spaces rapidly become filled with blood, which insinuates itself more and more under the skin and so prevents a successful "take." For the same reason, it is good practice to puncture the grafts with a very fine needle to allow any exudate to find its way to the exterior rather than be pent up between the skin and its bed.

When the operation is complete the cavity can be seen covered with the grafts, still with their tulle gras backing in place. These small pieces of gauze are left till the first dressing on the fifth day, when they can be painlessly picked out without loosening the grafts. No other packing is left in the cavity. The dressing of the radical mastoidectomy wound is thus rendered relatively painless. The subsequent dressings are done daily and consist in picking out desquamated outer layers of the skin grafts and removing secretions.

The placing of grafts on an infected bed is always some thing of a gamble. The surgeon's judgment of the virulence of the infection will dictate whether he will graft at the time of the original operation or defer it until bacteriological examination of the wound suggests that the chances of a "take" are greater. Young states that in grafting an infected area, fibrin fixation alone, without pressure dressings, gives less satisfactory results than when pressure dressings are employed. He states that this applies more particularly to large thick grafts, and that small thin grafts have about the average expectancy of survival.

In this manner 47 mastoidectomy cavities have been grafted. Of these, 30 were classical and 17 modified radical mastoidectomies. Primary grafting was carried out in 38, delayed in 9. The graft failed entirely to take in 4 cases, in 29 there was apparently complete survival of the graft, and in the remaining 14 over 75% of the graft survived.

Summary

Thrombin has proved of little value in arresting haemorrhage from the tonsillar fossae and in epistaxis.

Used in nasal and mastoid surgery, it permits dispensing with gauze packing, particularly after submucous resection of the nasal septum, and retaining skin grafts in the radical mastoidectomy cavity.

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TAPHYLOCOCCAL SPINAL OSTEOMYELITIS WITH ACUTE EXTRADURAL ABSCESS

BY

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An analysis by Dandy in 1926 showed that 25 cases of spinal osteomyelitis with extradural abscess had been reported up to that time. Only two of the patients recovered, and except in the case there was "no evidence to indicate that the nature of the lesion was more than roughly guessed" (Taylor and Kennedy, 1923). The concluding words are also of interest: "Whether an epidural abscess may eventually be diagnosed before implication of the spinal cord and before the appearance of a spinal block remains to be seen."

Numerous authors since that date have recorded cases successfully diagnosed and surgically treated (Abrahamson, McConnell, and Wilson, 1934; Stammers, 1938; Browder and Meyers, 1941).

As late as 1944, however, when the clinical syndrome had not been accurately defined in the literature, Boger states: "From the literature, as we have reviewed it, there are 84 reported cases with a mortality of 35%." All authors agree that in non-operated cases the disease is invariably fatal. The mortality, then, can reasonably be associated with delay in making the diagnosis—a state of affairs less likely to obtain when the clinical syndrome of fever, spinal muscle spasm, and pain in the back of rapid onset and in a site where alternative possibilities are rare gains more general recognition. The incident osteomyelitis of the spine and incipient neurological signs are indications for surgery without delay.

The surgical technique, when reported, has been that common for all abscesses—namely, incision (by an extensive laminectomy) within the limits of the extradural abscess) and drainage, either by repeated packing or by a large-bore drainage-tube (Stammers, 1938; Mixer and Smithwick, 1932). The natural outcome of this has been a lengthy and difficult period of hospital treatment while the spinal cavity collapsed or a sinus closed. Early diagnosis, however, should allow primary closure in a high proportion of cases, as the original focus of infection is frequently laminar and therefore easy of access. The organism, moreover, is most commonly a penicillin-sensitive staphylococcus.

The advantages of immediate closure of a spinal wound are, in fact, so striking, alike to patient and to nursing staff, that we have been prompted to record this single successful case.

Case Report

L/Cpl. J., aged 36, was admitted to the medical division of a military hospital on Jan. 19, 1946, with the provisional diagnosis of lumbago. He was complaining of general malaise and a constant severe dull ache in the left lumbar region. This had begun eight days previously, and was aggravated by any movement of the spine—so much so that he was unable to turn over in bed without extreme discomfort. The pain was not worse on coughing or sneezing, but latterly had radiated down the back of both legs. There was no relevant previous history or any recent minor sepsis. Micturition was normal; temperature 100° F. (37.8° C.), pulse rate 70. The left lumbar musculature was in spasm with a marked scoliosis to the right. There was decided tenderness to deep pressure over the erector spinae at the level of L 3-4 and below and medial to the renal angle. Flexion of the neck caused an increase in lumbar pain, but there were no abnormal neurological or genito-urinary findings. White cells, 8,000 per c.mm., polymorphs 90%, lymphocytes %, monocytes 3% (repeated twice). Erythrocyte sedimentation rate, 9 mm. per hour (normal 8).

Jan. 20.—Temperature, pulse, and respiration normal. The left aralaminar musculature opposite L 3-4 was more acutely tender than on the previous day and showed slight swelling and increase in local heat. There was no tenderness over the spinous processes. A diminution was noted in the left ankle-jerk.

Jan. 21.—An exploration by needling showed thick creamy pus in the paravertebral groove deep to the area of tenderness. Skiagrams failed to demonstrate any bony lesion in the lumbo-sacral vertebrae and there was no distortion of the psoas shadow. As the left ankle-jerk was still noticeably weaker than the right a diagnosis was made of osteomyelitis of the lumbar spine with extradural abscess.

Jan. 22.—The bacteriological report showed that *Staphylococcus aureus* had been isolated in the pus. No tubercle bacilli were seen in Ziehl-Neelsen films. Operation was therefore undertaken without delay. A midline incision was made from L 2 to S 1. Thick creamy pus was found in considerable quantity deep to both erector spinae muscles. The laminae of L 3, 4, and 5 were soft and necrotic and were removed, releasing an extradural abscess of thick pus, extending up to L 2 and down to S 1. It had not separated the close dural attachment to the posterior common ligament except inferiorly. The dura over an equivalent area was covered by fleshy greyish-red granulations. It was everywhere intact and pulsated freely. The wound was completely closed by layered catgut sutures and a small penicillin tube was brought to the lower end of the extradural abscess by a separate stab incision.

2,500 units of penicillin in 5 ml. were instilled twice daily down the tube for five days, and 15,000 units were administered parenterally three-hourly for 14 days.

Immediately after operation the patient became free from the severe aching lumbar pain and was able to move freely about the bed. His temperature showed a nightly rise of 1° for the first week, but after that it settled. The lumbar wound and the penicillin stab incision healed by first intention, and he started vigorous physiotherapy at 10 days. He was walking at the end of the first fortnight and his ankle-jerk had returned to normal. At the end of two months his white cells numbered 8,000 per c.mm. The sedimentation rate was 8 mm. per hour, and, beyond the deficiency due to the laminectomy, there was no evidence of bone disease. He was symptom-free and ready to return to duty.

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Medical Memoranda

Intussusception after Emergency Colostomy

The following case is placed on record because of the uncommon type of intussusception.

CASE REPORT

We were called to see a man aged 74 on the night of Sept. 27, 1945. He complained of abdominal distension and constipation for 10 days. A soapuds enema was given with excellent result. This was repeated the next morning, but neither faeces nor flatus was passed. He was admitted to St. Vincent's Nursing Home under Mr. Hamilton Bailey for complete intestinal obstruction.

On admission his clinical condition was very poor. The pulse was barely perceptible, his face was pale and his extremities, especially the feet, were deeply cyanosed. Gastric aspiration produced a small quantity of bile-stained fluid. In the operating theatre continuous intravenous glucose-saline was administered. After he had received one pint (568 ml.), together with a hypodermic injection of methedrine, his pulse and colour became a little better, but, whereas previously he had lain in a quiet semi-comatose condition, he now became noisy and restless, especially when some local analgesic was introduced into the skin of the abdominal wall. Infiltration was continued with the objective of transverse colostomy, but it was impossible to quiet the patient sufficiently for the operation to proceed under local analgesia alone. Pentothal was injected into the saline delivery tube, less than 0.05 g. being given. He fell asleep. A loop of colon was delivered through the incision; it was of the dimensions of the inner tube of a motor tyre. In passing it was noted that the loop was not of a transverse colon as would be expected from the position of the incision; the mesocolon was not attached to it. The apex of the loop was opened and a rubber tube was sewn in. Much gas but no faecal matter escaped. After completing the colostomy the patient was returned to bed with little hope of his recovery. For three days he remained in a more or less moribund state, and, although the distension had assumed less extravagant proportions, he was still distended and the colostomy had not acted. On the evening of the third day, after diligent irrigation through the colostomy, the patience of the sister in charge was rewarded by a copious motion. From that time his condition steadily improved, and at the end of three weeks he was convalescent. A barium enema revealed ballooning of the pelvic

colon, and barium issued from the colostomy opening. No sign of an obstructive growth of the colon was seen, and a tentative diagnosis of volvulus was made. Uncertainty as to the exact nature of the obstruction, his advanced years, and his erstwhile moribund condition were the factors that led to a decision to send him home with a colostomy belt and with the proviso that if all went well his case was to come up for review in three months' time.

Three weeks after this there was a prolapse of about 2 in. (5 cm.) of gut through his colostomy opening, which we successfully reduced. On Jan. 13, 1946, we were hastily summoned and found more than a foot (30 cm.) of gut prolapsed through the colostomy opening. The appearance was that of a dark sausage-like mass issuing from the colostomy. We endeavoured on two occasions in the next few hours to reduce the intussusception without success. The patient was in good condition, without pain or even discomfort. Mr. Hamilton Bailey came down and wrapped the intussusception in a towel and squeezed it for some moments in order to reduce the oedema. This appeared moderately successful. He then proceeded to attempt to reduce the apex in accordance with the orthodox method of reducing a paraphimosis. This also was partially successful, but about 4 in. (10 cm.) still remained without. Up to this time the patient had had but little pain. An effort was made with greater force, and the surgeon's thumb passed right through the mucous membrane and entered the peritoneal cavity, some clear peritoneal fluid escaping. Shortly after this some of the intussusception which had been reduced was extruded. The patient was sent to hospital. Under general anaesthesia Mr. Bailey freed the colostomy opening (with the intussusception protruding therefrom) from the abdominal wall and delivered 18 in. (45 cm.) of distal redundant colon and about 8 in. (20 cm.) of proximal colon. The intussusception had begun in the colon proximal to the colostomy opening. Before proceeding further it was ascertained by intra-abdominal palpation that there was no growth or other abnormality to account for the original obstruction. The two limbs of the colon were anastomosed by the Paul-Mikulicz procedure, and the intussusception, together with the redundant portion of the colon, was excised. The total length of colon removed, which included the intussuscepted portion, was nearly 3 ft. (90 cm.). The patient made a good recovery.

COMMENTARY

Intussusception is usually seen only when the abdomen is opened by the surgeon on the operating table, but the exceptions are the rare types that extrude through a colostomy or similar artificial opening, and those rare ones seen passing out through the anus. Very few cases of the former type have been recorded—one, by Milligan (1926) of an intussusception through an enterostomy and one by Turner (1936) in an article on the various complications of colostomies. The latter case was the only one in 175 cases of various complications of colostomies. Both these cases were treated in the same way as the one described above.

We are indebted to Mr. Hamilton Bailey for his co-operation and kind help in the preparation of this report.

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Plant Dermatitis in the Bahamas

A shrub *Metopium toxiferum*—"poison wood" or "poison ark"—flourishing throughout the open spaces of the Bahama Islands and in southernmost Florida (where it is also known as "doctor's gum"), has attracted little attention outside the immediate vicinity. Yet it contains a toxin at least as powerful as that of the well-known North American "poison ivy" (*Rhus toxicodendron*), thereby entitling this colonial product to at least a short note.

Botanical Note.—The plant *M. toxiferum*, of the family Spondiaceae (Small, *Florida Trees*, p. 60), varies in size from a small shrub to a tree 40 ft. (12.2 m.) high (Britton, *Bahamas Flora*, p. 244). The bark is thin and brown, with a moist, green, shining layer beneath, which becomes orange with increasing age. Its branches are widely spreading, and the leaves, up to a foot (30.48 cm.) long, alternate, with three to seven ovate, pinnate, glabrous leaflets, bright green and shining on top and dull on the under surface. The efflorescence is a many-flowered compound raceme with short pedicel. Florets have five short ovate sepals, five white separate petals, and five separate stamens with large anthers. The fruit is a green drupe, becoming yellowish when ripe.

The Toxin.—This is contained in the "milk" beneath the bark, in the leaves, and in the fruit. On the bark and leaves it frequently oozes up to the surface, where it or some other product associated with it in the juice becomes oxidized and produces black stains. It is a type of gum resin, very similar to that of poison ivy.

CLINICAL NOTE

Many R.A.F. personnel engaged on clearing undergrowth around the station were affected. Among the white residents there is regularly at the New Year a crop of cases of poison-wood dermatitis, following the incautious gathering of Christmas trees.

After contact with the toxin there are usually no symptoms for a few days, when small papules, rapidly becoming vesicular appear at the site of contact, with considerable itching and variable surrounding erythema. Superficial ulceration of these vesicles occurs, and the rash spreads both locally and to distant parts of the body. Crops of small, deep-set papulo-vesicles appear on face, trunk, and legs. Local weeping and crusting eczematization may occur, and the whole process continues for weeks after the initial contact. Sometimes the reaction is more urticarial, with gross erythema and oedema affecting and directly spreading from the contact area. In less sensitive people retrogression of the rash may occur at any stage. In one patient blisters up to an inch (2.5 cm.) in diameter formed over hands, forearms, body, face, and legs, breaking down to superficial ulcers, some of which became secondarily infected. The appearance resembled a papulo-necrotic tuberculide. He was febrile on admission, and remained in hospital 20 days.

SENSITIVITY TO THE TOXIN

One drop of juice from the underbark of a plant 5 ft. (1.52 m.) high was placed on the forearm of each of twenty volunteers. One developed a generalized spreading rash lasting several weeks, one a severe local erythematous reaction, 12 local population of varying degree, and 6 were unaffected. On my own arm itching occurred a few minutes after application, followed by the characteristic black staining and the development of a small papule by the next day. The local area became eroded after four days, with superficial ulceration and surrounding vesiculation. Resolution started on the seventh day. One drop of berry juice, however, caused a widespread erythematous vesicular eruption lasting some weeks. (This was not due to acquired hypersensitivity, since subsequent drops from the bark actually produced less reaction than the first.)

The phenomenon of generalized spread to non-contact areas seemed to indicate the production of a general allergic cutaneous tissue reaction of systemic dissemination. However, the possibility existed that the original toxin or product of it lurking in the blister fluid at the contact site was carried over the body by the patient's finger, producing multiple local reactions. Blister fluid from one patient with the disseminated rash was therefore tested on other parts of his own skin and on the skin of other sensitive subjects, with and without previous excoriation of the skin by a needle. In no case was any lesion produced, so that the hypothesis of contact spread would seem to be disproved.

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Traumatic Axillary Venospasm

This condition has been described by various people, especially Matas, and was first recognized about 60 years ago. It occurred most commonly on the right side, and various theories have been advanced to account for it. Sudden abduction of the arm may cause trauma to the axillary vein by contact with the subclavius muscle; this may either give rise to a generalized venospasm or actually damage the intima of the vein, with venospasm and thrombosis, hence the name "traumatic axillary vein thrombosis." Matas says that there is a polyvalent causation, in indirect trauma to the vein and its immediate environment, including lymphatics and perivenous sympathetic plexus, and that thrombosis is not essential.

The case described below is one of traumatic axillary venospasm without thrombosis, and in this instance the opportunity of observing the veins and brachial artery was taken. The brachial artery was very sensitive and the slightest handling was sufficient to put it into spasm, so apparently there must be a generalized increased sensitivity of the neurovascular make-up of this particular patient to account for the condition. The treatment adopted—cervical sympathetic block—does not claim to be original, but I have not seen any reference to it. The cervical sympathetic block has a twofold effect—viz., it relieves the venospasm, and also the arteriospasm, which in time will increase the venous return.

CASE REPORT

The patient was a female aged 35, married, but with no children, and was admitted complaining of swelling of the left arm, which was tense but not very painful. She said that four hours ago, when putting her left arm into her overcoat sleeve, she felt something

atch in her axilla, and that almost immediately her whole arm began to swell and felt useless, tight, and tense. There was no previous history of a similar condition.

On examination her general condition was seen to be good. Her temperature was 98° F. (36.7° C.), and her pulse rate 70. The left arm was diffusely swollen, tense, and blue from the middle of the deltoid muscle to the finger tips. The superficial veins on the dorsum of the hand were congested, and failed to empty on elevating the arm above the head. The upper chest veins were congested, but emptied on compression. The axillary vein was not palpable. The radial pulse was diminished in volume in comparison with the opposite side. There was no increase in heat of the limb. A small aceration was visible over the lower part of the cubital fossa, which had occurred about ten hours previously.

Operation.—A general anaesthetic was given, and it was decided to explore the laceration in the lower part of the cubital fossa to see the state of the vena comitans of the brachial artery. All the veins encountered were in a state of spasm and failed to bleed on cutting. The brachial artery was seen and appeared normal. It was retracted very gently and immediately went into spasm, showing the excessive sensitivity of the neurovascular system. The radial pulse at this stage disappeared, so it was decided to close the wound. The patient was then turned on her right side and a cervical sympathetic block was performed. The stellate ganglion and the second and third left thoracic ganglia were injected with 10 ml. of 2% procaine each by the posterior approach. On turning the patient on her back it was noticed that the hand was now becoming pink and that the radial pulse, which had disappeared after the brachial artery spasm, was now returning.

One hour later the radial pulse had fully returned; the hand was now pink and the superficial veins were empty. Twelve hours later the swelling of the hand and forearm had disappeared and the colour was normal. The upper arm, however, was still discoloured pink rather than the previous blue, and still swollen, but not so much as it had been. Twenty-four hours after the sympathetic block the whole arm was back to normal, and after that the patient made an uninterrupted recovery. X-ray examination failed to demonstrate any sign of cervical ribs.

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A Case of Secondary Syphilitic Iridocyclitis

Duke-Elder states that a severe and acute iridocyclitis is not uncommon in the early secondary stage of syphilis; thus, among 10,000 syphilitics studied by Moore (1931) at the Johns Hopkins Hospital, the expectancy of its development with the generalized secondary outbreak was 4.5%. I have not seen any comparable R.A.M.C. figures, but have the impression from R.A.M.C. venereologists that the complication is much rarer than this, and therefore the occurrence of a case is interesting enough to report. It is the first one I have personally seen in 3½ years in the Army.

CASE HISTORY

B. W. reported on Feb. 21, 1946, that both eyes had been inflamed for two weeks. He was found to have a mild bilateral iridocyclitis with fine keratitis punctata in each eye, a roseola of fine blood vessels on each iris, and posterior synechiae in the left eye only. He had a history of venereal infection two months ago, and gonorrhoea two years ago. General examination revealed secondary syphilis: the prepuce had an irregular margin and multiple ulceration round the edge; there were moist papules at the peno-scrotal junction; condylomata were present in each groin, with inguinal adenitis; no generalized rash was seen; the tonsils and pharynx were both congested. The Kahn test was positive.

Sodium penicillin 10,000 units 3-hourly for one day gave no Jarisch-Herxheimer reaction, so the dosage was increased to 40,000 units 3-hourly for 7½ days. With the penicillin were given daily mephariside injections to a total of 0.56 gr. (36.4 mg.) in 15 days. Atropine ointment and heat were used for the eyes. In one week they were much improved, with disappearance of the roseola, and in two weeks the ocular condition had entirely subsided, the only sequelae being a few pigmented dots of keratitis punctata, one posterior synechia, and a little pigment on the anterior line capsule in the left eye.

I wish to express my thanks to Major R. S. Garden, R.A.M.C., A.O.C. 48 British General Hospital, for permission to publish this paper.

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REFERENCE

Moore, J. E. 1931. *Amer. J. Ophthalm.*, 14, 110.

The Manchester Ear Hospital has been at work for ninety years, and now receives patients from areas as far distant as Derbyshire, Wales, and London. Owing to staffing difficulties and redecoration of the wards fewer patients were admitted last year than in the previous one (744 against 849); but on the other hand 6,816 new out-patients were treated—an increase of 72.

Reviews

RARE DISEASES

Rare Diseases and Some Debatable Subjects. By F. Parkes Weber, M.D., F.R.C.P. (Pp. 174; illustrated. 15s.) London: Staples Press Ltd.

As Dr. Parkes Weber truly remarks, it has been repeatedly suggested to him during the last thirty years that he should write a book on rare diseases. It is, therefore, somewhat disappointing to find signs of hasty compilation. This detracts from the pleasure of reading but not from the value of the book. He recognizes that the importance of a rare disease lies not merely in its rarity but in the light it throws on less extreme departures from the normal and sometimes even on the normal itself. He shows how some of the rare syndromes may involve a large number of systems in the body, but minor versions of such syndromes occur, so that there is a continuous series from the complete form to *formes frustes*.

In the earlier part of the book a useful classification is observed according to which tissues are mainly involved. The real gist of his argument is explained best in Chapter 16, entitled "Inborn and familial tendency to the development of hepatic cirrhosis." This enables him to develop his views of the inborn tendency of an organ inferiority as the basis of most of the diseases he is considering. He speaks of these as the congenital-developmental class under the convenient inclusive term "dysbiotrophy." Here his comments on Kinnier Wilson's description of progressive lenticular degeneration combined with cirrhosis of the liver are of special interest. Familial incidence in this rare disease has been emphasized by Wilson himself as well as by later authors. The association between these two conditions seems curiously remote and yet there are other instances of this connexion. Some of these hepatic conditions may work in either direction; thus the telangiectases of the Osler type may occur in families and involve haemorrhage from the stomach without the presence of any skin lesions. In some of these cases hepatic cirrhosis has been found—presumably due to a congenital dysplasia of the small blood vessels, including those of the liver. Conversely, in advanced hepatic cirrhosis, spider-like telangiectases are common on the face and hands. Here they follow and do not anticipate the cirrhosis.

It will be seen that the book even in its present form is a mine of interesting information which may well cause us to think. Apart from our initial criticism we can cordially congratulate the learned author on putting on record so much that is helpful.

A PHILOSOPHY OF SEX

Sex, Life, and Faith. A Modern Philosophy of Sex. By Rom Landau. (Pp. 319; illustrated. 21s.) London: Faber and Faber.

The author is not a doctor or a priest, but certainly has a large experience and knowledge of life. From this he has learnt the basic material of how man and woman have approached the problems of sex and behaved in this respect throughout the ages in all sorts of communities and under all sorts of conditions of society. What makes the wealth of material expounded in this book so valuable is that the author has throughout been able to expound it without prejudice and with a sympathetic understanding of why any particular behaviour has manifested itself. Whether he is dealing with polygamy, polyandry, homosexuality, or any other manifestation of the sexual urges of men and women, he is equally open-minded and objective. Though maintaining that the monogamous union is the ideal he realizes that this cannot be reached unless the union itself is ideal in that it really satisfies the aspirations of both partners. There must be no repression, false shame, or reservation on either side, and he recognizes that without this the ideal of sexual behaviour is to all intents and purposes unattainable. Nevertheless, such an ideal is in the author's view attainable in certain conditions. First, it is necessary to sweep away all prejudices and false values such as are maintained by the puritans, the respectable, and the smugly complacent people who make up such a large proportion of our moralists and ecclesiastical experts. Secondly, it is necessary to recognize fully the importance, strength, and essential place in life of the sexual instinct and

allow for its full gratification for both men and women by modifying our social education and probably many of our laws and customs. Thirdly, and most important of all, the religious "instinct"—the author is convinced that this is innate and fundamental in everyone—must be developed and strengthened into a firm belief in God.

The author pours scorn on the emotional revivalist schools and the puerilities of certain fashionable groups, but believes that by genuine private effort a real conversion may be attained which will result in a true control of the sexual instincts so that a solution to the conflict between sex and "morals" may be found. How many people will be able and willing to make the effort to achieve this victory is open to question, but whoever is interested in the social life of our times—and surely doctors above everyone must be or ought to be—should read this sincere, erudite, and clearly written book.

DERMATOLOGY AND SYPHILOLOGY

The 1945 Year Book of Dermatology and Syphilology. Edited by Marion B. Sulzberger, M.D. Assistant Editor, Rudolf L. Baer, M.D. (Pp. 559; illustrated. \$3.00 or 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

This now well-known annual keeps up its reputation and we admire the industry of the editors in collecting and presenting such a mass of contemporary literature in brief form. Notwithstanding their statement that great advances have been made in dermatology during 1945, we do not recall any specially noteworthy advance, though there is evidence of great activity in every department. Perhaps, however, 1945 will stand out in the history of dermatology as the year in which the treatment of lupus vulgaris by calciferol was first instituted, and that method, initially tried by Dowling at St. Thomas's, London, appears to have been published too late for mention in the year book before us.

The special article with which the editors always begin is this year devoted to skin tests in drug eruptions and also their management. There is an important addendum on the lichenoid dermatosis due to atabrine (usually spelt atebirin on this side of the Atlantic) with which the anti-malarial measures pursued so vigorously in the Eastern theatres of war have made us painfully familiar. In venereal disease much space is rightly given to the discussion of the place of penicillin in the treatment of syphilis. There seems to be a consensus of opinion that the best results are obtained by a combination of penicillin with the arsenical antisyphilitic drugs, and bismuth is not yet superseded. It is sad to think that the progress made between the two world wars in reducing the ravages of syphilis has been very largely lost during the second, nor are the conditions prevailing during the long-drawn-out armistice, especially in Europe, such as to help in regaining the lost ground. In the American Forces in Europe venereal disease has become the No. 1 medical problem. The editors think it probable that the post-war civilian population will continue to present venereal disease problems as great as those which followed the last war. Mitigation of this gloomy outlook it may at least be said that owing to penicillin and the sulpha drugs the period of effective treatment has been greatly shortened.

A cheerful feature of this year's book, as of recent numbers, is the "Quiz Section" on the dust jacket. It really deserves incorporation within the bound volume. Those who fancy that they are well abreast of dermatological literature should test themselves on the twenty questions posed. We doubt if there are many, even in the ranks of dermatological specialists, who would get a 50% marking at this examination. Deficiencies can be made good by study of the text.

ADULT PSYCHIATRY

Essentials of Neuro-Psychiatry. A Textbook of Nervous and Mental Disorders. By David M. Olkon, M.D. (Pp. 310; illustrated. 22s. 6d.) London: Henry Kimpton.

In this new survey of psychiatry the author sets out to present a conception of body-mind unity, but as so often happens there is more stress on the contribution of the body than of the mind. As in so many textbooks of psychiatry the section on psychoneuroses is weak, with too much relative attention to hysteria at the expense of the much more fundamental anxiety state. Though not specifically stated, the book is obviously directed to those who are dealing with or will have to deal with war

psychiatry, yet there is no recognition that in World War II the dramatic presentations of hysteria are much less important than the fear neuroses. In a comment on a case history of a hysterical girl the author remarks "the interesting feature is that there is such an entity as conversion hysteria." This sort of bias is evident throughout, and there is no real appreciation of modern medical psychological methods and their success in treatment.

The discussion of the psychoses is better but is rather unequal; the subject in which the author is himself particularly interested being given more prominence than is usual in what purports to be a comprehensive textbook. Thus there is an interesting discussion on the role of the capillary dysfunction in schizophrenia, and the reader is left wishing that all other aspects of this and other conditions were equally well dealt with. Again, in the section on sexual perversions sadism is dismissed in a small paragraph while transvestism is discussed at length, but perhaps without great enlightenment, because the author had one or two cases under his own observation. In order to keep the book within small compass there is a great deal of compression, and while most subjects relating to psychiatry will be found mentioned consecutive reading is not easy. The subject-matter deals almost exclusively with adult psychiatry, and although cases of adolescent abnormality are quoted there is no appreciation of modern child psychiatry.

Useful hints of relevant literature are given at the end of each chapter and the book is well illustrated by case histories and excellent photographs and diagrams.

Notes on Books

At Lambaréné in Wartime is the title of British Bulletin No. 11 (Spring, 1946) of Dr. Schweitzer's Fund. This pamphlet, written by the gifted musician himself, covers the history of his hospital in French Equatorial Africa from 1939 to 1945. The hospital escaped direct damage from the war, for both sides agreed not to bomb it during the short struggle between the de Gaulle and Vichy forces in the colony. But indirectly the war so increased the normal difficulties of administration that the work of the hospital had to be heavily curtailed, and, but for remarkable foresight shown in the buying of provisions and in other matters, it would have had to be closed altogether, to the great detriment of the wide area which it serves. The booklet may be obtained (price 1s.) from Mr. T. D. Williams, Treasurer, British Council for Dr. Schweitzer's Hospital, 5, Castleton Mansions, London, S.W.3, to whom all subscriptions or donations may be sent.

The fifth series of *Exposés Annuels de Biochimie Médicale* has been prepared under the direction of Prof. MICHEL POLONOVSKI of the Paris Faculty of Medicine. It is published by Masson et Cie 120, Boulevard Saint Germain, at 500 francs. The ten contributions by twelve authors deal with various important aspects of medical biochemistry. Most of the longer papers have bibliographies, though for reasons that all can understand the references to Anglo-American work do not cover publications since 1942. These valuable reviews began in 1938; the second of the series was published in 1939, the third in 1942, the fourth in 1944, and the present volume is dated 1945.

Dr. A. P. CAWADIAS's study of hermaphroditism, which was originally given as the Vicary Lecture at the Royal College of Surgeons in 1940, evidently attracted a good deal of attention, for a second edition of the book, *Hermaphroditos: The Human Intersex* (William Heinemann Medical Books; 15s.), based on that lecture has been called for. In this edition the chapter on the physiopathology of intersexuality has been rewritten in order to make clearer the two great classes, constitutional and endocrine, involved. The clinical chapters have also been rewritten, so as to make clearer these forms as they manifest themselves. Much learning and thought have been devoted to this work.

PROF. FRANCIS J. BROWN's *Antenatal and Postnatal Care*, first published eleven years ago, has now reached a sixth edition (J. and A. Churchill: 25s.). The continuing popularity of this book must be a source of much gratification to its author, who has carried on and amplified in London the pioneer work of John William Ballantyne in Edinburgh. He has revised the text throughout and made some changes and additions. Amendment was chiefly necessary in the chapter on erythroblastosis and the Rh factor (which was a new feature of the fifth edition), and in the chapters on placenta praevia on the toxæmias of late pregnancy, and on venereal diseases in pregnancy. The chapter on the uses and value of radiology in obstetrics has again been revised by Prof. Chassar Moir.

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ASSESSMENT OF DISABILITY IN DUST
DISEASES OF THE LUNG

Undergrass and Leopold¹ have recently suggested that the form of dust inhalation that occurs in electric arc welders and workers exposed to similar dusts should be called "benign pneumoconiosis" in order to contrast it with diseases resulting from the inhalation of siliceous matter. The latter produces a fibrous reaction, and even if tuberculosis is not a complicating condition the lung is still gradually destroyed. At the same time it is necessary to stress that the lung cannot become a physiological dust trap and yet retain its normal structure and function. It would seem possible that heroic quantities of any dust, no matter how innocuous they might be in small concentrations, would in time overwhelm the defences of the lung and accumulate in such amount as to impair function. Such a form of lung disease would obviously be due to mechanical causes—the physical presence of large amounts of inert foreign material.

Since pneumoconiosis is an industrial disease the question of compensation under the Workmen's Compensation Act always arises. Compensation is paid for disability acquired by the workman through the inhalation of dust while at work; it has, however, always been recognized that the diagnosis of the disease and the assessment of disability are difficult. For this reason the highly complicated silicosis Acts were passed by Parliament and the Silicosis and Asbestosis Board was created. But difficulty of the assessment of disability is still there, and at present it is decided largely by radiographical appearances. This method is not satisfactory because it is impossible to differentiate between the nodulation caused by iron oxide in the siderosis of arc welders and that shown by the fibrous nodules of silicosis. Similarly, the reticulation in lungs of arc welders, South Wales coal-miners, and the workers in iron foundries are essentially similar; yet the men with iron oxide in their lungs suffer little or no disability, as was first suggested by Doig and McLaughlin² and recently demonstrated with full physiological tests by Enzer, Simonson, and Evans.³ After their survey of chronic pulmonary disease in South Wales coal-miners Hart and Aslett⁴ suggested that the inclusion of reticulation as a compensatable disease would not lead to any large increase in the certification rate, because only a small proportion of these cases were significantly disabled; but, in fact, the enactment of the Pneumoconiosis in Coal Miners Bill, 1943, has been followed by a very large increase in the number of certifications. This is due to the difficulty of assessing disability, and there is no doubt that many men with reticulation who are not disabled are obtaining disablement certificates. It would seem, there-

fore, that compensation should not be awarded until disability actually occurs, which may be quite a long time after characteristic x-ray changes are detectable. If these are discovered and there is no disability the man should be removed from the silicosis risk and trained to fill a job which will give him equal or better prospects in life.

It is therefore essential to look for some other than the x-ray method of assessing disability—a method that must also be simple and practical and can be used by those undertaking surveys in factory and mine and by the Silicosis Board, besides those engaged on work in the laboratory and on long-term projects. Attempts have been made to arrive at some measurement by comparing the areas of the lung fields on radiographs in expiration and inspiration. In the clinical examination of pneumoconiotics the two most valuable observations are the marked diminution of air entry on auscultation and the poor chest measurements on inspiration and expiration, and it is hardly likely that more information than this can be obtained from x-ray examination. However, McCann and Kaltreider⁵ have suggested that if the ratio of the areas of the lung fields measured with a planimeter on x-ray films of the chest doubly exposed at maximum inspiration and maximum expiration exceeds 71% there will certainly be disability. Other possible methods of gauging disability include reactions to standard exercise, measurements of oxygen content of blood, blood sedimentation rates, and estimation of lung volume, including vital capacity and residual air. The fact that no two workers employ exactly the same exercise-tolerance test is itself evidence of the unsatisfactory nature of these tests, and it is doubtful if complicated exercises involving the use of dumb-bells or pedalling bicycles give much more information than simple stepping up and down on a box. In any event little information is likely to be gained unless the disease is advanced and the disability obvious. Measurement of the oxygen content of the arterial blood is complicated by the fact that the technique of arterial puncture is difficult and the range of complete and incomplete saturation of the blood with oxygen is narrow. Nevertheless, this is a promising field of research, and if it is possible to develop an oximeter which can estimate the oxygen saturation of the blood from the lobe of the ear the solution of the problem might be in sight. Little work has been done on blood sedimentation rates, and nothing is known of normal levels throughout the day in the industrial population as a whole. Most patients, however, who have real disability from pneumoconiosis have an increased sedimentation rate: this may in part be due to infection either tuberculous or non-tuberculous, but it is quite possible that the onset of the disability is closely related to the onset of infection. It is therefore possible that the blood sedimentation rate will prove to be a valuable simple test.

Vital capacity is at present the best guide, and if tracings are taken in the way suggested by Christie⁶ a permanent record is obtained. Vital capacity tracings are of no use for comparing one individual with another, but a series of tracings which show a decreasing vital capacity in a given individual over a period of time is of high significance.

¹ *J. Amer. med. Ass.*, 1945, 127, 731.

² *Lancet*, 1936, 1, 771.

³ *J. industr. Hyg.*, 1945, 27, 147.

⁴ *Med. Res. Counc. Sp. Rep. Ser. No. 243*, 1942, 191.

⁵ *Proc. Med. J.*, 1937, 42, 901.

⁶ *J. clin. Invest.*, 1934, 13, 295.

By taking the weight and height or sitting height of the individual it is also possible to compare his actual vital capacity with the expected one for one of his surface area. The greatest difficulty of these tracings rests with the ability of the patient to co-operate; some persons develop a sense of suffocation and are quite unable to perform the test, and when men seeking compensation are under review the operator can never be certain that they have emptied or filled their lungs to the limit. This can to some extent be checked by measurement of the residual air, and McMichael's⁷ modification of Christie's method is comparatively simple, as is that described by Cornand.⁸ McCann and Kaltreider⁵ have shown that a decrease in the total capacity and the vital capacity of the lungs, with an increase in residual air, is usual in advanced pneumoconiosis, and they consider that when the ratio of $\frac{\text{residual air}}{\text{total capacity}}$ exceeds 40% some degree of functional impairment is usually apparent. These authors also attempted to combine this method of investigation with a response to exercise, and thought that a better method of estimating disability was that of measuring the total ventilation during five minutes of exercise at the rate of 300 kilogramme/metres per minute and three minutes of subsequent rest. The resulting ratio $\frac{\text{total ventilation}}{\text{vital capacity}}$ is of great functional significance.

They found that in normal healthy men the ratio varied from 20 to 48, and that when the value rose above 55 shortness of breath was experienced. Estimations of the pulmonary reserve at definite rates of work also give an index of functional ability. Normal men have a pulmonary reserve of 55 to 73% when working at 300 kilogramme/metres per minute when they are using 27 to 45% of their maximal ventilating capacity, and dyspnoea is experienced when 50 to 60% of the maximal ventilating capacity is used.

The present situation may then be summarized by saying that there is no satisfactory simple method of assessing disability. Consideration must be given to physical examination, chest measurements, blood sedimentation, and vital capacity; the presence of x-ray shadows in the form of opaculation, or even nodulation, does not of necessity mean the patient is disabled. C. M. Fletcher, who is director of the Medical Research Council's Pneumoconiosis Unit in South Wales, is fully aware of all the difficulties and knows that until this problem is solved no great advance in the study of silicosis is possible. He is therefore devoting much time and man-power to research on the problem, and it is to be hoped that his efforts will soon be rewarded and some simple method of assessing disability developed.

MALARIA AND ITS CONTROL IN MALAYA

Control of malaria, from being a somewhat experimental and one might almost say often a rather debatable performance, has within a relatively few years become, partly as a result of increased knowledge and experience in carrying out measures against the disease and partly due to development of more effective insecticides and methods

of using these, a highly practicable proposition in which if essential requirements are recognized, success may be assured. In a pamphlet entitled "Notes on Malaria and its Control for Planters and Miners," issued from the London School of Hygiene and Tropical Medicine, incorporating the Ross Institute of Tropical Hygiene, Dr. Macdonald, director of the institute, has explained and illustrated in simple language the problem of malaria and its control. The pamphlet is published under the authority of the Ross Institute Industrial Advisory Committee, the Malayan Chamber of Commerce and the Rubber Growers Association and has been especially written relating to conditions in Malaya, though expanded to give some information applicable to most areas where there is industrial development in the Tropics.

An interesting feature of this up-to-date account of the position of methods of malaria control is that it is written for the instruction and guidance of the layman and yet something more than a merely popular account. What exactly is the position of the layman? He is clearly a deeply interested party in the matter, for it is he who will spend the money in carrying out such measures if he decides to do so and he to whom the benefits (if any) will come in terms of lowered costs or greater profits from such enterprises as he may be concerned with. It does not follow that he himself requires the knowledge and experience to carry out such measures, any more than the ordinary house occupier would be in a position to design his own water-carriage system. But it does follow that in appreciating what is involved in malaria control and having experience of some of the details of such work he is in a position not only to see it properly carried out but himself to do much to help. What may be called the high strategy of malaria control, such as the decision on the type of measure best adapted to particular circumstances is perhaps best left to expert advice, but there is a great deal that can be done by the planter, miner, or engineer himself in implementing such advice, and in this respect Dr. Macdonald's notes, giving as they do the essential facts the layman should know and a description of the different methods now in use, should be very helpful. Measures now mainly relied upon are various forms of drainage, dusting, spraying, and automatic petting with flushing devices for breeding-places; spraying, residual or otherwise, directed against the adult mosquito in houses and quarters; and, perhaps as important as any other measure, avoiding the creation of man-made breeding-places through ill-designed excavations, leaky water channels, and so on. In all these directions there is great scope for administrative talent, personal drive, and the inventive spirit. One small proviso might perhaps be stressed—viz., that it is essential that the layman who undertakes such work should be able to check up on the effect of what he is doing. For this he should be able to look for and recognize anopheline larvae in their natural breeding-places—not quite so simple a matter as sometimes made out, but one that nowadays could easily be learnt from a few hours spent with a collector or malaria officer.

Dr. Macdonald refers to the time when malaria was more severe in Malaya and affected industry more seriously

⁷ Clin. Sci., 1939, 4, 167.

⁸ J. clin. Invest., 1941, 20, 681.

man in any other country at an equal stage of development. Very largely by the efforts of planters and others engaged in industry this condition was brought to an end and Malaya became a model for other countries to follow. By the fortunes of war it has reverted to the state it was once in, though this can be remedied as it was before— but at this time without the need to accumulate new experience in the methods of doing it. The public spirit, initiative, and enterprise which before the war led to these results may, we feel sure, be counted upon again in the rehabilitation of Malaya; and, with what experience has been provided from the past, and the great advances in malaria control made during the war, there should be little doubt of the result.

ENVIRONMENTAL WARMTH

Maritime medicine has been much concerned with environmental conditions for nearly two centuries. For too long more attention was paid to machinery, equipment, and adjuncts than to the well-being and efficiency of the men. It was the usual story of the struggle of the machine versus man, interests which have conflicted since long before 1789, when Gilbert Blane wrote: "We see, indeed, infinite pains taken to prevent cordage from rotting, and arms from rusting; but however precious these may be as the necessary resources of war, it will not be disputed that the lives of men are still more so; yet, though there is the additional inducement of humanity to watch over the health of men, do not think that this, in general, is studied with a degree of attention equal to what is bestowed on some inanimate objects."

One important outcome of this war was a happy liaison between the Medical Research Council and the Admiralty—the Royal Naval Personnel Research Committee. The fruits of this union are even now inadequately recognized, but one of the most valuable is the recently published *Environmental Warmth and its Measurement*.¹ This memorandum, drawn up by Dr. T. Bedford primarily on the guidance of naval surgeons and such executives as the ventilation, construction, and gunnery officers, can be read profitably by all industrial hygienists. Two novel points are entailed in bringing up to date the science of environmental measurement: the use of special silvered data-thermometers, and the introduction of a new scale which Bedford terms the "Corrected Effective Temperature" scale. This differs from the original measurement devised by Yaglou and Houghten² in that globe thermometer readings are substituted for dry-bulb records. The reason for this innovation is the frequent occurrence in ships of unidirectional sources of radiant heat, which would detract from the accuracy of ordinary effective temperature measurements.

The late Medical Director General of the Navy, Sir Sheldon Dudley, writes a preface to the booklet, and a supplement gives a number of charts and nomograms. The monograph is not entirely devoted to the technique of environmental study, for one section deals with the effects of raised temperature upon output and efficiency and upon the accident rate. There is a useful bibliography, and special mention should be made of the excellence of the paper and printing.

TUBERCULOSIS IN TRINIDAD AND TOBAGO

In 1943 and 1944 Dr. W. Santon Gilmour was invited by the Colonial Office and the Council of the National Association for Prevention of Tuberculosis to carry out a survey of tuberculosis in the Colony of Trinidad and Tobago, the cost being shared as to £1,000 under the Colonial Development Act and £500 each from the Government of Trinidad and the N.A.P.T. Dr. Gilmour has now outlined in his report the tuberculosis problem in Trinidad and Tobago, placing it in its historical, racial, and economic setting.

The Crown Colony includes Trinidad, which is an island some 50 miles long by 37 wide, and Tobago, a narrow island 25 miles long, both situated a few miles off the coast of Venezuela. Descendants of African slaves introduced by the Spaniards, workers from India to meet demands of the sugar industry, with other descendants from Spanish and French settlers make up a varied total racial mixture of some half a million. Descendants of Indian settlers number about 200,000. The African predominates in the town, the Indian in the rural areas, the latter having the better housing: "From the point of view of tuberculosis there has not appeared to be any constantly direct relationship to nutrition other than malnutrition associated with poverty which still exists widely." The average temperature is not high for tropical areas, 69° to 88° F., but the average humidity is high, making the fatigue factor of much importance. The early tropical night also invites people indoors. Mortality rates from tuberculosis have been declining: 275 per 100,000 in 1896–1900 to 93 at the present time, which latter figure compares with 60 in the United Kingdom. Non-pulmonary tuberculosis is low in incidence. Very little milk is used, and most of it boiled before use. There is a much higher death rate in the towns compared with the country. Notifications about equal the deaths annually. Hospital and sanatorium accommodation is very inadequate. The tuberculin test was applied widely to give an indication of the infection rate and disclosed a high rate of infection in the towns and a considerably lower one in the country—and pulmonary disease was in the main found to be of the adult type. The Africans tend to present more acute than chronic disease; the Indians less disease, with tendency towards chronicity.

The main recommendations in the report concern the medical and nursing staff of the island; the provision of institutional accommodation and a few clinics. First, medical and nursing staff. These will consist of a whole-time chief tuberculosis officer and medical superintendent of a new institution, with the important suggestion that institutional work be unified in this one person undertaking clinic, preventive, and domiciliary work as is now done in the best schemes in the United Kingdom. Second, a sanatorium-hospital to be built up gradually to 268 beds, half for advanced cases. A site is already purchased and available near Port of Spain. The necessary additional medical and nursing staff are set out for the big sanatorium-hospital. Two new chief clinics are contemplated—one in Port of Spain, the other in San Fernando, with x-ray equipment. As regards diagnosis there has been a tuberculosis dispensary at Port of Spain working under the Trinidad and Tobago Association. It has been handicapped because (1) it is not officially recognized as the only place of reference of all cases of tuberculosis or suspected tuberculosis; (2) it is not the channel for admission of cases to the treatment wards of the existing hospital; (3) it has not the control of cases after discharge from hospital; (4) continued treatment after discharge from hospital and diagnosis have suffered from lack of equipment, especially x-rays; (5) the tuberculosis officer is part-time and has no control of notifications, or of admissions to hospital.

¹ M.R.C. War Mem. No. 17. London. H.M.S.O., 1946. Price 9d. (or including supplement, 2s. 3d.).

² *Trans. Amer. Soc. Heat. Vent. Engrs.*, 1923, 29, 163, and 1924, 30, 193.

The report makes many detailed recommendations for better and additional houses suitable to the special conditions of the islands. As a long-term policy better housing is required, and already the Government is dealing with the problem in some measure by its slum clearance. We are glad to note the Government proposes to enact legislation embodying the recommendations of the report.

UNITED STATES ARMY INSTITUTE OF PATHOLOGY

It was during the Civil War in 1862 that Surgeon General William A. Hammond founded the United States Army Institute of Pathology by ordering that pathological specimens be collected from hospitals and battlefields for the purpose of training Army surgeons. Seven months after its foundation the Institute had acquired thirteen hundred specimens illustrating wounds and the effects of projectiles. A year later a separate building had become necessary; and in 1887, the building in which it is now housed having been completed, the Institute's reports and specimens, together with the Surgeon General's Library (which to-day contains more than a million volumes), were established in Washington, D.C. Joseph Woodward started the photographic department in 1863. In 1942 its scope was greatly expanded under the designation of the Army Medical Illustration Service, and teams were sent to various theatres of war to take still and motion pictures in black-and-white and in colour, while some sixty general hospitals in the United States were equipped for clinical photography. The files now contain over a hundred thousand photographs in colour or monochrome and about a hundred thousand feet of cinematograph film. The Institute's present quarters have for long been inadequate, and it is hoped that they will soon be replaced by a new, enlarged Institute of Pathology and a thousand-bed hospital added, so that a centre for medical research and postgraduate training may be established for the study of the fundamental factors influencing disease. The staff consists of over thirty officers selected for their specialized knowledge, twenty Service men and women as clerical and technical assistants, and ninety-seven civilian employees. Information on any disease can be made available within a few minutes by means of sorting machines. Four departments have been formed: the Central Laboratory of Pathology, American Registry of Pathology, the Army Medical Illustration Service, and the Army Medical Museum. The director of the Institute is a Colonel in the Medical Corps of the Regular Army.

In accordance with the Federal Government's policy of sharing cultural and scientific matters with other nations the Institute aims at the dissemination throughout the world of knowledge of the pathology of disease. Its consultative service is available to foreign pathologists and medical graduates interested in special fields of pathology, as well as to the pathologists of the United States Army and American civilian institutions. The organization also conducts research into the pathology of disease and provides instruction in advanced pathology to officers of the Army Medical Department and others.

During the recent war Army hospitals in the United States and overseas sent in a wide variety of specimens, and it is expected that many more will be received as hospitals close down. Some of these specimens will be retained at the Institute, but it is intended that the surplus should be distributed to the war-damaged laboratories of medical schools throughout the world. Authorized foreign representatives and accredited scientists are invited to avail themselves of this valuable service. Further information

is obtainable from: The Director, Army Institute of Pathology, 7th Street and Independence Avenue, S.W., Washington, D.C., U.S.A.

INSECTS, MITES, AND ASTHMA

Allergic reactions to insect bites and stings are quite common and cause urticaria or angioneurotic oedema most frequently, asthma occasionally, and collapse and death rarely. It is less well-known that allergic reactions, especially rhinitis and asthma, may follow inhalation of insect emanations. The may-fly, sand-fly, house-fly, mushroom-fly, moths, and butterflies have all been incriminated.¹ Specificity has been proved, usually by conjunctival tests, passive transfer tests, and negative controls. Some of the case reports are of individuals exposed under special circumstances, but others are reports from parts of the world where the flies were present in myriads and the air was laden with the dust from the disintegration of their bodies. Such a report has recently been made by Ordtmann,² who describes asthma due to sewage flies (*Psychoda*) affecting workers at a South African sewage farm. The flies were so numerous that the shady parts of buildings and the interiors of homes near the filters were at times blackened by them. Thirty employees gave a history consistent with their asthma being due to sensitivity to the sewage fly, six showed positive skin tests to extracts of the fly, and two of the fly tested positive transfer tests; negative skin tests were obtained in controls.

The association of mites and asthma has in recent years aroused considerable interest, and was the subject of a leading article in this *Journal*.³ Attention was drawn to the findings of workers in Ceylon,^{4,5} that mites were present in the sputum of certain cases of tropical eosinophilia which was the subject of a recent annotation.⁶ This condition is also referred to as "eosinophilic bronchitis," "eosinophil lung," and "pseudo-tuberculosis." It appears particularly in India and Ceylon, and is characterized by asthma or bronchitis with an exceptionally high eosinophil count, and at times a particular x-ray appearance of the lungs; it is cured by arsenic. A second article by Carr and D'Abbrera⁷ describes their findings in twenty-five cases in Ceylon. Mites were detected in the sputum in every case, none had an eosinophil count of less than 3,000 per c.mm., and all except one responded to arsenic. The mites seem to live in the bronchial tree. It is suggested that they are responsible for the asthma and eosinophilia and that the arsenic effects a cure by their destruction. As the authors point out, further observations are necessary. It would be of interest to know whether mites occur in the sputum of apparently healthy people in Ceylon, particularly among those especially at risk.

There are both sewage flies and mites in this country. The former are localized to sewage plants but may be present in very large numbers. The possibility of individuals who attend to the filter plants being affected might be considered. That mites may cause asthma in this country appears clinically to be very unlikely, but more exact information from the entomologists of the conditions under which people are liable to be at risk is required.

We regret to announce the sudden death of Mr. A. Tudor Edwards, whose pioneer work in thoracic surgery won him international fame.

¹ *Bronchial Asthma*, L. Unger, Illinois, 1945, p. 185.

² *S. Afr. med. J.*, 1946, 20, 32.

³ *British Medical Journal*, 1945, 1, 18.

⁴ *Indian med. Gaz.*, 1944, 79, 163.

⁵ *British Medical Journal*, 1945, 1, 1.

⁶ *Ibid.*, 1946, 1, 884.

⁷ *Trans. roy. Soc. trop. Med. Hyg.*, 1946, 29, 373.

Reports of Societies

CONFERENCE ON AGEING

July 16 at the Imperial College of Science, London, a conference was held by the British Branch of the Club for Research on Ageing. The delegates of the European Branches of the Club and some other guests interested in the subject were also present. Lord Nuffield was elected Hon. President and Sir Francis Fraser chairman of the conference.

Sir FRANCIS FRASER, having introduced the delegates from ten countries, said that clinical research on old age was the most difficult of all fields of research as there were always so many uncontrolled factors to consider. Quick results were not to be expected. Pathological conditions were generally present in addition to old age. Clinical research on physiological ageing is practically impossible and it was better for clinicians to concentrate on studying primarily the pathological conditions. Prof. F. A. E. CREW gave an account of recent work in Holland on the sociological problems of an ageing population. The current figures for births, deaths, and marriages appeared satisfactory on the surface, but when looked into more carefully the present population trend showed a most disquieting increase in the proportion over 65. Since industrial capacity diminished after 35 there was a danger of the old becoming a burden on the young. He urged the need for closer collaboration between clinical investigators and those working on population research. The real problem of gerontology was "not how to give years to life, but life to years."

Dr. M. CRITCHLEY urged the need for further research on the nervous system in the study of normal ageing as well as the associated pathological conditions.

Dr. V. KORENCHESKY expressed the aim of gerontology as not merely to achieve a longer life but a stronger one. Since ageing started at a very early age they must include the study of the whole life span and even the development of the foetus. Attempts at rejuvenation by such methods as Voronoff's grafts, hormone treatment, or Bogomoletz's serum were unsatisfactory since they achieved only a temporary stimulation. The aim must be to discover and remove the causes of premature ageing and not merely to stimulate degenerated tissues.

Prof. F. C. BARTLETT considered that the effects of ageing on psychological performance could be compared with the effects of other factors such as extremes of heat, humidity, and noise. Each of these produced an increased liability to fatigue, which could be measured in a number of ways. New methods developed for the study of skill and fatigue in air pilots during the war might be applicable.

Reliable Information Sought

In the discussion which followed Prof. G. R. CAMERON emphasized the need for quantitative research on the effects of ageing on the blood vessels of the brain; there was scope for the employment of many new techniques on this problem. Lord Nuffield said he could not understand how ageing could begin in early childhood, since the athletic performance of a child went on improving up to the age of 15. Dr. Korenchewsky and Dr. Hammond pointed out in reply that different organs developed at different ages: brain and bone had priority at an early age and muscle developed only later. Prof. M. J. STEWART wanted research to be carried out on changes in the blood in old age. Many old people died of pneumonia because their blood failed to respond as vigorously as that of young people to the toxins of the pneumococcus. Dr. D. RICHTER urged the need for more accurate statistics of the causation of death. The present figures were unreliable as permission for a necropsy was often refused. The public must be educated to a realization of the importance and value of post-mortem examinations. Dr. L. FAIRFIELD deplored the way in which the chronic sick and aged were despised by the teaching hospitals and thrust on the public authorities. Medical science had relieved many of the worst miseries of old age, but senile dementia was a social problem of increasing urgency. Was it right that healthy young women, who should be bringing up

children in their own homes, were engaged in washing the dirty linen of wards full of wet and dirty senile demented?

Dr. PURCHASE, as a coroner, agreed as to the unreliability of the present statistics and said he could provide reliable figures for some two thousand cases a year on which necropsies were carried out. Prof. Crew said he was anxious to close with Dr. Purchase's offer. Dr. Fairfield considered that the conspiracy among general practitioners to avoid putting cancer on death certificates might cause significant error in the figures.

The morning session was closed by the passing of five resolutions expressing the requirements for the further advance of gerontology. These included international co-operation between those interested in the subject, establishment of permanent institutes for research on ageing, and the provision of ample funds necessary to secure these facilities.

Hormones and Ageing

At the afternoon session Dr. Williams read a paper for Prof. E. DODDS on the significance of androgen and oestrogen excretion in the urine in relation to ageing. The tendency to cancer of the prostate was considerably affected by the sex hormone balance as shown by experiments on castration and by the effects of administering stilboestrol in the male. Prof. Crew pointed out that the male infant had a much poorer chance of survival than the female. A male infant with bronchopneumonia was thus suffering from two conditions: (a) bronchopneumonia and (b) maleness. Could we use sex hormones to transform temporarily a male infant into a female to get over this disadvantage? Dr. Hammond, describing recent work at Cambridge, said that chronological age must be differentiated from physiological age. The physiological ageing of the foetus could be varied experimentally by controlling the size of the litter and the nutrition of the mother. Similar factors might operate in the return to an infantile condition in old age.

Prof. J. B. DUGUID put forward a new theory of the thickening of the arteries in atherosclerosis. We had been misled by the teachings of Virchow. The thickening did not come from within the artery walls: it was due to the organization of successive layers of fibrin deposited on the intima. In his view the primary cause of the disease was in the blood rather than in the vessels. Prof. Cameron asked how this could account for lipoids in atheromatous plaques. If the arterial narrowing was due to encrustation with fibrin from without, why did not the veins get narrowed in the same way? Prof. Duguid felt the relation of lipid changes to atheroma was not fully understood. The veins did not get narrowed, because when they thrombosed the whole vein became blocked, while in an artery the vessel was cleared by the rapid flow of the blood.

Dr. Korenchewsky gave an account of experiments on the artificial premature "climacteric" and its effects on ageing in female rats. Ovariectomy hastened ageing of rats. The combination of androgenic, oestrogenic, and thyroid hormones produced an apparent "anti-ageing" effect as judged by the organ weights and histological appearances, but this might be a temporary stimulation of ageing organs.

Effect of Vitamins

Dr. W. STEPHENSON read a paper for Dr. P. E. VERNON in which it was concluded that large amounts of vitamins exerted little effect on psychological ageing when the diet was adequate in these compounds. Dr. Stephenson described some work of his own in which an increase of vitamins in a diet previously deficient in them had improved the mental capacity of senile subjects. Prof. Bartlett criticized the use of psychometric tests in these experiments: the performance of such tests was not characteristic of senile subjects; the things that they normally enjoy doing should be measured.

Dr. RICHTER described an investigation of the biochemical changes. Mental and physical deterioration in ageing were processes that could be differentiated by their biochemical accompaniments; the changes associated with senile dementia were different again. Senility was a series of pathological processes which needed to be more clearly defined. Much public money was now being spent in providing homes for old people: there was an urgent need that more should be spent on preventive measures, which meant research.

Dr. J. H. SMYLY gave an account of his methods for assessing physical fitness in old men, including exercise-tolerance tests

as measured by pulse rate and oxygen consumption. The usual methods might be dangerous for old people.

Prof. Crew in summing up said that the proportion of old people in the population was increasing, and gerontology was therefore of increasing social importance. He recommended the formation of a permanent International Congress Committee to organize international gerontological congresses.

Nova et Vetera

SIR DOMINIC CORRIGAN

Nos. 1 and 2 of Volume VIII of the *Dublin Historical Record* contain an interesting memoir by Dr. Eileen Dixon of Sir Dominic Corrigan, who described the "famine fever" of 1847, wrote upon diseases of the heart, and in 1832 published an original description of insufficiency of the aortic valve. His name lives in the characteristic "water-hammer pulse" of aortic regurgitation.

Dominic John Corrigan was born in Dublin in 1802, one of six children. He went to school at the Lay College of Maynooth, a separate institution from the Ecclesiastical College, though the boys were not kept apart too rigidly. His classical grounding stood him in good stead when later he attended medical lectures in Latin at Sir Patrick Dun's Hospital. After qualification he became known as a sound and popular lecturer in the medical schools. His practice was enormous and for many years very lucrative. After an early failure, due to party and religious spirit, he was elected a Fellow of the Royal College of Physicians of Ireland in 1859 and soon afterwards began a term of five years in succession as its president. He was for a time Member of Parliament. Honours flowed in. For the first time in history a Catholic was appointed Physician-in-Ordinary in Ireland to Queen Victoria, and two years later, in 1849, Trinity College conferred an honorary degree of M.D. upon him. He was a member of the General Medical Council from the time of its foundation in 1857 until his death in 1880. But perhaps, as Dr. Eileen Dixon says, the distinction that he himself may have appreciated most was his election as Corresponding Member of the Paris Academy of Medicine in 1874, an honour only once previously bestowed on an Irishman, Richard Carmichael. For four-fifths of his working years Dominic Corrigan was one of Dublin's famous Merrion Square doctors. He was created a baronet in 1866.

MEDICAL ASSURANCE

The annual general meeting of the Medical Sickness, Annuity and Life Assurance Society, Ltd., was held for the first time at its new offices, 7, Cavendish Square, on July 16, Mr. R. J. McNEILL LOVE presiding.

In his address, Mr. McNeill Love made some reference to the National Health Service Bill. "We welcome any steps which might improve the service which our profession gives to the community, but we are not convinced that the suggested measure will secure the results. There is no doubt that very many doctors resent the able limitation and control of their work, and they are uneasy at the future. This state of mind is not improved by the realization that the eventual aim of the Government is to establish a full-time salaried service."

Turning to the accounts for the year, the Chairman said that in the Life Assurance Fund new business at £270,048 showed an increase of £45,208 on 1944; and the total annual premium income was now £175,431. Claims by death and maturity were over £80,000, which was a very large increase on previous figures. In the Sickness Fund the premium income was now £135,366, and claims paid during 1945 were £72,265—actually less than in 1944, although the amount at risk was substantially higher. The funds of the Society had increased by £200,000, and now amounted to £3,226,000.

Sir Cecil Wakeley, who was congratulated on his recent honour, and Mr. Bertram Sutton were re-elected directors. The meeting agreed to an interim bonus on with-profit policies for permanent sickness and accident insurance and life assurance terminating at the stated age or by death in 1946, the bonus on life assurance to include provision for each of the years since the valuation in 1936.

Imperial Chemical Industries has leased the house and laboratories at The Frythe, Welwyn, Herts, for conducting long-term research into such subjects as the antibiotic products of moulds, kinetics of continuous chemical reactions, and industrial design and toxicology. Work has already begun, but this accommodation will be temporary and will be used until a site near St. Albans can be developed.

Correspondence

Health Service Bill

SIR,—The National Health Service Bill has now been discussed from every conceivable standpoint, and there are few medical men who are not well versed in its provisions. Professional opinion seems to be divided into four main groups: (1) Those who for political reasons strongly support the Bill; (2) Those who, having little or no experience of general practice and lacking economic security, support the Bill for its obvious advantages for themselves; (3) Those who have been compelled for some years to submit themselves to the rigours of general practice and who, heartily disliking many of the provisions of the Bill, feel that the profession should accept it in the same spirit as the tired doctor accepts a night shift; (4) Those who object to the Bill on a basis of principle regardless of its advantages or disadvantages to themselves. The fourth group has not been very conspicuous—probably because it is very much easier to know that a thing smells bad than it is to give concise reasons why it does so.

Since the Bill is called the National Health Service Bill it is presumably to be judged by the degree of service which it provides for the general public. The advantages or disadvantages which accrue to the consultant or the general practitioner are therefore of secondary importance.

Regarded in this light two important facts emerge: (1) Adequate service can be given unless the amenities in the staff of hospital beds and staffs are forthcoming. (2) The medical profession has two distinct services which it renders to the general public: (a) a personal service rendered by the general practitioner; (b) an expert treatment-of-disease service rendered by the hospital and the consultant.

The hospitals, which started as institutions for the treatment of the sick poor, have developed into institutions for specialist treatment of disease. Mr. Jones in the medical practitioner's surgery becomes No. 14 in the hospital ward. A specialist is not a specialist in human nature but a specialist in some specific group of diseases. Where the medical practitioner treats the whole person the hospital and the consultant treat his disordered function.

Now, the State through its Government deals not with individuals as such but with their functions. The various shades of political opinion vary from a right wing which, while legislation for man's functions, recognizes that he has an individuality which should be given expression, to a left wing which regards man as a functioning citizen and nothing else. When, therefore, the State takes an active interest in the health of people it can legislate for man's disordered functions, but cannot and must not interfere with his individuality. This has very important implications in relation to the Bill. It means that, taking a long view, the general public will get an ever-improving service from the consultant and the hospital but continually deteriorating service from the general practitioner. This fact has nothing whatever to do with the willingness of the professional man to work the Bill or with his efficiency or skill.

It seems likely that the medical profession will be split into two sections on this point. The long-sighted consultant will see that he will have an ever-increasing opportunity to do good work, while the equally long-sighted general practitioner will see that purely clerical duties will absorb more and more of his time. There is much in the hospital and consultant service which will benefit from State interference. There is nothing in the general practitioner service which cannot be improved without the State interfering—I am, etc.,

Bath.

E. R. MATTHEWS

SIR,—Every doctor will agree with the first sentence of Dr. McIntosh Rattray's letter (Aug. 17, p. 238), but with his interpretation of Dr. Dain's address, as reflected by his subsequent remarks, there will not be such unanimity. While we all admit the difficulty of getting every single doctor to make up his mind, that is just what Dr. Dain told us to do. "Where do we stand?" he asked. "This decision has to be made, by the medical profession as a body or acting through

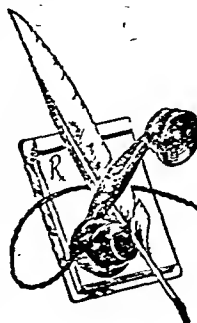
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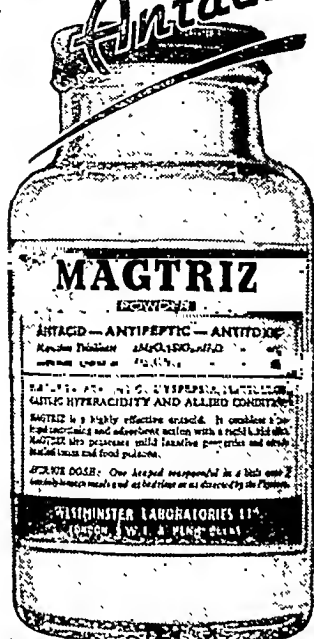
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ouncil, but by each individual member of the profession . . . ere comes a moment at which the doctors themselves must e asked what action they intend to take. The Council will t on their instructions. . . ."

Our course has not been set for us. The future policy is to e decided by each one of us by himself in his or her own ome. As a profession we are accustomed to taking decisions of ome magnitude every day of our lives, and I agree that we ould not sit on the fence any longer. The sooner the plebiscite aken the better. Until the result is known no action can be aken, and the present battle of words will continue. It ill ecomes one who loves freedom to call his colleagues traitors. here is to be no conscription into the Service, and those that o not like it can stay out, and not even Mr. Bevan will call hem traitors. Why therefore apply the epithet to those who ay wish to join the new Service? And who knows?—they ay even be in the majority.

There is no danger of the medical profession becoming ex-inct. The need for our art grows yearly, just as the need for strong and united B.M.A. grows more vital as the weeks go y. There has been too much verbal bickering, and it does us o credit with either the public or the Minister. Once the esult of the plebiscite is known let us all unite behind the Council in following a common line, and let there be no more alk of traitors nor of dishonourable conduct. The debate has gone on long enough. The time for a vote has come. Which- ever way it goes let us hope that it will be decisive.—I am, etc.,

Skewen.

TREVOR DAVIES.

SIR,—The Minister of Health, a paid public servant, demands o have supreme power conferred on himself and his successors, power which sets aside the jurisdiction of the High Court of Justice—this and nothing less will satisfy his craving for authority. So far, by political acumen, astute handling, with an arrogance seldom exceeded, and backed by a heavy "yes-men" vote a totalitarian measure has been forced through the House of Commons on the highly debatable pretext that it is the-wish of the people.

In actuality the informed public are antagonistic to this Bill ; the as yet uninformed will thank the medical profession if it insists on a much more detailed consideration of the implications of this extremely complex measure before signing away its liberties, together with those of the people, and abjectly "bending the knee" to the dictation of any one man. To sign a service contract must mean complete failure to recognize the "iron hand in the velvet glove," but at the same time it means blind and trusting acceptance by the signatory of what is acknowledged in every quarter to be merely a "skeleton Bill"—but nevertheless when fully garbed a political weapon of quite unlimited potentialities.

A brief résumé of the "conditioning process" to which the medical profession has been and still is being subjected may help to throw into relief political ethics. The blending of dulcet tones to attract the young by spurious promises of initially attractive salaries, the more-than-market value offered for practices to induce the older men to part with their freedom: these ill conceal the ulterior motives behind this seeming generosity. Through State seizure of hospitals (plus their endowments) consultants either sign or starve; by abolition of the right to buy or sell the general practitioners likewise have duress applied; thereafter each will be directed or controlled.

Fate has placed on the shoulders of the medical profession a very heavy burden of responsibility to the people of this land, for on the decision to steadfastly decline to be a party to bribery and corruption is poised the fate of a nation—here surely is the chance to strike a blow to free an "England in Prison." Count well the cost before bartering your soul, your independence, and your self-respect for specious promises of materialistic gain, for which in any case there are no honest guarantees but only memories of broken pledges (reduced capitations, raised insurable income limits, broken E.M.S. contracts).

After a calm survey of such a record can you trust the politician? Would it not be wiser to use your own common sense in conjunction with your conscience before signing?

This Bill as it stands is totalitarianism naked and unashamed. If we have moral principles and do not exercise them fearlessly this "skeleton" will see to it that the opportunity for so doing will never again arise: we shall have reaped where we have

sown. The plebiscite will at least determine whether in the main we are morally sound or rotten with corruption and unworthy of the responsibilities we have to carry. It surely is not so. In short, we are being tempted to barter our freedom and our honour for economic baits.—I am, etc.,

St. Ann's-on-Sea.

G. H. URQUHART.

SIR,—I would like to congratulate Dr. C. G. Jones (Aug. 17, p. 239), who has, I feel quite sure, expressed the views of a large section of our profession. The report of the Annual Representative Meeting made very sorry reading: I refer particularly to the speech by Dr. H. Guy Dain, the Chairman of Council, speaking on behalf of the Council. It is a fundamental law of nature that there shall be opposition to every growing, developing thing. It is more than regrettable that the opposition to the National Health Service Bill has come from the leaders of our Association. The B.M.A. has already said and done quite enough to be made the laughing-stock of future generations of doctors, who will be, as Dr. Jones rightly states, doctors because of their vocation and not merely business men being doctors.

Week by week we are urged to unite to "fight the Bill," to "fight the Minister," to "bring the Government to its knees," and Dr. Dain concluded his speech by saying that "we are in the strongest possible position for ensuring that what we think is best for the public will be carried out." What rubbish! There can be no such unity. An appreciable number of doctors see in this Bill the way to better health for the people of the British nation, and no amount of claptrap will deter them from working in the new Service to the best of their ability. It would appear that some members of our profession require a reminder that we are in fact living in a democratic country, which implies in our case government by an elected majority in the House of Commons. The present Government, elected by constitutional methods in 1945, has decided that there shall be a National Health Service and has laid down certain basic principles upon which the Service shall be built. Let there be no mistake—the new Bill will be on the statute book in the near future. With the full co-operation of the profession the new Service could be second to none. Without that co-operation it might well be a mediocre apology for a Service of which nobody could be proud. It does not require a great deal of thought to see where our duty lies.—I am, etc.,

Scarborough.

PETER WADDINGTON.

SIR,—Judging from most of the correspondence and articles in the *Journal* it would appear that some members of the profession at least do not approve of the proposed National Health Service. This is of course a pity. The main complaints appear to be directed against the ministerial powers—his power of direction—and the fact that we will become a salaried service.

The direction of doctors appears to me to be an unfortunate but very necessary evil. It will be impossible in the future, as in the past, to spread the limited number of doctors evenly throughout the country without some sort of planning. Without control there would inevitably be areas of relative congestion and sparsity. Surely we can see that this is so and therefore agree that some measure of direction is required. Is it not the *method* of direction rather than the *principle* of being directed into which we should inquire? Providing the "direction" is reasonably carried out, with due consideration being given to the preference of doctors for the type of work and areas in which they wish to work, nothing but good can result. This will I believe prove to be the case.

The proposed National Health Service is a magnification and improvement on an already well-tried and successful system—the Panel. No one can deny that this system is not a good one, and that should there be any failure in the ability of doctors to work an extension of it (i.e., the National Health Service) perhaps the fault lies not in the system but in those who have to work it.

Ministerial powers can of course become dangerous. Again, rather than strive to fight the principle whether or not he should have these powers should we not grant that he must have them but see that the powers are not carried beyond those given to him by Parliament, which, under an excellent democratic system, represents the wishes of us all?—I am, etc.,

London, E.2.

ALAN MALCONE.

Principle 2 and the Health Service

SIR,—Two distinct issues seem to be involved in the choice of a right medical policy at the present time. The first involves the question of the manner in which the best possible Health Service can be provided within the terms of the Health Bill having regard to the number of available doctors, the number of patients to be provided for, and the amount of money to be spent upon the service, and so on. This first issue has been under debate for years. The B.M.A. has tried to persuade both doctors and the public to set up a complete service based upon existing and established services. Any chance of success these proposals may have had was destroyed partly by the absence of enthusiasm among doctors for any radical change and partly by the results of the last election.

It is now clear that the community has decided the general form of the Health Service that it desires to have. Hence only one choice lies before every doctor: to accept or to refuse service under the Act in 1948. Before he can finally make this choice every doctor must determine his attitude towards accepting service in any State-conducted Service. When he has done that he must ask himself whether the actual conditions of work and remuneration are likely to be such that he is willing to accept service. If his answer to either of these questions is in the negative he will know where he stands. But even if he is prepared to accept service in a State-sponsored Health Service he will still need to be satisfied about the conditions of work that will be offered to him in the Service.

This brings me to the second issue. The conditions of work under the new Health Bill are only partly determined by the Bill itself. Many of them will be determined by the Regulations that are yet to be made. It seems to me to be most impolitic to attempt to precipitate a struggle about a short-term issue such as the amount of the present N.H.I. capitation fee. What we ought to be discussing are the long-term issues—I mean remuneration and conditions of service—so far as they will be settled by Regulation. I see no reason why such a discussion cannot be "without prejudice" on both sides. One thing at least is certain: many doctors will not be able to decide whether they are willing or unwilling to enter the new Service until they know a great deal more about the proposed conditions under which they will be asked to work. As soon as those conditions have been made clear we shall be able to make plans for our future with some degree of certainty.

When the Act is in operation we may find in fact and in experience that it infringes Principle 2 in some important respect. If that happens the time will have arrived for a real trial of strength. If the above plan of action should prove to be generally acceptable to the profession we should not place ourselves in the invidious position of appearing to be seeking to force the political views of a majority of doctors against the expressed will of the community. If only a tithe of the warnings given by some doctors should prove to be justified it will not be long after Jan., 1948, before we have strong grounds and wide popular support for a demand for changes in the Regulations or even in the Act itself.

In my opinion Principle 2 is the only solid ground on which opposition to the new Service can be rightly undertaken, and that only after the Act has been given a trial.—I am, etc.,

Worcester

HOWARD E. COLLIER.

* Principle 2 is as follows: "The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards, and knowledge, the individual doctor retaining full responsibility for the care of the patient, freedom of judgment, action, speech, and publication, without interference in his professional work."—Ed., *B.M.J.*

Direction in National Health Service

SIR,—I cannot see how a National Health Service can be run efficiently without a certain amount of direction. After all, do we not have a degree of negative direction at present? When a man qualifies in the ordinary way he applies for a hospital appointment or an assistantship. Obviously he must apply where there is a vacancy, and if that is just where he wants to go then he is lucky. It appears to me that under the N.H.S. these conditions would be similar.

There are at present certain districts in large towns which are insufficiently supplied by medical practitioners. Conditions in these areas are not attractive, and therefore at present shunned, but under the N.H.S. they could be made more attractive by carrying a higher rate of pay. You can always get a job done if you pay highly enough, and this can be done under a Service, whereas it is impossible under present conditions of practice.—I am, etc.,

Portsmouth.

DOUGLAS W. BRUCE

Negotiators and Legal Advice

SIR,—I should like very strongly to support the letter of Geoffrey Dudley (Aug. 17, p. 240). It has always appeared to me that the very best legal counsel should be employed in negotiations with the Government, and I have always been surprised at the apathy of our profession in this matter. I once raised the question at a B.M.A. meeting at which members of the Central Executive were present, but there was a complete absence of any acknowledgment that the idea was sound. I am, etc.,

Richmond.

R. K. ROBERTSON.

SIR,—Surgeons and well-known consultants will float easily above the murky waters which will engulf the free profession. It is high time that a strong Committee of Finance controlled dealings with the Socialistic Government, which daily is becoming more totalitarian than ever. An experienced lawyer should hold the chair. Salaries, capitation fees, retiring pensions, and a definite arrangement for the distribution of the promised £66,000,000—the solatium for the life work of thousands of busy doctors who on a wave of the hand are renouncing all dealing in their property—all need deciding at an early date. Once on the statute book repealing or amending is a troublesome matter. The profession owes a debt of gratitude to Mr. H. U. Willink.—I am, etc.,

Cranlock.

A. L. MARTYN.

Amoebic Dysentery

SIR,—I have recently been able to read the letters and articles which have appeared in the *Journal* discussing at some length the condition of amoebic dysentery. While most of them pointed out that this chronic condition could cause manifold different symptoms only one such symptom appears to have been mentioned—i.e., that of diarrhoea.

It became apparent to all medical officers working in the Far East that many common symptoms of this condition have as yet not found their way into the textbooks. The hazard to the general well-being of the population of this country in relation to the large number of men and women returning from the Far East has been well recognized, and in this connexion it is interesting to note that at Service hospitals to which men are medically repatriated for reasons other than amoebiasis a routine tropical overhaul reveals a large number of apparently symptomless patients who are infected with amoebic cysts. An even larger number must by now have taken their place among the civilian population.

The general practitioner is bound to be confronted with such patients, and unless he is aware of at least a few of the more common symptoms with which such patients present themselves proper investigation may be dangerously delayed.

(1) Diarrhoea is the commonest symptom, and even in this country it may be of an acute nature, although more usually the patient complains of persistent loose bowel actions with or without blood and mucus. Such conditions are seldom missed.

(2) Pain in the abdomen. Acute abdominal pain in any patient who has spent some time in the East should be regarded as an "amoebic possibility": often these patients even without fever have a liver or caecal infection with *Entamoeba histolytica*. Persistent dull abdominal pain with apparent good general health is probably one of the more usual manifestations of this disease that the general practitioner sees in this country. It resembles closely the symptomatology of peptic ulceration, and is accompanied by a large excess of large-bowel flatulence which is most embarrassing to the unfortunate sufferer. Chronic caecal pain may again be a pitfall in diagnosis; and in both these cases widespread pin-point bowel mucosal lesions discharging amoebic cysts should be excluded.

(3) Haemorrhoids. The number of people who report to their doctor with piles is enormous, but in any fresh cases the doctor may be in men or women returning from the Far East it is as well to include the possibility of amoebic bowel ulceration as the primary cause of the condition.

(4) Malaise and irritability. The general practitioner is overwhelmed by patients complaining of general debility; but clinically it is of interest to note that the stools of patients giving past history of overseas service, often a history of very vague abdominal discomfort, and complaining bitterly of continued irritability for which they cannot account will often demonstrate amoebic cysts. The chronic civilian sufferer from amoebiasis in the East always states he knows when he is due for a relapse by the onset of this odd irritability.

This list is by no manner of means complete or comprehensive, but it may afford the already overworked practitioner a basis on which to work.

This letter was prompted by the fact that I have recently seen in this country two cases: one "operated on for piles which had persisted" who showed large ulcer craters with actively motile *E. histolyticae* three inches above the pile-bearing area; and the other investigated for flatulent dyspepsia and discharged with negative results who had large numbers of amoebic cysts in his stools. Appropriate treatment cleared both these cases.

I feel sure there must be many more such patients.—I am, etc.,

London, N.12.

M. L. MASON.

Transurethral Prostatectomy

SIR,—I do not wish to join in the present battle of words taking place in your columns on the relative merits of the transurethral versus the open prostatectomies, but I must refute the inaccurate figures and erroneous conclusions drawn therefrom contained in Dr. H. T. Cox's letter (Aug. 17, p. 241). If Dr. Cox will carefully re-read my paper (*Proc. roy. Soc. Med.*) to which he refers he will find the 219 cases of resection reported herein did not represent my total but merely a group in a consecutive series of 357 cases dealt with by various methods. I have been performing transurethral resection of the prostate since Sept., 1931 (*Lancet*, 1, 121; 1932, etc.), and have carried out more than 1,600 such operations. I think by now I can claim to appreciate that the procedure has very definite contradictions quite evidently not realized by some of the recently converted ultra-enthusiasts.—I am, etc.,

London, W.1.

TERENCE MILLIN.

The Catheter and the Prostate

SIR,—Mr. Wilson Hey (Aug. 17, p. 241) reiterates his well-known statement that operation must be delayed if a catheter has been passed for prostatic obstruction. In the last paragraph of his letter he condemns suprapubic cystostomy as a dangerous procedure. It would be of the greatest help to both general practitioners and surgeons if he would state categorically what should be done for a patient when acute obstruction supervenes on chronic under conditions when transfer to hospital or nursing home involves considerable delay. This is a common experience for many. He should also make it clear how such patients are to be treated after their initial obstruction has been (perforce) relieved by catheter pending operation.

Mr. Wilson Hey may have made these points clear in previous correspondence, but I have been unable to find it, and apparently many others are in the same difficulty.—I am, etc.,

Belfast.

C. J. A. WOODSIDE.

Reiter's Disease

SIR,—I beg to draw attention to the fact that so-called Reiter's disease, as described by Flight-Lieut. W. P. U. Jackson (Aug. 10, p. 197) and Dr. F. Wrigley (p. 199), is almost certainly dysenteric polyarthritides, as it is well known to most physicians who served in dysenteric zones in the Hitlerian war. A history of dysentery, sometimes fleeting, with a latent interval of about ten days could be established in nearly all the cases I saw (about a dozen), and in no instance was it the first attack. Paulett and

I succeeded in reproducing the sterile conjunctivitis by instilling a drop of Flexner vaccine into the conjunctival sac in three of these cases, the flare taking place after an interval of five to eight days. It was impossible to employ autogenous vaccine because stool cultures were always negative when such patients were first seen, and it was therefore a matter of chance whether we used the right organism or not. Conjunctivitis did not follow use of the vaccine in normal controls, nor in patients with gonococcal polyarthritides or with streptococcal polyarthritides (rheumatic fever). Vaccine dropped into the urethral orifice in several cases failed to cause urethritis, however. Vaccine dropped into the conjunctival sac of cases of dysentery without polyarthritides yielded essentially negative results. This work was not published owing to loss of the records in Italy (in the usual way).

The hall-marks of the various organisms responsible for different forms of what is thought to be allergic polyarthritides are interesting: conjunctivitis and urethritis (sterile) point to the dysenteric group; tenosynovitis to the gonococcus and tubercle bacillus; carditis and salicylate response to the streptococcus. The list is by no means complete, and the explanation remains unknown.—I am, etc.,

London, W.1.

PAUL WOOD.

SIR,—You published in the *Journal* of Aug. 10 two interesting short papers; one by Flight-Lieut. W. P. U. Jackson; the other by Dr. F. Wrigley, on Reiter's disease. I entirely agree with their view that this syndrome should be more widely recognized, both in order to promote further research into its aetiology and to remove an unjust stigma of venereal disease from certain cases. At a discussion on acute arthritis in adults, held by the Physical Medical Section of the Royal Society of Medicine in April, I drew attention to this condition, giving brief notes on six cases seen in the Middle East and suggesting that some of the cases discussed at the same section in 1942 by Lieut.-Col. King and myself as being probably of gonococcal origin might more rightly have been classified in this group. By 1944 Lever and Crawford were able to find 45 such cases in the literature.

The order of appearance and time lapse between the appearance of the symptom triad vary a great deal, but I think it unusual for the urethritis to appear thirteen days after the arthritis as in Case 1 quoted by Jackson, and again the presence of a true keratitis described in Case 3 is, I believe, uncommon. The most likely aetiological agent appears to be a virus of the Waelsch type, which is probably also responsible for "swimming bath" conjunctivitis and "inclusion" cervicitis (Van Rooyen). Research into the causative agent in this syndrome is urgently required, and valuable information may be obtained by careful recording and follow-up of suspected cases, together with examination of urethral scrapings for inclusion bodies and the carrying out of the Frei antigenic reaction. This was unfortunately impossible in my cases, but under peacetime conditions it should be less difficult.—I am, etc.,

Bath.

GEORGE D. KERSLEY.

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Van Rooyen, C. F., and Rhodes, A. J. (1940). *Virus Diseases in Man*, Oxf. Univ. Press.

SIR,—After reading the article on Reiter's disease by Flight-Lieut. W. P. U. Jackson (Aug. 10, p. 197), one is reminded of the fact that the triad of symptoms described is a well-known complication of bacillary dysentery. Although the author states that "diarrhoea, sometimes severe and bloody, may be present at the onset," no mention is made of bacillary dysentery as a possible aetiological factor in his cases. Complications in bacillary dysentery may occur during the attack, but the usual story is that they occur two or more weeks later, and unless a history of diarrhoea is inquired for the patient will rarely volunteer the information. The author used sulphathiazole in treatment, and it is of interest to note that following the introduction of sulphaguanidine in the treatment of bacillary dysentery the incidence of complications became negligible.—I am, etc.,

St. Helena.

JAMES KAY.

Problem of Haemophilia

SIR,—I was much interested in the annotation on the problem of haemophilia (July 6, p. 18) and the treatment of this condition with plasma. In discussing the causation and treatment of this condition (*Clin. J.*, 1936, Dec.), I referred to Howell and Cekada's researches which indicated that the platelets were unduly stable and, therefore, thrombokinasase was liberated so slowly that clotting was unduly delayed. I also pointed out that bleeding occurred without trauma.

Since 1942 I have treated seven cases of true haemophilia and two cases of multiple hereditary telangiectasis with plasma applied topically and by mouth—seemingly with good effect. The usual method has been to give from one to two measured ounces of plasma three times a day and also regularly as a prophylactic measure. This seems to have been very helpful, and where the full dose of plasma has been continued the patient has been practically free from bleeding.

For some unknown reason the improvement in the coagulation time in the blood frequently does not coincide with the marked clinical improvement which ensues. It is important to note, however, that there are factors in haemophilia which are not understood—such, for instance, as the undoubted periodicity which occurs in some cases; and it is possible that there is also a capillary factor which has a direct action on the walls of the capillaries, quite apart from the alteration in the coagulation time. While evidence has been adduced that the unduly stable platelets of haemophilic blood break down normally when in contact with normal plasma, it is possible that much more normal plasma may be required to liberate sufficient thromboplastin to bring about normal coagulation than is required for the liberation of the capillary factor, if this exists.

The most striking case was a man who recovered after amputation of the leg for a compound fracture of the femur, which had become septic. This patient had been under my care, having prophylactic plasma for over a year, and during that time he had been much improved. He gave a typical history of haemophilia, and the blood-coagulation time was characteristic. The family history revealed that one cousin, two maternal uncles, and one maternal great-uncle had all died from haemophilia. Unfortunately the patient sustained a compound fracture, and when I saw him some weeks later two open sinuses were oozing blood and pus continuously, while huge masses of septic blood clot extended up the thigh. As would be expected the patient was very anaemic and cachectic. After ordering transfusion I expressed the clot through the sinuses by manipulation over two or three sessions. The wound was gradually cleaned by irrigation with peroxide and hypochlorite solution, and the application of sulphanilamide. It continued to ooze, however, despite transference because the sharp ends of the fractured bone, which were art, caused frequent trauma. I consulted with my colleague, Kenneth Pridie, and he agreed that the only hope of saving patient's life was to undertake the formidable procedure of amputating the leg. This was successfully performed by Mr. Isserlin, the patient being transfused before and after the operation. At first all went well, but some days later I was asked to see him again as the stump was septic. The sutures had broken down, and underneath was a mass of foul-smelling, septic clot which oozed continuously. I removed masses of the septic material with my gloved hand, swabbed with peroxide until the stump was clean, then applied dressings soaked in plasma, which were successful in stopping the haemorrhage. I ordered another transfusion and also a combination of bipp and plasma to be applied to the wound. This was very effective; and when it was quite clean skin-traction was applied by Mr. Isserlin, and the wound was successfully sutured. All this time the patient had several transfusions, and 2 oz. (57 ml.) of plasma in milk by mouth, i.d.s. He was eventually discharged from the Bristol Royal Infirmary quite well. Since then he has taken the plasma by mouth and has remained well.

A point that I have always insisted upon is that pus and blood clot must be evacuated. A joint must be aspirated and aspirated again if permanently crippling adhesions are to be avoided; and again, a loose tooth which is oozing must be extracted before the patient becomes anaemic. Plasma by mouth, vitamin K, and plasma applied to the socket on a pad, with the patient biting on it, have always succeeded in stopping the bleeding.

There are other less dramatic cases which I could record did space permit, and some of these have been successfully treated solely by plasma given by mouth. But neither transfusion of blood nor plasma by mouth will have any immediate effect on controlling bleeding coming from the kidney. This is always

troublesome, and takes some time to stop. Again, none of these measures will have more than a slight temporary effect when haemolytic pyogenic organisms are at work in the blood stream. The rule holds here, as elsewhere, that pus in any quantity must be evacuated if blood, plasma, or penicillin is to be effective. Whenever the condition is really dangerous the first measure should be immediate transfusion of plasma followed by properly grouped blood. (We found in the case described above that cross-grouped blood was infinitely more effective than ordinary stored blood.)

Finally, it is not claimed that the use of plasma by mouth is established by the apparent results obtained in a few cases, but since it has seemed to be very helpful, particularly as a prophylactic measure, it is recorded here so that others may assess its value in due course.—I am, etc.,

Bristol.

FREDERICK SUTTON.

Fibrin Foam and Fibrin Films

SIR,—I have read with interest your annotation (Aug. 3, p. 165) on fibrin foam and fibrin films. May I draw your attention to a rather obvious mistake in the reference to sterilization? The writer states: "Fibrin film, in fine transparent sheets sterilized by glycerol or, more conveniently, by heat..." Obviously sterilization in glycerol would not do at all. What is meant by the original workers in this work is: heating in ethylene glycol to 120° C. for at least 10 minutes. The ethylene glycol is a plasticizer; were water the plasticizer or water-soluble plasticizers used in the composition of the plastic fibrin tissue-reaction would be much more marked even if the material survived the treatment. That it does not react kindly at all to any form of heat treatment was found in experiments by Sorsby, Dollar, and myself in 1944 (*Trans. ophthalm. Soc. U.K.*, p. 187), and this has been the case in further work by me.

I also note the omission of reports of further progress—which has been considerable—in this field. I refer in particular to the work at Columbia, Vanderbilt, and Harvard, and at the Mayo Clinic, by Frantz, Light, Pilcher, Meacham, Uihlein, and a few others, describing oxycellulose, the gelatin-sponge, etc.—materials which have undergone considerable clinical trial in the United States. A full bibliography can be found in any of Dr. Frantz's admirable papers—namely, "Oxidized cellulose-absorbable gauze" (1945). *J. Amer. med. Ass.*, 129, 798–801. or "New Absorbable Hemostatic Agents" (1946). *Bull. N.Y. Acad. Med.*, 22, 102–110. Mention of and reference to published work in this new and interesting field of applied surgical research should in my opinion form part of any editorial which is to be regarded as a comprehensive account of achievement in any particular field it deals with.—I am, etc.,

Sutton.

GEORGE BLAINE.

Penicillin Solutions for Injection

SIR,—In suggested methods for the preparation of penicillin solutions for injection "sterile normal saline" figures prominently in many publications. It has recently been adopted as an official recommendation by the *British Pharmacopoeia*. We have been puzzled as to why "normal saline" should be used for intramuscular or subcutaneous injection and we would be interested to learn if this has any specific merits over distilled water, which is the usual diluent for injection purposes. It would seem to add a quite unnecessary complication to penicillin therapy in general practice as "sterile normal saline" is not a very readily available material outside hospitals.

It is obvious that solutions for injection should be as near as possible to the tonicity of plasma and it seems probable that normal saline was recommended on the supposition that this would produce isotonic solutions. However, the tonicity of penicillin solutions depends not only on the presence or absence of sodium chloride but also on the amount of penicillin dissolved in the water and on the amounts of impurities present in the commercial sample apart from the active antibiotic. Commercial penicillin of 500 units per mg. contains less than one-third penicillin, and a solution of this material containing, say, 20,000 units per ml. will contain 40 mg. of the powder per ml. or 4% weight in volume of total solids. With higher potency material of 1,300 units per mg. a solution of 20,000 units per ml. will contain approximately 1.5% weight in volume of solids, and a solution made from the same material to contain 100,000

nits per ml. will have a total solid content of approximately % weight in volume. These examples show how the nature of the solution varies with the purity of the penicillin used and the strength of the solution required.

Our results with red cell haemolysis given in the table below illustrate the tonicity of solutions of penicillin of different strengths and made from penicillin preparations of varying purity. For this work batches of penicillin of low potency, high potency, and pure penicillin were used. Solutions were prepared in sterile distilled water in small tubes and fresh human red cells were added. After 15 minutes at room temperature tubes were examined for haemolysis of the cells.

Batch of Penicillin	Potency u./mg.	Penicillin Units per ml. of Solution				
		50,000	20,000	10,000	5,000	2,000
A "commercial" ..	545	0	0	0	+	++
B " " ..	1,358	0	0	++	++	++
C "pure" ..	1,650	0	++	++	++	++

0 = No haemolysis. + = Partial haemolysis. ++ = Complete haemolysis.

It can be seen from the table that with sample "A" human red cells were partially haemolysed in a solution containing 1,000 units per ml. but not in the more concentrated solutions. Solutions containing 10,000 units per ml. of the higher potency sample "B" were hypotonic, whereas with 20,000 units per ml. no haemolysis occurred. Solutions containing 20,000 units per ml. made from pure penicillin were hypotonic but not those containing 50,000 units per ml. These results can be substantiated by the cryoscopic method. The more concentrated solutions of penicillin are certainly hypertonic, and the addition of sodium chloride would appear to be quite unjustifiable for this would only increase the hypertonicity.

Information at present available does not indicate that sodium chloride has any advantage in maintaining the stability of solutions of penicillin. The recommendation of the *British Pharmacopoeia* that solutions for injection should not be kept for more than seven days at 4°C. is certainly sufficiently cautious.—We are, etc.,

J. UNGAR.
R. DENSTON.

Glaxo Laboratories, Ltd.

Syphilis Masked by Penicillin

SIR,—The possible danger of masking an incubating syphilis during treatment of a recent gonorrhoea by penicillin, first suggested by Scott Cowe and myself (1945) and recently echoed independently (1946) by Allan, Batchelor, Donald, and Murrell, is really part of the wider problem of therapeutic penicillin generally, and I would suggest that the following criteria are essential in any true evaluation, both immediate and remote, of this truly potent preparation.

(1) Penicillin is bacteriostatic and bactericidal to many pathogenic and non-pathogenic organisms. (2) It has no effect on increasing the defensive and reparative processes of the body. (3) It has no effect on "walled-off" lesions, and it is so rapidly excreted that on cessation of treatment its effect quickly falls to zero. Consequently any organisms that escape destruction must be dealt with by the body defences *per se*. (4) Time and dosage factors.—Period of administration and dosage are of necessity empirical, and cure rates approaching 100% in no way absolve us from individual assessment in every case. (5) Instability.—This property bids us be ever on our guard against loss of potency, more especially now that penicillin is generally released from central control. (6) Lastly, a point that often receives scant attention—i.e., that the pathological and reparative processes brought about by disease may by their very nature militate against cure although the causative organism is very susceptible to the drug.

If due consideration is paid to all the above factors many interesting possibilities, sometimes amounting to probabilities, suggest themselves. For instance, apart altogether from masking an incubating syphilis the typical lesion of syphilis itself, especially when modified by time, tends to assume a "walled-off" lesion, and perhaps here we have the explanation of the higher failure rate the later treatment is commenced. Again, on purely pathological grounds in ulcerative endocarditis I would suggest that the result of treatment is to convert phase

(i) characterized pathologically by the "raw" valve and clinically by bacteraemia, emboli, and fever to phase (ii) characterized by the "healed" valve of the well-known asymptomatic stage. Claims of cure therefore must be viewed with a healthy scepticism, and perhaps repeated courses may be necessary to control the disease. From the listed criteria also the disappointing results in dermatology are more easily understood. And finally, in view of the recent recognition of the value of some intestinal bacterial products to the body economy the non-toxicity of penicillin may have to be reconsidered since it is possible that syndromes, perhaps long-delayed and apparently unconnected with the therapy, may occur. The partially successful attempts of oral therapy increase this possibility, and it is interesting to record that in a personal communication Dr. Doayne Bell has encountered a widespread purpura developing after treatment by oral penicillin which responded to vitamin therapy.

Finally, may I digress in order to ask if the subcutaneous implantation of solid penicillin has been tried as a means of prolonging its action as this method has been so highly successful in the use of other preparations?—I am, etc.,

London, W.1.

F. L. LYDON.

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Allan, A. (1946). *Ibid.*, 1, 314.
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The Pathogenesis of Cancer

SIR,—I was interested to read in the *Journal* of Feb. 16 (p. 242) the annotation headed "Testosterone Prophylaxis of Mammary Cancer" and in particular this sentence: "A major outcome of cancer research in recent years has been the recognition that many tumour types are closely dependent upon specific hormonal changes for their inception and, in some cases at least, for their subsequent growth." I would like to offer the following observations.

Being unable personally to undertake researches which would be costly and prohibitive to the general medical practitioner, I wished to stimulate investigations in cancer on the crux of the problem, the solution of which is of such far-reaching importance to the world in general. After the termination of my studies for entry into the medical profession at Madrid I published an article "A Hypothesis on the Pathogeny of Cancer" in the review *El Siglo Médico* (1927, No. 3857, p. 467) in which I suggested the following: (1) Cancer is a neoformation made up of epithelial cells which regain their embryonal karyokinesis owing to the absence or weakness of the endogenous stimulus which would restrain commonly cellular mitosis. (2) This stimulus is represented by some of the sexual hormones. (3) Despite the control or check which prevents the excessive multiplication of the cells these retain their tendency to divide and in fact are relatively autonomous, and it is indispensable to assist organic necessities.

Many years since I have had the satisfaction of confirming that the researches on the cancer problem are proceeding on the lines we indicated in 1927, and I am glad that my theory has been a small contribution to cancer research, though I am far from suggesting that it would have solved a problem of such immensity.—I am, etc.,

Mahón, Minorca.

A. CURIÉSES DEL AGUA.

Africans, Peptic Ulcers, and Parasyphilis

SIR.—If Abdulla read the *B.M.J.* he would be hurt by Sir Heneage Ogilvie's comment (May 25, p. 800) that Africans seem to be immune to peptic ulceration. For Abdulla is an old Nubian, who blew the bugle for Kitchener at Omdurman and, domiciled in Kenya, suffered from abdominal pain and repeated haematemeses, until in 1941 Sir Heneage (then Col.) Ogilvie performed a partial gastrectomy for a gastric ulcer which had penetrated to the pancreas. The result has been excellent and the writer, as the mere go-between, receives periodic presents of eggs from a grateful patient. Acute and chronic progressive peptic ulcerations, with haemorrhage and perforation as complications, do occur in East Africans, probably less commonly than amongst Europeans, and perhaps with a greater incidence amongst the urban African than

the others. Perhaps Sir Heneage Ogilvie does not mean us to take him literally, but I fear that we must be blamed for having failed to wrest him from our surgical colleagues—how else can we explain his comment (*Lancet*, 1945, 2, 586) that the African "contracts syphilis, but it never goes on to parasyphilis"? Meningovascular syphilis, epileptiform attacks from cerebral syphilis, and general paralysis of the insane are far from uncommon, although tabes dorsalis is, apparently, peculiarly rare.

If we have given any false impressions to our visitors, we apologize; for, if Sir Heneage Ogilvie found the officers of the East African Medical Service helpful, we greatly appreciated the visits of the surgeons and physicians, who lightened our darkness and enriched our B.M.A. meetings.—I am, etc.,

FREDK. J. WRIGHT, M.R.C.P.,

Nairobi.

Medical Officer, Kenya.

Menstrual Changes in Hot Climates

SIR,—Dr. W. P. Grieve (Aug. 17, p. 243) asks if any investigation was made of menstrual variations among auxiliaries serving in hot climates. In 1944 I obtained menstrual histories at medical inspections or special interviews from 500 British Service women of whom 42 were Q.A.I.M.N.S. and 458 A.T.S., and whose service in the Middle East ranged from six months to two years.

Menstrual changes, chiefly menorrhagia, were common, but amenorrhoea was not at all a prominent condition. Only 11 had suffered from amenorrhoea on arrival for a time ranging from six weeks to five months, whereas 32 had previously experienced amenorrhoea of from two months to two years, either between the ages of 16 and 20 on starting nursing (15 out of 42 nurses) or on joining the A.T.S. Six of these 32 had again had amenorrhoea on arrival in the Middle East and are included in the 11 mentioned above.

It would seem therefore that a change to a hotter climate is not in itself a prominent cause of amenorrhoea.—I am, etc.,

London, S.W.7.

MARGARET E. R. BALFOUR.

Foreign Body in the Gut

SIR,—I enclose an account of a case that came into my hands more than a quarter of a century ago. There are several features of interest:

Female patient. Complained of chronic diarrhoea for last two years. *Previous history*.—Hysterectomy two years previously. Felt well for ten days after operation, when sudden attack of diarrhoea occurred. *Examination*.—Patient pale, thin, looked ill. Tumour felt in right iliac fossa. Carcinoma of caecum suspected. Barium enema shows normal caecum. *Operation*.—Incision right iliac fossa. Caecum and appendix normal. Hard mass felt within small gut about one foot above ileo-caecal valve. It was found impossible to move the mass either way within the lumen of the gut, so the top was isolated, the mass removed, and the incision in the gut wall closed. The patient made an uninterrupted recovery, and the diarrhoea ceased almost immediately.

The mass was about the size of a cricket ball and proved to be a complete coiled-up strip of gauze. Presumably it had gravitated to the upper abdomen while the patient was in the Trendelenburg position during the hysterectomy, been inadvertently left in, and become shut off between the transverse colon and the jejunum. Spontaneous junction had followed and the gauze had slipped into the jejunal lumen.

I am, etc.,

St. Leonards-on-Sea.

D. LIGAT.

Demobilized Service Medical Officers

SIR,—On a recent trip I have had an opportunity of seeing a number of ex-Service medical officers, and it has been something of a shock to realize the strong feeling which prevails among them about their treatment by the Service. It is alleged very bitterly that men who have been doing specialist work, although they were "given to understand" or as some say "promised" that after demobilization they would be given the benefit of further training in their specialty, have been "fobbed off" with a short refresher course. Who is responsible for what they regard as a gross breach of faith I am not in a

position to say. It has even been suggested that it is part of a subtle plan to cause disgruntlement, dissatisfaction; and even pressing need—as it was put to me: "to throw us into Bevar arms to work his National Health Service from sheer necessity to earn bread and butter."

It seems to me that the time has come to appoint a B.M.A. ex-Serviceman's Committee composed of ex-Service medical officers, with a chairman who would be an *ex-officio* member of Council, to deal with the acute problems of a very large number of our profession whose lot in many cases could be described not unreasonably as nearing desperation.—I am, etc.,

H. M. STANLEY TURNER,

Wing-Comdr., R.A.F. (retd.).

Brookwood.

The London College of Osteopathy

SIR,—As the Dean of the above college it is my duty to reply to the letter from Mr. W. E. Tucker (July 27, p. 141). Whatever the orthopaedic surgeons or the physiotherapists know of manipulation has been gleaned from the osteopaths. Twenty-five years ago an article in a leading British medical journal stated it was impossible to move by manipulation any joint of the spine. This was the generally accepted view of the medical profession. If it had not been for the osteopaths the progress of manipulation within the orthodox profession, if adequate as it even now is, would have been exactly nil.

Within the last ten years neurological and orthopaedic surgeons have "discovered" that many cases of sciatica are due to pressure, probably from intervertebral disks, on the roots of certain nerves. Forty years previously osteopaths had pointed out that frequently sciatica was due to pressure on nerves from mechanically deranged tissues of the lumbar region, including the intervertebral disks. The interesting and illuminating surgical advances that are being carried out in connexion with the intervertebral disk have already gone far to establishing the osteopathic lesion as an aetiological entity. The development of a proper assessment of the osteopathic lesion is still, however, in its infancy, and while many mis-statements have been and still continue to be made about it there is no shadow of doubt about its existence. As the Minister of Health recently pointed out, the heterodoxy of yesterday frequently becomes the orthodoxy of to-day, and the medical profession to-day practise many forms of therapy which it yesterday rejected.

The basic principles that are to be taught at the above college have been circulated to all educational bodies in this country and they are not erroneous. We are confining our students to registered medical practitioners so that the osteopathy of the future will be adequately trained in the basic principles of medicine and will have educationally conformed with the requirements of the authorities of the land.

There is no ulterior motive behind the action of the British Osteopathic Association such as Mr. Tucker suggests. The sole object is to promulgate the principles and technique of osteopathy and to prevent the exploitation and overlaying of the art of manipulation by any sectional interests such as he represents.

The British Osteopathic Association is not asking for any recognition from the medical profession or any other body. If British medical practitioners do not care to avail themselves of this opportunity there is an end to the matter, but any organized boycotting of this unselfish and laudable effort of the British Osteopathic Association will necessarily play into the hands of the inadequately trained osteopath whom the Select Committee of the House of Lords rightly exposed.—I am, etc.,

London, W.1.

GEORGE MACDONALD.

Osteopathy

SIR,—Mr. W. E. Tucker (July 27, p. 141) refers to the basic principles of osteopathy as erroneous. In any curative method conceptions about its basic principles—from advocates or opponents—are less important than good results. It has even happened in the past that the one has had to be adjusted to meet the demands of the other. As regards osteopathy in its actual clinical results, I do not believe this has ever been fairly investigated by our profession.—I am, etc.,

New Malden.

S. RANSOM.

Unsigned Reviews

SIR,—I heartily endorse Mr. H. Osmond Clarke's views on anonymous reviews (July 20, p. 102). Why should a signed author be "potted at" by an unsigned reviewer? In a review of *A Descriptive Atlas of Radiographs* it was stated that the plates were placed haphazard when it was one of the key features that the normals were arranged on the left- and the abnormal on the right-hand pages so as to be readily compared with one another. Protest brought no satisfaction. I once had the good luck of recognizing one reviewer by a certain cheapness which characterizes his writings. I have approached several editors, but they merely state that the good name of their respective journals was sufficient safeguard against wrong judgment. Let us at least have initials.—I am, etc.,

London, W.1.

A. P. BERTVISTLE.

Protection against Sexual Offences

SIR,—Dr. Clifford Allen, in his letter (July 27, p. 136) criticizing the efficacy of short-term imprisonment in preventing the repetition of sexual offences, asserts that "the only solution to this problem would be to give the prisoner a life sentence or else to regard the behaviour as an illness and treat it."

I would agree with his alternatives had his last phrase read "and cure it," for is it a solution for an unsuccessfully treated perversity to be released, again to debauch children and maybe to commit murderous assaults upon women?

He asserts that few cases receive treatment in prison, but can he assure us that treatment by a psychiatrist would produce the high percentage of cures that would be necessary to allay the fears of those who would go to any length to protect women and children from outrage?

As a general practitioner with no experience of the technique of psycho-therapy, my psychopaths and neurotics return to me after periods of treatment by psychiatrists, and few appear to have received benefit from their treatment. Can one expect any better results from the treatment of those sentenced for sexual offences? One can, however, put forward a proposal which would, I think, solve this problem. By the obligatory castration at the commencement of his sentence of every person convicted of a sexual offence against a woman or child, one could assume that, at the end of his incarceration, impotence and loss of desire would render him incapable of harm, and during the period of his imprisonment such treatment as may be considered desirable could be rendered without any misgivings on the part of the psychiatrist as to the effect upon some innocent third party of a failure of treatment.—I am, etc.,

London, N.15.

L. B. LIEBSTER.

The Epidemiology of Infectious Diseases

SIR,—With reference to my letter (June 8, p. 887), I beg to suggest that the clue to the mystery of the mechanism by which infection in influenza and other epidemic diseases survives through long interepidemic periods is to be found in the instability of the molecular structure of viruses. Fenton (1945) writes:

"[Viruses] are giant molecules containing hundreds of thousands of atoms that are linked in complex groups and series. For generations these molecules may remain stable. Then they abruptly change. Thus the virus which normally causes tobacco mosaic may add a few thousand atoms and become a variety that produces the much more virulent disease known as acuba. Other modifications may cause a disease that kills the affected plant [outright] or make the virus so weak that its effects can barely be detected. Apparently a single virus strain may appear in any or all of these forms, shifting from one to another as atoms are gained or lost."

An analogous mechanism in bacteria also may not unreasonably be inferred. The variations in virulence which commonly occur in epidemic diseases are well illustrated by the history of scarlet fever. According to Singer (1928) scarlet fever first became clearly recognizable as a mild disease without prominent symptoms about 1650. Good observers in the half century which followed considered it a new disease. In England it continued to be of little importance till about 1748, when it began to be associated with grave throat symptoms. This phase continued for about ten years. The virulence then dropped, and the disease continued of slight importance till 1785. It then grew virulent again and remained so until about 1808. The

malignancy then fell and remained low for about thirty years. It rose again about 1837, and from then till 1894 it was one of the great killing diseases, especially of children. Since then the mortality from it has steadily decreased.—I am, etc.,

Sydney, N.S.W.

J. WALKER TOMB.

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The Burden of the M.R.C.P.

SIR,—Whatever may be the case in the future, many of the people who have taken the M.R.C.P. did so in order to enter consulting practice, of course hoping that the day would come when they would be elected to the Fellowship. But what did not strike them was that if that day did not dawn the M.R.C.P. would be worse than useless because as the years go by and the man remains a member some of the doctors who have been in the habit of referring patients to him begin to think that his abilities are after all less than they thought. If he had ever taken the membership but had his M.D. the idea that the absence of the fellowship was a stigma would never have struck them.

The disability under which the M.R.C.P. of many years' standing labours is the greater because he is probably not on the staff of a teaching hospital; a lack which makes his path as a consultant more difficult. Of course the member of a teaching hospital staff is more likely to get the fellowship, mainly because his senior colleagues are likely to propose him, whereas nobody is likely to be so directly interested in the non-teaching consultant.

Would it not be more equitable if after the lapse of not less than five years after taking the M.R.C.P. the member might submit his name together with such evidence of professional attainments (excluding testimonials and the names of referees) as he thinks might convince the College that he is a fit and proper person for election to the Fellowship?—I am, etc.,

DUM SPIRO SPERO.

Notification of Venereal Disease

SIR,—In his letter advocating compulsory treatment, Dr. G. G. Thyne (Aug. 3, p. 175) states: "It would be a very strange man, whether he was a venerable dean or bus conductor, who has not at some time or other run the risks of venereal infection." This statement requires challenging. It is based on the old heresy, unfortunately still implied in some health lectures, that to refrain from promiscuity is unnatural, abnormal, or even detrimental to health. This heresy is not only contrary to considered medical opinion but is disturbing to parents and youth leaders and entirely opposed to the ideals of pre-Service units, whose charges are entering the Services daily. Furthermore it is deeply resented by a large body of men (and women) who, conscious of natural desires to satisfy a normal sex urge, not only prefer to wait for that complete satisfaction they look forward to experiencing in the permanent companionship of a future marriage with its harmonious union on all levels, but intelligently refuse to spoil its resultant happiness by either the possible risks of V.D. or the sordid memories so often associated with the doubtful pleasures of the temporary liaison of promiscuous living. As it also encourages men of poor moral sense, and causes others, who but for the dislike of being thought unnatural, etc., would not otherwise do so, to expose themselves to infection, the continued propagation of this heresy is detrimental to the efforts being made for the prevention and control of V.D.

There is a vital need to-day for men (and women) to understand that even if the risks of V.D. and pregnancy could be completely eliminated there still remain the results of the promiscuous act itself. These are not only the psychological disharmony arising out of inner conflict and leading on to disintegration of the personality and a loss of self-respect, but also (and this is important) a serious undermining of those qualities of love, loyalty, and responsibility essential to successful, stable, and permanent marriage, resulting in a serious collapse of home and family life. This not only causes severe mental strain and physical ill-health to the parties concerned, but robs children of that love and sense of security essential to their moral and physical health.

The only measure giving complete protection is "self-control." This is neither easy to advise or carry out. But where, in addition to advice necessary to protect the wilfully promiscuous, the preventive of self-control is presented in terms of "consideration for others" men will respond grandly to an appeal to face up to this duty which is embodied in the common ethic of Christianity and sportsmanship. These facts are borne out by an experience of Service life (recruit to combatant officer, home and abroad, in peace and on active service) and youth- and marriage-guidance work.

In closing, and for the encouragement of those called for duty in the Services, some twenty years of lecturing on the above lines to recruits (men and boys) of the three Services show that such information, far from being resented, is sincerely appreciated. The outstanding question, "Why are we not given this information by parents, schools, etc., earlier?" or "now, by our own M.O.s?" is a challenge not only to those responsible for the health and leadership of young men and women, but to those bodies responsible for their training.—I am, etc.,

Bristol.

WILFRID WAGLAND.

Post-haemorrhagic Blindness

SIR.—Recent communications in the *Journal* prompt me to put yet another case of post-haemorrhagic blindness on record. The patient (a fisherman aged 54) was admitted to hospital in an extremely weak and collapsed state as a result of recurrent melaena over a period of four days previously. At the time of admission haemoglobin estimation was 30% (Haldane), plasma CO_2 78 vols. per cent, and the blood urea 40 mg. per 100 ml. The patient was transfused with two pints of Group O blood and on the following morning awoke to find that he was partially blind in the left eye.

Ophthalmological examination revealed a normal right visual field, but the left was contracted to a horizontally disposed band nasally and upwards, including the macular area. The left disk appeared to be definitely pale and there was no evidence of swelling.

Subsequent progress was uneventful: the anaemia responded to the exhibition of iron, with a gradual improvement in the patient's condition. Test-meal showed a hyperchlorhydria with blood in several specimens, and barium-meal examination indirect evidence of ulceration of the first part of the duodenum. Occult blood was present in the stools for some days before becoming persistently negative. Vision in the left eye, after slow improvement initially, has recovered considerably over a period of sixteen months despite the complete optic atrophy, which is now evident.

The unilateral visual loss is not as common as bilateral defects, but of course both are rare complications of haemorrhage.—I am, etc.,

Aberdeen.

WILLIAM R. GAULD.

Sir Frank Colyer Fund

SIR.—I would like to quote the old proverb, "Whatsoever thy hand findeth to do—do it with all thy might," for in suchwise Sir Frank Colyer has ordained his life should be lived, and the dental profession has reaped in full measure the harvest of his strenuous labours. The writer had the privilege of seeing their commencement when sixty long years ago Sir Frank was assistant house-surgeon at the Royal Dental Hospital; and many old students there must be who in later years knew him, and remember him as teacher and Dean. His pen too has enriched clinical and scientific dental literature, while for over thirty years he has been curator of the museum of the Odontological section of the Royal Society of Medicine. So successful has been its growth and development that it is now amalgamated with the Hunterian Collection in the Royal College of Surgeons museum.

As a mark of appreciation for his sixty years of tireless and high endeavour it is proposed to make a gift to him of his portrait on September 25—his 80th birthday—a gift not from any learned society but from the rank and file of the dental profession. As one of them I appeal to all and sundry to contribute generously to that gift. Contributions should be addressed to: Mrs. Thurston, "Brentknoll," Radlett, Herts, and envelopes marked "Sir Frank Colyer Fund." Any surplus after paying for the portrait will be used as a fund for the further development of the Odontological Museum.—I am, etc.,

Nottingham.

F. C. PORTER.

Obituary

OTTO MAY, M.A., M.D., F.R.C.P.

The sudden death of Dr. Otto May deprives the community and the medical profession of a singularly able and attractive personality, and will make a deep breach in the many circles of friends where his presence was always a refreshment and a delight.

Otto May was born in 1879, educated privately and at St. John's College, Cambridge, where he took a first in both parts of the Natural Sciences Tripos. Remaining in Cambridge he became a demonstrator in physiology and a most successful coach. He also made a real attempt to enter research, and the instance of Prof. Langley undertook a study of the mechanism of pancreatic secretion that is excited by the entry of acid into the duodenum. It so chanced that Bayliss and Starling were also engaged upon this research problem, and the discovery of secretin, and the general conception of hormones that arose from it, solved the question to which May was independently, seeking the answer. He thereupon came down and entered University College Hospital to take his medical degree. He was one of a small number of brilliant young men who entered the hospital from Cambridge at about that period and lent to the student body of their time an animation and distinction that the present writer, who was their junior, still retains as one of his happiest recollections.

His hospital career was highly successful. He took the Atchison Scholarship and the Liston medal and, upon qualification, a British Medical Association research scholarship. He was later one of the first group of Beit Memorial Fellows, a group which included the late Sir Thomas Lewis and Sir Edward Mellanby. For a time he worked in the laboratory of Sir Victor Horsley, and some original papers in *Brain* mark this period of his life. Turning then to clinical medicine he showed the same easy brilliance of which his earlier activities had given earnest, and would in time have doubtless made a mark for himself in consulting medicine, but shortly after becoming physician to the Evelina Hospital for Children he made his last change and entered what was to be his life's work, the field of insurance medicine. As principal medical officer to the Prudential Assurance Company he quickly made his mark in this field of medicine, in which he became a recognized authority, revivifying it and bringing it into touch with the advance of medicine. His contributions to the transactions of the Assurance Medical Society were of outstanding merit and gained for him the unusual distinction of honorary membership of the Association of Life Assurance Directors of America. Outside this work his deepest and most abiding professional interest centred round the problems of venereal disease, a subject to the elucidation of which he wrote a number of forceful, clear, and valuable papers in various journals. At the time of his death he was chairman of the British Social Hygiene Council; and he will be deeply missed by his fellow workers on this body.

Otto May was a fervently loyal son of his old hospital, and his memory is perpetuated there by the *U.C.H. Magazine*, of which he was one of the founders and the first editor. But it is not wholly or mainly of these fruitful achievements that those who had the delight and privilege of his friendship will now be thinking. Otto May was far more than the work he did. His friends will recall his perennially youthful spirit, which the passing years seemed not to have touched, his singularly attractive smile and his whimsical humour, his modesty, those warm family feelings that made his home so pleasant a haven, his live interest in the humanities, and his complete integrity. The sympathy of all his friends will go out to his wife and to his two sons in their loss.

Dr. T. W. PRESTON writes: I first became associated with Otto May in 1927 and worked with him at the Prudential Assurance Company until he retired in 1938. As an authority on assurance medicine he had a reputation which extended to all parts of the world where life assurance is conducted. He had an alert brain and considerable clinical acumen, although it was many years since he gave up clinical medicine; there is no doubt that had he chosen another path he would have attained a reputation as a consulting physician. May chose to pose as something of a cynic; but this was a thin veneer which deceived nobody. His friends mourn a loved and warm-hearted colleague.

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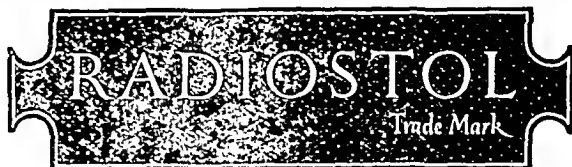
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Her many friends were shocked to learn of the sudden death of Dr. ELEANOR CICELY THISTLETHWAITE. She was born in the Philippines in 1896, and after graduating M.B., Ch.B. at St. Andrew's, held resident posts at the Queen's Hospital for Children, Hackney. Between 1926 and 1931 she was in general practice in the Gray's Inn Road and Camden Town, and then held various temporary posts, including one at the London Lock Hospital. In 1935 she became visiting medical officer to St. Margaret's Hospital, Kentish Town, where she was responsible for the care of children suffering from vulvo-vaginitis and ophthalmia neonatorum. She carried on this work until the outbreak of war, when she was appointed medical officer to a mobile Naval train, and rendered valuable service during the evacuation of the wounded after Dunkirk. Subsequently she was appointed assistant medical officer of health, St. Pancras, with special responsibilities in connexion with air raid precautions, and served all through the first London bombardments, often staying at the first-aid stations both by night and by day. The late Maitland Radford formed a very high opinion of her conduct and services throughout this testing time, and commended her most warmly to the writer. At the beginning of 1943 she was appointed assistant medical officer, County Borough of Southend-on-Sea, and did valuable work, both in the school medical service and the V.D. treatment centre. She gained the confidence of patients, parents, and children; her kindly personal interest and wide experience of life quickly enabled her to make a unique position for herself, and her sudden and untimely passing leaves a gap which will not easily be filled.

Dr. COLIN MACPHAIL FORBES died suddenly at Weymouth on August 13 at the age of 48. He was born at Ayr and educated at Ayr Academy and Glasgow University, graduating M.B., Ch.B. in 1921. He practised in Weymouth for the major part of his career and was honorary surgeon to the Weymouth and District Hospital. He was a member of the B.M.A. from the time he qualified. Dr. Forbes was a man of many interests and activities, and the crowded church at his funeral service testified to the esteem and affection with which the townspeople of Weymouth held him. He was a surgeon sub-lieutenant in the 1914-18 war and performed his first operation in amputating his captain's finger in an open lifeboat after his ship had been sunk. He was a keen musician and fine pianist. In 1939 he was admitted as a Serving Brother of the Order of St. John and acted as County Commissioner for Dorset in the Brigade. Forbes was called up in 1939 with the Territorials and served throughout the war in the rank of lieutenant-colonel. He had a dry sense of humour and his after-dinner speeches were a delight to all who heard him. "Forby," as he was affectionately called by colleagues and friends, will be sadly missed. —E. P.

BERTRAM SYDNEY NISSÉ, M.D., M.R.C.P., who died on Aug. 14 at Teignmouth Road, Brondesbury, N.W., had made his mark in physical medicine and was a vice-president and former secretary of that Section of the Royal Society of Medicine. Born in 1898 he was educated at St. Olave's School and the London Hospital, where he won the Buxton scholarship in arts. He qualified in 1921, took the M.B. and B.S. degrees of the University of London in the following year, and won the university gold medal in medicine at the M.D. examination in 1924. After holding various junior posts at the London Hospital and at the West End Hospital for Nervous Diseases he became resident medical officer and then chief assistant and medical registrar at the National Hospital for Diseases of the Heart; later he was elected physician to the British Red Cross Society's Clinic for Rheumatism in Regent's Park, when it was established in 1930. Dr. Nissé published a number of papers dealing mainly with cardiology and rheumatism in medical journals and in the *Annals of Eugenics*; he also wrote a small book *Rheumatism* published in 1938. He was a Fellow of the Medical Society of London and the Hunterian Society, and the International Society of Medical Hydrology made him a member. During the war years, while Dr. W. S. C. Copeman was on service in the R.A.M.C., Dr. Nissé took charge of the rheumatism clinic at the West London Hospital. His early death is a loss to the campaign against rheumatism in this country.

We regret to learn of the death in Edinburgh recently of Dr. HUGH FERGUSON WATSON who, for over 14 years, was Medical Deputy Commissioner of the General Board of Control. Before taking up medicine Dr. Watson had been in business for several years. He first qualified as L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. in 1907, then graduated as M.B., Ch.B.Glas. in 1911. He became assistant medical officer at Glasgow District Mental Hospital, Woodilee, and collaborated

with Prof. Carl Browning and Dr. Ivy McKenzie in research on the Wassermann reaction in syphilis. He made this subject his thesis when, in 1913, he was awarded the degree of M.D. with honours. In August, 1913, he was appointed medical officer at H.M. Prison, Peterhead, and eight months later became M.O. at Perth prison and medical superintendent of the Criminal Lunatic Department. In 1916 he gained the degree of Ph.D.Ed. In October, 1919, he was appointed Deputy Medical Commissioner of the General Board of Control, an office he held till he retired in March, 1934. In 1928 he became a Fellow of the Royal Society of Physicians and Surgeons of Glasgow, and three years later a Member of the Royal College of Physicians of London. On the outbreak of war Dr. Watson's services were enlisted in a team of voluntary members of the E.M.S. prepared to cope with any development of neurosis in the civilian population. Of a retiring and studious disposition. Dr. Watson was held in high esteem by his colleagues who were favoured by his friendship, and these mourn the passing of one whose knowledge of men and motives was wide and well-founded, whose opinion was valued, and who did much good unostentatiously. —J. H. M.

The Services

The Legion of Merit, Degree of Officer, has been conferred upon Major-Gen. Sir Edward Phillips, K.B.E., C.B., D.S.O., M.C., late R.A.M.C., and the Bronze Star Medal upon Col. (Temp.) T. Parr, and Major C. C. Misener, R.C.A.M.C., by the President of the United States of America, in recognition of distinguished services in the cause of the Allies.

The following have been mentioned in dispatches in recognition of gallant and distinguished services in the Far East: Capt. D. L. Broadhead and D. H. K. Soltau, R.A.M.C., Lieut.-Col. (Temp.) S. L. Rikhye, and Capt. B. B. Chetrie and Lal Chand, I.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died from injuries received in car accident.—Flying Officer William Caldwell Adam, R.A.F.V.R.

Universities and Colleges

UNIVERSITY OF OXFORD

The Theodore Williams Scholarship in Human Anatomy, 1946, has been awarded to M. J. V. Bull, University College. (Proxime accessit: R. G. Willison, Trinity College.)

UNIVERSITY OF CAMBRIDGE

H. Hynes, M.D., of St. John's College, has been appointed Reader in Medicine from Oct. 1, 1946. C. L. G. Pratt, M.D. Liverp., has been appointed University Lecturer in Mammalian Physiology from Oct. 1, and G. P. McCullagh, of Queen's College, University Lecturer in Pathology for three years from Oct. 1. H. Butler, M.B., B.Chir., of Queen's College, has been appointed temporary University Demonstrator in Anatomy.

UNIVERSITY OF LONDON

The prize distribution and a conversazione will be held at the Royal Dental Hospital of London, School of Dental Surgery, 32, Leicester Square, W.C., on Saturday, Oct. 5, at 3 p.m., when the Minister of Health, the Rt. Hon. Aneurin Bevan, M.P., will present the prizes.

Medical News

The work carried out by the Save the Children Fund at Lübeck deeply impressed Sir Hugh S. Robertson on his recent visit to Germany with the Glasgow Orpheus Choir. The choir has sent a gift of £100 to the Fund. In Yugoslavia a group of mothers have expressed their gratitude to the fund workers at Kamenica, and in Greece a relief worker of the fund, Miss A. Forster, has been presented with the Freedom of the City of Xanthi.

Sir John Boyd Orr, Director-General of the Food and Agriculture Organization of the United Nations, hopes that a successor to his post may be found after the autumn conference at Copenhagen. He had previously made it clear that his was a temporary appointment; and his intention is to return to Parliamentary duties as soon as he is released.

The International Anaesthesia Research Society and the International College of Anaesthetists have issued a preliminary programme for the twenty-first Congress of Anaesthetists, which will be held at New York City on Sept. 9-13, 1946. Discussions on all branches of anaesthesia have been arranged, including reports of clinical trials of a new anaesthetic, "metopryl." On Sept. 12 Dr. T. Cecil Gray, of Liverpool, will read a paper entitled "The Use of d-Tubocurarine Chloride in Thoracic and Abdominal Anaesthesia."

Mr. W. McAdam Eccles, M.S., F.R.C.S., consulting surgeon to, and governor of, St. Bartholomew's Hospital, who died on May 30, aged 79 years, left £5,740 15s. 4d. gross, with net personalty £4,367 3s. 6d. Specific bequests included his surgical instruments and appliances to the Regions Beyond Missionary Union; his medical and surgical books to the council of the West London Medico-Chirurgical Society; and his caricatures of past members of the medical staff of St. Bartholomew's Hospital to the governors of the Hospital. The residue of his property he left to his sons Philip Campbell Eccles and David McAdam Eccles, M.P.

EPIDEMIOLOGICAL NOTES

Typhoid Epidemic

Notifications from the Aberystwyth epidemic reached a total of 135 by Aug. 27, and there have been 4 deaths. It is not expected that there will be many more cases in the town itself.

Cases of typhoid infected at Aberystwyth are still being reported from other areas. Within the last week Northampton has had 5 cases, all returned holiday-makers, Oldbury 4, Banbury 2, Keighley 1, and Stafford 1.

Ice-cream Again

An outbreak of food-poisoning has occurred in Boston, Lincolnshire. Ice-cream from one source, prepared by the cold mix process, was consumed by the 70 cases investigated. *Salmonella typhimurium* has been isolated from the stools of notified cases but not from the ingredients of the ice-cream.

At Coatbridge, Lanarkshire, 36 people are under observation after eating ice-cream prepared by a man believed to be a typhoid carrier.

Discussion of Table

In England and Wales there were decreases in the notifications of scarlet fever 233, measles 241, whooping-cough 182, and pneumonia 58. An increased incidence was reported for typhoid 29, and dysentery 25.

A fall in the notifications of scarlet fever was reported in most areas of the country, and notably in Staffordshire 49. The largest decreases in the incidence of whooping-cough were London 38 and Warwickshire 33.

There were fewer cases of measles in Middlesex 106 and Surrey 69, and more notifications in Durham 60, Lancashire 38, and Warwickshire 31. Cases of diphtheria fell by 3 below last week's record low level; the largest of the local variations were an increase of 12 in London and a decrease of 11 in Staffordshire. The largest returns of dysentery were those of Lancashire 15, Kent 13, and London 12.

In Scotland there were decreases in the notifications of acute primary pneumonia 33 and scarlet fever 16. A decrease of 7 in cases of dysentery gave the lowest return for recent months.

In Eire the large increase of 99 in cases of whooping-cough was mainly due to an outbreak involving 88 persons in an institution in the rural district of Dublin North. The rise in the incidence of diarrhoea and enteritis was due to 38 cases notified from an institution in Dublin C.B. in respect of previous weeks.

Quarterly Return for Eire

During the March quarter a birth rate of 22.5 per 1,000 was recorded, which was 0.9 above the rate for the first quarter of 1945. Infant mortality was 81 per 1,000 births and was 8 and 20, respectively, below the rates for the two previous March quarters. The general death rate was 17.4 per 1,000, being 1.1 below the 1945 figure. Altogether 239 deaths were attributed to diarrhoea and enteritis under 2 years; this was 28 above the average for the five preceding first quarters. Deaths from pulmonary tuberculosis numbered 677 and from other forms 197, figures which were 183 and 39 below the averages of the five preceding March quarters. There were 46 deaths attributed to diphtheria and 34 to whooping-cough.

Week Ending August 17

The notifications of infectious diseases in England and Wales during the week included, scarlet fever 690, whooping-cough 2,097, diphtheria 251, measles 2,712, acute pneumonia 300, cerebrospinal fever 47, acute poliomyelitis 33, dysentery 70, paratyphoid 60, typhoid 53.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	34	2	19	—	1	33	—	16	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	243	30	74	27	6	346	20	95	52	—
Deaths	2	—	2	—	—	8	—	2	—	—
Dysentery	84	12	21	—	—	300	25	47	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	3	—	—	2	—	—	—	—
Deaths	—	1	—	—	—	—	—	—	—	—
Erysipelas	—	—	21	8	1	—	—	40	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	74	—	—	—	—	60	—
Deaths	34	5	16	15	2	51	7	6	13	—
Measles*	3,299	350	105	34	4	1,681	61	33	8	—
Deaths	2	—	—	—	—	—	—	1	—	—
Ophthalmia neonatorum	58	2	15	1	—	59	3	20	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	13	—	—	—	—	6	—	2(B)	—	2
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	298	18	8	7	—	251	13	2	3	—
Deaths (from influenza)†	3	—	—	—	—	4	—	—	—	—
Pneumonia, primary	—	—	105	18	—	—	—	67	10	—
Deaths	—	18	3	5	—	—	17	—	7	—
Poli-encephalitis, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	18	2	2	2	—	16	—	2	2	—
Deaths	—	—	—	—	—	—	1	—	—	—
Puerperal fever	—	2	5	—	—	—	2	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	149	9	9	2	—	116	7	16	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	707	60	118	16	14	937	57	154	19	—
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	89	1	2	10	—	6	1	4	3	—
Deaths	—	—	—	1	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,910	121	29	140	28	935	41	26	16	—
Deaths	7	—	1	—	—	9	1	1	—	—
Deaths (0-1 year)	201	42	52	32	10	263	38	33	28	1
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,599	550	509	159	95	3,668	555	478	153	11
Annual death rate (per 1,000 persons living)	—	—	11.2	10.2	—	—	10.9	9.9	—	—
Live births	7,858	1,227	970	369	236	5,926	733	748	377	26
Annual rate per 1,000 persons living	—	—	19.5	23.6	—	—	15.0	24.3	—	—
Stillbirths	261	28	40	—	—	193	16	19	—	—
Rate per 1,000 total births (including stillborn)	—	—	40	—	—	—	25	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales; London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Hydroorrhoea Gravidarum

Q.—*What causes spontaneous leakage of liquor amnii between the twentieth and thirtieth weeks of pregnancy? What are the prospects of foetal survival? Can the present apparent prevalence of the condition be explained?*

A.—Leakage of liquor amnii implies rupture of the membranes, and when it occurs during pregnancy is to be regarded as accidental, although it might be associated with an inherent weakness of the membranes or lack of cervical support due to a previous laceration or high amputation. There is no evidence to suggest that this accident is more frequent now than formerly.

When the membranes rupture during pregnancy the outlook for the foetus is poor, because abortion or premature labour nearly always occurs within a few days. However there are cases recorded in which the pregnancy has continued for as long as 50 to 120 days afterwards and the child has survived. One possibility is for the membranes to rupture and then retract from around the foetus, which thereafter develops outside them (*grossesse extramembraneuse*). This is accompanied by a continuous or intermittent discharge of liquor during the pregnancy and the child rarely survives, since it tends to be born prematurely and in any case is feeble and often deformed.

Another possibility is that the fluid discharged is not liquor amnii but an unusually heavy secretion of the uterine glands which tracks down between the decidua vera and the decidua capsularis. This condition is rare and is supposed to be associated with some type of decidual endometritis. Its pathology is extremely doubtful, and it is possible that all cases described as such have in fact been examples of *grossesse extramembraneuse*. In any case abortion and premature labour are again common although not inevitable. The continued discharge of fluid from the uterus during pregnancy—liquor or otherwise—is usually called hydroorrhoea gravidarum.

Finally, the possibility that the fluid is urine, the patient suffering some lack of control over the bladder, should not be overlooked.

Penicillin for Pregnant Syphilitic

Q.—*A patient with syphilis contracted five months ago became pregnant at the time of infection. Treatment with N.A.B. and bismuth was begun at the 14th week, since when a total of 1.9 g. of N.A.B. and 1.5 g. of bismuth has been given. As I am anxious to combine penicillin with routine arsenical therapy please suggest total dosage and duration of penicillin treatment. Admission to hospital for three-hourly injections is impossible.*

A.—The aim should be to administer 4,200,000 Oxford units of penicillin; these may be given in doses of 300,000 units intramuscularly once or twice daily, and the period of treatment will therefore be 7 or 14 days. Arsenic and bismuth should be continued at least to the termination of pregnancy, and a course of treatment should be prescribed during any subsequent pregnancy. It has been suggested that penicillin may tend to cause abortion, but the consensus is against this; nevertheless the possibility should be kept in mind. Admission to hospital is unnecessary for the penicillin injections.

Nicotine and Nicotinic Acid

Q.—*Is there any chemical and/or pharmacological similarity between nicotine and nicotinic acid? Why have the Americans given the name niacin to nicotinic acid?*

A.—Nicotine and nicotinic acid have some chemical similarity inasmuch as both are derivatives of pyridine. Nicotine is a combination of pyridine with methylpyrrolidine. Nicotinic acid is pyridine with a COOH group attached at the same point as the methylpyrrolidine is attached in nicotine. There is no pharmacological similarity between nicotine and nicotinic acid. "Niacin" has been chosen by the compilers of *New and Non-official Remedies* as a name in which there are no proprietary rights. It is partly made up of the first two letters of each of the two words "nicotinic acid." The word "niacin" seems scarcely necessary, and was apparently introduced because of the possible association in the lay mind of nicotinic acid with the poisonous substance nicotine.

Treatment by Fibrolysin

Q.—*Please give an account of treatment with fibrolysin of Dupuytren's contracture of the palmar fascia.*

A.—Treatment of Dupuytren's contracture by injections of fibrolysin has not proved satisfactory. Fibrolysin is a preparation containing sodium salicylate and allyl thiourea; when administered hypodermically it is supposed to have a softening or solvent effect on scar tissue. A solution of 10 parts of the drug, 20 of glycerin, and 70 of water is suitable. The dose is from 0.5 ml. up to 3 or 4 ml. of the solution given hypodermically at intervals of a few days. Experience has not confirmed the claims at first made for it.

Bite by Dog with Tetanus

Q.—*A man was bitten by a tetanic dog. I gave him 3,000 units of A.T.S. and repeated it in 48 hours. Was this necessary?*

A.—Tetanus is an uncommon infection in the dog, and the suggestion that the bite of a dog with tetanus is potentially more dangerous than that of a normal dog has little to support it. The infection is due to the neurotropic toxin of the organism, and this material would not be transmitted in the dog-bite. However, dogs, like other domestic animals, frequently carry tetanus spores in the alimentary canal, and it is therefore a wise precautionary measure to give tetanus antitoxin to any person who has been bitten by a dog. The usual dose is 3,000 units, and this may be repeated a week later if the wound has not healed by then.

Experimental Helminthic Infection

Q.—*With a view to finding an effective anthelmintic against Taenia solium and Enterobius vermicularis I intend experimenting with rabbits. How may these animals be infected—by injection of ova or the adult worm?*

A.—To obtain infection of rabbits with adult *T. solium* it is necessary to feed them on viable and complete cysticerci obtained from measly pork or artificially fed animals; it would be essential to see that each cysticercus was swallowed whole without being bitten. A supply of cysticerci might be obtained by feeding rabbits with gravid segments of *T. solium* broken up in their food, or with mature *Taenia* ova teased out of gravid segments. These would produce cysticerci, which could then be fed to other rabbits. It is doubtful if the rabbit is a suitable host for adult *T. solium*.

The best way to infect rabbits with *Enterobius vermicularis* would probably be to obtain gravid female worms and break them up in the rabbit's food, or tease out the ova and add them to the food.

Therapeutic Value of Yeasts

Q.—*Have the various yeasts—viz., brewer's yeast, baker's yeast, and "food yeast"—different therapeutic values?*

A.—All yeasts are valuable as a source of protein. In considering their therapeutic value, however, we usually have in mind their action either as live organisms or as a source of vitamins. Live yeast is sometimes taken by the public as a

homely remedy for skin eruptions, but it is doubtful whether there is any scientific justification for this, and, if there is, whether any one type of yeast is better than others. The vitamin contents of yeast survive drying or extraction, and vary according to both the type of yeast and the medium on which it has been grown. Vitamin B₁ shows by far the widest range of variation. According to J. C. Somogyi, writing recently in Supplement No. 4 of the *Zeitschrift für Vitaminforschung*, brewer's yeast, which is a strain of *Saccharomyces cerevisiae*, contained 60 to 80 i.u. of vitamin B₁ per gramme of dried material (10% water) when grown on a wort of malt and hops. Baker's yeast, another strain of the same organism, and grown on molasses, contained 20 i.u. of vitamin B₁ per gramme dried weight. In contrast, preparations of *Torula utilis*, which is used for the production of food yeast, contained only 8 i.u. per gramme dry weight when grown in a solution of wood sugar (xylose) and mineral salts. In specially cultivated yeasts concentrations of 250 i.u. of vitamin B₁ per gramme dry weight have been attained. The variations in other members of the vitamin-B complex appear to be relatively slight, but yeasts differ widely in their contents of ergosterol (provitamin D) and of lecithin. There is also a considerable range in flavour, which may sometimes be very bitter, and probably also in the laxative action which has been reported by certain workers who have conducted human trials with specimens of food yeast.

Tuberculous Allergy and Immunity

Q.—Could you briefly explain the significance of difference between allergy and immunity arising (in a child) from tuberculosis?

A.—Allergy is a state of hypersensitiveness produced by tuberculous infection, manifested by an acute inflammatory reaction sometimes going on to necrosis when tuberculin or tubercle bacilli are introduced into the tissues. The element in the tubercle bacillus which elicits this response is a protein. The change yielding this result is in the tissues themselves; it appears not to be dependent on an antibody in the blood, and the condition is certainly not, as in some other forms of hypersensitiveness, passively transferable. Tuberculous allergy may be regarded as a protective mechanism—protective, that is, against reinfection—but it is not the sole basis of immunity. There is a form of immunity distinct from it and presumably dependent, as in immunity to other bacterial infections, on the presence of antibodies in the blood. Experiments have been made in which the two conditions were dissociated, and the desensitized animal has been found to have gained rather than lost in capacity to resist the infection. Although the significance of such experiments has been questioned and the whole subject is somewhat controversial, few would deny that the two conditions are distinct. Immunity operates in the usual way, disposing of the invaders without undue disturbance; allergy, except in so far as it is positively harmful, has a purely irritating function.

Coronary Thrombosis and High Altitudes

Q.—A patient aged 62 had a coronary thrombosis 3½ years ago. He made a good recovery, and his blood pressure is now 140/75. He has a tendency to get short of breath on moderate exertion. Are there any contraindications to his spending a vacation at an altitude of 5,000–6,000 feet (1,500–1,800 m.)?

A.—The fact that this patient had a coronary thrombosis at the age of 58 implies the existence of coronary sclerosis. As he is not troubled with angina of effort and there is no hypertension the prognosis may be regarded as good, although the slight reduction of effort tolerance indicates some impairment of the myocardium. At an altitude of 5,000–6,000 feet the heart has a little extra work to do in maintaining the oxygenation of the body. Coronary syndromes are among the least predictable, but I believe that if no very active pursuits are undertaken the patient will suffer no harm from a vacation at this altitude. He will probably find that his tendency to breathlessness on exertion is a little more noticeable. If he should experience any hint of a return of pain in the chest he should curtail the vacation and return to lower altitudes.

INCOME TAX

Appointment: Car Expenses

R. B. is entitled to a car allowance, as assistant medical officer health, but he regards it as inadequate. (At present he uses a supplied by his employers but intends to buy one shortly.) (C) he refuse the car allowance and claim for tax purposes the interest and depreciation allowances?

*. The statutory rule applicable is that R. B. can deduct expense if it is incurred wholly, exclusively, and necessarily in performance of his duties. Any elements in the expense attributable to private use or the possession of a car superior to one which reasonably necessary would not be allowable. If he receives allowance from his employers the Revenue Authorities are, not naturally, reluctant to regard it as inadequate, and; though R. would be entitled to claim the excess of his allowable expense (including depreciation, etc.) over the amount receivable from employers, they might require the facts to be proved on personal appeal before the Income Tax Commissioners. If he declines car allowance—whether he receives additional pay for that reason or not—the case can be more easily put, but the essential facts would remain substantially the same.

LETTERS, NOTES, ETC.

Treatment of Phlebitis

Dr. R. ROWDEN FOOTE writes: Under your "Any Questions" section (Aug. 17, p. 251) you are asked for the modern treatment of phlebitis. I would like to suggest that the reply excludes some of the modern views on phlebitis. First, regarding phlebitis of superficial veins: since the work of Heyerdale (1943) and many others both before and after it has been accepted that this condition should in the majority of cases be taken to be a direct indication for a high resection of the internal saphenous vein. Provided the inflammation has not reached the last few inches of the vein the operation will produce a dramatic resolution of the inflammatory process. Secondly, when this ideal treatment cannot be offered to the patient I agree that "the limb should be enclosed in adhesive bandages to well above the upper limit of the phlebitis. No mention however is made of the desirability of a sorbo rubber pad over the fossa ovalis. This precaution is an important one. Turning to the condition of deep vein thrombosis, you state that "almost all clinicians still favour a long period of immobilization. Surely with the advent of dicumaryl and heparin modern clinicians have altered their views? I agree that these cases should be kept in bed during the acute and active stage; but this should not be denied the therapeutic benefits both of penicillin and the sulpha series of drugs, neither of which receives notice in your reply.

The Itchy Patient

Dr. S. W. ALLWORTHY writes: The interesting article on The Itchy Patient by Drs. Henry MacCormac, P. H. Sandifer, and A. M. Jelliffe (July 13, p. 48) reminds me of the following: A psychologically normal and elderly patient when suffering from severe and intolerable itching reacted by saying to her husband that, should she go to Hell, she hoped that she would not be tortured by itching. This was rather in contrast to the more hopeful outlook of Oliver Goldsmith's Scotchman who refused to be cured of the itch because it made him unco' thoughtful of his wife and bonny Inverary.

Children in Nurseries

Mrs. G. M. WOOLF writes: The Report of the Medical Women's Federation on the Health of Children in Wartime Day Nurseries (Aug. 17, p. 217) will be studied with the utmost interest, and especially by those who have faith in day nurseries and wish them to well. Thirty-five years ago I became a voluntary helper in a voluntary nursery, and I remember how concerned I was to find that four large handkerchiefs were in common use for the sixty children. I gathered together my courage (I was a novice and just out of my teens) and approached the Chairman of the Nursery Committee. Fortunately for the children and myself she was understanding and sympathetic, and they were each provided at once with a clean handkerchief every day. A simple precaution useful against respiratory infection which one sees adopted in far too few nurseries and nursery schools is that during the afternoon rest the children's stretcher cots should be placed in alternate positions, i.e., the head of one child should lie opposite to the feet of its neighbour.

Disclaimer

Dr. F. HIMMELWEIT writes from St. Mary's Hospital, Inoculation Department, to say that a recent reference to himself and his work on influenza, appearing in a London newspaper, was not inspired by him, and that most of the facts as presented there bear no relation to the true situation. He regards this kind of publicity as most undesirable.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 31 1946

Correspondence

Medical Unemployment

SIR,—I feel I must elbow my way into the discussion on this subject—a serious one, and quite as likely as any other to cause wide rift in the profession on its attitude to the National Health Service and in its answer to the forthcoming referendum.

The facts are, indeed, as the majority of your correspondents have stated, though I have, speaking for myself, had more of the courtesy exhibited so gracefully by the letter of "M.D." (*Supplement*, Aug. 17, p. 65) than other applicants. I have at least had four replies to my scores of letters, and though each of the four was to inform me that the vacancy was filled I appreciated the kindness of the answer from busy men.

Sir, there are hundreds of ex-Service medical men unemployed through no fault of their own. Do not believe that we are being too imaginative in the price we expect for our services or too over-particular in the jobs we obtain and the areas we are to work in. When one's gratuity and other capital is fastbbing away is no time for such niceties. And the older we are the less chance we have in every way. At 40 years of age we are not wanted as assistants and we have so many years the less in which to obtain the necessary money to repay what we borrow for home and practice. If we have to purchase a house by effecting life insurance cover the premiums are, by virtue of our years of war service, so much more expensive that the younger man can step in before us.

There are possibly two sides to the question—but we should not let the matter degenerate into an antagonism between the returned and unemployed ex-Service medical officer and the stay-at-home, overworked practitioner of the war years. That way dissension at this critical moment in the profession's future is certain. A solution must be found.

As an unemployed demobilized ex-Service medical officer I write to thank "M.D." for his letter and to warn the profession at large that unless we are speedily able to find employment—we as assistants, or partners, or in a practice where exorbitant low-payment is not demanded—we shall have no alternative but to ask for speedier negotiations with the Minister, in the hope that we can be found permanent work and financial security. Opponent to the idea of nationalization of the profession though I have always been, I must say "Yes" when I make my answer to the referendum and I must agree to serve in the National Health Service unless a quick way out is found. —I am, etc.,

"PRE-WAR R.A.F.V.R."

SIR,—In medical practice as in many other businesses there exists uncertainty about Socialist plans. As a result, many elderly doctors are working and earning all they can before the calamity of 1948. Many of them should retire, or employ an assistant, but they intend to carry on, and then "get out" in 1948 or when. There is no doubt also that many prospective buyers are nervous: to invest or borrow a large sum, and later find working conditions (under the State) intolerable, leaves one shackled to accept compensation when one is dead as preferable to none at all.

You cannot leave politics out of the argument, and in 1950 the people of this country will settle their own fate after their experiment of July, 1945. This does not excuse men with too much work on hand from getting help, and giving the Serviceman a chance, but let there be no doubt that politics are the root of this, and many of our other troubles.—I am, etc.,

Newquay.

J. P. O'SHEA.

SIR,—Are there many British doctors who like Dr. G. L. E. Thomas (Aug. 3, p. 58) worked in G.P. during the war without finding a permanency, or are there any special reasons for his failure? I was thankful for the sanctuary I found in this country, and when my hope to work as a doctor could not be fulfilled I did not grumble that like many others I had first to live in enforced idleness (1939–1940) and then to work as a labourer in a factory (Jan.–Oct., 1941). Later and up to the present I have held house appointments which included E.M.S. work. I did so by choice, though it would have been much more lucrative to work as an assistant in G.P. I was given a fair amount of responsibility, professional as well as otherwise—for quite a while I looked after German prisoners of war. I was only a little cog, but other alien doctors in this area made great contributions to the work among soldiers and civilians.

At present, when there is some unemployment amongst doctors, the ex-Serviceman comes first. Incidentally, there are some ex-Servicemen amongst alien doctors. We others, like Dr. Thomas and myself, have to take our turn. A number of us alien doctors hope to be British citizens soon; we are all anxious to play a humble part in the magnificently expanding health service of this country, which according to Sir Ernest Graham-Little and others will require many more medical men. Some foreign doctors have already gone back to the Continent, more will follow. A number are anxious to stay for a variety of reasons. I am among the latter, and it is my earnest desire to spare my British wife and son much more uncertainty and anxiety. Personally I received nothing but understanding and kindness from my British colleagues and I would hate to be a trouble to anybody. Nor do I wish to be a scapegoat either.

There are two ways in which we alien doctors can make room now (some are already unemployed). The first one is open to those who are only on the temporary *Register*. Having worked for so many years in this country shall we be admitted to the permanent *Medical Register* right away or shall we have to take a British qualification first? If this question could be settled soon, and perhaps we are expected to sit for a conjoint diploma, we could do our studying now and cease to be competitors for jobs during this difficult interim period. And if it were possible to work for the examination without two to three years' hospital practice (like, for example, a graduate of Cairo or Khartum), we should not be competing with British ex-Servicemen for places at teaching hospitals. The second way is being tried by a friend of mine, a fully qualified man (F.R.C.S., etc.); who is expecting his naturalization any day now. He wants to join the R.A.M.C. Unfortunately he finds it very difficult to get accepted.—I am, etc.,

Manchester.

HERBERT E. BACH, M.D. Vienna.

SIR,—No doubt this is one of many letters you have received in reply to "Principal" (Aug. 17, p. 65). I would like to say that I have been looking for employment such as he offers since February of this year without one reply to my many applications. I am British, ex-Service (5½ years Navy), and an Edinburgh graduate and would gladly start work for "Principal" now under the conditions he offers. Should he still doubt that medical unemployment is a myth let him advertise once more.—I am, etc.,

North Queensferry.

V. C. HASSAN.

SIR,—I was pleased to see the letter from "Unemployed Ex-Serviceman" (*Supplement*, Aug. 3, p. 58). The serious plight of many ex-Service doctors is indeed widespread and distressing, and certainly not appreciated by the majority of the profession. nor, might I add, by the B.M.A. Numerous colleagues whom I have met during the last six months in the waiting-rooms of

the agencies and elsewhere all tell a similar story. Most of us joined the Services at the earliest opportunity after qualifying, and many of us are now married and with a family. Speaking for myself, I have had great satisfaction and experience from my service in the Navy and by no means regret it. But now having left the Service what are the chances of employment? My medical school offers a three months' appointment at £350 per annum—but what then?

If one cared to tie a millstone of debt about one's neck one could purchase a practice or partnership—and usually a house at a price of £3,000 to £6,000 must be bought with it. I have applied for about twenty public health and industrial posts without success; and I applied for seventy-two assistantships, and only two were offered to me—I turned them down as they were both offered by aliens. Sir, what has happened that ex-Service doctors should be unemployed while aliens are sufficiently well established to require assistants?

Believe me, Sir, I am not unique. Yet in spite of excellent professional and Service records and testimonials I remain unemployed. I am told by one of the agencies that for every assistantship vacant they can offer over fifty applicants. As one's bank balance decreases so one's bitterness increases, especially when one sees or hears of colleagues who went from A to B2 and stuck, and who are now (with or without the higher degrees they had the opportunity of taking) comfortably ensconced in lucrative employment, having attained their object of avoiding the Services.

Some time ago I would have seen Mr. Bevan in hell before joining his Service. I regard him now as an angel from heaven who will at least offer me a job with a living wage, which is more than the B.M.A. or the profession seems capable of doing. Roll along 1948. In the meantime,—I am, etc.,

UNEMPLOYED EX-R.N.V.R.

SIR,—May I speak for those young doctors (there must be many of them) who had the misfortune to be rejected by the R.A.M.C. on account of ill-health and who now are out of work? Though not thought fit enough to serve in uniform, we were nevertheless directed to work in hospitals and general practice, at a low salary and for long hours. Now, amid the clamours of the ex-Servicemen, we stand no chance of getting work. But whereas our more fortunate fellows in the Forces were, during their period of leisure, well-fed, well-housed, and paid what seems to us a princely wage, we in our turn have difficulty in finding where to live and are earning nothing.

I submit that conscripted ex-Servicemen should not be given priority over those who were rejected for the Services through ill-health: both should be treated alike.—I am, etc.,

“REJECTED.”

*. These six letters are representative of many others on the same subject.—ED., *B.M.J.*

Delayed Release of Specialists

SIR,—“Ex-Service Medical Officer” (Aug. 3, p. 58) writes utterly about the more fortunate specialists who served with us in the war. They do not deserve this. His bitterness should be directed rather at the fantastic medical system which is debarring the returned doctor from acquiring the much-stressed experience demanded, by the simple expedient of not giving him a job in which he may get his chance of acquiring experience along with his more highly qualified and stay-at-home brothers. After six years in the Forces he may have acquired experience which no years of peacetime work could give him, in the jungle, on the sea, in the front line. But, alas, he has no F.R.C.S., no D.P.H., no D.C.H., no car, so his letters of application will remain unanswered, and, although unable to verify his suspicions, he will be left to assume that the “wartime temporary” appointments have been confirmed in favour of the “wise” doctor who stayed at home and piled up experience in the concrete form of higher qualifications.—I am, etc.,

“EX-SERVICE WOMAN DOCTOR.”

SIR,—We would like to draw the attention of the Central Medical War Committee to the sorry position in which R.A.M.C. specialists find themselves, a year or more after the termination of hostilities. This applies particularly to graded specialists,

to which group we unfortunately belong. While our corresponding groups of general duty medical officers were demobilized four to five months ago, we find ourselves with a further to twelve or even more months to serve in the Army before we can enter civilian practice.

The benefits accrued by our service as graded specialists not very obvious. The practical experience and opportunity for improvement in our specialist branches have been conspicuous by their near-absence. The additional pay, especially taxation, certainly does not compensate for our involuntary delayed release. On the other hand the advantages of demobilization are very obvious, and far outweigh the benefit of being a graded specialist.

Our general duty medical officer colleagues in the Army now in a position to gain experience, to accept available hospital posts, and to study for higher qualifications, the lack of which will prevent graded specialists from competing with them for senior posts in hospitals upon our (eventual) release. Moreover our chances of acquiring practices, if we do not continue in our specialties, are progressively diminishing as more and more G.D. medical officers of far higher A. & S. groups are released from the Army.

Up to the present we have no information (nor is any available from higher authorities) of the approximate expected date of our demob., with the obvious result that we are powerless to make any definite arrangement for our future careers; the uncertainty of the extent of our further service also prevents us getting a definite answer as to whether or not we are eligible to have our families join us overseas.

To sum up, we feel strongly that the R.A.M.C. specialists (especially the “graded” who has not got the qualification to enable him to compete for a senior hospital post immediately on demobilization) is being grossly unfairly treated. Are the Central Medical War Committee and the Army authorities doing all in their power to hasten the demobilization of R.A.M.C. specialists? We believe that this is open to question.—We are, etc.,

B.A.O.R.

“TWO GRADED SPECIALISTS.”

Absent Practitioners' Scheme

SIR,—Now that most of those men in practice before war are back in their practices again, is it not desirable that the names of those who subscribed to this scheme should at least be circulated privately amongst themselves—with the date when they joined, of course!

The new Health Service will mean many committees and is desirable that in electing such, practitioners should know those who refused to share the others' burdens. Otherwise the same astute beings will not be backward in getting themselves into power.—I am, etc.,

Bradford.

THOS. SAVAGE

Functions of an Insurance Committee

SIR,—I have received a letter from the London Insurance Committee which expresses the committee's hope that I “may find a booklet on pulmonary tuberculosis useful.” A copy of the booklet was enclosed. I was not aware that the London Insurance Committee had any function except to administer National Health Insurance. It seems that the committee has been “impressed” by a pamphlet and wishes to instruct ignorant panel doctors in the sort of literature they should read. Is this a sample of the new State Service, when we may expect the Civil Service to direct our medical education and methods of treatment? It is surely wrong that a document published at Tavistock House should be distributed in this way.—I am, etc.,

Welling.

H. G. HOWITT.

*. The booklet in question is by Dr. C. H. C. Toussaint and is published by the National Association for the Prevention of Tuberculosis. Price 1s.—ED., *B.M.J.*

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Mr. John Howkins, F.R.C.S., 109, Harley Street, W.1 (Day, Welbeck 7395; night, Wimbledon 1613); Mr. D. N. Matthews, M.Ch., F.R.C.S., at 152, Harley Street, W.1 (Welbeck 2714); Dr. Kenneth Robson, F.R.C.P., at 57 Wimpole Street, W.1 (Welbeck 0270).

H.M. Forces Appointments

ARMY

Lieut.-Cols. A. J. Beveridge, O.B.E., M.C., and T. H. Sarsfield, B.E., from R.A.M.C., to be Cols.
Lieut.-Col. J. T. Johnson, D.S.O., R.A.M.C., retired and re-employed, has been restored to the rank of Col. on ceasing to be employed.

ROYAL ARMY MEDICAL CORPS

Major (War Subs. Lieut.-Col.) A. N. B. Odbert, O.B.E., to be Lieut.-Col.
Major C. Ryles, O.B.E., retired and re-employed, has been granted the honorary rank of Col. on ceasing to be re-employed.
Major J. V. McNally has retired on retired pay and has been granted the honorary rank of Lieut.-Col.
Capt. (War Subs. Major) D. N. Keys has retired and has been granted the honorary rank of Lieut.-Col.
Capt. J. A. V. Nicoll to be Major.
Capt. C. Reburn has retired and has been granted the honorary rank of Major.
Short Service Commission.—Capt. E. P. Jowett has retired and is being granted the honorary rank of Major.
Short Service Commissions.—Capts. W. Windsor and A. B. Dick have been appointed to permanent commissions.
Short Service Commissions.—War Subs. Capt. J. McQuillan, from A.M.C., Emergency Commission, to be Lieut., and to be Capt. id has been appointed to a permanent commission.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Capt. C. Helm, D.S.O., O.B.E., M.C., having exceeded the age limit, has ceased to belong to the Reserve of Officers and has been granted the honorary rank of Col.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major F. A. Bevan, T.D., has relinquished his commission on account of disability and has been granted the honorary rank of Lieut.-Col.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Cols. (Local Brigs.) M. F. Nicholls and M. L. Rosenheim have relinquished their appointments as Consultants and be local rank of Brig.

War Subs. Capt. R. V. Coxon has relinquished his commission on account of disability and has been granted the honorary rank of Major.

War Subs. Capts. K. W. Leon and P. H. Garrard have relinquished their commissions on account of disability and have been granted the honorary rank of Capt.

War Subs. Capts. G. H. Rosenbaum and K. H. Koster have relinquished their commissions.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Mrs.) L. E. N. Price has relinquished her commission on account of disability and has been granted the honorary rank of Capt.

(Miss) Joan Marsden to be Lieut.

ROYAL AIR FORCE

E. W. R. Fairley has been appointed to a commission as Squad. Ldr. with four years on the active list.

ROYAL AIR FORCE VOLUNTEER RESERVE

To be Squad. Ldrs. (Emergency): M. Lentin, D. A. J. Ebrill, A. H. Galley, H. Kopelman, and W. C. Lawrence.

To be Fl. Lieuts. (Emergency): H. W. Bunjé, S. L. Citron, M. E. Winston, J. M. Brown and M. M. Brown.

Fl. Lieut. (Temp. Squad. Ldr.) D. P. Rowe has resigned his commission, retaining the rank of Squad. Ldr.

Fl. Lieuts. W. E. Graham and R. B. Walker have relinquished their commissions on account of medical unfitness for Air Force service, retaining their rank.

To be Flying Officers (Emergency): A. P. Roberts, R. J. Aspinall, J. D. Blainey, E. De M. Connell, T. M. Glaister, L. M. Harrison, D. C. R. Jones, R. H. Little, G. R. McOwan, R. E. Morgan, K. W. E. Paine, D. S. Sharpe, H. R. Smart, N. T. Welford, J. D. Whitehouse, J. E. Davies, D. D. Forbes, R. A. Allen, P. W. Arundell, G. E. R. Bibbings, M. Binnie, R. Burns, E. C. Davies, P. G. Laing, J. G. Latimer, D. J. Lyall, A. Mather, J. D. Paterson, M. J. Peto, N. Rosedale, J. C. Taylor, J. Ward, E. A. Witheridge, H. H. Slack, R. Ellam, E. A. Harris, A. G. Hayter, P. G. Jagger, F. F. Jerichow, A. G. Pollacchi, A. E. Pritchard, G. P. Reed, R. M. E. Seal, S. D. K. Stride, T. C. D. Whiteside, and A. Young.

WOMEN'S FORCES

EMPLOYED WITH THE MEDICAL BRANCH OF THE R.A.F.

Fl. Lieuts. M. B. Wizer, E. M. M. Tulloch, and M. I. Greenaway have resigned their commissions, retaining their rank.

INDIAN MEDICAL SERVICE

Majors B. M. Rao, B. N. Hajra, R. M. Lloyd Still, and A. Singh to be Lieut.-Cols.

Major M. G. Leane has retired on account of ill-health and has been granted the honorary rank of Lieut.-Col.

Capt. W. J. Young, D.S.O., M.B.E., J. L. Mewton, L. S. F. Woodhead, M.B.E., J. R. Kerr, J. D. Munroe, W. C. Templeton, G. W. Palmer, B. J. Doran, T. M. Williams, J. F. Thomson, and E. J. Crowe, O.B.E., to be Majors

EMERGENCY COMMISSIONS

Lieut. C. R. Peck to be Capt

COLONIAL MEDICAL SERVICE

The following appointments have been announced: T. H. Bassett, M.B. B.S., A. G. M. Davies, M.B. B.Ch., and D. E. Thompson, M.B. B.Ch., Medical Officers, Tanganyika; Miss A. G. Brodie, M.B. Ch.B., and J. F. McGarrity, M.B. B.S., Medical Officers, Malaya; J. Clark, M.B. Ch.B., D.P.H., J. J. Elbert, M.B. Ch.B., G. F. Houston, M.R.C.S., L.R.C.P., and F. J. Cauchi, M.D., Medical Officers, Nigeria; A. H. Dunnitt, M.B. Ch.B., and J. E. Bosman, L.R.C.P., L.R.C.S., Medical Officers, Gold Coast; S. G. Gordon, M.R.C.S., L.R.C.P., Medical Officer, Gambia; W. G. Timmis, M.B. Ch.B., Medical Officer, Uganda; B. H. B. Upton, M.B. Ch.B., Medical Officer, Fiji; R. K. A. Van Someren, F.R.C.S., Medical Officer, Kenya; R. Wright, M.B., Medical Officer, Nyasaland; S. S. Dryden, M.B. Ch.B., Assistant Medical Officer, Jamaica; J. M. Fitton, F.R.C.S., Orthopaedic Surgeon, Mauritius; S. M. Frazer, M.R.C.S., L.R.C.P., Medical Officer, Bermuda; G. C. A. Jackson, M.B. B.S., Medical Officer, Northern Rhodesia; K. C. Willett, M.R.C.S., L.R.C.P., Trypanosomiasis Officer, Tanganyika; T. A. Austin, L.R.C.P. and S.I. and L.M., D.P.H., Director of Medical Services, Uganda; H. N. Davies, M.B., Ch.B., Medical Specialist, Tanganyika.

MENTAL NURSING SALARIES

HIGHER PAY FOR SENIOR GRADES.

The Rushcliffe Committee has now completed its review of salaries and conditions in the mental nursing services. The provision of new grades is recommended—including those of Deputy Matron (salary from £420-£460 where there are fewer than 330 beds, up to £475-£575 where there are 1,330 or more beds) and Senior Assistant Matron (salary from £440-£480 (330-499 beds) up to £455-£550 where there are 1,330 or more beds). A salary scale of £680-£900, including emoluments of £250, is recommended for Matrons of hospitals or other institutions approved as training schools which have 1,330 or more beds; and increased salaries are recommended also for Matrons and Deputy Matrons in hospitals or institutions which are not training schools. Assistant Matrons, Sister Tutors, Home Sisters, and Housekeeping Sisters also benefit, as does the senior male staff, including Male Tutors. Special consideration has been given to student mental nurses who have been on war service.

All salary increases are retrospective from Jan. 1, 1946. Half their cost will be met by the Ministry of Health.

Meetings of Branches and Divisions

BATH DIVISION

A meeting of the Bath Division was held on Aug. 15, with Dr. G. D. STEVEN in the chair. The secretary informed the meeting that the following three resolutions passed at the meeting of July 17 has been sent to the Council: *Motion I.*—That this meeting of practitioners of the Bath area gives its full support to the three resolutions passed by overwhelming majorities at the Special Representative Meeting on May 1 and 2, 1946, viz.—(i) That the remuneration of general practitioners under any National Health Service should take the form of an adequate capitation fee without a fixed part salary, and without a tapering scale of payment. (ii) That this meeting regards as essential to the freedom of patients and the profession the right to buy and sell practices as at present. (iii) That there shall be no control over doctors in regard to the choice of area in which they shall practise. *Motion II.*—That this meeting of practitioners of the Bath area urges the Council of the British Medical Association to submit a preliminary referendum to all members of the profession immediately after the National Health Service Bill is passed. And that that part of the referendum dealing with general practitioner service should be based upon the acceptance or rejection of the three main clauses, viz.—(i) Payment by capitation fee only. (ii) The right to continue to buy and sell practices. (iii) No control over doctors as regards the area in which they shall practise. *Motion III.*—That in returning the proposed referendum each individual should be asked to state to which group of the profession he or she predominantly belongs, viz.—A. general practitioner, B. consultant, C. public health.

Dr. R. G. GORDON, the representative of the Division, gave an account of the Representative Meeting which had just been held, and this was followed by considerable discussion.

INSURANCE CAPITATION FEE

A special meeting of the Insurance Acts Committee was held on July 22 to consider an offer by the Minister of Health, orally communicated to the Committee's representatives on July 17, of an increase in the capitation to 12s. 6d., with retrospective effect from Jan. 1, 1946. A letter containing this proposal was received from the Ministry within an hour of the meeting (*Supplement*, July 27, p. 31). At the meeting the following resolutions were carried unanimously:

1. "That the Minister be informed that the Insurance Acts Committee, while it welcomes the Minister's acceptance of the majority report of the Spens Committee and his recognition of the inadequacy of the capitation fee, regards the proposed increase of the capitation fee to 12s. 6d. as gravely inadequate."

2. "That the Minister be informed that the Insurance Acts Committee would be prepared to recommend insurance practitioners to accept in the interim a capitation fee of 15s., retrospective to January 1, 1946. The Committee would be willing, if the Minister so prefers, that the Spens Committee should be asked to state the implications of its majority report in relation to the current insurance capitation fee on the understanding that the Minister and the Insurance Acts Committee accepted, in advance, the findings of that Committee."

The action taken by the Insurance Acts Committee was approved by the Annual Representative Meeting on July 25 (*Supplement*, Aug. 3, p. 53). There has now been issued by the Ministry of Health the following circular, which is addressed to the clerks of insurance committees.

CENTRAL PRACTITIONERS' FUND, 1946

Increase in the Capitation Fee Payable to Insurance Doctors

1. I am directed by the Minister of Health to say he has decided to increase the amount of the capitation fee payable to insurance doctors from 10s. 6d. to 12s. 6d. as from January 1, 1946.

2. The effect of this decision is to increase the Committee's share of the central pool for 1946 from the provisional amount shown in Paragraph 5 of the Department's circular letter (I.C.L. 1250) of March 8 last to £..... The Committee should accordingly arrange for payment to be made to insurance doctors for the current quarter on the basis of this revised amount and for the necessary additional payment to be made at the same time, if possible, or as soon afterwards as practicable, in respect of the first two quarters of the year. Application for funds to meet these payments should be made to the Ministry forthwith on the appropriate form.

3. The additional sum of six shillings per annum in respect of persons discharged from His Majesty's Forces on medical grounds remains unchanged, and the total fee in respect of such persons will be 18s. 6d. in place of 16s. 6d.

4. A form of notice (G.P. 119) announcing the increase is in course of preparation, and a supply for issue to resident doctors on the Committee's medical list is being forwarded to you under separate cover.

5. The fee of 10s. 6d. mentioned in the fourth paragraph of Circular Letter I.C.L. 1259 of June 26 last as the capitation fee in respect of unaccompanied evacuee children billeted on householders in reception areas will also be increased to 12s. 6d., but the Committee will be concerned only with the period from July 1, 1946, and payment for the current quarter should therefore be on the revised basis of 3s. 1½d. (exclusive of payment in respect of drugs and appliances and mileage).

The position will be reconsidered by the Insurance Acts Committee on Sept. 5.

Association Notices

Sir Charles Hastings Clinical Prize

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition. The following are the regulations governing the award:

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money award of the value of fifty guineas.

2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made. It is to be noted that candidates in their entries should confine their attention to their own

observations in practice rather than to comments on previous published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, their interpretations, and their conclusions.

4. Essays, or whatever form the candidate desires his work take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946. The prize will be awarded at the Annual General Meeting of the Association to be held in 1947.

5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work. A prizewinner any year is not eligible for a second award of the prize.

6. If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay the decision of the Council on any such point shall be final.

7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8. The writer of the essay to whom the prize is awarded may, at the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal* or for presentation to the appropriate Section of the Annual Meeting of the Association.

9. Inquiries relative to the prize should be addressed to the Secretary.

POSTGRADUATE NEWS

A series of meetings will be held in the Department of Ophthalmology of the University of Glasgow on Wednesdays, at 8 p.m. from Sept. 11 to Oct. 16, both dates inclusive, and will be open to all medical practitioners and senior students interested in ophthalmology. Details will be published in the diary column week by week.

APPOINTMENTS

LONDON COUNTY COUNCIL.—The following appointments have been made to the mental health services of the Council at the hospitals indicated in parentheses. *Deputy Medical Superintendent*: B. H. Kirman, M.D. (Fountain). *First Assistant Medical Officers*: E. N. Butler, M.R.C.S., L.R.C.P. (Ca Hill); J. M. Crawford, M.D. (St. Bernard's); Pauline W. M. C. Stirling, M.B., Ch.B. (Friern); G. M. Tucker, M.B., Ch.B. (Darenth Park).

KENT AND SUSSEX HOSPITAL, TUNBRIDGE WELLS.—Honorary appointments: *Physician*: J. H. Easton, M.D., M.R.C.P. *Pediatrician*: N. M. Jacob, M.B., B.S. *Assistant Ophthalmic Surgeon*: H. M. Symons, M.B., B.S. *D.O.M.S. Anaesthetist*: P. T. Ashby, M.B., B.Ch., D.A.

ROYAL SHEFFIELD INFIRMARY AND HOSPITAL.—Honorary *Physicians*: H. Brody, M.R.C.P., A. W. D. Leishman, D.M., M.R.C.P., E. Skipper, M.I.M.R.C.P.

TIMBLES, SYDNEY G., L.R.C.P.&S.Ed., Eye Specialist to Kent County Council for clinics at Beckenham and West Wickham, and to the L.C.C. Hammersmith.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

CURNOCK.—On August 17, 1946, to Vera (née Bucknell), wife of Dr. H. H. Curnock, 136, Wanstead Park Avenue, E.12, a son—David Anthony.

FERGUSON.—On August 11, 1946, at Avondale, Woodbourne Road, Douglas, I.O.M., to Frances (née Wright), wife of Dr. J. H. Ferguson, a daughter—Elizabeth Ann.

KELLY.—On August 18, at 5, Cator Road, London, S.E.26, to Peggy, wife of Dr. Reginald Kelly, a son—Christopher William.

LANKESTER.—On August 21, 1946, at Oxted, Surrey, to Mary (née Burnett), wife of Dr. John Lankester, a son—Thomas Edwin.

MCALPIN.—On August 20, 1946, at Great Yarmouth, to Dorothy (née Goldsmith), wife of Surg.-Lieut. J. M. McAlpin, R.N.V.R., Royal Naval Hospital, Great Yarmouth, a son—Robert John.

SMITH.—On July 18, 1946, to Valentine, wife of Dr. R. W. Smith, a daughter—Rosemary Ann.

WILSON WILLIAMS.—On August 18, 1946, at Cardiff, to Betty, wife of Capt. R. Wilson Williams, R.A.M.C., B.A.O.R., a son.

MARRIAGES

MCCLAREN—TAYLOR.—On August 10, 1946, at Irish Church, Kingraigh, Invernesshire, Flying Officer William James McLaren, M.B., Ch.B., to Pauline Annette, only daughter of Mrs. E. B. Taylor, of Cricklewood, London.

MORT—WESTON.—On July 18, 1946, at Sale, Cheshire, Philip Mort, M.B., B.Chir., M.R.C.S., to Sybil Weston.

DEATHS

CAMPBELL.—On August 14, 1946, at Radcliffe Infirmary, Oxford, John Fort Campbell, L.R.C.S.&P.Edin., L.D.S.Edin., of Forest Lodge, Totton, Hanover, after a short illness.

COWARDIN.—On August 3, 1946, at Portsmouth, William Lewis Cowardin, M.R.C.S., L.R.C.P.Lond., Surg.-Commander, R.N. (retd.), the dearly loved husband of Edith Cowardin.

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MIGRAINE AND THE SYMPATHETIC NERVOUS PATHWAYS

BY

G. F. ROWBOTHAM, B.Sc., F.R.C.S.

Neurosurgical Unit, Newcastle-upon-Tyne

he pain of migraine is probably due either to excessive spasm or to dilatation of the arteries of the scalp and dura mater. It has been shown that the painful impulses are, in some cases, conveyed to the brain through the upper half of the posterior root of the trigeminal nerve on the same side, and so the trigeminal pathways may be regarded as a sensory arm of the migraine cycle" (Rowbotham, 1942).

What is not known is why the arteries concerned occasionally contract or dilate excessively. One theory is that a migrainous person is born with an unstable mechanism in the hypothalamus which reacts excessively to the multitudinous stimuli that reach it, either from the higher centres or through the blood stream, and causes explosive or dysrhythmic messages to be sent to the large blood vessels of the head. It is an anatomical fact that these large blood vessels are supplied with motor fibres from the efferent side of the autonomic nervous system. Therefore, if disordered messages from the hypothalamus are in fact transmitted by the motor autonomic pathways to the vessels concerned, then section of those pathways should give relief in cases of migraine.

Experiments to Test Hypothesis

The following series of experiments was designed and carried out to test the verity of this supposition.

Case I

This concerns a young doctor aged 30 years. The history is that from the age of 8 he had suffered from periodic headaches. At the age of 14 he began to study for matriculation and higher school certificate, and from then onward the headaches became increasingly severe and more frequent. He obtained a scholarship into a medical school and finally qualified M.R.C.S., L.R.C.P., intending later to sit for a university degree. In the postgraduate period his headaches became so severe that he became virtually incapacitated, and on occasion suffered pains in the head which lasted for five days or more. His condition apparently was hereditary, as his mother, grandmother, and great-grandmother had all suffered from migraine.

Typically, an attack of headache would be preceded by hallucinations of light in the right homonymous field which ended in a complete right homonymous hemianopia. The hallucinations of light would, on the average, last for twenty minutes, and the homonymous hemianopia for about an hour. Occasionally tingling feelings would also be felt in the right hand and the right leg. Sometimes, during an attack, the right pupil would be contracted and the right side of the face flushed. One hour or so after the onset of the visual hallucinations a pain would start as a burrowing sensation in the region of the left temple, and as the pain became more severe it would radiate backwards and forwards until the whole of the left side of the head was affected. Only rarely did the headache extend to the right side of the head. Sometimes the pain on the left side radiated into the upper part of the face. A feeling of nausea was usual during an attack, but actual vomiting was only occasional. After the attack was over the left side of the scalp was sore and accommodation of the eyes was difficult. The attacks of headache might occur without being preceded by visual hallucinations.

On examination the patient was found to be a man of good intelligence; mentally alert in every way, quick to answer questions, and quick to appreciate the logic of an argument. He showed no sign of nervousness when being closely cross-questioned. All his movements were smoothly co-ordinated, and the pulse was normal in rate and rhythm. No abnormal neurological signs were found, and later special investigations and tests failed to reveal any abnormality in the head or in the general metabolic processes. Though it was realized we might be dealing with a cerebral vascular anomaly of the arteriovenous type, we felt that angiography was not called for.

Diagnosis.—From the periodicity of the head pains and the premonitory visual hallucinations there was little doubt that we were dealing with a case of migraine. Moreover, in view of the long-standing history and the absence of abnormal physical findings, it was justifiable to regard the migraine as being of the idiopathic or primary type.

At a neurological clinic elsewhere, full investigations had been made and a diagnosis arrived at of a psycho-neurosis of the anxiety type. Moreover, in the near past my patient had been taking excessive quantities of analgesic and soporific drugs, and had on this account been in trouble with higher governmental authorities. The doctor admitted that he was highly strung, and agreed that his headaches were almost invariably precipitated by some psychological activity. What he was adamant about was that it was mental excitement or exhilaration which led to trouble, and not a sense of depression. When fully enjoying himself, making investigations into a problem which particularly interested him, he would be struck down by a violent headache and left incapacitated for a week or more. He had no objection whatever to the periods of mental exhilaration; it was the pain, and only the pain, which incapacitated him. His father was also of the same opinion, and thought that his son could become satisfactorily readjusted and resocialized if he could be relieved of what he considered to be physical pain.

After having made careful observation, I came to the conclusion that, whatever this man's psychological state, he was suffering from the condition which we know as migraine. In view of this decision and the fact that all kinds of drugs, including ergotamine tartrate, had been given an extensive trial, I decided that some kind of operation was necessary.

Operation, Feb. 14, 1945.—Under general anaesthesia, the patient lying on his back with the head turned to the right, an incision was made along the anterior margin of the left sternomastoid muscle, starting at the tip of the mastoid process and extending downwards as far as the thyroid cartilage. The carotid sheath with its enclosed vessels and the vagus nerve were isolated and retracted backwards, the sympathetic chain between the middle and upper cervical ganglia was exposed and divided, and the lower half of the upper cervical ganglion was removed. The outer coats of the common internal and external carotid arteries were stripped and removed in the manner of Leriche's periarterial sympathectomy. Finally the external carotid artery was clamped and divided between two ligatures (Fig. 1). The wound was re-formed in layers without drainage, and the patient made an uninterrupted recovery from the operation.

The following is a series of statements taken from the progress reports. Feb. 28, 1945: "Since my operation 14 days ago I have been perfectly free from symptoms of headaches and visual hallucinations." May 13: "The operation on the left side has so far

proved an unqualified success. In these last three months I have not had the slightest trouble in any way with the left side." May 31: "I have had five right-sided headaches since I last wrote you, but no trouble at all with the left; otherwise I am keeping pretty fit."

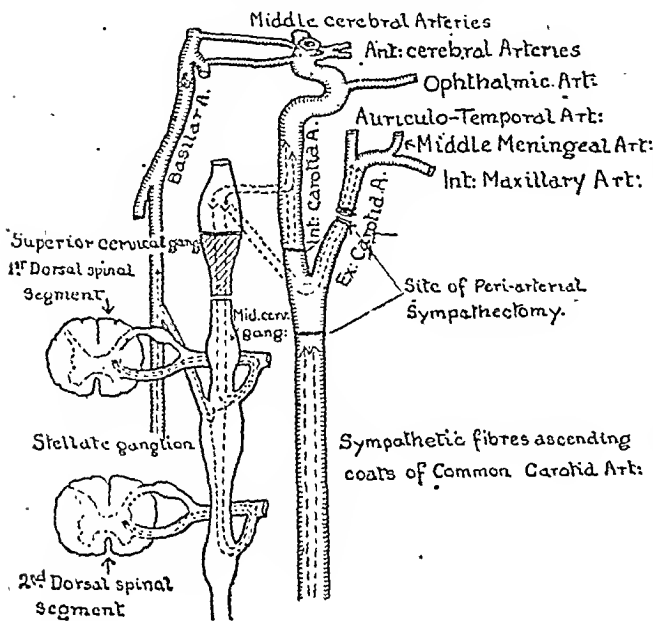


FIG. 1.—The operation of high cervical ganglionectomy and periarterial sympathectomy. (The part of the ganglion and sympathetic chain removed is shown by shading.)

Operation, June 20, 1945.—On account of the fact that the right-sided headaches were increasing in frequency and severity, and because of the apparent success of the left-sided sympathectomy, it was decided to carry out a similar operation on the right side of the neck. The details and technique were the same as those of the previous operation.

The following are extracted from the progress reports. Sept. 12, 1945: "I must tell you that the effect of the second operation, and therefore of the two combined, has been truly dramatic: it gives me very great pleasure to be able to tell you that every symptom the migraine has completely vanished. There has been no further of pain on either side; the visual fields have cleared completely; there are no longer any hallucinatory or defectual faults of vision. All throbbing and tenderness along vessels and in the scalp have vanished. I can now go to the cinema, indulge in hot and cold baths, etc., with impunity." Nov. 18: "I am happy to be able to tell you that I am still completely free from all migrainous symptoms: especially so now that I am doing a full-time job." Feb. 18, 1946: "I am happy to be able to tell you that I am still absolutely without symptoms and signs of migraine in any form. I have put on 18 lb. [8.16 kg.] in weight, I sleep like a log, and I am generally more placid and far less excitable than I used to be." May 8: "I have great pleasure in informing you that I am still quite free from any sign or symptom of migraine."

Case II

A young man aged 21 years, whose illness commenced in 1942 while he was in Gibraltar serving with the Navy in a non-commissioned rank. For many months he had been on convoy duty between Gibraltar and Malta. One night, for no special reason, he developed a very severe headache, but after a time was able to get off to sleep; that same night he woke up and vomited. The next night he had another severe headache, which was also associated with vomiting, and this was followed by a period of lassitude which lasted for about two days. On account of the frequent recurrence of the headaches he was returned to the British Isles and finally had to be discharged from the Services.

I first saw him on Jan. 18, 1945, at the Retreat Hospital, York, at the request of my friend Dr. Pool. It was Dr. Pool's opinion that this man was suffering from neither a psychosis nor a psychoneurosis; in fact, he had come to the conclusion that his patient was suffering from a serious organic lesion and possibly from a cerebral tumour.

On my first examination I found the man to be fully and easily co-operative, to be quick and alert in every way, and that he revealed no obvious signs of psychoneurosis. Neurologically there were no abnormal signs. He was admitted to the Neurosurgical Unit on Feb. 1, 1945, for observation. After a day he began with

very severe left-sided headache which made him vomit, and during the height of the painful attack he developed a left external rectus palsy which persisted for 36 hours.

Full investigations were carried out, and these failed to reveal any organic abnormality in the head or in the general metabolic processes. Although the probable existence of a vascular anomaly of the aneurysmal type was borne in mind, an angiogram was not made. In spite of adequate medical treatment, including injections of ergotamine tartrate, the headaches came on at intervals of about two days, and the pain was so exceedingly severe as to be completely incapacitating. On one occasion it was necessary to inject morphine to give him relief. Later he was transferred to the rehabilitation centre in the hope that a change of air would relieve his symptoms, but within two weeks he was returned to my care still complaining of severe pain.

Diagnosis.—In view of the unilateral character of the pain, its periodicity, and the temporary ocular paralysis, there could be little doubt that this was a case of migraine. Moreover, as no physical abnormalities could be demonstrated, it could be classed as idiopathic or primary migraine. Because of the severity of the pain, and the fact that it had been causing the man to take large quantities of analgesic drugs, I decided to operate.

Operation, March 14, 1945.—The following procedure was carried out: (a) Removal of the lower half of the upper cervical sympathetic ganglion and the chain below it; (b) stripping of the outer coats of the external and internal common carotid arteries; (c) ligation and division of the external carotid artery.

After the operation wound had healed the patient was transferred to the rehabilitation centre, where he remained for two months. During this period he had no recurrence of the headaches, and the medical report from the matron was satisfactory in every way. After a short stay at home he volunteered to the Society of Friends to go to Burma as an ambulance driver. However, on advice he found work on the land, and has been in full-time agricultural employment ever since. He occasionally gets a sense of discomfort on the left side of the head, but he has had no more severe head pains; moreover, he has no need to take analgesic drugs and finds that he has no desire to indulge in them.

Case III

A woman aged 38 years, an assistant matron in a general hospital. The history was that at least six years ago she started to suffer from attacks of right-sided headache and had, in fact, been off duty for long periods because of the pains. The headache would start slowly in the right temple or in the right forehead, and gradually increase in severity and spread until the whole of the right side of the head was affected. It was preceded or accompanied by spots in front of the eyes and by photophobia. Often she felt sick, but only occasionally did she vomit. In the early years of her illness the pain would disappear after a quiet rest, but in later years the headache had lasted for several days. Attacks were particularly liable to occur about the time of menstruation.

On examination she was found to be an intelligent woman and in every way satisfactorily co-operative. Though anxious about her present state of ill-health she showed no signs of a formal psychoneurosis. Neurologically no abnormal signs were found, and full investigation failed to reveal any abnormality in the head or the general metabolic system.

Diagnosis.—There was little doubt that here we were dealing with a case of migraine of the idiopathic or primary type. In view of the severity and frequency of the headaches I decided that operation was justifiable.

Operation, July 11, 1945.—This consisted in (a) removal of the lower half of the upper cervical sympathetic ganglion and the chain below it; (b) stripping of the outer coats of the external and internal common carotid arteries; (c) ligation and division of the external carotid artery.

Shortly after operation she was able to return to work, and the following is a statement from her on Oct. 18, 1945: "I am very pleased to say I have been free from attacks since the operation. I shall never be able to thank you for all you did for me; words cannot express my appreciation." I saw her again on April 3, 1946, and she said that the operation had been a great success. She had been able to stay on duty continuously. On one occasion she developed a pain in the head similar in character to the ones she had before the operation, but it was very much lighter and within an hour or so it passed off. She has had a lot of what she describes as "little headaches," which begin as though major attacks would follow, but these soon disappear and do not develop into actual pain.

Case IV

This was a young man aged 29, a lieutenant in the Army. The history is that, as far back as he can remember, he has suffered from headaches of varying degrees of severity. Until 1935 the pain had never been so severe as to incapacitate him completely or to

compel him to go to bed. In 1940 the headaches became more frequent and increasingly severe, and it was noticed that they were particularly liable to occur on Sundays. He entered the Services in August, 1941, and was put into Grade A1. From then until 1943, though he had attacks of headache, he did not have any serious incapacitating head pains. The first really bad attack occurred in the early summer of 1943, and because of a repetition of the severe headaches he was sent to a military hospital for further investigations and for treatment. There a diagnosis of migraine was made by the attending neurologist, and he was put on a course of analgesic drugs. During the winter of 1944 he had a series of extremely bad headaches, and these he attributed to excessive work and the fact that he had to deal with a difficult commandant.

In the past year the headaches have been coming on at intervals of from three to six weeks. He has never been able to discover any definite cause, but he has noticed that there is a tendency for them to occur whenever he has been mentally excited—for example, after an enjoyable evening spent with friends. He is a teetotaler and smokes fewer than 20 cigarettes a day. It was discovered that the only two drugs which gave him any real relief were ergotamine tartrate injected intramuscularly early in an attack, or enough morphine to put him to sleep.

In a typical attack he gets a feeling of discomfort in the head the night before the onset; he wakes up the next morning with a general kind of headache which later becomes intense, and a pain develops in the right temple, gradually spreading all over the right side of the head. The pain is stabbing in nature, and when at its height is almost unbearable; it is also of a throbbing character and occasionally spreads into the right side of the face. Any kind of head movement aggravates the pain; during an attack he finds it difficult to focus his eyes, but he has never been troubled with double vision, spots, or light; he has vomited not more than three times, and then only after the giving of morphine or of fergemin.

On examination he proved to be above average intelligence, and in no way unduly emotional. He was obviously highly strung, but there were no frank psychoneurotic tendencies; certainly there was no desire to escape from his duties, and the one thing he wanted was to remain in the Services. The headaches troubled him chiefly because they interfered with his capacity to carry out his duties efficiently. Neurologically I could find no evidence of any organic intracranial lesion. Special investigations and tests failed to demonstrate any abnormality in the head or in the general metabolic processes.

Diagnosis.—In view of the periodicity and the long history of the head pains there could be little doubt that we were dealing with a case of migraine; moreover, it was probably of the idiopathic type, because no underlying pathological lesion could be demonstrated.

Operation, Aug. 10, 1945.—In this case removal of the whole of the upper cervical ganglion, stripping of the outer coats of the common internal and external carotid arteries, and ligation and division of the external carotid artery were carried out. Appended are copies of the follow-up reports.

Sept. 16, 1945: "I had an attack of right-sided headache to-day, which was similar in every way, neither more nor less severe, to those I experienced prior to the operation." Oct. 24: "The operation has afforded me no relief from my headaches." Dec. 12: "I am still having occasional right-sided headaches of the type similar to those I had before I was operated on." Dec. 31: "I am convinced that the attacks are now less frequent and, if anything, a trifle less severe than at one time. I find that I am able to go about without the fear of an attack materializing. I have occasional stabs of pain, or a dull ache for some while in either left or right temple, but I am now, disregarding these, as they have not led to further trouble."

Feb. 3, 1946: "As mentioned to you when I was in Newcastle last, I am of the opinion that the operation has been of some help. Whether it is that I am now taking the precaution of having something done before the attack becomes too serious for the fergemin to take effect I cannot say, but certainly no attack, since the one on Sept. 16 last, has been so severe as those experienced before. On this occasion, however, you will see from the report that I was unable to obtain fergemin, and morphine was administered only at night. There would not appear to be much difference in the frequency, except that at times, of course, in the past there have been periods when I would have attacks two or three times during the month. This, however, has only been exceptional." Feb. 23: "There have been no other attacks, severe or mild, during the month, so there is little to report. One thing does amaze me, however, and that is that the attacks in over 75% of cases occur on a Sunday. It does not seem to matter where I am or where I have been. You will recollect that the last attack prior to the operation was on a Sunday, whilst in hospital. It does not seem material, therefore, that any particular place, work, or happenings have any bearing upon this aspect, which always has appeared to me to be very mysterious."

Comment on the Operations

In all four cases the nervous tissue removed was proved by histological section to be sympathetic ganglia and lengths of the sympathetic chain. In all cases the patient was left with Horner's syndrome, and dryness of the face and of the nasal air passages on the operated side. In no case was the carotid body itself removed, though, of course, its connexions must have been extensively severed. The identity of the external carotid artery was established, both by its position and by demonstration of its lower branches. In Case IV the patient complained of a persistent and unpleasant sense of stuffiness in the dried nostril, and this complication is a serious disadvantage of the operation. In Case I, following the second operation, the patient developed paralysis of the vocal cord due to retraction of the vagus nerve. Recovery is now taking place.

Assessment of the Pain

The Amount of Pain.—Though electrical disturbances can be measured in peripheral nerves when pain is being conducted

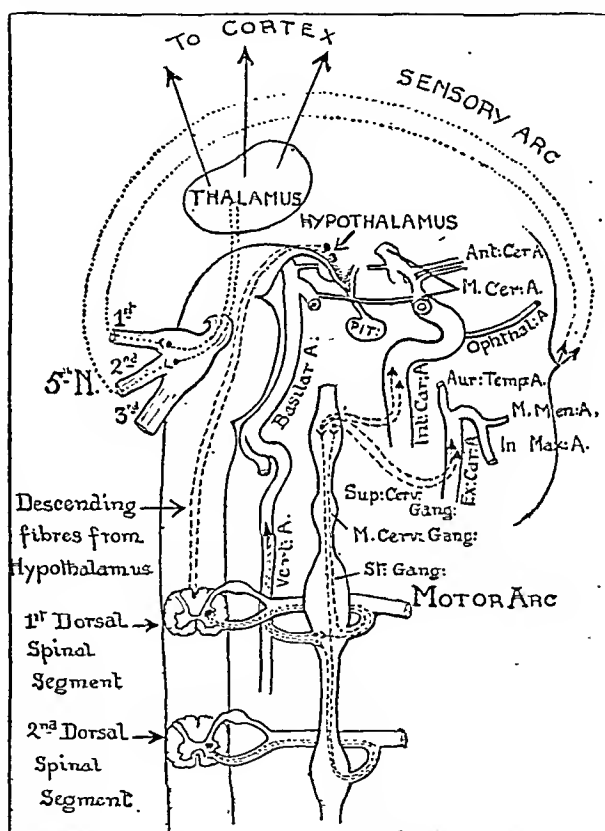


FIG. 2.—The "migraine cycle."

along their pathways, the amount or severity of pain cannot be precisely measured in scientific units. We depend for our assessment on how much a patient complains, on how the pain affects his happiness and human relationships, and how it affects his ability to work.

Its Relief.—Assessment of the result of the relief of pain depends partly on the patient's own statement, on his ability to enjoy himself, on the way he is socialized, and on how he can carry out his work. The possible objection that at least two of the patients in the above series were suffering from a psychoneurosis rather than migraine is not a strong one, because psychoneurotics are rarely cured, or relieved for any length of time, by a simple incision in the neck. Moreover, a disordered mental state can precipitate the "migraine cycle."

If it is true that (1) the pain of migraine arises in the arteries of the head from excessive spasm or dilatation, that (2) the pain in some cases is transmitted to the brain through the upper part of the posterior root of the trigeminus, and that (3) the arterial spasm is aroused by dysrhythmic messages passing along the

motor sympathetic pathways, then a neural mechanism can be constructed which will account for many of the phenomena in migraine. Fig. 2 illustrates this possible mechanism.

That the hypothalamus exists is an anatomical fact; that certain of its cell clusters can, with suitable stimulation, affect the calibre of the peripheral arteries is also a fact. The hypothalamus can be stimulated by chemical changes in the blood stream which reflect changes in general metabolism, and by messages of the intellect and emotions from the higher centres. If the hypothalamic mechanism happens to be in unstable equilibrium it can react abnormally to all kinds of stimuli and transmit dysrhythmic messages to the peripheral blood vessels, and particularly to those of the head. Possibly, therefore, a central unstable mechanism is the essential cause of migraine; all other stimuli, too much or too little of this and that, being merely precipitants or initiators of the "migraine cycle." The connexions of the hypothalamus with the peripheral anterior pathways are not known. They are, however, believed to lie deeply within the brain stem and spinal cord. The peripheral motor sympathetic pathways are known, and the main neuro-anatomical details are depicted in Fig. 1.

By my own previous experiments it has been shown that in some cases the pain pathways are transmitted through the upper part of the trigeminal root on the same side. It is known that no nerve fibres enter the posterior root other than through the ganglion, and no fibres enter the ganglion other than through the divisions of the nerve. Therefore, since the fibres of the ophthalmic division are represented in the upper part of the root, the pain pathways in migraine must traverse the ophthalmic division of the trigeminal nerve. Where precisely the pain pathways enter the ophthalmic nerve is not known. Moreover, it is not known whether the blood vessels themselves are supplied with pain fibres. This, however, is merely a point of academic importance, because radicles of the trigeminal nerve so closely follow the vessels that, even if they do not supply them, they could easily be stimulated by changes in their calibre.

In Case IV the fact that peripheral sympathectomy failed to cure possibly means that the unstable mechanism in this case lay in the vessels themselves and not in the hypothalamus. Another possible reason for failure is that the whole, and not the lower half only, of the upper cervical ganglion was removed.

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CRASH HELMETS*

BY

Sir HUGH CAIRNS, K.B.E., D.M., F.R.C.S.

My interest in crash helmets arises solely from the fact that during the war I spent a considerable part of my time treating injured motor-cyclists at the Military Hospital for Head Injuries at Oxford. In other words, it was the segregation of the Army's head-injury patients in special centres which made possible the prompt recognition of the importance of crash helmets. In subsequent work on the subject I was fortunate in having as collaborator my colleague at Oxford, Dr. Holbourn, who was a motor-cyclist as well as a physicist.

In 1940 we observed that a large proportion of our head-injury patients were motor-cyclists: of the first 290 patients with blunt head injury 70 were motor-cyclists. Of these 1 died, 10 were invalided from the Service, and the remainder were absent from duty for an average period of four months. There were at that time no medical statistics relating to motor-cycle accidents, but the records of the Claims Commission showed that about 600 motor-cycle accidents occurred in the Army at home each month. The total death rate in the country was mounting: in the first 21 months of the war 2,279 motor-cyclists and pillion passengers were killed on the road—over 3 a day—and calculations showed that to this death roll the Army was contributing about two-thirds. With the help of the Royal Society for the Prevention of Accidents, and the Registrar-General, we found that head injury was present in 92% of a series of 111 fatal cases, and, though not the sole cause of death, was clearly a major factor in the majority.

In 1940 the Army already had some crash helmets. These were issued only to certain types of motor-cyclist, and some were of canvas and others were meant for use in armoured vehicles. Some motor-cyclists wore the ordinary steel helmet. In 1940-1 only 1 in 20 of our motor-cyclist patients at Oxford had been wearing crash helmets at the time of the accident, but in these the relative mildness of symptoms was impressive enough to justify a report to the Director-General of the Army Medical Services, and to the Military Personnel Research Committee of the Medical Research Council, who were at that time considering helmets (Cairns, 1941).

In November, 1941, the Army Council made the use of crash helmets compulsory for all motor-cyclists. The R.A.F. followed suit in 1942. Whether the Royal Navy took any action I do not know—which is perhaps a humble argument in favour of a combined medical service. After recommendation had been made and action taken, by the end of 1942, we had accumulated enough evidence to prove that crash helmets were really very effective, and also to show how they might be still further improved (Cairns and Holbourn, 1943). This is an example of the impelling need for hasty decision in wartime on questions which really should have been worked out thoroughly between the wars.

The medical interest in crash helmets would have had no immediate effect if the Army, by the end of 1941, had not had crash helmets ready to supply all its 100,000 and more motor-cyclists in this country. The fact that it had got them may have been influenced to some extent by the early medical reports, but was, I suspect, mainly due to the example, before the war, of the racing motor-cyclists and men like A. B. Bourne and Graham Walker, who helped the Army to build up its motor-cyclist training. From about 1921 the Auto Cycle Union had made the wearing of crash helmets compulsory at speed trials, and their standard laminated fabric helmet is still one of the best available. When we began to treat Army motor-cyclists at Oxford we naturally got to know their comrades—keen motor-cyclists in the Army Training Schools, Royal Corps of Signals, and other units, who were very much alive to the wastage of their man-power from accidents, and they needed little encouragement to become enthusiastic advocates of compulsory use of crash helmets.

Structure and Mode of Action of the Crash Helmet

The components of a crash helmet are a firm outer shell, and an inner sling and hat-band which act as buffers. To understand the action of crash helmets it is necessary to consider what happens in a blunt head injury. There are two important effects of the blow: (1) the local injury beneath the site of the blow; (2) distortions in parts of the brain remote from the blow which depend on sudden change of velocity of the head.

At the site of the blow the scalp may be torn, the skull bends and may break, and fragments of it may penetrate the brain; and the brain may be bruised as well as torn. According to Holbourn (1943, 1944, 1945), when the head is made to rotate suddenly by a blow from a moving object, or against a stationary one, the brain, not being a rigid structure, lags behind. The brain makes the only kind of movement possible to a highly incompressible substance in an enclosed space—namely, a swirling movement—and the surface of the brain slides along inside the cranial cavity. These sliding movements of the surface of the brain have been observed with a high-speed camera and a perspex window in the skull, using the technique of Shelden *et al.* (1944). The movements set up shearing stresses in various parts of the brain; they are most severe where the lesser wing of the sphenoid juts into the cranial cavity, and it is in this region that bruising and laceration of the brain are so often seen, no matter where the blow has been struck. The clinical state of concussion is clearly due to remote effects, since it does not arise from the local brain injury of many gunshot wounds or of surgical operations.

The crash helmet modifies both the local and the remote effects. Locally the shell of the helmet spreads the blow over a wide area and protects the scalp and skull from the pointed pieces of road metal or whatever object is struck. In some cases it prevents fracture of the skull; in others, where a fracture is produced, it prevents the fracture from becoming

* Read at the Royal Society of Medicine, March 20, 1946.

depressed. The shell lessens bending of the skull, and therefore the local bruising of the brain. The shell also lengthens the blow—i.e., spreads it over a longer period of time. It does this by sliding over the surface struck, instead of stopping more abruptly as the unprotected head would do owing to its greater coefficient of friction, and by means of the buffering action of the slings and hat-band. The blow is also lengthened to some extent by rotation of the helmet relative to the head.

So far as the remote injury is concerned, spreading the blow over a larger area does not diminish the rotational velocity, but spreading the blow over a longer interval of time reduces the total force at any instant and thus lessens the remote effects.

Types of Helmet

The two main types of helmet used by Army motor-cyclists—the vulcanized rubber helmet and the pulp helmet—have previously been described, together with examples of their behaviour in various accidents (Cairns and Holbourn, 1943). The pulp helmet is at least twice as good as the rubber helmet. In addition there are the Army steel crash helmet and the leather helmet used by motor-cyclists of the National Fire Service.

The importance of adjusting the fit so as to obtain maximum protection of the forehead and sides of the head, the need to have the chin-strap buckled and to maintain all parts of the helmet in serviceable condition, have been emphasized in Army Council Instructions and Training Memoranda.

Observations on Head Wounds

In the course of this work we found that it was possible, from the marks on the helmet, to determine the site of the blow, as there was the closest correspondence. In 91 cases over 50% of the blows were on the front half of the helmet and very few on the crown. In 40% the head received more than one blow. Blows in the occipital region, which is protected by the helmet and by the neck muscles, were least dangerous, and blows in the temporal region, which is not very well protected by the helmet, were most dangerous to life.

Results

In estimating results we were hampered by being able to observe only the hospital population of injured motor-cyclists. We had no figures of the motor-cyclists whose injuries were so slight that they were not admitted to hospital, or of those who died before admission to hospital (20% of one group of 46 fatal cases in Southern Command). However, on evidence which we have already published (Cairns and Holbourn, 1943), we concluded that the incidence of fractured skull was reduced to one-quarter by the pulp helmet, and the severity of such fractures as occurred was demonstrably less. The effects of concussion were also modified by crash helmets, as the incidence of prolonged amnesia after injury was only one-third of its incidence among those who had not worn a crash helmet. In non-lethal accidents the pulp helmets so alleviated the injury as to halve the incidence of admission to hospital.

To what extent the helmets were life-saving it was impossible to determine. After the crash helmet was made compulsory in the Army there was a considerable sustained fall in the total death rate of motor-cyclists in Britain (see Graph). But so many factors influenced the total death rate that it is impossible to estimate the effect of the helmets. The graph includes civilians as well as fighting Services. It shows the influence of weather, and of such events as the outbreak of war, preparations against German invasion, and final preparations for D Day. Doubtless, also, improved selection and training of Army motor-cyclists contributed to a considerable reduction in the total death rate from 1942 to the end of the war.

These monthly figures of the Ministry of War Transport would be greatly increased in value if they included figures of the number at risk, mileage, and petrol consumption.

Taking all the evidence into account the pulp helmet clearly affords remarkably good protection. The vulcanized rubber helmet is not so good: it is too brittle, and the slinging of the buffers is not sound. Our impression is that the steel crash helmet was also eventually good, but by that time we were too busy dealing with head wounds to collect observations. The leather helmet appeared to answer well for the N.F.S., whose motor-cycling was done in built-up areas and presumably at low speeds; but here again we have not had time to assemble the information which the N.F.S. kindly put at our disposal.

Crash Helmets for Other Purposes.—Other people, besides motor-cyclists are concerned with crash helmets—glider pilots, firemen, and miners, each with their own particular requirements, but space will not allow me to consider these.

Conclusions

From these experiences there can be little doubt that adoption of a crash helmet as standard wear by all civilian motor-cyclists would result in considerable saving of life, working time, and the time of the hospitals.

The present crash helmets could be considerably improved.

During the war much time was wasted by useful people searching for suitable buffering substances in place of rubber. Even when a material was in stock it could not be obtained because it was needed for other purposes more important in the war effort. Now that the war is over a much more efficient helmet could be manufactured at small cost.

As I said at the beginning, it is only by being in the Army Medical Services that we have been able to make these observations and, with the willing help of many people in different branches of the Service, to influence to some extent the loss of man-power from motor-cycling. Both in peace and in war, the Army Medical Services are in a unique position to make further contributions—in fact, to lead the country in prevention and alleviation of accidents, with considerable saving of their own man-power and their own Treasury grant. In peacetime they could, with the help of competent statisticians and physicists, carry out a programme of investigations on accidents which would be much more convincing and effective than anything we were able to do once war had begun, and which would keep the Army up to date in regard to supplies of protective equipment and ready for whatever might happen. In these days of war by mass production, once the war has begun the soldier's protective equipment cannot compete with demands for materials for offensive warfare.

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Local education authorities have recently been reminded by the Ministry of Education that for maintained boarding special schools they have powers either to provide a store of clothing that can be lent to the children while they are pupils at the schools, or to provide as the child's personal property the clothing that he needs. In the case of schools not maintained by the authority a parent must not suffer financially because lack of a vacancy in a maintained special school compels him to send his child to a non-maintained school. Such pupils must also receive free medical treatment, including surgical operations, spectacles, hearing aids, etc.

PENICILLIN IN TREATMENT OF COMMON EXTERNAL EYE INFECTIONS

BY

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The value of penicillin in the treatment of infections of the eyes was established in 1944 and 1945. Sorsby fully reported on the rapid cure of infants suffering from ophthalmia neonatorum when treated with penicillin drops. Rycroft, who had to deal with a large number of infected intraocular war injuries, treated his cases with penicillin given subconjunctivally or injected into the anterior or posterior chambers of the eye. Other observers reported on the value of penicillin drops, ointment, and lamellae in ocular infections, and on penicillin introduced into the eye by iontophoresis. The latter method of treatment has not been generally adopted.

This short paper gives an account of the use of penicillin for one year in the out-patient department of a children's hospital (Queen's Hospital for Children) and the ophthalmic department of a general hospital (Hampstead General Hospital). Penicillin was given to out-patients in these hospitals for use at home.

External Eye Infections in Children

The most common external eye infections seen in children are: (i) blepharitis; (ii) conjunctivitis, often associated with corneal ulcerations; and (iii) lacrimal sac infections. Mothers often bring infants, a few weeks old, who have suffered from a discharging eye since birth. Pressure on the lacrimal sac of the discharging eye will cause a profuse flow of pus from the lacrimal punctum, thus establishing the diagnosis of an infection of the lacrimal sac resulting from an obstruction of the lacrimal duct.

Other observers have now established that organisms causing the more common external eye infections (staphylococci, pneumococci, Morax-Axenfeld bacilli, etc.) are penicillin-sensitive. Conjunctivitis and blepharitis seen among children in London are in most cases due to a staphylococcal infection; it was therefore considered unnecessary to take swabs from the conjunctivae of the hundreds of children and infants treated in the casualty and the ophthalmic out-patient departments before penicillin was prescribed. All cases of blepharitis (ulcerative and squamous) and of conjunctivitis were treated for the past year with penicillin drops or ointment. Cases of corneal ulceration were also given atropine and hot steaming.

Blepharitis, which in the past so often resisted all forms of treatment, clears up quickly with penicillin ointment, but it very often recurs when treatment is stopped; the mothers are therefore advised to continue applying the ointment to the lids as a prophylactic twice a week for several weeks and to report at once if the condition recurs.

Conjunctivitis amongst infants and children also clears up within a few days when treated with penicillin. Penicillin drops (1,000 or 2,000 units per ml.) are given to the mothers in a bottle provided with a bakelite cap and a rubber washer; an eye dropper is fixed through an aperture in the bakelite cap. (The same type of bottle is used by the manufacturers of albucid eye drops.)

The mothers are told to keep the penicillin in the pantry (refrigerators do not exist in the patients' houses). Drops are to be used four times a day; at least three or four are to be instilled on each occasion. The bottle contains about half an ounce (14 ml.) of penicillin solution, which is sufficient for more than a week's treatment. The mother is asked to bring the child again a week later. In severe infections the penicillin is dispensed in the strength of 2,000 units per ml. In all other cases a strength of 1,000 units per ml. is ordered.

Lacrimal sac infections in infants take weeks, often months, to clear up. Penicillin drops—2,000 units per ml.—were used in 30 infants suffering from this condition. The drops were given to the mothers to be used, as in conjunctivitis cases, four times a day. The muco-purulent discharge ceased in most cases

after a week's treatment. In many cases the eye continued water. Penicillin was continued in these cases for three weeks. If at the end of that period watering had not ceased the lacrimal duct was probed under ethyl chloride general anaesthesia. Twelve cases out of the total of 30 had to be probed. The procedure takes only a few minutes, and one probing of an obstructed lacrimal duct in an infant suffices to cure the condition. Penicillin drops are ordered for another week after probing.

External Eye Infections in Adults

In the ophthalmic out-patient department of the Hampstead General Hospital very few children are seen. The most common external eye infections amongst adults are: (i) conjunctivitis and (ii) chronic blepharitis, which is usually of the seborrhoeic type with a secondary staphylococcal infection. It is often associated with seborrhoea capitis and infected seborrhoeic dermatitis of the external ear (auditory meatus) and of the skin behind the ear. (iii) Industrial eye injuries are also seen frequently, the common ones being corneal abrasions, corneal foreign bodies, and lime and cement burns of the conjunctiva and cornea. Lime burns are often severe in nature, and extensive corneal ulceration may follow, with pus in the anterior chamber (hypopyon ulcer). Patients suffering from lime burns are admitted to the hospital and are treated with penicillin drops (2,500 units per ml.) instilled into the eye every hour. Sulphonamides are administered by mouth, and, if the condition is severe, fever therapy (T.A.B. vaccine 0.1 or 0.2 ml. saline) is also given intravenously.

Conjunctivitis is not as common in adults as in children, and it is usually associated with ulceration of the cornea; the marginal corneal ulcer is the most common type. This infection is again largely caused by staphylococci and Morax-Axenfeld bacilli. These two organisms are penicillin-sensitive. Pneumococci and Koch-Weeks infections are seen less frequently—the pneumococcus is penicillin-sensitive. Koch-Weeks bacilli are only slightly penicillin-sensitive, but infections with these organisms are cured with penicillin in a concentration of 1,000 or 2,000 units per ml. Conjunctival swabs are therefore taken only in very severe and unusual cases; the majority of the out-patients were treated with gutt. penicillin 1:1,000 or 2,000 units per ml., given to them for treatment at home. The same instructions as to storing the penicillin in the pantry and not leaving the bottle of penicillin solution exposed to air are handed to patients. Drops are to be used four times a day. If the infection is severe an ounce (28 ml.) of penicillin is given for one week's treatment and the patient is told to instil six drops of penicillin on each occasion. All cases clear up very quickly. Patients suffering from corneal ulceration are given the same treatment, combined with atropine drops and hot steaming of the eye. They are instructed to return to the hospital every day, to be seen by the house-surgeon. Deep and extensive corneal ulcers are carbolicized—in most cases carbolicization is not necessary—and the ulcer shows signs of healing within a few days. Dendritic corneal ulcers which are due to a virus infection are resistant to penicillin treatment, and these ulcers are carbolicized and treated with gutt. albucid (sulphacetamide) 30%, atropine, and hot steaming of the eye.

Blepharitis, which, as already mentioned above, is most often of the seborrhoeic type, responds rapidly to penicillin treatment if secondary staphylococcal infection is present. The ulcerative type with red crusted lid margins is usually due to a secondary infection, and penicillin ointment is given to the patient to be used at home twice a day.

Allergic Skin Reactions due to Penicillin

A number of adults, after using penicillin drops or ointment returned to the hospital with a marked redness and oedema of the skin of the lids, often extending to the skin of the cheek and forehead. The condition cleared up within a few days when penicillin was stopped. These patients are allergic to penicillin and were suffering from a penicillin-produced allergic dermatitis. Skin-patch testing proved their sensitivity to penicillin.

These skin reactions to penicillin were not caused through the use of any particular fatty base in the penicillin ointment—they occurred also after the use of penicillin drops prepared by dissolving the drug in distilled water. Penicillin dermatitis

of the lids was seen among patients throughout the past year, and was not due to any particular batch of penicillin. Other observers also reported on these allergic skin reactions after the use of penicillin; but it is not yet established whether they are due to impurities which are still present in the penicillin supplied for general purposes. Pure white penicillin was not tried in these patients who were found to be penicillin-sensitive to the generally used yellowish preparation. I did not attempt to desensitize those of my patients who were penicillin-sensitive. In all such cases penicillin treatment must be discontinued.

It is worthy of note that none of the children treated with penicillin showed any allergic skin reactions.

Industrial Eye Injuries

Corneal abrasions, superficial burns of the cornea and conjunctiva, and patients who had corneal foreign bodies are best treated with gutt. penicillin. The drops are supplied to the patients for use at home. Three days' treatment usually suffices to heal the injured cornea and conjunctiva.

Potency and Stability

The life of penicillin in solution is limited. Penicillin is hydrolysed in the presence of moisture. The stability of penicillin is also greatly affected by the pH of the solution; the optimum pH is stated to be 6. Departure from this pH on either side leads to a considerable increase in the rate of deterioration. The rate of deterioration increases more rapidly on the acid side of pH 6, so that pH 6 to pH 6.5 is usually considered the best range. By interpolation, the rate of deterioration of a solution is twice as great at pH 7.5 and pH 5.2 as it is at pH 6. Temperature has a considerable effect on the stability of penicillin, the rate being approximately double for every 3° C. rise. Salts of certain metals destroy penicillin. The more important ones appear to be copper, lead, and mercury; iron also inactivates the substance. Oxidizing agents such as potassium permanganate and hydrogen peroxide will destroy penicillin, although the substance seems to stand up fairly well to reducing agents.

The actual life of penicillin in solution varies from batch to batch. Investigations carried out in the Glaxo Laboratories within the last twelve months have shown that the stability of the drug in solution is fairly high: even at room temperature its potency remained at between 90 and 100% for eight days. On the fourteenth day the potency of penicillin in solution kept at room temperature usually falls to about 75% of the original strength.

The pH of the solution has a much greater effect on the stability of the penicillin. Benedict and others have demonstrated that at pH 6 penicillin in solution remained stable for 360 hours, whilst at pH 5 (the acid side) and at pH 9 (the alkaline side) the stability lasted only 120 hours. In the preparation of drops and ointment for ophthalmic use it is essential to get the pH of these preparations as near as possible to the pH of tears. The pH of tears is 7.2. It is most fortunate that penicillin dissolved in distilled water has a pH between 6 and 6.5; such solutions are therefore not irritating to the eyes. Water not only inactivates penicillin but also provides a medium for the growth of penicillin-resistant organisms. These organisms produce penicillinase, which destroys penicillin. The drop-bottles must therefore be carefully sterilized.

Penicillin Eye Drops

At Queen's Hospital for Children the following method of preparation of penicillin eye drops is adopted. The drops contain 1,000 or 2,000 units per ml. in sterilized distilled water. 20 ml. of distilled water is poured into bottles fitted with a bakelite cap and rubber washer and then autoclaved at 10 lb. (4.5 kg.) pressure for half an hour. When penicillin drops are required two or four tablets of sodium penicillin (B. & W.), according to the strength required, are added to each 20 ml. The tablets supplied are of three different strengths—9,500, 10,000, and 10,500 units per tablet.

Penicillin Ointment

When penicillin ointment was first prepared for ophthalmic use "lanette" wax was employed as a base; but it was found

that the ointment was irritating to the eyes, as the pH of this fatty base is on the acid side and becomes more acid when the ointment is stored. "Lanette" wax was therefore discarded for ophthalmic use, and eucerin L.M. was found to be the best base for penicillin eye ointment. Within the first nine months the penicillin eye ointment was prepared with water; the penicillin was first dissolved in distilled water and then added to the eucerin L.M. At present water is not used in the making of ophthalmic ointment, and the stability of this preparation will therefore be very much greater. The penicillin is not soluble in the fatty base of the ointment, but it will dissolve in the tears fairly rapidly. When applied to the lids the moisture of the skin, and the tears which are constantly wetting the lid margins, will dissolve the penicillin. The delayed release of penicillin is advantageous in prolonging the action of penicillin.

The method of preparation of penicillin eye ointment as used at the Queen's Hospital for Children is given below.

The ointment is prepared in the strength of 400 units per gramme. 200,000 units of penicillin in powder form are rubbed down in a sterile mortar with a little sterile liquid paraffin. 500 g. of eucerin L.M. base (previously sterilized by heating in a sterotherm at 150° C.) are gradually incorporated. The ointment is transferred to sterile jars, using a sterile spatula.

The official B.P. method of preparing oculentum penicillin is as follows:

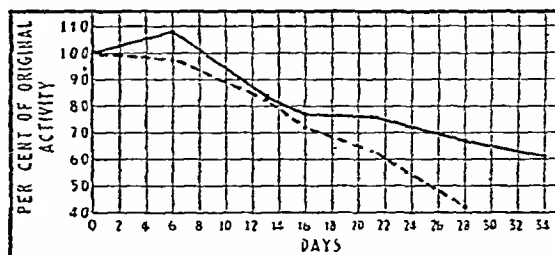
Penicillin (calcium salt)	100,000 units
Yellow soft paraffin	90 g.
Wool fat	10 g.

Melt together the yellow soft paraffin and the wool fat, filter while hot through coarse filter-paper placed in a heated funnel, and sterilize the mixture by heating at 150° C. for one hour. Place the penicillin (calcium salt) in a sterilized mortar and triturate with a small quantity of the basis until smooth; then incorporate the remainder of the basis gradually. Distribute into small sterile collapsible tubes and close.

The official B.P. oculentum has not yet been tried. It will be essential for the dispenser to obtain wool fat and paraffin molle in an anhydrous state. Samples of commercial wool fat and paraffin molle are known to contain varying amounts of moisture. It is also hoped that the ointment will retain a pH very near to 6 for a few weeks: a change to the acid side due to decomposition of the wool fat would destroy the penicillin. In the present state of our knowledge eucerin L.M. has the necessary requisites for an oculentum base: (i) it has very little moisture; and (ii) it does not turn acid and is considered by many pharmacists to be a superior base to wool fat in the preparation of oculentum penicillin.

Stability of Penicillin in Eye Drops and Ointment

To ascertain the stability of penicillin in the eye drops used at Queen's Hospital for Children, two bottles of eye drops as dispensed to out-patients were sent to Glaxo Laboratories. A



Graph showing the potency of penicillin eye drops; original potency, 2,000 units/ml. — = Refrigerator, ---- = Room temperature. This solution was exposed to the air on frequent occasions. (The apparent increase in potency is, of course, an assay error, the accuracy of the method being about $\pm 10\%$.)

biological assay was carried out. The deterioration of the penicillin in the eye drops at refrigerator and at room temperature is shown in the accompanying Graph.

The bottles were frequently opened and exposed to air in the same way as when the patients use them for treatment in their own homes. The solutions retained 50% of the original penicillin activity for about three weeks at room temperature, and

longer in the refrigerator. If one takes into account the undoubted fact that penicillin solutions, in the first place, are often of greater concentration than is therapeutically necessary, the useful life of the solution can be taken as being two to three weeks, and possibly longer. In one case the solution seems to have increased in strength. This, of course, is due to an assay error. The method of assay normally has a margin of error of plus or minus 10%, which is reasonable for any biological assay method.

The penicillin ointment was also sent to the Glaxo Laboratories for examination. The original pH of the ointment was 7.1, and this did not change significantly on standing. A biological assay on the ointment was not carried out. The penicillin ointment was prepared without water, and its stability at room temperature is probably that of the dry penicillin—this means that it will probably last longer than six weeks. The pH of the eye drops was 6.35, and this fell but very slightly.

These findings confirmed our clinical experience that the penicillin eye drops and ointment have an ideal pH value for ophthalmic use and are therefore not irritating to the eyes. They also confirmed that the excellent results obtained in the treatment of out-patients suffering from external infections of the eye were due to the high content of penicillin in the eye drops and ointment which were dispensed for use at home for one or two weeks.

Summary

Penicillin eye drops and ointment were used for one year at Queen's Hospital for Children and at the Hampstead General Hospital in the treatment of external eye infections. These preparations were given to the patients for use at home. The clinical results were excellent.

Allergic skin reactions of the lids and the skin of the face arising from the use of penicillin drops or ointment are described.

A biological assay of the penicillin eye drops proved that the content of penicillin when the eye drops are kept at room temperature, and with the bottles frequently opened and exposed to air, was 80% of its original potency at the end of fourteen days.

I wish to thank the Glaxo Laboratories for their great help, and particularly Dr. H. M. Walker and Mr. J. T. Marsh, M.P.S., who carried out the biological assay and gave me a great deal of useful information. My thanks are also due to Miss L. E. Jacob, M.P.S., the chief pharmacist at Queen's Hospital for Children, whose interest in this investigation enabled me to try various penicillin preparations.

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1936) to certain cases of hypersomnia in which morbid hunger is exhibited during the attack, accompanied by motor unrest and mild confusion. In view of the rarity of the condition the following two examples are considered worthy of record.

Case I

Male aged 18, working as a milling operator. His previous health had been good, save for occasional attacks of bronchitis in winter. His mother (aged 50) and father (aged 52), one sister (aged 22) and two brothers (aged 26 and 22) were alive and well. One brother (aged 30) complained of attacks of sleepiness (noted at end of this case report).

History of Present Illness.—In 1939, at the age of 12, following an attack of "influenza" (then epidemic in the town in which he was living), he noticed a tendency to sleepy attacks at school. About the age of 14, when he started work as an office-boy, these attacks became pronounced. They occurred every three to six months and lasted from one to five days. During them he became very drowsy and would sleep if he closed his eyes. They occurred anywhere even at meals or when he was standing up. During the attack he was unusually irritable, difficult to rouse, and felt "confused and muddled" if he was roused. There was definite abnormal hunger but no excessive thirst. He experienced no physical discomfort and had no unusual thoughts or dreams. The attacks wore off gradually and for a day or two he felt somewhat "depressed and touchy." Sleep between the attacks was normal. Observers seeing him in an attack noted that the drowsiness came on usually in the morning and rapidly became severe; there was no abnormal behaviour, but he was slow to answer if roused and appeared "dazed." He was irritable, and when touched seemed to resent it intensely, throwing off the touching hand and contracting his muscles sharply. "He tended to curl himself up like a hedgehog." One attack had occurred during the "blitz" on Coventry in November, 1941, and he had "slept like a baby during the eleven hours that bombs were dropping." There were no hypnagogic hallucinations and no evidence of cataplexy or sleep paralysis. He had no other complaints, and lived a normal healthy life.

Physical Examination.—He appeared healthy. Speech was slow and deliberate, but there was no evidence of delayed cerebration or encephalitis. General physical examination revealed no abnormality in the nervous system, heart, chest, abdomen, or urinary system. Ophthalmoscopically the disks and fundi were clear. B.P. 122/80.

Special Examinations.—Urine acid; specific gravity 1012; no albumin or sugar present. R.B.C., 4,250,000 per c.mm.; W.B.C., 3,400 (polymorph leucocytes 40%, lymphocytes 57%, eosinophils 1%, hyaline cells 2%); haemoglobin, 90%. X-ray examination showed no abnormality of skull or pituitary fossa; a chest film revealed slight bronchial catarrh but no other abnormality. B.S.R. was 6 and 10 mm. at 1 and 2 hours. Blood Wassermann and Kahn tests negative. Lumbar puncture revealed a clear fluid with no increase in pressure. Examination of C.S.F.: Cells, 1 per ml.; protein, 20 mg./100 ml.; no excess of globulin; chlorides, 720 mg./100 ml.; sugar, 55 mg./100 ml.; culture remained sterile. Wassermann and Lange reactions negative. Electro-encephalography revealed no abnormality either at rest or during overbreathing. A fairly high potential alpha rhythm was noted in the occipital lobes.

Carbohydrate Metabolism.—A glucose tolerance curve gave figures of 66, 84, 105, 55, 63, 68 mg./100 ml. (fasting and at half-hourly intervals thereafter). On a low-carbohydrate diet (80 g. per day) he showed no abnormal response to exercise. An insulin tolerance test was carried out after a diet of 400 g. of carbohydrate had been given for three days, and following a fast of three hours (Fraser, 1938, 1941). After the administration of insulin the blood-sugar figures were 76, 32, 62, 64, 64, 74 mg./100 ml. (fasting and at 20, 30, 40, 60, 90 minutes thereafter). There was a slight fall in blood pressure and a feeling of hunger, but no other abnormal symptoms.

Progress.—While under observation an attack developed, the general features of which agreed with those described. The hypersomnia was well marked, and there was mild confusion with irritability accompanied by motor restlessness. The appetite was increased and could fairly be described as ravenous. There was no hypoglycaemia.

Investigation of the patient's brother, who complained of sleepiness, was also carried out. This revealed a picture of disturbance of sleep rhythm and features suggesting an encephalitis. The condition dated from an attack of "sunstroke" in 1955, and was not similar to that of Case I.

Case II

Male aged 29. His previous health had been good, save for occasional attacks of tonsillitis. His mother (aged 60) and father (aged 62), three brothers (aged 40, 36, and 30), and three sisters (aged 38, 35, and 33) were alive and well.

History of Present Illness.—In 1936, when aged 20, the patient developed attacks of drowsiness, sometimes coming on first thing

HYPERSOMNIA ASSOCIATED WITH ABNORMAL HUNGER: THE KLEINE-LEVIN SYNDROME

by

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Abnormalities of sleep are commonly considered as falling into two classes—narcolepsy (including sleep paralysis, cataplexy, and sleep hallucinosis) and hypersomnia. In hypersomnia the patient can be aroused with difficulty from the prolonged sleep. The pathology of the condition is obscure, and it may be associated with various pathological states, such as cerebral tumour, encephalitis, head injury, endocrine and metabolic upsets, and toxic or infective conditions of the nervous system. Attention has been called by Kleine (1925) and Levin (1929,

in the morning. Attacks lasted two to three days, and occurred at four-monthly intervals; and he could not identify any precipitating factor. He could be roused, but fell asleep again when left. He had not fallen asleep standing up, but while at work or while talking. He had excessive hunger but no thirst. There was no restlessness, but some confusion of thought with amnesia for events occurring during the sleepy period. Nocturnal sleep was unaffected. There were no unusual dreams or thoughts. Recovery took two to three days, during which time he felt rather depressed.

Physical Examination.—He appeared healthy. No evidence of encephalitis could be found. General systemic examination revealed no abnormality. B.P. 118/76. Ophthalmoscopic examination showed no lesion of disks or fundi.

Special Examinations.—Urine acid; specific gravity 1016; no albumin or sugar present. R.B.C., 4,860,000; W.B.C. (polymorph leucocytes 72%, lymphocytes 26%, eosinophils 1%, hyaline cells 1%), 7,200; haemoglobin, 94%. X-ray examination of skull, pituitary fossa, and chest showed no abnormality. B.S.R. was 4 and 7 mm. at 1 and 2 hours. Blood Wassermann and Kahn reactions negative. Lumbar puncture revealed a clear fluid with no increase in pressure. Examination of C.S.F.: Cells, 2 per ml.; protein, 30 mg./100 ml.; no excess of globulin; chlorides, 700 mg./100 ml.; sugar, 60 mg./100 ml.; culture remained sterile; Wassermann and Lange reactions negative. An electroencephalogram revealed no abnormality either at rest or on overbreathing.

Carbohydrate Metabolism.—A glucose tolerance test gave figures of 78, 110, 120, 100, 78, 70 mg./100 ml. (fasting and at half-hourly intervals thereafter). On a low-carbohydrate diet (80 g. per day) he showed no abnormal response to exercise. Following a diet of 400 g. carbohydrate for three days, an insulin tolerance test yielded these figures: 80, 52, 60, 66, 72, 78 mg./100 ml. glucose (fasting and at 20, 30, 40, 60, 90 minutes thereafter). There were no abnormal symptoms.

Discussion

The faculty of sleep is possessed by all living beings, and it has been suggested (Szymanski, 1918a, 1918b, 1920) that two types of sleep may be recognized—polyphasic and monophasic. The former is exhibited by animals, such as the rabbit, which depend on touch and smell for obtaining food, and the latter by animals, such as the dog, which depend on vision. The human being, initially polyphasic, becomes monophasic early in his development.

Pavlov (1927) has advanced the view that normal sleep represents a process of cerebral inhibition, but it must be recognized that other organs may be involved, as animals in which the cerebral hemispheres have been removed still show regular sleep and waking alternation (Best and Taylor, 1943). The existence of a "sleep centre" in the brain was first postulated by Dubois (1896) when he showed that disturbances of sleep were frequently associated with lesions of the nuclei of the anterior part of the aqueduct of Sylvius and the floor of the third ventricle. That the destruction of such a centre should be associated with hypersomnia, and not with insomnia, has not been explained. Rowe (1935) is of the opinion that the peri-aqueductal and periventricular grey matter should rather be regarded as a transmitting mechanism for sleep impulses passing between the cerebral nuclei and the autonomic nuclei of the midbrain. Demole (1927) has made the interesting observation that injection of solutions of calcium chloride in the region of the floor of the third ventricle produces deep sleep, the susceptible area extending from the lamina terminalis to the corpora mamillaria. Experimental work, borne out by clinical and pathological experience, implicates particularly the lateral hypothalamic areas in the region of the corpora mamillaria (Hess, 1932; Ranson, 1939). The work of Davison and Demuth (1945a, 1945b) suggests that the actual mechanisms concerned with afferent and efferent connexions are effected by means of the medial forebrain bundle (part of the hippocampohypothalamic tract), cortico-hypothalamic fibres between the hippocampus and the mamillary nuclei, and fibres connecting the cortex and hypothalamus through the inferior thalamic peduncle. It would thus appear that the production of normal sleep depends on the integrity of such connexions, and that lesions affecting them lead to disturbances of sleep. The subject has been reviewed by Kleitman (1939, 1944).

Of the abnormal forms of sleep, narcolepsy is more commonly encountered than hypersomnia. The association of morbid hunger with excessive somnolence is rare, but is well enough established to justify its consideration as a specific entity, differing from narcolepsy in the periodic

nature of the attacks, the absence of cataplexy and disordered nocturnal sleep, and the presence of abnormal hunger during the attacks.

The cases described above exhibit the typical features of the syndrome, which appears to be limited to males—onset in the second decade, appearance of attacks of abnormal sleep lasting several days, excessive hunger during such attacks, motor unrest, irritability, and mental confusion. Between the attacks the patients were both normal. In Case I the onset followed influenza, and a similar relationship has been noted by other writers. In neither case was there evidence of encephalitis or narcolepsy and its associated symptom-complexes. The response to sugar and insulin tolerance tests is considered to eliminate a diagnosis of hyperinsulism due to primary pancreatic over-activity, as judged by the standards laid down by Wilder (1940), and insulin intolerance was absent. An electroencephalogram revealed no abnormality, and this is in accordance with the findings of Critchley and Hoffman (1942). It is interesting to note that in a patient suffering from a hypothalamic tumour Walter *et al.* (1939) obtained an electroencephalogram resembling that found in deep, natural sleep.

The causation of the condition is obscure. Purves-Stewart (1937) considers that the symptoms are suggestive of exhaustion of the centres in the prefrontal lobe which not only control psychomotor activities but also influence gastro-intestinal motility. Excessive hunger has been noted by Fulton (1938) after extirpation of parts of the frontal lobes in monkeys; and intestinal hypermotility and restlessness by Messimy (1939). On the other hand, similar results have not followed frontal lobectomy in man. The somnolence is attributed by Levin to loss of function of the highest cerebral centres; that these do not all undergo inhibition at the same moment explains the variable time relation of symptoms. Critchley and Hoffman (1942), from their recent study of two cases, suggest that a patho-physiological process of undetermined nature affecting the hypothalamus is responsible, and do not consider the evidence in favour of a lesion of the frontal lobe to be convincing. The reversion to "polyphasic" sleep might be considered as supporting this hypothesis, and Lhermitte and Tournay's (1927) association of abnormal sleep with lesions of the hypothalamic region and third ventricle also bears it out.

A careful clinical study of the two cases here reported has failed to elucidate the problem of pathogenesis, and it is felt that until further evidence is forthcoming no definite conclusion can be reached.

Summary

Two cases of the Kleine-Levin syndrome (periodic somnolence, morbid hunger, motor unrest, and psychomotor upset) are reported. The mechanism of normal sleep and hypersomnia (excluding the narcolepsy symptom-complex) is briefly discussed.

It is pointed out that the present state of our knowledge of the condition is inadequate to determine accurately the pathological lesion, which may involve the prefrontal zone, the hypothalamic region, or both.

It is a pleasure to acknowledge my thanks to Dr. MacDonald Critchley for his advice.

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THE XENOPUS PREGNANCY TEST

BY

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The female toad *Xenopus laevis* was introduced into this country from South Africa in 1930 by Hogben for physiological purposes. It was subsequently shown that under natural conditions of existence this animal would not ovulate except upon stimulation by the male, and that if maintained under laboratory conditions out of contact with the male, oviposition would not normally occur. Hogben (1930), however, demonstrated that if the animal was injected with anterior pituitary hormone ovulation and oviposition could be induced. This fact was subsequently made use of by Bellerby (1934) and by Shapiro and Zwarenstein (1935), who independently suggested that the phenomenon could be utilized as a pregnancy test.

The procedure simply consists in injecting the urine (or an extract) into the dorsal sac of the toad and watching for the subsequent appearance of eggs. More prolonged experience with the test, as was reported by Elkan (1938), showed that it was at least as reliable as the Aschheim-Zondek method (Zondek 1931), and considerably more convenient.

As was emphasized by Landgrebe (1939) and later workers, the advantages of the test include: (1) its simplicity; (2) the objectivity (even when only a few ova extrude they are quite unmistakable); (3) the rapidity with which a result may be obtained (6-18 hours); (4) after a resting period of about three months the toads may be used again.

After the favourable comments on the test by Crew (1939) the toad method was introduced into the U.S.A. by Weisman and Coates (1941), who were much impressed by its simplicity and reliability. Weisman, Snyder, and Coates (1942) have since investigated the process on a much more quantitative basis, and have shown that the luteinizing factor gives a positive response at a much lower level than the follicular stimulating principle. Further work (Weisman and Coates, 1943) indicated that injection of about 100 i.u. of gonadotrophic substance represented the lowest level at which oviposition may be elicited. Since this amount is not likely to be present in normal urine, the likelihood of the test showing false positives is small.

It has been suggested, however, that as normally carried out the test is not sensitive enough to indicate pregnancies where oestrogenic excretion is low, as is often the case in the early stages of pregnancy.

This is partly because the amount of urine which may be injected into the animal is quite small, larger quantities having a lethal effect. In order to overcome this possibility, it is essential that concentration of the hormone from the urine be made before the test. The usual procedure is to treat the morning urine specimen with twice its volume of acetone, to separate by centrifuging, and to dissolve the hormone from the precipitate by shaking with a small volume of distilled water. In view of the low stability of the hormone in the presence of solvents this technique is fraught with some risk. Moreover, toxic substances are co-precipitated which, when dissolved and injected into the toad, often have fatal effects. In view of these facts other methods of separation of the hormone have been investigated.

More recent work by Katzman, Godfrid, Cain, and Dpisy (1943) has confirmed the observation of Lejwa (1932) that the gonadotrophic hormone may be separated in biological fluids by adsorption on permutit and elution with weak alkali. Katzman *et al.* use the permutit in the form of a chromatographic column and allow the urine to pass through at a steady rate so as to ensure complete adsorption. The urine is previously adjusted to pH 3.5, and since this is close to the isoelectric point of the hormone it is suggested that absorption rather than cation exchange with the permutit is responsible for the separation.

New Concentration Test

This method of separation and concentration has been found to be very suitable as a preliminary to xenopus tests, and does in fact provide a means of indicating the quantitative as well as the qualitative excretion of the hormone.

A chromatographic column is prepared quite conveniently from piece of glass tubing of bore approximately 1 in. (2.5 cm.) diameter and 15 in. (38 cm.) long, with a constriction in the bottom. A glass-wool plug is put in the constriction. The tube is placed in rubber bung, which fits in a Buchner filtration flask. Permutit "Decalco" brand (obtained from Messrs. Permutit, Ltd., Chiswick London) is then poured into the top of the tube until a column of the material about 10 in. (25 cm.) deep is produced. The column is then washed by pouring on dilute ammonia, dilute hydrochloric acid, and finally water. The column is dried by applying suction, and is then ready for use. The whole of the morning specimen of urine—e.g., 300 ml.—is filtered and adjusted to pH 3, with dilute acetic acid, using bromophenol blue as an external indicator. It is then transferred to a separating funnel and clamped above the column, and the tap of the funnel is opened to allow the urine to flow on to the column at a slow rate so that about 300 ml. is passed through in 30 minutes. Gentle suction is applied to assist if necessary. The column is washed with water until the washings are colourless, and finally sucked dry. Elution of the hormone is then carried out by pouring 10 ml. of 5% ammonia on to the column, and allowing it to percolate through before suction is applied, and is followed by a second elution with 5 ml. of dilute ammonia. (The column may be used over and over again if cleansing by acid washing followed by distilled water is made each time.) The eluates are then combined and aspirated to remove ammonia, and 5 ml. is injected into the dorsal lymph sac of each of three female *Xenopus laevis*. The toads are placed on wide-mesh platforms in jars, are just covered with water, and are put in a dark place (Weisman and Coates, 1944) for 18 hours. A positive qualitative result is evidenced by the appearance of eggs, ranging from a dozen or so up to hundreds.

Using this technique, a positive result may be obtained if the excretion of hormone is greater than about 500 i.u. a day—a condition which very rarely occurs in the absence of pregnancy, and usually is manifest after the first two weeks of pregnancy. Experience of this technique for the past year shows it to be extremely satisfactory. The quantitative test may be carried out by graduation of dosage and calculated on the basis of the Weisman findings.

I am indebted to Dr. C. J. O. Morris, of the Endocrine Unit, London Hospital, for criticism and for certain information with regard to the adsorption technique.

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GIANT URETHRAL CALCULUS IN THE FEMALE

BY

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Urethral calculi are not common, and calculus in the female urethra may be regarded as rare, but when a stone reaches such a size that, having regard to the sex, it may be designated giant it is worthy of record.

The great majority of urethral calculi occur in the male and are usually associated with some pathological condition of the urethra, either present or pre-existing, such as stricture, periurethral abscess, etc., which may obstruct the voiding of a small vesical calculus or is productive of a stagnant pool of infected urine in which phosphatic stones are deposited. Like most stones which form in tubular structures, the initial shape is a spindle, but secondary changes in the surrounding urethra—periurethral pockets and so on—may lead to bizarre forms. Such stones have been reported of considerable size and have often been present for many years—in one case as long as 53 years.

In the female, however, the urethra is short and large in calibre; furthermore stricture is uncommon, and owing to vertical disposition stagnation of urine is almost unknown. For these reasons vesical calculi which pass the internal meatus will negotiate the rest of the urethra easily, while the formation of a stone *in situ* is unlikely. The great majority of the recorded cases of urethral calculus have thus been in the male.

The present case is that of a multiparous woman aged 60 who for over three years had complained of increasing discomfort and pain in the urethral region. For more than a year



FIG. 1.—Photograph of stone, showing shape and size.

there had been dysuria accompanied by a leaking incontinence; for the same period the patient had been unable to sit without pain, and so spent her time either standing or lying down. When she was first medically examined a large swelling was noted on the anterior vaginal wall, which was diagnosed as an abscess; in consequence antiphlogistic measures were instituted. After several months had passed the condition remained unaffected by treatment; it was then thought that post-inflammatory fibrosis might account for the swelling. As time went on, with increasing intensity of symptoms, the diagnosis was changed to one of probable malignant disease of the urethra, but some reluctance on the part of the patient

to submit to investigation and surgical treatment delayed further consideration of the case. After more than three years had elapsed since the onset, the symptoms reached such intensity and the discomfort became so unbearable that at last consent was given for further investigation. She was referred for an opinion whether any operative treatment was advisable or whether radium treatment should be adopted.

On examination she was found to have great difficulty in passing urine and yet to have a continual dribbling incontinence. In the anterior vaginal wall about an inch (2.5 cm.)

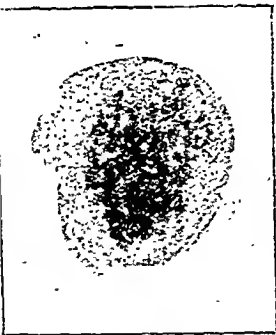


FIG. 2.—X-ray picture of stone after removal. Note the internal structure.

above the external meatus was a large (tangerine-orange) swelling, tender, red, and extremely hard to the touch; it was indeed thought to be too hard even for a carcinoma, and so suspicion of a calculus was raised, and confirmed both by x rays and by the passage of a probe, which grated against a stone about three-quarters of an inch (2 cm.) inside the rather pouting orifice. The stone was of such size that it seemed probable it had stretched the internal meatus, and fears were entertained that permanent incontinence might follow its removal. At operation the external meatus was first stretched as much as seemed safe, and was then incised backwards and upwards in the midline through the oedema-

tous anterior vaginal wall to the most prominent point of the swelling; this allowed the calculus to be gently detached and removed. Exploration now revealed that the internal meatus was intact and that the whole stone had lain within the tremendously distended urethra. The cone-shaped cavity was smooth-walled, except for a little inflammatory reaction, and no evidence of any diaphragm or atresia was discovered. Some catgut sutures closed the urethra down to the meatus again, a catheter being left *in situ* for a few days. After its removal it was, happily, found that a reasonable measure of control was present. This has slowly improved, leaving, nine months later, only a slight degree of stress incontinence under exceptional circumstances. As would be expected, there was a secondary cystitis present at first, which readily yielded to medicinal treatment.

The stone (Fig. 1) had a circumference of $4\frac{1}{2}$ in. (10.75 cm.) vertically, $3\frac{1}{2}$ in. (9.8 cm.) horizontally; length $1\frac{1}{2}$ in. (3.75 cm.), breadth $1\frac{1}{10}$ in. (3.3 cm.); its weight was 29 g. A scraping from the surface proved to be pure phosphate (except for a small amount of albuminous binding material), but the x-ray plate (Fig. 2) shows that the central nucleus is composed of denser material, possibly oxalate. The film also shows how the primary spindle-shaped calculus gradually conformed to the shape of the expanding urethra until it became an inverted cone with the point towards the external meatus. It will be noted that there was no evidence of any pre-existing pathological condition in the urethra, although such may have been present without causing symptoms, nor of any vesical calculus. It therefore remains an enigma how the stone formed and why it did not pass in its earlier stages.

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Medical Memoranda

Surgical Treatment of Deformities of the Hallux by Skin-grafting

End-results of surgical treatment of such minor foot disabilities as ingrowing toe-nail, onychogryphosis, and subungual exostosis, when such results are obtained by the Jones radical treatment, have not always given the degree of aesthetic satisfaction anticipated. I would therefore like to outline the procedure successfully adopted in a field surgical unit among cases chosen at random, and at varying stages of chronicity and inflammatory reaction. The method features skin-grafting; and it aims at the final absence of shortening and of residual scar tissue.

Ingrowing Toe-nail

Under pentothal, gas and oxygen anaesthesia a tourniquet is applied round the base of the hallux; the nail is then avulsed and the whole matrix dissected out. In some cases it is necessary at the same time to do a bilateral wedge resection of the matrix, owing to the toe-nail deformity. The thigh is previously prepared for skin-grafting, and a small Thiersch graft the size of the nail bed is taken from the prepared area and transferred to the prepared nail bed. It is very important that a firm dressing be applied, and the following method was found to be the most satisfactory:

(a) A small firm compressed pad of sterile cotton-wool impregnated with petroleum jelly, the size of the graft, is pressed firmly down over the latter. This is surrounded by (b) a very thin layer of gauze wrung out of saline solution. (c) A thin layer of petroleum jelly is placed on top. The two layers of petroleum jelly keep the saline gauze moist. The whole hallux is then firmly strapped with "elastoplast." The patient remains in bed with a cradle over the leg, and sandbags on either side of the foot to prevent movement. On the fourth day the patient is taken to the theatre, and, with the strictest asepsis, the dressings are removed for inspection. Petroleum jelly gauze dressings are then reapplied and the patient is returned to bed until the seventh day, when the area is again inspected. From the seventh to the tenth day dry dressings only are necessary. Patients are allowed baths from the seventh day onwards before their dressings are reapplied. Cases dealt with in this manner were discharged from hospital on the eleventh day, with a perfectly sound result, and when seen three months later had had no trouble whatever. There were no complications in a total of nine cases, and all skin grafts had taken when the primary inspection was made. They were, with one exception, free from

infection when operated on; and a one-stage operation was undertaken.

In the infected case a two-stage operation was necessary. Under gas-oxygen anaesthesia complete avulsion of the nail and nail bed was carried out, and saline dressings were applied. Penicillin, 100,000 units, was given intramuscularly. The most suitable time for the second stage was assumed to be on the third day, when granulation tissue was beginning to form. Under gas-and-oxygen anaesthesia a Thiersch graft was taken from the previously prepared thigh and transferred to the field of operation. The dressing and post-operative management were similar to those of the uninfected cases, and the result was equally satisfactory.

Onychogryphosis.—Two cases of uninfected onychogryphosis were dealt with by skin-graft methods. In both it was necessary to do a wedge resection. The remainder of the operation, and the post-operative management, were as for ingrowing toe-nail. Both results were good.

Subungual Exostosis.—A one-stage operation is all that is necessary here. Once the exostosis has been removed, the procedure is the same as in the previously recorded conditions.

CONCLUSION

The use of skin-grafting when dealing surgically with such conditions as ingrowing toe-nails, onychogryphosis, and subungual exostosis assures a more effective and cosmetic result by obviating the necessity for suturing, with its resultant liability to contracture and scar deformity.

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Rat Scratch causing Weil's Disease

Much has been published recently on cases of Weil's disease occurring among British troops in Italy and Normandy, but, so far as can be ascertained, infection was from bathing pools and rivers. Whereas several cases of Weil's disease have been diagnosed and notified in Cardiganshire during the last five or six years, this is the first case in that county where the source of infection could be traced to an actual rat scratch. The other interesting point about this case is that a clinical diagnosis of Weil's disease was made before the method of infection was discovered.

CASE RECORD

A farmer aged 24 was seen on March 16, 1946, complaining of headache, vomiting, generalized aches and pains, followed later by a rigor. The headache was acute frontal and retro-orbital in distribution, and there was also photophobia. The aches and pains were intense, confined to the back, the calf, and thigh muscles. The muscle pains were aggravated by movement. Vomiting was persistent for the first two or three days, and the vomit was bile-stained. On examination the temperature was 102° F. (38.9° C.), pulse 120, respirations 16. Examinations of abdomen, chest, central nervous system, and urine revealed nothing abnormal. The patient was kept under observation and symptomatic treatment given. Two days later there was still no change in the symptoms: muscle pains continued prominent, and vomiting was present. On examination the temperature was 100° F. (37.8° C.), and the pulse 120. Enlarged glands were palpable in both groins and axillae, and abdominally there was splenic tenderness, but neither spleen nor liver was palpable. Twenty-four hours later the patient was jaundiced, the jaundice of a more orange tint than the usual catarrhal variety. The conjunctivae were of course jaundiced, and there were moderate bilateral subconjunctival haemorrhages. There was also a mild bilateral blepharitis. The liver and spleen were palpable, and the urine contained large amounts of bile and albumin. The temperature was still 100° F., but the pulse rate had dropped to 100. There was a leucocytosis of 18,000, with 89% polymorphs. The red cell count was 4,250,000, with a haemoglobin of 75%. The blood pressure was 112/65. A diagnosis of Weil's disease was made, and 5 ml. of blood were taken for agglutination against *Leptospira icterohaemorrhagiae*. The report of the test was as follows: "His serum gives partial agglutination of a suspension of *L. icterohaemorrhagiae* at 1 in 10 dilution. Suggest that this test is repeated in seven days."

Fluids, glucose, and alkalis were pushed, and in another 24 hours vomiting abated, with a marked improvement in the patient's general condition. The urinary secretion was carefully observed and measured in order to ascertain the early presence, if any, of oliguria. At this stage the patient disclosed that on March 9 (one week before the start of his illness) a rat cornered by a dog in the stables darted up his trouser-leg before being killed. There had been a few small scratches on the inner aspect of his right thigh, which healed and disappeared within 48 hours.

From now on until March 30 the patient ran a fever of 99–100° F. (37.2–37.8° C.), and had marked albuminuria. His urinary output was, however, satisfactory (average, 42 oz. (1.2 litres) per 24 hours), and he was quite comfortable, with no further vomiting. On March 31 the jaundice was clearing, and there was only a trace of albumin in the urine. A further agglutination test on April 3 was positive, with agglutination in a dilution of 1 in 1,000. On April 7 he felt well, the jaundice had cleared, and his urine was albumin-free. Apart from the early conjunctival haemorrhages there were no other haemorrhagic signs, such as epistaxis. At no time were the liver and spleen noticeably enlarged.

Treatment consisted of massive doses of alkalis, a large fluid intake, and plenty of glucose. Penicillin was not used, as this seemed to be a fairly mild case of Weil's disease, and also it was understood that for favourable results penicillin therapy must begin early in the disease. The duration of illness was 24 days.

COMMENT

The case reported above is of Weil's disease occurring in an agricultural district of Wales following a rat scratch. In diagnosis of any condition in which there is a combination of pyrexia, jaundice, and albuminuria Weil's disease should be borne in mind. Although the duration of illness in this case was only 24 days, asthenia was marked, there being a loss of weight of 12 lb. (5.4 kg.). Vigorous action is now being taken by the local authorities to increase rat destruction.

We are indebted to Dr. Evan Evans, of Lampeter, for his helpful advice and co-operation, and to Dr. Suds, Emergency Public Health Laboratory, Aberystwyth, for the agglutination tests.

J. ALBERT EVANS, M.R.C.S., L.R.C.P.

J. DAVIES JONES, M.R.C.S., L.R.C.P.
Late Squad.-Ldr., R.A.F.

Recurrent Inguinal Hernia

No very recent figures are available as to frequency of recurrence, but the rate is probably still 5–10%. Many operations have been done in the last few years by young surgeons, who have not always removed the whole sac or the lax peritoneum which produces the direct element. Sometimes a hernia of the linea semilunaris is missed. Fascioplasty operations are not yet widely practised; insufficient attention is paid to closure of a wide internal abdominal ring; and, finally, the tone of the abdominal muscles is allowed to relax by too much rest in bed and lack of early exercises.

OPERATIVE TECHNIQUE

In dealing with a recurrent case, I proceed as though there had been no previous operation. Having exposed and lifted up the cord, holding it over to the outer side, I split the coverings on the inner aspect and define the circular fibres of the internal ring; these may be felt before they are seen. With a sweep of the finger round to the outer side the spermatic vessels and vas are identified. The peritoneum is then picked up and opened. If a sac has been left and is present in the cord, the finger is introduced and it is drawn up by gauze dissection without disturbing the structures of the cord. Attention is then directed to the removal of the slack peritoneum behind the epigastric and hypogastric arteries. This is pulled up and freed by gauze sponging until bladder fat is identified. The sac is clipped with large forceps and the peritoneum is stitched. The line of suture may be 3–4 in. (7.5–10 cm.) long, but it is reduced to a point by tying the two ends of the thread together. Examination of the inner aspect of the excised sac often reveals fibrous nodes, the "corns of Villandre."

Fascial Suture.—The assistant cuts a piece of fascia from the opposite thigh, 4 in. by 1 in. (10 by 2.5 cm.) wide, which makes four strips. The first one is used to close the abdominal ring; one end is anchored by a thread stitch, and the strip is passed through the ring fibres by my fascioplasty forceps. One of the stitches approximates the edges between the vas and the vessels—Torek's stitch. This strip is fastened off by a thread stitch. A flap is cut from the inner portion of the external oblique aponeurosis, base downwards, and is fastened across the floor of the canal, being stitched to Poupart's ligament and the conjoined tendon respectively. The cord is replaced and the roof restored by another fascial strip. I suture the deep layer of the superficial fascia separately before closing the skin.

After-treatment.—I consider it important to encourage the restoration of the tone of the abdominal muscles, and therefore start gentle exercises after 24 hours. The patient begins by tightening up his muscles once an hour, soon performing definite movements, such as sitting up. He is allowed out of bed on the fifth day, is walking on the tenth day, and is encouraged to go back to work after 28 days.

COMMENTS

If the surgeon finds the sac, excises it widely, and carries out a fascial repair, with the co-operation of the patient and early restoration of the muscle tone, there is very little chance of recurrence.

The commonest cause of recurrence is failure to identify and remove the sac. The importance of wide excision of all slack peritoneum has been emphasized.

ERNEST COWELL, K.B.E., M.D. F.R.C.S., K.H.S.,
Visiting Surgeon, Mayday Hospital, Croydon.

Reviews

LUPUS VULGARIS

The Problem of Lupus Vulgaris. By Robert Aitken, M.D., F.R.C.P.Ed. (Pp. 69; illustrated. 15s. plus 7d. postage.) Edinburgh: E. and S. Livingstone.

Though not a particularly common disease there is no doubt that lupus vulgaris, owing to its chronicity, its disfiguring effect in so many cases, and the length of time and the expense needed for its successful treatment, presents a serious problem the existence of which has been realized by several generations of dermatologists. The gravity of the situation is increased by the fact that for the most part lupus is a disease of the poorer sections of the population. For this reason the main burden of its treatment is bound to fall upon public authorities, and up to the present time they have been extremely reluctant to shoulder the load. Their backwardness is the less excusable because since the inauguration of light treatment by Finsen at the end of the nineteenth century, and particularly since the improvements on his original method introduced by his followers, the successful treatment of this disease has been for the most part simply a patient and prolonged application of the principles laid down by him.

Dr. Robert Aitken in the present volume once more points out the need for co-ordinated action between the medical profession and the public authorities. At the present time there are regrettably few centres in England or Scotland where the disease is properly treated, and even the law requiring the notification of all cases has been allowed to fall completely into abeyance. The regular notification of lupus vulgaris in daily practice would have at once the salutary effect of enabling an accurate estimate to be made of the numbers of lupus patients in existence and hence what provision is necessary for tackling the problem as a whole. Meanwhile those who are interested cannot do better than read Dr. Aitken's little book. In it he has condensed the experience of thirty years spent (though of course not exclusively) in the study of this subject. The late Sir Norman Walker, who wrote a paper on the "Need of Greater Method in the Treatment of Lupus," which he read at the Aberdeen meeting of the B.M.A. in 1914, inaugurated the modern regime of the treatment of lupus in Scotland. His efforts were temporarily frustrated by the war of 1914-18, but subsequently he opened a special lupus clinic at the Edinburgh Royal Infirmary and this received much-needed assistance from the light department which started in 1923. His mantle has fallen upon the shoulders of Dr. Aitken, and the results of his work are now before us. They are good, but, as he maintains, they might be much better with proper co-operation from the public authorities. The publication of this book is really a plea for that. It appears at a most opportune moment, for the whole medical service of Great Britain is now cast into the melting pot and the improved handling of the treatment of lupus is one of the things we may reasonably expect from the new era of medicine about to open. Dr. Aitken's book is perhaps primarily intended for the medical profession, but it should be studied even more carefully by all the non-medical administrators of the Ministry of Health and their satellites and also by our legislators.

SOCIAL PAEDIATRICS

Child and Adolescent Life in Health and Disease. A Study in Social Paediatrics. By W. S. Craig, M.D., F.R.C.P.Ed., F.R.S.Ed. Foreword by Charles McNeill, M.D., F.R.C.P. (Pp. 667; illustrated. 25s. plus 7d. postage.) Edinburgh: E. and S. Livingstone. 1946.

Prof. W. S. Craig has performed a service of national importance by compiling, after a long period of careful study, this excellent treatise giving a bird's-eye view of the whole field of paediatrics in so far as poor children are concerned; and if the adjective "poor" seems unsuitable at a time when economic circumstances are steadily becoming more level throughout the country, let us replace it by "less fortunate." And it is well to remember that the chief factor influencing the fortunes of childhood is the quality of the home. If all homes were as good as the best—using that word in the widest sense—Prof. Craig would have been able to cover the whole range of his

subject in a much smaller volume. The reader will note that he frequently refers to the influence of home conditions upon children, and he deals specifically, though briefly, with the subject on p. 245; perhaps if he had made a fuller reference he would have focused the reader's attention more sharply upon the most fundamental of a child's needs, namely a good home. This comment should not, however, be taken as any reflection upon the merits of this work. What Baedeker did for intelligent travellers, Craig has done for paediatricians and for all who have the welfare of children at heart. He has provided us with a map of the paediatric country, and a precise and comprehensive description of its features; and he has seized every opportunity to indicate, either directly or indirectly, the paths along which progress has been made in the past and the requirements for further advance.

Part 1 is a most interesting historical sketch describing the development of the many services now available for children—services which are remarkable alike in their number and in their lack of co-ordination. Part 2 describes the present provisions for the care of children; healthy school-children, sick children, delicate children, blind children, deaf children, epileptics, delinquents, the homeless—in fact, all children (except the very fortunate) are to be found in this procession as they run, skip, and alas sometimes stumble and falter pathetically through the pages. This is a truthful and objective summary, unspoilt by any empty emotionalism, and it will help to counteract the spirit of complacency which is still to be found all too frequently. The training of all those who participate in paediatric work is also described in this part of the book. Part 3 deals rather briefly with future developments; and Part 4 might be described as "potted Acts of Parliament," for it gives, in simple language, the essence from the paediatric point of view of the many enactments which have a bearing upon the subject. The volume concludes with several excellent appendices and a first-class index.

This is undoubtedly a most valuable work, which has been aptly described by Prof. Charles McNeill, in his thoughtful and stimulating foreword, as "immense both in its range and complexity; and no less in its importance." There are, as might be expected in the exposition of so great a mass of evidence, a few errors which can be corrected in future editions, but the work may be accepted as authoritative and it is warmly recommended as a well-written and reliable guide which stimulates while it teaches. An improved paediatric service is on its way, and both planners and practical workers in the service would do well to keep Prof. Craig's book beside them for frequent reference. The medical profession owes a great debt not only to the author, but to the publishers, whose work is well up to their usual high standard.

NEUROLOGY, PSYCHIATRY, ENDOCRINOLOGY

The 1945 Year Book of Neurology, Psychiatry and Endocrinology. Neurology, edited by Hans H. Reese, M.D., and Mabel G. Masten, M.D. Psychiatry, edited by Nolan D. C. Lewis, M.D. Endocrinology, edited by Elmer L. Sevringshans, M.D. (Pp. 720; illustrated. \$3.00 or 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

This book is always welcome because it gives abstracts, often with editorial comment, of the principal articles in the literature, foreign as well as American, in the three subjects. As might be expected many of these are related to war medicine and surgery but by no means exclusively so.

In the neurological section some interesting work on reflexes is covered, and head injuries, concussion, and tumours are discussed by many authorities. Some new work on epilepsy and the electroencephalogram is of considerable interest as are some observations on the demyelinating conditions. Peripheral neuritis and nerve injuries are fairly well covered and there are accounts of the so far disappointing results of penicillin in neurosyphilis. In the psychiatric section a good deal of work has been done on the electroencephalographic findings in various conditions, and some articles are included on shock therapy and leucotomy. There are several articles on the organic psychotic reactions and quite a number on psychosomatic conditions, and the final item reviews military psychiatry. In the endocrine section there are descriptions of recent work on the thyroid, and the account of experience in the use of thiouracil is of interest. The other glands are adequately dealt with in the various articles, but while knowledge continues to grow

it is obvious that there is much to be done before really adequate diagnosis and treatment can be achieved.

All doctors will find interest in this collection of abstracts, while specialists in the three fields should find it necessary to study the volume every year.

INDUSTRIAL MEDICINE

Medicine in Industry. By Bernhard J. Stern, Ph.D. (Pp. 209. \$1.50 or 8s. 6d.) New York: The Commonwealth Fund; London: Oxford University Press. 1946.

This book is issued under the auspices of the New York Academy of Medicine Committee on Medicine and the Changing Order. It is written by Dr. Bernhard J. Stern, a lecturer on sociology at Columbia University, and it traces in broad perspective the social, economic, legal, and professional setting within which industrial medicine has progressed. The book begins by giving a brief history of industrial medicine from the time of Hippocrates onwards, and then we read about the gradual rise of modern methods for the protection of the health and safety of the worker. The author is unduly critical in maintaining that Great Britain lagged in affording protection to workers, and was slow in adopting factory inspection and workmen's compensation, for he candidly admits that the U.S.A. was far behind our rate of advance in almost every particular.

In an interesting chapter on handicapped workers, evidence is adduced to show that the accident rate and absenteeism of the handicapped is lower than that of the able-bodied, while their production rate is higher. A long chapter on "Preventive Services" shows how different are the advantages provided in large plants as compared with most small ones. The average expenditure, in 1940, on a labour force of 49 million workers, was only 10 cents. The chapter on "Health Insurance" gives detailed evidence of the health plans adopted in some of the large plants, but it states that, taken together, the plans provide direct medical services to a negligible percentage of the total. The final chapter, on the industrial physician, maintains that the field of industrial medicine offers one of the most fruitful approaches to medicine and public health, and that it can play a preventive and curative part far beyond its present range.

Notes on Books

Xenopus Laevis: A Bibliography has been compiled by Drs. H. ZWARENSTEIN, N. SAPEIKA, and H. A. SHAPIRO, and is published for the University of Cape Town by the African Bookman at 10s., post free. Before 1933 experimental work on the South African clawed frog was confined almost exclusively to South Africa. Since the discovery that it could be used for the diagnosis of human pregnancy *Xenopus* has found an increasing use in all parts of the world. Hence a growing interest in the biology of this amphibian has arisen, and it has been extensively used as an experimental animal.

1. A full bibliography of the publications referring to it is given. A note on the pregnancy test, by R. F. Milton, appears at p. 328.

Preparations and Appliances

A RESISTANCE TYPE SKIN THERMOMETER

Dr. W. A. BOURNE, M.R.C.P., writes from Hove:

A new type of skin thermometer evolved at my suggestion by Mr. Arthur Light with advice from Prof. Paterson Ross has now been in use for some months at the Royal Sussex County Hospital, the Hove General Hospital, and in my private practice, and has proved consistent, robust, and as portable as a small mains wireless set.

The principle is that of an old, perhaps forgotten, friend, the Wheatstone bridge, the variable arms being a small metallic bead mounted for application to the patient's skin (Fig. 1, D), balanced against a potentiometer controlled by dial E. If these are not balanced there is a current across the bridge indicated by a meter F. The thermometer, run from electric mains through plug A, is brought into action by switch B, and monitor light G indicates that mains current is passing. For absolute readings some minutes are allowed for full stabilization. The needle of meter F will have moved from zero in a clockwise direction. On applying the alloy bead in its holder, the "skin probe" D,

to the skin, the needle F will be deflected according to the relation of resistances D and E. By moving dial E a point is found at which needle F shows a minimum deflection—i.e. is as far in an anti-clockwise direction as possible. It does not as a rule reach zero, but the end-point is sharp. Ten seconds are allowed for full stabilization, the temperature is read directly from the dial, and further readings can be made elsewhere at once.

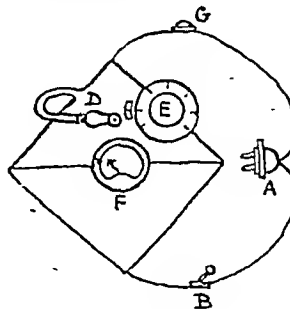


FIG. 1

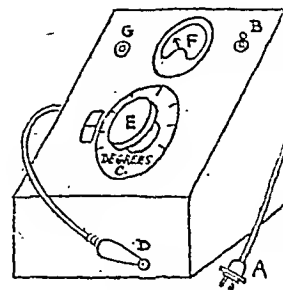


FIG. 2

The complete apparatus (Fig. 2) measures 9 in. × 9 in. × 11 in. (22.8 cm. × 22.8 cm. × 27.9 cm.), and has been used by the resident staff in a considerable number of cases with success after very brief demonstration.

I am indebted to Mr. Light, evolver of the apparatus, for the following technical details:

The thermometer measures skin temperatures to the order of $1/10^{\circ}$ Centigrade. The bridge method employed has many advantages, including freedom from ambient temperature change and from the necessity for initial setting-up operations. The heat-sensitive element, selected after investigation of many resistance materials which had usually the objection of large heat capacity for the required sensitivity, was an oxide alloy of maximum diameter 0.5 mm. sealed in a glass bead, which had a relation of heat sensitivity to heat capacity allowing overall stabilization time of "subject" temperature of 7 seconds. This was mounted in an electrically and thermally insulated holder suitably shaped for application to the patient's skin and giving necessary protection to the bead.

This "probe" is connected to the case containing the bridge network, precision potentiometer, controlled oscillator, and three-stage amplifier by a shielded concentric cable. The case itself is also shielded, and the apparatus is quite free from all electrical interference but most sensitive to temperature changes in the probe.

The bridge circuit is developed on conventional Wheatstone lines, care being taken to select low temperature coefficients for the stationary arms. One of the variable arms is of course the probe. The opposite arm is a precision potentiometer controlled from the front panel of the instrument. This is calibrated against known temperatures applied to the bead in stabilized copper-mercury cells. The full temperature range being determined by inter- and extrapolation. When all the arms of the bridge are of equal resistance there is no output from the bridge. Resistance changes in the patient's probe disturb the balance and produce a current voltage across the bridge. The resultant resistance change for a temperature change of $1/10^{\circ}$ being very small, a three-stage amplifier is added to make the null point of the bridge sensitive, and the final output of the amplifier led to a diode, the null point meter being connected in series with the load of the diode. To produce a minimum deflection on the meter again, the precision potentiometer is adjusted and the temperature read off directly from the 5 in. (12.7 cm.) dial fitted.

Temperature range $10^{\circ}\text{C. to } 40^{\circ}\text{C.}$ calibrated directly on dial with subdivision $1/5^{\circ}\text{C.}$ Probe capable of examining area down to 1 mm. diameter. Any number of probes can be fitted, and any length of lead used. Mains operated, A.C. or D.C., 200/250 volts. Finish—cream enamel cabinet. From Light Laboratories 31A, Shanklin Road, Brighton, 7.

"Tubarine" brand injection of *d*-tubocurarine chloride, the introduction of which is announced by Burroughs Wellcome and Co., is a stable solution of *d*-tubocurarine chloride containing 10 mg. per ml. for intravenous injection. It is intended for use as an adjunct to general anaesthesia, to promote muscular relaxation, and in conditions in which the action of curare is desired. As supplies are limited, it is available at present only in boxes of 6 ampoules, each containing 1.5 ml. (15 mg.). Further information is available on request from Burroughs Wellcome and Co., 12, Red Lion Square, London, W.C.1.

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SEROUS PLEURAL EFFUSION

There is still difference of opinion on the prognosis and treatment of serous pleural effusions; the war has illustrated some of the difficulties of this. It seemed, for example, undesirable to send to the Middle East men having had a recent pleural effusion in the knowledge that they might break down with pulmonary tuberculosis; against this had to be weighed the possible loss to the Services of a highly trained man. And a man not allowed to go abroad on account of a history of pleural effusion might be deprived of his chance of promotion in his career. The only way of making a balanced decision is by a full knowledge of the facts. What is the evidence on the incidence of pulmonary tuberculosis after a primary serous pleural effusion?

These effusions may be considered in terms of three age groups—those occurring below 15, those between 15 and 40, and those over 40. Re-infection pulmonary tuberculosis is rare under the age of 15, and carcinoma of lung is a common cause of effusion over the age of 40. Investigations show that a primary tuberculous complex close to the periphery of the lung may give rise to effusion, and that in such cases the prognosis is more favourable in children than in adults. Graham¹ traced 39 out of 56 children with a history of primary pleural effusion and found 7 cases of pulmonary tuberculosis with 2 deaths; Smithers² followed up 32 cases out of a series of 49 and also found 7 cases of tuberculosis, 2 of which had proved fatal. Vaizey and Perry³ were able to trace 33 out of 60 after a period of five years or more, and found that only one had shown any manifestation of pulmonary tuberculosis. It is evident, therefore, that children with pleural effusion often do well and do not develop tuberculosis.

Several investigations to elucidate the prognosis have been made in adults, and many of the earlier ones, carried out before the advent of chest radiography, yielded results very similar to the more recent ones: an interesting commentary on the stethoscope versus x rays controversy. In 1846 Laennec⁴ taught—and indeed the whole French school did much to further the view—that pleurisy was often of tuberculous origin, while in 1897 Hamman⁵ showed that of 562 cases of pleural effusion 167 (30%)

developed tuberculosis. More recently two large series have been reported from Scandinavia. Borelius⁶ in 1932 followed up 230 patients for ten to twenty years and found that 23 had died of pulmonary tuberculosis, while there was a morbidity of 39.8%. Kallner⁷ in 1937 gave a detailed analysis of 690 cases which he followed up for periods up to twenty years: among these there was a mortality of 22% and a morbidity of 39%. In 1939 Trudeau⁸ reported the figures from the Saranac Lake Sanatorium. He divided his cases into those in which effusion complicated recognized pulmonary tuberculosis—a group which we are not here considering—and those apparently primary. In this second group there were 83 patients and 74 were well and working, 4 others were alive, and 5 had died. These figures were, however, based on a questionnaire issued to the patients and not on clinical or radiographical examination. Two surveys in England were interrupted by the outbreak of war in 1939. Vaizey and Perry³ followed up some 308 cases admitted to a general hospital in the ten years' period 1926 to 1936 and had succeeded in tracing 148, of whom 33 were under 15. Of the primary effusions between the ages of 15 and 25 there were 80 men and 57 women; 2 of the men and 1 of the women had died of pulmonary tuberculosis, 3 men and 4 women were found to have extensive pulmonary tuberculosis radiographed subsequently, while 24 men and 8 women showed no evidence of disease. They concluded that, in spite of many cases not traced, the incidence of subsequent tuberculosis could not have been less than 30%. Robson⁹ investigated those cases admitted to the Brompton Hospital between 5 and 12 years previously. He succeeded in tracing 70% of 111 cases and found a tuberculosis morbidity of 23%. It may be wondered if there is a selection in those admitted to a general hospital compared with a chest hospital.

Conybeare¹⁰ in a recent discussion considered a group of healthy young men who had developed primary effusions while on service in the R.A.F.; he had inquired into their subsequent history over a period of three years. He gave the tuberculosis morbidity rate as about 12%. This investigation, carried out in a way similar to Trudeau's, gives similar results and is open to the same objections. Brooks¹⁰ observed that in a similar investigation in the Royal Navy approximately 12% were found to have broken down with the disease and another 22% to have radiographical lesions in the lung.

All the evidence points therefore to an incidence of pulmonary tuberculosis of over 30% in persons developing a serous primary pleural effusion between the ages of 15 and 40. Arrangements ought, therefore, to be made for treatment with this knowledge in mind. The London County Council's arrangement of setting up a special sanatorium at Sidcup for the treatment of such cases might be followed by other authorities.

¹ *Glasgow med. J.*, 1925, 104, 1.² *Arch. Dis. Childh.*, 1934, 9, 245.³ *Lancet*, 1940, 1, 1120.⁴ *A Treatise on Mediate Auscultation*, London, 1846.⁵ Quoted by Osler, W. (1912). *The Principles and Practice of Medicine*, 8th ed., New York, p. 654.⁶ *Acta. med. scand.*, 1932, 78, 391.⁷ *Ibid.*, 1937, 82, 549.⁸ *Amer. Rev. Tuberc.*, 1939, 39, 57.⁹ *Practitioner*, 1944, 153, 344.¹⁰ *Quart. J. Med.* Recent discussion at Association of Physicians.

A DUTCH ABSTRACTING SERVICE IN ENGLISH

Many medical men in this country have received and are receiving invitations to join the Board of Editors of a medical abstracting service now being established in Holland. This service will issue a number of abstracting supplements in the various special branches of medicine on lines somewhat similar to those familiar to readers of the *Zentralblätter* previously brought out in Germany by the firm of Julius Springer. They will appear under the general title of *Excerpta Medica*. A distinguished group of Dutch medical men have associated themselves with this work, and we should have felt more able to extend a welcome to it were it not for two facts: the first is that the Dutch abstracting journals will be published in the English language; the second is that in ignorance of the Dutch venture the B.M.A. has established an abstracting service in the Editorial Department of this *Journal*.

That our Dutch colleagues have chosen the English language as their medium of communication is highly flattering to this country and a recognition of the possibility that English will replace German as the second language of medical men and men of science in Europe. It is, however, a matter of regret that before starting on this ambitious venture our Dutch colleagues did not first inquire whether any organization in Britain was not making a systematic attempt to fill the gap left in medical journalism by the disappearance of the *Zentralblätter*. It would have been considered unwise if we had thought of starting an abstracting service in German or French or Dutch without having previously inquired whether such a service was not likely to be introduced in the countries where these languages are native. However excellent may be the linguists at the disposal of our Dutch colleagues, it would seem unlikely that they will be able to provide medical readers in Europe with a version of the English language which comes up to the standards we try to maintain in British medical periodicals. Those familiar with articles in English appearing in foreign medical journals know well the obstacles that confront the translator. If, indeed, medical men in Europe and other countries are to regard Britain as a source of medical knowledge and an information service through the medium of English abstracts of world medical periodicals, then it is very much our concern that the English they read should be that in current usage in the country of its origin.

Apart from the important question of language, it is a pity that two competing abstracting services should be launched more or less at the same time. It is a pity because work will be duplicated where duplication should be unnecessary if the aims of the two services are similar. As there may be some misconception of the aims of the abstracting service now in operation in the Editorial Department of the *British Medical Journal* it is opportune to state again what they are. The immediate aim is to publish each month, beginning in January next year, two monthly abstracting journals—*Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics, and Gynaecology*. From these titles it should be clear that the scope of the journals is international—that is to say, we

shall include in the survey conducted through these two abstracting journals all the important medical journals published in the world, and these journals will subsequently be available in the Library of the B.M.A. In this way we hope to keep medical men here and abroad currently informed of medical work in progress in a world where, in spite of modern communications, doctors of different nationalities still know little enough of what is being thought and done outside their own frontiers. The publication of two monthly abstracting journals is not, however, the end-point of our abstracting service. Out of it it is hoped, will evolve a series of abstracting sections or supplements in the various specialties. These will be published in the first instance in relation to the quarterly journals published by the B.M.A. where the editors of these journals see the need for them and when more paper becomes available. It is hoped, too, to publish abstracting supplements in co-operation with the editors of other special journals published in this country. Our aim, in fact, is the same as that of our Dutch colleagues, and we differ only in the method of approach to the problem. In these days of increasing specialization we feel that it is more than ever necessary for the specialist to be aware of the problems workers in other special fields are tackling. Facts of science are being grouped in compartments that grow more and more watertight, and if the expert is to escape from the narrow confines of his own field he must be able to look over the hedge to get at least some idea of what the other man is up to. In medicine this is an urgent need and one which we are trying to meet.

To assist us in this task a few hundred medical men have already been asked to do the work of abstracting; and their response has been ready. At the same time our Dutch colleagues are inviting the English editors of their editorial board to send to Holland the names of suitable abstracters in the various specialties. The regrettable work of duplication has in fact started. It is not for us to suggest that medical men in this country should help to nourish a home-grown product, because medicine is international and knows no frontiers. It is, however, hoped that those wishing to support an abstracting service in the English language will carefully consider the problem before finally deciding which service is worthy of their support—the English or the Dutch. In an attempt to find a way out of the difficulty that has arisen we have suggested to our Dutch friends that they might consider publishing in their country a Dutch version of the two monthly abstracting journals which will be issued in January next year.

PLAN FOR WORLD FOOD BOARD

At the request of the Food and Agriculture Organization Sir John Boyd Orr, the Director-General, has prepared a report on long-term food problems for the consideration of the present conference at Copenhagen. There has never been enough food in the world to maintain normal health. Before the war more than half the world's population consumed daily less than the food equivalent of 2,250 calories, whereas in spite of the present shortage in the United Kingdom the average daily intake per person is 2,750 calories. Production of agricultural products will

ve to be doubled if all are to be relieved of hunger, provided with the basic necessity of good health, and enabled to live the 70 years that they may hope for: the average length of life is 30 to 40 years in many areas, but hardly 70 in the best-fed communities.

The rapidly increasing population in certain countries is an additional, though by no means insuperable, obstacle to any attempt at providing sufficient food for all; the main difficulty is the economic adjustment required to establish a continuous market with remunerative prices. Full employment with good wages would help to solve the problem of purchasing power in nations whose main industries are not food production; volume of trade and prosperity of agriculture are interdependent; but it is not easy to convince farmers who have seen prices for their products crash in times of glut that the danger of overproduction cannot arise in the immediate future. It is essential that increased food production should be the primary objective, but it is equally important that non-agricultural industries be re-established as soon as possible so that the purchasing power of countries in which these reponderate may suffice to cover the cost of food. A commendation characteristic of Sir John's humane approach to these problems is that countries in need of immediate assistance should be granted credits on approved programmes of development, which they would repay by the export of raw materials or other commodities, and that the financial worth of the borrower would not be the principal consideration.

The charter of the F.A.O. established it as a fact-finding and advisory body only, required to defer to national sovereignty, but the critical food situation last winter has compelled Sir John to go beyond these limitations. He proposes that a World Food Board should be set up with the functions of stabilizing (by the provision of funds if necessary) the prices of agricultural commodities, establishing a world food reserve with which to meet emergencies, and providing funds for financing the disposal of surplus food cheaply to countries that most urgently need it. The Board would co-operate with organizations concerned with international credits for industrial and agricultural development.

APPLIED RESPIRATORY PHYSIOLOGY

The physiology of respiratory function in health and disease is a promising field for investigation which has received too little attention in this country. One of the major problems of thoracic surgery is the selection of the right type of case for operation. A radical cure of the disease is of little use to the patient if the operation leaves him crippled by respiratory embarrassment. The assessment of a patient's respiratory function and probable reaction to surgical intervention often have to be made empirically; therefore any attempt to solve these problems scientifically must be welcomed.

A series of observations by Birath¹ on lung volume and ventilation efficiency are of interest in this connexion. The lung volume was determined, during quiet respiration, by a modification of the hydrogen-dilution method of van Slyke and Binger,² and it was found that in healthy subjects the residual capacity after maximal expiration did not exceed 35% of the total capacity. In untreated pulmonary tuberculosis the total capacity of the lungs was reduced, and here was an absolute increase in the residual capacity.

Three factors were responsible for these findings: compensatory emphysema, the presence of cavities increasing the pulmonary dead space, and a reflex rise in the respiratory level due to dyspnoea. Pneumothorax reduced the total capacity, as might be expected, but did not alter the relative proportions of its various fractions. Also the reduction of the lung volume was less than that of the insufflated air, a phenomenon previously observed by Christie³ and others. This discrepancy was not entirely accounted for by compensatory distension of the thorax, suggesting that there was a real increase in the volume of the uncollapsed lung tissue. After thoracoplasty the lung volume was reduced and the residual capacity increased, probably because fixation of the chest limited expiration. This defect remained for ten years after operation, although the total capacity improved. A similar defect was observed after pneumonectomy and lobectomy, but the distribution of the fractions became more normal with the passage of time.

Birath concludes that when part of a lung is put out of action there is an immediate increase in the volume of the remaining lung tissue, leading to distension of the functioning parenchyma. This is probably a reflex effect. Hess⁴ found that in animals a diminution of lung volume immediately produced an increased tonus in the diaphragm. This reflex has a double function: it increases the available alveolar surfaces, thus compensating for the reduction in gaseous exchange, and it opens up fresh capillaries to counteract the increased resistance in the pulmonary circulation. Birath thinks that the immediate action of this reflex accounts for the remarkable lack of functional disturbance which accompanies the removal of a lung. But a late effect of this distension is the production of permanent emphysema. In a subject who is already emphysematous, or whose lung capacity has been impaired by some other disease, such as tuberculosis, this defect may constitute a serious handicap after operation and may even prove fatal. Determination of the lung volume should therefore be of value when considering the indications for operation. If the residual capacity of the lungs is both absolutely and relatively too high, the probability of emphysema is great and respiratory function is certainly impaired. Estimation of the vital capacity alone is misleading in cases of emphysema; even when the functional capacity of the lungs is considerably diminished vital capacity readings as high as 3 to 4 litres may be obtained. It is to be hoped that further research along these lines will result in the development of a reliable method for assessing pulmonary function before embarking upon irreversible surgery.

NEW BLOOD

One of the minor compensations of the wartime paper shortage was the reduction in the output of ephemeral literature and the higher standard of editing of scientific journals. It seems doubtful whether this happy state of affairs will continue, for compulsory virtues are swiftly discarded. The end of the war has, in fact, seen the birth of a large family of new journals, the latest of which has the rather blunt title of *Blood*. This is a product of the American school of haematology, under the editorship of William Dameshek. It is printed on good paper, with occasional coloured plates and a blood-and-sand cover. The first number contains a review by Cohn of the chemical

¹ *Acta med. scand.*, 1944, Supplement 154.

² *J. exp. Med.*, 1923, 37, 457.

³ *Quart. J. Med.*, 1936, 29, 445.

⁴ *Die Regulierung der Atmung*, Leipzig, 1931.

components of the blood, followed by original articles, editorials, abstracts, and book reviews. Two of the diagrams are of the horoscopic type, much favoured by American authors, which are very mysterious to the casual reader. They are apparently prepared in an effort to display the author's whole knowledge of the subject in a microcosm, and they look more like problem pictures than visual aids to textual interpretation. "News and Views" has a slightly disturbing pan-American flavour, but we understand that in future there will be corresponding editors in Europe and Asia.

The danger which faces any specialist journal, and particularly one of haematology, is that it may become too precious. Haematology is not a unified subject or discipline in the same sense as neurology and cardiology, and it is too limited and depressing a section of clinical medicine and pathology to constitute a whole-time specialty. There is no agreement as to who should be its exponents, whether clinicians, pathologists, or transfusion officers, though Dameshek comes down, rightly as we think, on the side of the clinician. The most important causes of anaemia are malnutrition, malaria, and hookworm disease, none of which is likely to be adequately considered in a journal of haematology, while the study of leukaemia is a branch of cancer research. The great advances in haematology have not been made by professed haematologists, and future advances would be unlikely to be published in a journal of haematology. The scientist studying the Rh factor does not speak the same language as one who is studying the P.A. factor. The former is a geneticist and serologist, the latter a nutritionist and biochemist. Analysis of the chemical components of the plasma takes us into the field of large-scale chemistry and biophysics. The result of all this is that journals of haematology, such as *Folia Haematologica* and *Le Sang*, have often concerned themselves with the minutiae of the subject and have become the medium for long-winded and unimportant arguments among the *cognoscenti*. They have too often devoted their pages to articles on the classification of rare and inscrutable maladies or to dogmatic statements about the lineage of blood cells, unsupported by experiment or comparative pathology. The danger that Dr. Dameshek will have to avoid is that of having prepared just another dish of caviare instead of good solid meat. However, there probably is a place for a journal of this kind, just because the blood is the meeting-place of so many sciences, and we wish Dr. Dameshek good fortune in this task.

INTERNAL CAROTID SYNDROMES

The internal carotid artery represents the vertebrate "*arteria cranialis carotis*," which, with its fellow on the other side, serves to supply the whole of the mammalian cerebrum. In man it is connected with its mate by the anterior communicating artery, and posteriorly it joins up with a relatively recent arterial contribution by way of the vertebrals, basilar, and posterior cerebrals. Thus a *circulus arteriosus* is evolved, and in this way, too, the vascular supply of the brain is partitioned into two zones of influence, of which the anterior three-fourths forms the territory of the internal carotid artery. How much the posterior system owes to the carotid varies. This point is borne out by the variable calibre of the posterior communicating arteries, which are sometimes so large as to suggest that there may be an antero-posterior arterial flow within them. Arteriography has also shown that it is

possible to demonstrate the posterior cerebral ramifications by means of carotid injection in about 15% of all cases.

In morbid conditions the carotid is rarely the seat of vascular occlusion; the most usual cause for carotid syndromes is the deliberate surgical ligation of the artery. Untoward effects of this operation are an important practical problem, though luckily not a common one. Paralytic sequelae, which may come on immediately after carotid ligation or after a delay, were studied by Perthes and Brüning in 1926, and ten years later by Gollub¹. Three types are identified pathologically: (1) paralysis due to inadequacy of the collateral circulation; (2) hemiparesis from thrombosis or embolus formation; and (3) local cerebral oedema resulting from venous congestion. The second and the third may develop only after an interval, and only the third has a favourable outcome.

Schorstein's series² of 60 cases of carotid ligation for aneurysms showed a mortality of 13% and about the same proportion of neurological complications. His findings did not support the embolic theory, for he observed that the main cause of a hemiplegia was an inadequate circulation before operation. Poor health, anaemia, and a raised intracranial pressure are unfavourable circumstances, which add to the post-operative risk of cerebral anoxic necrosis and hemiplegia. In his view it is important that the patient should be nursed recumbent for three weeks after operation. Lambert Rogers³ believes that electroencephalography carried out at the time of temporary carotid occlusion is helpful in determining whether or not ligation will be followed by a dangerous degree of ischaemia. Another possible cause of dysfunction in the cerebral territory of the carotid can be seen in the angiospasm of traumatic origin—the so-called *stupeur artérielle*, or Kroh's spasm—due to a "near-miss" type of lesion. In Ecker's four cases⁴ war wounds of the neck or head produced a minor trauma of the internal carotid artery. Cerebral symptoms appeared within ten minutes. Oedema of the brain occurred early and lasted three or more days, the maximum swelling taking place within twenty-four hours. Narrowing of the cerebral arteries was actually demonstrated by arteriography, while air studies later revealed a dilatation of the ventricles, more especially on the homolateral side.

None of these authors mention the interesting clinical syndrome of "carotid hemiplegia." The association of optic atrophy on one side with hemiplegia and hemianaesthesia on the other forms a striking neurological picture (see Lestelle, *Thèse de Paris*, 1903). When the dominant half of the brain is involved there may result a severe aphasia of particular importance to those interested in speech affections because of the almost complete destruction of the zone of language.

¹ *Munch. med. Wschr.*, 1936, 83, 1827.

² *Brit. J. Surg.*, 1940, 28, 50.

³ *Ibid.*, 1944, 32, 309.

⁴ *J. Neurosurg.*, 1945, 2, 479.

The Home Secretary has appointed Dr. Robert Arthur Young to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in place of the late Sir E. Farquhar Buzzard.

The President of the Royal College of Physicians and the Master of the Society of Apothecaries of London have awarded the prize for the Joseph Rogers Essay (administered by the Society of Apothecaries) for 1946 to R. C. Wofinden (Rotherham), who submitted an essay under the nom-de-plume "Hygeia."

Correspondence

Keeping Mother and Baby Together

SIR,—It is with pleasure that we note that the committee of the British Paediatric Association whose preliminary report on "Cross-infection in Children's Wards" appeared in the *Journal* of May 4 (p. 673) advocates the above principle in future buildings. In our article on "Elimination of Cross-infection" (*British Medical Journal*, 1945, 1, 159) we gave a short account of our plastic surgery clinic for babies established on this principle. We have now been working under these conditions for nearly five years—i.e., giving each mother and baby a small room to themselves, with a window facing the sun, and still there has not been a single case of cross-infection—despite being very busy all the time. A few months ago a child soon after admission developed scarlet fever, and we realized that our system was to be tested. But by transferring mother and baby to our isolated room in the garden and adopting the usual precautions the infection did not spread, and operations went on as usual. Another child developed measles *three days after* returning home, yet no other case of measles developed in the clinic.

A necessary factor in the system is that the mother must be to a large extent a free agent. There must be certain rules and regulations of course, but to get a happy and contented baby one must have a happy and contented mother. A mother who is reduced to a nervous wreck by an autocratic ward sister will not serve the desired purpose, for the baby will also become discontented and miserable and therefore unresponsive to treatment. We contend that a baby and mother are a biological entity, and to get results must be treated as such.—We are, etc.,

CECILY M. PICKERILL.

H. P. PICKERILL.

Wellington, N.Z.

Pleural Shock or Cerebral Air Embolism

SIR,—I should like to offer some criticism of Dr. D. Gutmann's letter on pleural shock (Aug. 24, p. 278). Although I do not deny the existence of pleural shock, I should like to point out how unconvincing are the three cases which he concludes to be due to this condition. He describes three incidents during needling of the chest, and I cannot agree from the evidence given that they were in fact due to pleural shock.

In his first and fatal case collapse occurred only after air had been introduced apparently into a pleural space. Necropsy rarely reveals the small quantity of air necessary to produce a fatal issue in such a case. In his second case, one of spontaneous pneumothorax having air withdrawn, there was already considerable circulatory and respiratory embarrassment before the insertion of the needle. The third incident, occurring in a woman with a ruptured lung abscess, might well be an example of vagal syncope, such as may attend any similar procedure in the sitting conscious patient, especially if seriously ill. Suturing a cut finger may have just such an effect in the normal adult.

As Dr. Gutmann states, serious collapse during the introduction of needles into the chest most commonly occurs if the lung substance is punctured or torn. This is surely because it is only if they enter the pulmonary circulation that small bubbles of air are likely to reach and block the cerebral or coronary vessels; and it is not, as Dr. Gutmann suggests, due to pleural shock. As pointed out in the *B.M.J.* (July 20, p. 94), relatively large volumes of air must enter the peripheral venous system to produce untoward effects, which are due to filling of the right ventricle with air. Small bubbles are harmlessly arrested in the lungs and absorbed. Moreover, as well-demonstrated at the operation of adhesion section, it is stimulation of the parietal pleura which causes pain, distress, and reflex phenomena. The viscus itself is relatively insensitive. If stimulation of the parietal pleura commonly caused pleural shock, a serious increase in the incidence might have been anticipated when the use of Morland's pneumothorax refill needles without local anaesthetic became widespread. In fact no such increase has occurred.

Air embolism occasionally causes collapse and death, and accordingly many suggestions have been made concerning precautions against its occurrence. The most fundamental of these is the proper use of the manometer. Some urge that the rubber tubing connecting the patient to the pneumothorax apparatus should be as short as possible and of small bore. Probably more important is the use of an efficient tap which allows no air to be delivered until turned on. The usual clip, so often faulty, is inadequate, and this probably explains many of the serious mishaps before the apparent introduction of air. Within a year I have witnessed three cases of collapse during thoracic puncture procedures.

Case 1.—A man of 40 years with a chronic secondarily infected empyema collapsed while having the empyema cavity irrigated. He remained unconscious for forty-eight hours. He was found to have a hemiplegia, which persisted until his death five weeks later. Necropsy revealed a parietal lobe abscess.

Case 2.—A man of 39 years, undergoing a pneumothorax refill in a recumbent position, complained of a tingling sensation in the right arm and lost consciousness for thirty seconds. The needle was immediately withdrawn, and although the manometric readings had been satisfactory on commencing the refill, lung puncture was evidenced by blood in the needle. Recovery was complete, although weakness of one arm persisted for two days.

Case 3.—A man of 32 years with a tuberculous empyema was undergoing aspiration, a procedure which he had several times previously endured. After the cannula had been in position for two to three minutes he became pale, complained of faintness, and lost consciousness. On being laid flat, the cannula still in position, he quickly recovered, and the aspiration was continued.

My interpretation of these events is as follows. The first was due to displacement of a septic thrombus in a pulmonary vein, with subsequent cerebral embolism. The second was an example of air embolism. The third could well be attributed to vagal syncope, and I see no reason to postulate pleural shock, as the occurrence seemed to have no direct relationship with either the insertion or continued presence of the cannula.—I am, etc.,

Aylesford.

A. P. BENTLEY

Autonomic Responses after Frontal Leucotomy

SIR,—It would appear from the contents of the annotation on "Autonomic Responses after Frontal Leucotomy" (Aug. 17, p. 234) that your writer's experience is of extensive cerebral incisions performed in a plane which is too posterior, as visualized by the resulting "placidity which has on occasion been compared to that of a vegetable." Presumably if one is to anticipate this degree of deterioration as the result of frontal leucotomy, an open operation (such as has already been performed by Lyster in America) is not a drawback. It would however seem to be a better aim to inflict the minimum amount of injury to both grey and white matter which is necessary to produce the desired result. We believe this minimum is far less than has so far been reported. Our incisions have always been made with a leucotome to avoid deterioration, and we have varied the fibres cut according to the symptoms; but we hope that a still smaller incision may eventually be found to suffice.

The other point in the annotation on which we would comment is the statement that the operation is a blind one and the surgeon is never entirely sure which tracts have been destroyed. In a recent paper (*Proc. roy. Soc. Med.*, June, 1946) we have shown how the operation need not be blind if a temporal approach is used and the Sylvian vessels are identified as a landmark; additionally, a method was described in the article whereby the extent and position of the incision in the white matter could be demonstrated on a tracing of a brain through the plane of section.

Lastly, another recent paper of Reiman's shows that the effects of section in certain cases may be obtained not by inducing placidity but activity. Thus we feel that though the annotation is useful in bringing this important work to a more general notice some of its value is destroyed by its contents.—We are, etc.,

E. CUNNINGHAM DAX.

E. J. RADLEY SMITH.

Cousdon.

Incubation Period in Infective Hepatitis

SIR,—The occurrence in June–Aug., 1945, of three cases of infective hepatitis at a European boys' boarding school during term-time, followed by a fourth case during the subsequent holidays, gives an indication of the probable incubation period. Details of the cases are not presented, but the three observed during the term all showed the cardinal features of anorexia, slight fever, and hepatic pain, followed by intense jaundice lasting for ten days or more. Blood smears examined for malarial parasites were negative in each of these three cases.

The first boy reported sick on June 23. The next two boys to be affected reported sick on July 18 and 19 respectively. A fourth boy began to suffer from anorexia on about Aug. 19 and was noticed to be jaundiced on Aug. 26. The second and third cases suggest an incubation period of 25–26 days, the fourth some 5 days longer.

A possible fallacy is the occurrence of subclinical cases. It may be noted that term ended on July 31, so that if the fourth boy acquired his infection while at the school the minimum incubation period, from a subclinical case, would have been 19 days. The second boy to be affected sat next but one to the first boy at meals, otherwise contact between the cases was only casual.

It is perhaps worth recording that there was an epidemic of measles in the school at the time. The occurrence of cases of infective hepatitis brought to an abrupt stop the collection and use of convalescent measles serum. None of the few recipients of the serum developed jaundice, however.

(This note is published at the suggestion of Dr. E. R. Cullinan and by permission of Hon. Director of Medical Services, Kenya).—I am, etc.,

Kenya.

FREDK. J. WRIGHT.

Early Treatment of Ocular Defects in Infants and Young Children

SIR,—I imagine that all ophthalmologists must deplore the delay which, not infrequently, they encounter in referring for a specialist's advice young children suffering from squint in particular, and also other ocular defects. The usual plea for delay is that the child is too young or that it will grow out of the defect. The truth is that the child is never too young and very rarely grows out of it; on the contrary it grows into it and a whole train of perversions arises. In this connexion I cannot do better than quote the late Bernard Chavasse:

"It seems probable that, if glasses were given to an infant immediately and as a matter of extreme urgency at the first momentary glide of the eye, the problem of accommodational squint, both in its visual and aesthetic aspects, would disappear. Operations would not be necessary. Multitudes of eyes would be saved for acute vision against the possible loss, by accident or case, of their fellows. A heavy burden would be lifted from community; and some very bitter waters would run sweet."

"If there is a squint the child pays with its sight for every day—whoever treats it. The child has a moral right to investigation and treatment. *It is the only way.*"

he delay of which I complain is not peculiar to this country, for Oscar Wilkinson of America in *Strabismus* (1943) complains just as strongly as Chavasse. If every general practitioner in this country reads this letter and acts upon it, a very great service will be rendered to the eyesight of the nation, and I say, deliberately, that I know of no other benefit which is so great and at the same time so readily available.—I am, etc.,

St. Leonards-on-Sea

MAURICE C. MASON.

Physiology of Vision

SIR,—The *Journal* of April 27 has just reached me. I regret to find from it that Prof. H. Hartridge (p. 637) failed to point out to your readers the fact that Prof. Granit's work confirms my own views on the nature of colour vision which were first made public in my book, *A New Physiology of Sensation*.

In Lucknow, I may mention, first-year students were taught colour vision in their first term. It was not my custom, however, to lay out the different theories of colour vision for their inspection, as it were, and then attempt to make choice between

them. Instead, in addition to considering what electric currents do to that very abnormal cardiac preparation, the Stannius heart, they were also taught what the heart's natural stimulant, adrenaline, does to hearts. After that they were invited to consider what would happen if retinal end-organs were rhythmically active structures just as are hearts, and were stimulated to greater activity by the drug or hormone, visual purple modified by light.

Colour vision thereby becomes a matter of simple deduction, one no longer puts up some special adjustive theory to explain the phenomenon of complementary colours; one just predicts or deduces that such phenomena ought to be. My students further learnt that no theory of dark accommodation should be considered as acceptable unless one were able to predict from it the existence of complementary colours. I appreciate that to many of my contemporaries this is a hard saying, but I would even go further than this and claim that a valid theory of dark accommodation would automatically lead to an explanation of the colours of Benham's top.

I mention Benham's top because no satisfactory explanation of its colours was available until Dr. Naidu of Annamalai University took the matter up. In the "light" of orthodox theory he performed experiments over many months, and puzzled his brains to no result. Then he read my book and found an automatic explanation. His paper is published in *Current Science* (1938, 7, 273). Some day there should be more general appreciation of the point that there is unity behind the phenomena of vision, and that dark accommodation is even related to irritable weakness.—I am, etc.,

The Medical College, Rangoon.

W. BURRIDGE.

Migrainous Headaches

SIR,—In the interesting correspondence on the above subject, it has surprised me that no mention has been made of refractive errors, either as regards causation or treatment. Throughout fifty years of general practice I have never yet found a case which, if coming within the wide classification of migrainous states, has not had some refractive error or binocular imbalance—it may be slight or it may be gross. Having been suspected, the next step is successful correction, and here we are entirely in the hands of the oculist. He has to exercise his judgment as to how much to correct and how much to leave to the patient's own powers of adjustment.

Success is measured solely by the lessening and final disappearance of the migrainous symptoms. This latter result may come with dramatic suddenness. The symptoms may have been of a most varied character. The classical ones need no recounting, but unusual variants are, I venture to think, of interest. One patient told me, after the oculist had lessened her troubles, that in another part of the country she had escaped a cholecystectomy by the narrowest margin of time. Another elsewhere had been told that her only hope of relief from troublesome head symptoms was to undergo some cerebral operation, and that her vision was normal; but the discovery of astigmatism and its correction entirely relieved her. Another patient came from the Channel Islands on a visit to relatives some years ago, and when I called to see her I found her nearly unconscious and with a dusky blue colour. On inquiry I learned that attacks of this character came on about every three weeks. Headache and the other common symptoms played only a secondary part. The usual routine visceral examination revealed nothing abnormal, but the oculist found considerable hypermetropic astigmatism, which he corrected forthwith; and the family told me years later that not one attack occurred after she received her glasses. The case of another elderly lady illustrates the atypical nature of some migrainous conditions, in that her form of trouble was frequent falls followed by a dazed condition which had been diagnosed in the Midlands as petit mal. Again hypermetropic astigmatism was present, and the oculist's prescription entirely removed the trouble.

The above cases are only a few out of many, and I confess to the belief that every case approaching or resembling a migrainous state should be at all events suspected of refractive error or a "phoria"; and if present, there is, in my opinion, every prospect that a correction may ameliorate if not cure it.—I am, etc.,

Southsea.

M. ASTON KEY.

Penicillin Ointment

SIR,—We read Dr. I. Lloyd Johnstone's article (Aug. 10, p. 201), with much interest, and find it a very useful contribution towards the use of penicillin in eye cases. There are, however, some points where we should like to add our reflections based on nineteen months' experimenting at the Eye Department of the Caernarvonshire and Anglesey Infirmary, Bangor, North Wales.

Dr. Johnstone questions the reliability of collapsible lead tubes in dispensing creams. We have not had any trouble with them, and the cream dispensed in them did not deteriorate faster than that kept in glass containers. We repeatedly tested them against Oxford Standard staphylococci, and more recently against various organisms cultured from conjunctival sacs—*Staph. pyogenes*, *pneumococci*, etc.—and found that the zone of inhibition—taking an average—was 15 to 16 mm. when fresh, 11 to 12 mm. after one week's use by the patient, 9 to 11 mm. after two weeks', and 7 to 8 mm. after 3 weeks' use. Our cream contains 250 units per gramme. The nozzleed applicator tubes are the best containers for dispensing the creams: they give no trouble to the patient, and he need not observe sterile precautions.

With regard to the pH of the creams, our experience concurs with that of Dr. Johnstone. We find 7.2 optimal. As a base, we first used 30% lanette wax in water, but several patients complained of this being irritating. We then tried eucerine L.M., and are now using an equal mixture of the two. This is easily applicable, not too hard, and does not irritate the conjunctiva.—We are, etc.,

T. G. WYNN PARRY.
G. C. LASZLO.

Bangor.

Peptic Ulcer

SIR,—The paper entitled "A Study of Peptic Ulcer" by Drs. Hugh Gainsborough and Eliot Slater (Aug. 24, p. 253) tempts me to record an observation of my own on the physical characteristics of peptic-ulcer patients.

In the course of operating on some hundreds of cases of perforated ulcers I have been impressed by the very high proportion of the patients who had dark hair. Unfortunately I have no precise figures to quote, but for some years I have been in the habit of offering a modest financial reward of sixpence to my house-surgeons for each fair-haired patient with a perforated ulcer whom they could bring to my notice. Very few have been able to enrich themselves by a single sixpence at my expense, and none had previously heard of the association of this particular type with perforated ulcers. This leads me to suppose that the association, if generally recognized, is not commonly taught. The observation is of some practical value in that it indicates that the diagnosis of "perforated ulcer" in a fair-haired patient needs to be scrutinized with more than ordinary scepticism.

I would be interested to have the opinion of some of your readers, versed in anthropology and psychology, as to what light, if any, this observation may shed on the aetiology of peptic ulcer or on the factors which lead to perforation.—I am, etc.,

Edzwane.

FRANK FORTY.

Transmesenteric Hernia

SIR,—Reports of cases of transmesenteric hernia appeared in the *Journal* of Feb. 16 (Peter Martin, p. 238) and March 2 (James Moroney, p. 329) of this year. My return to England has delayed these reaching me, but it is evidently worth recording a further case of this rare condition.

On Jan. 21 a male African (Muganda) aged about 30 years was admitted to hospital, complaining of severe abdominal pain. The pain had woken him up about 2 o'clock that morning, and there was no relevant previous history. He vomited on admission, but his general condition was good; on examination of the abdomen nothing abnormal was found except a little tenderness below the umbilicus. An enema produced a constipated result, and the pain went off, but later in the day the pain increased again, abdominal distension was noted, and his condition began to deteriorate.

Laparotomy was performed about 20 hours after the onset of pain. It was found that about 12 in. of sigmoid colon together with 6 in. of lower ileum had herniated through and become strangulated in a foramen in the mesentery of the small intestine. But not only were the herniated coils of intestine practically gangrenous, the coil of small intestine was part of some 6 ft. of terminal ileum

which was also gangrenous. The foramen was situated at the base of the mesentery near the caecum, and was about 1/2 in. in diameter; it had smooth sharp edges. The affected ileum was resected with ileostomy, and the sigmoid marsupialized; but the patient died the next day.

In the article on transmesenteric hernia mentioned by Martin (Cutler, C. D., and Scott, H. W., *Surg. Gynec. Obstet.*, 1944, 79, 509) reference is made to 54 cases of this condition at all ages, with a mortality of about one in three. The history in all cases is similar, and exact pre-operative diagnosis is rarely possible, but the onset of gangrene is rapid. The site of the mesenteric defect is commonly much the same as in the present case; evidence is adduced in favour of its being due to a developmental defect in a relatively avascular part of the mesentery. It has been described as an incidental finding in 3 of a series of 1,660 necropsies. The incarcerated bowel is, in most cases, the small intestine, though one other instance in which it is the large intestine is reported; there is no reference to a case in which both large and small intestines are involved. That the sigmoid colon should pass from above downwards through the mesentery in the right iliac fossa is an interesting sidelight on the mobility of the intestines. Another extraordinary feature in the present account is that, as in Moroney's case, gangrenous gut was present on both sides of the mesenteric defect; there was no evidence of constriction at either end of the affected ileum, a central loop of which only was strangulated. It would appear that the blood supply of the whole segment had been interfered with in the mesentery, but it was not possible to ascertain how this had happened.—I am, etc.,

R. B. LEECH,

Mengo Hospital, Kampala, Uganda.

Church Missionary Society.

Rubella in Pregnancy

SIR,—I have read the correspondence about rubella with interest and feel that this personal experience may be of interest too. During the early part of 1940 I was seeing many cases of rubella but did not develop the complaint myself until about six weeks after seeing the first cases. I was then three months pregnant (second pregnancy). The disease lasted for three days with much sneezing and temperature of 100° F. (37.8° C.). For the subsequent four days I had considerable pain in my wrists. Four weeks afterwards a pilonidal cyst which had been quiescent for eight years became enlarged and infected and was dissected out under pentothal, gas, and ether anaesthesia, recovery being uneventful.

I had a female child of 5 lb. (2.2 kg.) three weeks after term. The baby suffered from mild neonatal jaundice and was a very slow feeder. Later she was amyotonic, extremities were blue, and the fontanelle bulging. There was frequent crying of "meningeal" type. She died at seven months from pneumococcal meningitis in spite of full dosage by mouth of sulphapyridine. Sight and hearing seemed quite normal and there was no congenital cardiac defect.

During the course of my work I have come across one case of congenital nerve deafness and aphasia in a girl of five whose mother gives a history of having had rubella at the seventh month of her pregnancy. In view of the data already collected of the effect of rubella on foetal tissues it would be a wise measure to warn those in charge of antenatal care to guard expectant women from this infectious complaint as much as possible.—I am, etc.,

"A WOMAN DOCTOR."

Immunization with B.C.G.

SIR,—The decision by the Ministry of Health to give B.C.G. a trial in this country will be welcome news to all doctors who are interested in the prevention and control of tuberculosis. The Minister is to be congratulated on this announcement.

This treatment, as far as reports show, has proved to be of great value in other countries. If it is found to protect children from tuberculosis it should prevent tuberculous meningitis in children, and later all those cases of surgical tuberculosis, whether of bovine or human origin.

Since I worked at the Pasteur Institute under Calmette and Guérin over some fifteen years ago I have been anxious to see B.C.G. tried out in this country and so far have been able to get nothing done.—I am, etc.,

HORHAM.

SYDNEY GORDON TIPPETT.

Trilene

SIR,—In reply to Dr. Walter Calvert (Aug. 3, p. 172), concerning amnesia following upon the use of trilene in midwifery, apologies are due to Dr. Calvert for overlooking his article, which we have now read. His apparatus would appear very useful, particularly as at the present day it is difficult or impossible to buy a Clover's inhaler. We look forward to the forthcoming communication promised by him.

Replying to Dr. T. D. Culbert (Aug. 10, p. 210), on physiological grounds alone we must agree to the contention that variation of the rate and depth of respiration must also vary the amount of available anaesthetic agent. However, we fail to see how this can be done with any degree of accuracy without a metronome and some method of measuring the depth of respiration, also a very co-operative patient. This would appear to be an expedient to remedy a defect rather than an equivalent method, and we would still prefer the simple accuracy of a variable administrator.

Referring to the point raised concerning anaesthesia, as opposed to analgesia, with trilene: the article in question only mentions narcosis up to the point of automatic breathing with use of the Clover inhaler and bag, followed by its removal and maintenance of light anaesthesia with the "open" inhaler set at 4/4 aperture. We have on occasions pushed anaesthesia to a deeper plane, and have noted the tachypnoea and tendency to cyanosis in certain cases. We have preferred, except in cases requiring the lightest plane of anaesthesia, to change to "open" ether, for which the trilene prepares the patient in a most excellent manner. The "open" Clover inhaler set at 4/4 aperture has been found to give after three to four minutes' administration adequate narcosis for the purpose of simple perineal repair. We thank Dr. Culbert for his kindly criticism and commendation.—We are, etc.,

Leeds.

A. BARRATT.

S. H. B. PLATTS.

"Drug Eruption" following Sodium Pentothal

SIR,—In view of the recent correspondence describing drug eruptions after the use of sodium pentothal an account of the following case may be of interest.

In 1941 an airman in the Middle East received a bullet wound of the perineum. Since then he has had about forty anaesthetics in the Middle East and in this country, being given pentothal or pentothal supplemented by an inhalation anaesthetic.

He was admitted to this unit in 1944 for repair, and in two years has had three operations under gas-oxygen-ether with a pentothal induction. In March, 1946, he came in with a blocked suprapubic catheter, which was changed under pentothal anaesthesia, using, in all, 20 ml. of a 5% solution (10 ml. for induction and 10 ml. intermittently). On his way back to the ward he developed an urticarial rash on his face, arms, and trunk, with gross swelling of his eyelids and lips. He was given adrenaline subcutaneously, 5, 10, 15, and 20 minims (0.3, 0.6, 0.9, and 1.2 ml.) at five-minute intervals, after which the rash subsided; and the patient was subsequently quite well. He was admitted again with a blocked catheter in June, but this time was given gas-oxygen-trilene without any rash developing.

On Aug. 1 he underwent an operation for the repair of a urethral fistula, and anaesthesia was induced with 10 ml. of a 5% solution of sodium pentothal, followed by endotracheal gas-oxygen-ether. The operation lasted fifty minutes, and neither during nor after the operation did a rash develop.

An intra-dermal skin test (2 minims (0.12 ml.) of a 2½% solution), using myself as a control, produced a skin wheal an inch in diameter with a surrounding flare. This developed in fifteen minutes, and took an hour to disappear. The patient is an otherwise healthy man of twenty-four who gives no other history of an urticarial eruption.

There seem to be two possible explanations for this case: first, that the patient has some degree of sensitivity to sodium pentothal, but that a dose larger than half a gramme is needed to produce a general reaction; and secondly, that this reaction is inhibited by the addition of an inhalation anaesthetic. Unfortunately there is no record of the amount of pentothal used in operations before he came to this unit.

It would be interesting to know if others have had similar cases and to hear their views on the variability of the reaction to this drug where sensitivity is known to exist.

My thanks are due to Mr. R. Mowlem, Mr. J. N. Barron, and Dr. H. Woodfield-Davies for permission to publish this case.—I am, etc.,

St. Albans.

P. H. MOORE.

Catheter and Prostate

SIR,—In 1934 my article "Complete Closure of the Blad in Cystotomy Cases" with special reference to prostatectomy was published in the *Lancet*. Practically all the methods now used by Mr. Wilson Hey, as described in his article in *Journal* of May 18, 1946, were suggested in my article with the recent advantages of chemotherapy. My article was originally submitted to the *B.M.J.* in the later part of 1932, but was not returned to me for over a year. As a result of this I lost priority of an operation for complete closure of the bladder in prostatectomy, as Harris's operation gained months' priority.

I did not persist with my operation after six operations because it produced so many heartaches due to catheter blockage, urethritis, and troublesome post-operative nursing. Mr. Wilson Hey's improved technique upon my original operation encourages me to try it again. His method of excising part of the trigone, so as to make the residual prostatic pouch a bladder one, diathermic haemostasis, anti-clotting with sodium citrate, and pre-operative and post-operative chemotherapy seem most logical. I would like to know the percentage cases in Mr. Wilson Hey's series; how many developed post-operative retention, and if any required bladder drainage.

Mr. Terence Millin's operation is a brilliant contribution to prostatectomy, and should replace all other methods, provided post-operative stricture does not become its bugbear.—I am, etc.

MORTON WHITBY.

Durban, South Africa.

Health Service Bill

SIR,—There has been some talk in these columns about "the issues not being clear" in our dealings with the Minister regarding the new National Health Service. To my mind there are enough points already on which agreement has been reached by the majority to make it possible to form a reasonably clear picture of our position.

As I see it these are the main points: (1) The majority (doctors and laymen) want a National Health Service. (2) The Government scheme is not a unified service. (3) The majority of the medical profession object to direction, negative or otherwise, and consider it unnecessary to secure proper distribution. They feel sure that adjustment of remuneration to make unattractive areas more remunerative would solve the problem. (4) The majority agree that payment by capitation fee and adequate mileage is the best scheme devised up to date. (5) A majority of practitioners object to their practices being bought by the Minister of Health without prospect of payment until retirement or death. (6) The majority object to the obvious infringement of their civil right to appeal to the High Court in the event of dismissal. (7) The majority object to the Minister's high-handed action in presenting us with a *fait accompli* each time negotiations are suggested.

Surely it is obvious by now that he has no intention of meeting any of our suggestions. What would any other group in the country do?—decline to work the scheme until their reasonable demands had been met, and so clarify the position now before any more time had been wasted. No other section of the community is in such a favourable position to withstand this bureaucratic domination. The Minister has said he cannot work the scheme without the co-operation of the doctors. Let him understand now and in no uncertain voice that doctors will not work the scheme without mutual co-operation from him. Bullying and issuing orders are not co-operation.—I am, etc.,

Birmingham.

W. MORISON.

SIR,—It has always been said that doctors are notoriously bad business men, and this may well indeed be true. But even the most irredeemable moron never yet entered into a contract without first knowing (a) what was expected of him, and (b) what he was to receive out of it. But that is precisely what we doctors are in great danger of doing if we allow this proposed referendum or plebiscite to be completed before we are in possession of more facts as to the terms of service under the new Bill. Dress up the referendum with whatever words you will, it still stands naked as the simple question: "Are you



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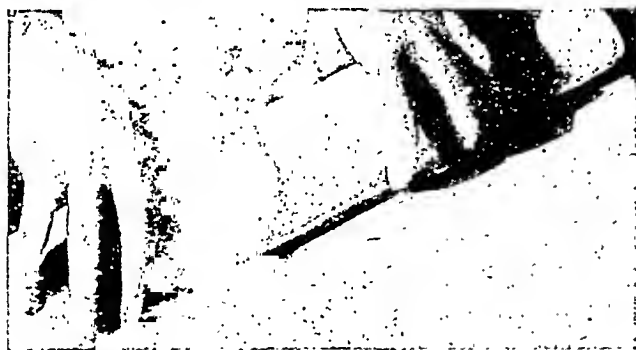
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Dist. Ed.

are you not prepared to enter into service under the new ?"

Each a question is premature. Before we answer this question need to know a lot more facts which are as yet not forthcoming. We need to be informed much more fully of all the "pros" and "cons." So far all we have heard about are the "cons"—direction, the prohibition of buying and selling our practices, no appeal other than to the Minister, civil servant status, etc., etc. We have all had a bellyful of these particularly indigestible "cons" and have had plenty of time to absorb them into our systems.

But what of the potential "pros," which when revealed may be a little more palatable? These "pros," which we should know and must know before we can reply to any referendum, are: (1) What is the proposed salary? (2) What are the hours of work to be? (3) What is the pension to be (if any)? (4) If the new service is to be pensionable, what adjustment will be made for the middle-aged practitioner who has only a limited period of pensionable service before him but has many years of undervalued N.H.I. service behind him? Until we know the answers to these questions (most especially (1), (2), and (3)), how on earth can we be expected to make any decision in replying to the referendum?

We need to know what our future income will be *vis à vis* our present income. We have school fees to pay, insurances, etc., etc., which for our personal future budgets demand this knowledge.

As for the working hours under the new Bill—we are told that the new N.H.S. will require about three times as many doctors as there are in practice to-day. It will obviously take many years to build up this extra strength of doctors. Presumably, then, when the scheme comes into force in 1948 the hours of work will be increased rather than decreased, and I doubt the paper-work will be stepped up tenfold. All this, of course, is far beyond a joke as the average G.P.'s home during the winter months is merely a place where he snatches a few meals and sleeps at night. In all conscience it is difficult enough for us now to do full justice to each of our patients during the winter. If we get more work (plus paper-work) piled upon us then the examination and careful treatment of patients during the winter months will become a pathetic caricature. And while all this welter of work is being prepared for, many of the country's workers are striking for a 40-hour week.

Mr. Bevan presumes to dictate to us—to direct us, to deny us the right of appeal to any soul other than himself. He intends to extract from us a forced loan to the Government in the shape of our practice capital on which he will graciously give us 24% (less tax) until we are 65 years old or die from overwork. Mr. Bevan proposes to do all this to us, but yet as not breathed a single word on the question of salary, hours of work, or pension. And all we do is to tiddle around and talk of a referendum on further negotiations.

The Bill will become law. How could it be otherwise when the continued four-figure existence of that huge majority in the House depends largely on their ability as "yes-men"? The Bill will go inexorably through the Parliamentary sausage machine, and will plop out of the far end all neatly tied up at both ends; and we, unless we wake up and get some unity among ourselves, will be neatly tied up in the middle of it.

Sir, it is high time we doctors forgot some of our bedside dignity and got angry, *really* angry, with this man who in the spare time he has left over from his housing problems presumes to dictate our lives to us. Let us tell him quite bluntly that we don't like his Bill; that we will not be directed; that we will not have our practice goodwill confiscated from us; that we will not accept what must entail longer hours of work; that we demand a channel of appeal other than to the Minister. In brief, let us tell him that we will neither operate nor co-operate in his scheme as it stands to-day. If Mr. Bevan then wishes to produce an alternative scheme let him consult with and be advised by the technicians who will have to operate it.

Above all, let us have unity among ourselves. Let us not fall victim to the dictator's policy of "divide and conquer." On the principles of direction and appeal alone our very liberty is seriously threatened. If there is any spirit left in the profession there can only be one reply to Mr. Bevan—a defiant, unequivocal "No!"—I am, etc.,

SIR,—The principles for which the medical profession (or some of it) is fighting have been clearly and repeatedly stated in this *Journal*. But the majority of the profession is, as Dr. R. S. V. Marshall (Aug. 10, p. 207) remarked, "apathetic, resigned, or ignorant," as are the people of this country at present—a state of affairs which is most striking to anyone like myself just returned from service overseas.

The Minister of Health cannot but succeed in his nationalization scheme under such circumstances, for the Bill merely has to become a law to disperse feeble opposition. Theoretically, of course, our resistance is bound to succeed. It is only a matter of numbers—in spite of the influence of the formidable "enemy within the gate."

Speaking for myself I shall leave this country permanently, like many others, if we fail and our work is controlled by a higher authority who is also a layman. I suppose that the Government intends to produce the required 15,000 doctors by means of one of its celebrated statistical sleights of hand; and as there are no more gullible people than the British everything will be all right—except for the patient.—I am, etc.,

Airborne Forces Club.

C. J. R. JACOB.

SIR,—You must be deploring the amount of letter space you would normally devote to technical correspondence but must now perforce allow to be encroached on by "medico-politics," a new subject and one impressed upon the profession's attention from without. Yet you have not wasted this space if, as certainly appears, you have clarified some of the muddled thinking which seems inseparable from this new specialty.

On the part of His Majesty's Ministers one cannot diagnose muddled thinking until long-headed scheming is eliminated: apparent amblyopia may be deliberate shutting of the eyes. But there remains plenty of genuine naïveté, never better exemplified than by Mr. Bevan's delicious recent plaint to the general effect that his Government can easily foist upon the public health schemes which nobody wants, but that only nurses and doctors can translate them into reality.

From schoolboy days I seem to remember the pathetic bleatings of dominies who protested *ad nauseam* that they could provide every facility for learning, yet the "educand" would in the nature of things learn nothing but by his own efforts. (I then cherished, being at the "age without pity," unworthy suspicions that there might be such a person as a bad teacher here and there, and that this might be a bad doctrine conveniently propagated in order to make his detection difficult. But now that an increasingly powerful group in our own profession so often echoes the pedagogue's refrain by way of explaining why the patient is no better—I refer of course to the learned faculty of psychiatrists—such puerile doubts must clearly be dismissed.)

The teacher is right in his contention, for he offers the crystal fountain of knowledge, and if his alumni will not drink they have themselves to blame for the very obvious social and economic advantages which will pass by. But I cannot for the life of me see how the argument applies the other way round to the turbid waters of Socialism, which, as Prof. K. Douglas Wilkinson (Aug. 24, p. 272) so ably points out, have a bitter taste to the more energetic and useful doctor, and the imbibing of which can only occasion social and economic disadvantages to such a man. The Socialists say: "We have a plan to make your work monotonous and to reduce your income, but our plan will fail without your loyal co-operation."

The profession itself seems almost equally muddle-headed, as to the organization of its counter-measures. It takes two to make a negotiation no less than a quarrel, and the wisdom of the proposed referendum is open to doubt in view of the fact that the only sign of ministerial consistency has been a declared and inflexible refusal to do any negotiating. And another abortive referendum is unthinkable at a time when the profession has such need to conserve its funds.

I submit with humble deference that the only relevant question to print and post is: "What are you doing or going to do about the projected scheme?" Some men and women are already up and doing, for I know those who are leaving these shores or preparing to go: they are brave and adventurous people. I know others who are studying hard for higher diplomas, and they are still braver and more venturesome, since

Government service (e.g., the Colonial Medical Service) so often discounts and discredits the better-qualified when promotion is in issue. Such a question allows scope, and if the replies can be deciphered they must make interesting reading to the public, the Government, and the medical profession itself. Find as a fact that 79.81% of those who have any views on the matter are prepared to negotiate with a non-negotiator, and the moral, if any, is hard to see. It could be an index of Christian toleration, but some of us are Jews and Buddhists. But find as a fact that 79.81% are anxious to become Civil Servants, or willing to drift anywhere with the political wind, and the moral is plain: let them have it good and proper, and henceforth devote your valuable pages to facts and figures.—I am, etc.,

Stratford-on-Avon.

PETER PARRY.

SIR,—It is indeed a shocking thing, as Prof. K. Douglas Wilkinson points out (Aug. 24, p. 272), that the doctor in future is hardly likely to "work longer than 48 hours a week," and that "the practitioner who in the past has made £800 or £900 a year is to get more, but the able, hard-working, more highly qualified, more successful doctor who may have made as much as £3,500 is to get less . . ." It is simply dreadful to feel "that doctors will be less efficient, will not be proud of their profession, will tend to resemble their peacetime counterpart in the Services, do as little medical work as possible, and that poorly," merely because they will not have the opportunity to make £3,500 a year or more. Again, the "poor stick" of the future working in a sort of "telephone service" will probably have had a "free education" and "speak B.B.C. English." Could degradation indeed go further?

At the same time, I am afraid I cannot quite follow Prof. Wilkinson's reasoning. He writes: "As a learned profession medicine is dead." Of course it is, but it was no "pink giant" that killed it nor even a pink elephant, but Pasteur when he assisted at the birth of medicine as a science and thereby declared war on the childish assumption that medicine can be learned from books, and put an end to quotations from the ancients as a substitute for knowledge—unless as a preamble to one of the annual addresses, by way of a pretence to scholarship.

But quite frankly I do not feel from a perusal of his letter that that is what your correspondent really means, although that is what he says. I think what he really means is that in future medicine will be no place for a snob, still less for a money-maker. Indeed, to quote the words of the editor of an ancient but vigorous contemporary, "the scope for bedside manner and humbug is steadily diminishing."—I am, etc.,

London, W 6.

LAURA L. BATEMAN.

SIR,—I should like to congratulate Prof. K. D. Wilkinson on his very excellent letter (Aug. 24, p. 272). It is quite the best and most straightforward one we have had. If only the B.M.A. members would stick together they could call the tune, but they I not—already there are blacklegs looking out for the best for themselves under the new Service.

o doctor ever talked of "striking." He could always see patients, but just sign no forms at all—National Health, death certificates, etc.—and there would be chaos. Everyone else can strike, but doctors doing so would just be "not done" says the Government Press.—I am, etc.,

Leamington Spa

D. F. L. CROFT.

Reassuring the Profession

SIR,—One feels that only a sense of economic insecurity will prevent a 100% vote against the National Health Service Bill in its present form. Most men under 50 have so many commitments that they cannot lightly contemplate remaining out of a scheme which seems to promise financial security and compensation. They feel even against their better judgment that they cannot afford to stay out. Reassure these that the profession, discarding all contracts (including the present National Health Insurance agreements), is prepared to run the health services of the country on a fee-paying basis so that no one may starve, and you will have the bulk of the profession with you. But reassurement they must have.

As for the younger members of the profession (and particularly those back from the Forces), they must be disillusion about the terms of the present Bill. Show them that it is "pig in a poke," that it guarantees terms of service in neither time nor income, perpetuates all the disadvantages of present day practice without any compensating advantages, that it means harder work, longer hours, and a smaller income, at a time when wages all round are going up—and for what?—the promise of a pension which in 10, 15, or 20 years will bear no relationship to the cost of living.

Unless these facts are more widely known there is a very grave fear that the voting may in spite of us go against the Association's policy—and simply because few men know the facts of the situation. A leader on these lines would, one feels, do more to clarify the position than a dozen verbatim accounts of Representative Meetings.—I am, etc.,

London, N.6.

W. LEES TEMPLETON.

Principles and Policies

SIR,—A careful study of the proceedings of the Representative Body at its last meeting makes it clear that the issue lies between the policy of the B.M.A. and that of the Government. Why then all the talk about "principles" which characterized so many of the speeches? Presumably the reference was to the Seven Principles enunciated by the Council for discussion by the R.B. at the meeting in May, but consideration of these in the light of the definitions of the word "principle" in the Oxford English Dictionary shows that most of them are matters of policy and in no way true principles. It is important that the distinction should be clearly recognized. Many will fight to the death for a principle; few would carry opposition to a policy so far. The O.E.D. definitions most applicable appear to be: (1) "A tenet forming the ground of, or held to be essential to, a system of thought or belief"; (2) "a fundamental motive or reason of action, especially one consciously recognized and followed."

"The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards, and knowledge, the individual doctor retaining full responsibility for the care of the patient, freedom of judgment, action, speech, and publication, without interference in his professional work" clearly conforms to the definitions, but it seems to me that the rest of the so-called principles are either comprehended in it or are matters of opinion or policy.

I cannot find sufficient reason for refusal to co-operate with the Minister on the ground of principle. Dr. Dain says that the basic salary means a "partial transference of the doctor's responsibility from the patient to the person who pays the bill." This may be so, but in "the good old days" it was customary for wealthy people to pay for the medical attendance of their servants. Did the profession protest against this custom on the ground of principle? On the contrary, the fact that the N.H.I.A. would have practically abolished it was one reason for the opposition of a large section of the profession to Mr. Lloyd George's Bill. The practitioner will find it easier to protect the interests of his patient when a department is the "person who pays the bill" than when the latter was the squire who wanted his gamekeeper ready for a big shoot or his butler fit for a house party.

In the matter of "direction," has a practitioner ever been absolutely free to practise where he pleased? If there was no vacancy in the place of his choice, or if he had not sufficient capital to purchase a practice or partnership, it is true that he was free to "squat"—but at the price of ostracism by his fellows. Are there really many other workers who are not subject to direction in one form or another? Is there any essential difference between the compulsory acquisition by the State of the goodwill of medical practices and the compulsory acquisition of the Bank of England and the mining industry?

The policy of the present Government is Socialist. We as a profession are essentially individualists, but it does not appear to me to be consonant with our dignity to refuse to work a National Health Service based on a policy for which the majority of our patients voted at the general election. I am not a Socialist. I have voted for the Conservative candidate in my Division at every election during the last 42 years, so that I have

tical bias in favour of this N.H.S. Bill, which frankly I st. It deprives me of certain cherished privileges, affronts dignity, and interferes with me, as I think, unnecessarily. I nt to be free to practise in my own way, in my own place ; when I retire, to hand over my patients to a man of my n choice. I am sure that most of my colleagues share these timents, but let us be honest, keep our sense of proportion, I not talk about "principle" when we really mean "policy." Two world wars during one generation have shaken the ndations of our civilization, and we live in a period of olution, bloodless as yet, but none the less real. It seems me lamentable that the Minister of Health should be able say—with some justification—that "the spokesmen of some ments of the medical profession have become the most ctionary politicians in Great Britain." One would have ex- ted a learned and humane profession to take the lead in aptation to the changed conditions of life. To refuse to empt to work an Act of Parliament appears to me to be democratic and indefensible. To insist on Regulations em- dying safeguards to our remaining liberties, adequate remun- tion, and equitable terms of service as an essential condition taking service under the Act is a right which we share with other workers, and I hope that our negotiators will be in- ducted to take this course. For myself, being a law-abiding izen, when this Bill becomes law I shall feel obliged to work o the best of my ability—and I am very sure that I shall not merely a member of a small minority.—I am, etc.,

luckfastleigh.

SYDNEY R. WILLIAMS.

Resistance

SIR,—Britain is emerging from a situation in which she im- rilled her existence in the name of democracy to protect lated minorities in Europe against the domination of a group norarily in a position to infringe their rights and impose olitical doctrines upon them—a group arrogantly acclaiming emselves to be in the vanguard of progress. Owing to the despread cultivation of arrogance and the infliction of cruelty, r political ends these cults became conventional in Germany, und expression during the war, and created the animosity wards the race which still prevails. These acquired character- ics were responsible for the war and the manner in which it as conducted ; but the issue which determined Britain's atti- de was whether a powerful group, or combination of groups, ould arrogate the rights of various weaker groups, dispose their properties, and impose political doctrines upon them. ough there was no semblance in the ethical principles vio- ted, the Labour programme regarding the medical profession nd other minorities was designed, directly or indirectly, to ach a similar objective.

It is true that in a democratic sense the medical profession, ke other minorities, is represented in the Government ; but the ctual position is that it is governed by the representatives of bour. It is also, and more truly, represented by distinguished edical men with high qualifications and positions won in open ompetition. These distinguished men have made the problems f health a life study, and have consistently advocated reforms i the health services. Many of them have had these services nder constant observation throughout long careers and have tilized their exceptional advantages to consider the advisability f the various changes which have been periodically advocated. hey necessarily provide the most reliable information avail- able, including that on which the contemplated changes are ased ; yet recommendations, which they regard as of primary mportance, are being set aside by men of whom few can claim o have made a contribution of value to this or any other bject.

If it could be claimed that the tribunal was impartial the visdom of resistance would be questionable ; but it is notorious hat the essential qualification for membership is exceptional roficiency in fostering and appealing to prejudice.—I am, etc.,

Amersham.

H. MACNAUGHTON-JONES.

H. G. Wells

SIR,—May I express my appreciation of your very brilliant eader on the subject of Mr. Wells (Aug. 24, p. 268) ? I feel hat I should like to call attention to a volume not quoted in your article—viz., the *Textbook of Zoology*. This, said by

some to be one of his first books, and now under dual author- ship with A. M. Davis, I found very valuable during my first ear as a medical student. The book is a literary classic and a joy to read. It is enriched by many concise diagrams and there is a very useful appendix of practical suggestions at the end of the work. Another very precise and fascinating small volume is his *Short History of the World*, published by Watts, probably a condensation of his monumental *Outline*, cited in your leader. I observed a new edition of the *Short History* has recently been published taking readers to the victorious conclusion of the war against the tripartite powers.

While he was often very provocative in his utterance, I feel no one can afford lightly to dismiss the writings of such a profound thinker and scientist. He was one who knew how to arrest the popular imagination and I have always felt that his film *The Shape of Things to Come* is one of the most searching pieces of anti-war propaganda ever conceived. That film is a plain warning for all mankind and still has its message for our atomic age. I feel no one had a clearer conception of the full implications of modern science and of its use and misuse by man.—I am, etc.,

Dunfermline, Fife.

J. B. GURNEY SMITH.

On Reverence for Authority

SIR,—In the *Journal* of Aug. 24 you publish an appreciation of H. G. Wells in a leading article. In it you state, as if it were a thing to be admired, that he hated cant, pomp, and reverence for authority. We all hate cant because it is a vice. With his hatred of pomp many may disagree. It can be very pleasant and enjoyable, and it is the enemy of drabness. It appeals to some desire in the ordinary man, and at some time or other we all indulge in it, both in our public and private lives. It is not essentially wrong, and so it may not be hated. The vast majority will, I think, agree that reverence for authority is not a thing to be hated, but on the contrary that it is a virtue to be practised and admired, and will hold in suspicion the man who teaches otherwise. Authority is necessary in every society and every civilization, and if it is to work its greatest good it needs the reverence of those subject to it. Without this it becomes a tyranny.

The profession of medicine is an excellent example of the necessity of reverence for authority. Through it it lives and has its being. Upon it rests the doctor-patient relationship. Take it away, and the patient has recourse to the thousand cures of his well-meaning friends, who back their advice with the authority of friends.

From the general practitioner take his reverence for the opinion of his better-qualified or more experienced colleagues, and what will become of him in times of difficulty and of crisis? Without it what value is there in higher degrees and postgraduate courses? Our specialists dare not attempt their delicate, difficult, and dangerous tasks if they had no trust in the authorities they have studied. Why then should professors write their textbooks or research workers publish their findings? Why should we have medical journals, and why should they publish papers by the leaders of our profession, or have such features as "Any Questions"? Is it not because we have reverence for authority, and because we recognize that it is essential in the practice of medicine?

We look to leading articles for authoritative statements upon matters of moment and are guided by them. Yet with the authority of the editorial chair we are asked to admire in a man the fact that he hated reverence for authority.—I am, etc.,

Clones.

W. G. KIERANS.

* * We stated what we believed to be the outstanding characteristics of a remarkable man. The word "pomp" was used in the sense of the dictionary definitions: "ostentatious display ; parade ; vainglory" ; in the Prayer Book sense of "the pomps and vanities of the wicked world." It would not be difficult to sustain the thesis that "reverence for authority" has often impeded the advance of medicine. Reverence for the authority of Galen made him the dictator of medical thought for a thousand years—in spite of Galen's warning "that those who are enslaved to their sects are not merely devoid of all sound knowledge, but they will not even stop to learn."—ED., *B.M.J.*

Book Reviewing

SIR,—Most of your correspondents on this subject have pressed for signed reviews; I should like also to give my vote in favour of signed reviews, but not necessarily against unsigned ones. There is another side to the question which those who have not experienced editorial responsibility may not appreciate.

What is the object of a review? Surely it is neither to encourage nor to discourage the author, neither to flatter nor to castigate him, but rather to serve as a guide to the prospective reader. The latter wants information on three main points; he wants to know: (1) What is the scope of the book? And is the subject well covered? (2) Is the information conveyed satisfactory: that is, does it either conform to the generally accepted views of the day or represent the opinions of one recognized school of thought; or, if it presents the author's individual opinions, are these reasonable hypotheses well supported by reliable data or by adequate personal experience? (3) Is the subject-matter well presented? Additional information, on the aesthetic effect of the book for example, may not be out of place but is really of secondary importance.

It is not always easy for an editor to choose a reviewer whom he can trust to give a fair and balanced opinion on all these three points. The acknowledged authority on his subject may have views which happen to be directly opposed to those of the author, so that, unless of course the book achieves the miracle of conversion, his answer to question (2) may be perfunctory if he can sink his own individuality, or prejudiced if he cannot. On question (3) the expert knows his subject so well that he does not always appreciate the point of view of the student (*sensu lato*) as fully as might a reviewer less familiar with the subject.

You, Sir, no doubt have a very wide choice of willing reviewers from whom you can always select exactly the right man for each book, but editors are not always so fortunately placed; and in some parts of the Empire experts are rare and usually far too busy to write reviews. The editor's choice may then lie between an expert on the subject, on whom he cannot count to give an unbiased review (or in fact any review at all), and a tried and trusted but less specialized reviewer—to whom in any case he may have to send the book a year later when he has at last recovered it from the defaulting expert. In such circumstances it may not be politic, nor is it always fair on the reviewer, to ask him to sign his review, and the reader must trust the editor. There are other circumstances in which reviews should remain anonymous, but I do not agree with "One of Your Reviewers" that complete objectivity cannot be obtained without anonymity. However, the editor must take a great measure of responsibility if he publishes unsigned reviews, and I consider that all contentious or highly critical reviews should be signed. Mr. H. Osmond Clarke (July 20, p. 102) seems to suggest that the feelings of the author should be given first consideration and that highly critical reviews should not be published at all. Such censoring would in my opinion be unfair to your readers.

We have had the opinion of "One of Your Reviewers"; it would be interesting to know the results of a questionnaire sent to your reviewers. It is my guess that a majority would be in favour of anonymity but that the reasons they would give in support of their vote would be unconvincing; however, I believe that the real reason that they may favour anonymity is much more laudable than the one Mr. Osmond Clarke suggests.

Following along Mr. Hamilton Bailey's diversion (Aug. 3, p. 173), I can give him one reason why more space is given to foreign books: it is because there are more foreign books. In the United States alone there are probably two or three times as many medical books published as in the British Commonwealth. Further, American publishers are far more enterprising in sending out their books for review. Even if allowances are made for what I believe to be a fact, namely that proportionately more American books are unworthy of a review, at least in this country, I cannot help feeling that Dr. E. A. McWhirter's statistics (p. 173) on pride of place in your review columns—26 for American and 22 for British—suggest a pro-British bias, rather than the prejudice in favour of American books of which he and Mr. Hamilton Bailey appear to accuse you: I feel sure that you entertain no such prejudices and that you are guided

solely by your reviewers' opinions. The latter correspondent's suggestion that you should adopt a weighted quota system in your choice of the reviews you publish is in my opinion monstrous, and most insulting to British authors and publishers. Our medical books (and above all those written by Mr. Hamilton Bailey) need no special boosting and can surely hold their own with those from any foreign country; if they cannot then it is time we did something about it other than asking editors for preferential treatment.—I am, etc.,

London, W.1.

L. EVERARD NAPIER.

The London College of Osteopathy

SIR,—Dr. George Macdonald's statement (Aug. 31, p. 312) that "whatever the orthopaedic surgeons or the physiotherapists know of manipulation has been gleaned from the osteopaths" is absolutely untrue. We have learnt nothing about manipulation from osteopaths. The present position of manipulative surgery as an integral part of orthopaedic surgery is entirely due to Herbert Barker, who is not an osteopath and has never practised osteopathy.

Bone-setting is an essentially British product which flourished in this country for 200 years before A. T. Still was born. Admittedly it was looked down upon and neglected by the medical profession until Barker compelled attention to the good that there might be in it. The osteopaths were quick to take advantage of this and they have tried ever since to ride home on the backs of the bone-setters. But osteopathy has nothing whatever to do with bone-setting or manipulative surgery properly so called. It is a typical American stunt and its claims have been investigated up to the hilt and found wanting.

It is true that many osteopaths practise bone-setting or manipulative surgery and call it osteopathy. Obviously the manipulation of a stiff foot, a knee, a shoulder, or a sacroiliac joint, if properly done, may be as successful in the hands of an osteopath as in those of a bone-setter or an orthopaedic surgeon, but it is not osteopathy. Even the manipulation of a back for chronic backstrain is not osteopathy, but straightforward manipulative surgery. The essence of osteopathy is the treatment of remote conditions by the "adjustment" of the osteopathic "lesion."

Dr. Macdonald's admission that he does not know what the osteopathic "lesion" is is almost illuminating. I always thought that osteopaths claimed to know exactly what was the matter. His latest attempt to identify it with the prolapsed intervertebral disk is delightfully ingenuous, for if this could be established it would be the end of osteopathy. Who wants to manipulate a prolapsed disk anyway?

A registered medical practitioner in this country is free to practise any form of therapy he pleases. But medical men are by no means immune to credulity and it is right that they should be told what they are in for before they fall for the advertisement of the London College of Osteopathy. The Select Committee of the House of Lords "rightly exposed" very much more than "the inadequately trained osteopath" it exposed osteopathy.—I am, etc.,

London, W.1.

A. S. BLUNDELL BANKART.

SIR,—In reply to Sir Morton Smart's letter (Aug. 17, p. 245), a postgraduate course in osteopathy has been organized by the British Osteopathic Association. The course is open to qualified medical men only, takes nine months, starts on October 1, and will be held at the British Osteopathic Association Clinic in Dorset Square.

As to the standing of the college, the lecturers are clinical teachers who have all been trained in America, and some of them are on the British Medical Register. Both the clinic, which was founded in 1938, and the college are supported by voluntary contributions, and the staff is almost entirely honorary.

The British School of Osteopathy on the other hand teaches students *ab initio*, and is in no way associated with this postgraduate college.

The British Osteopathic Association feel that by adopting this policy all that is best in osteopathy, as taught and practised in America, will be made available to qualified medical men in this country.—I am, etc.,

London, N.W.1.

W. HARGRAVE-WILSON.

Amenorrhoea during Internment

SIR,—I have read with great interest the experiences of Dr. Annie Sydenham (Aug. 3, p. 159) and Dr. W. P. Grieve (Aug. 17, p. 243) on amenorrhoea during internment, and I should like to record some criticisms and observations of my own. On careful analysis of Dr. Sydenham's paper I am unable to find sufficient support for her contention that a nutritional deficiency, particularly of the first-class proteins, was responsible for the amenorrhoea. Two of her own statements entirely destroy this hypothesis. First, Dr. Sydenham says that "... in most instances amenorrhoea dated from December, 1941, before the effects of undernourishment on general metabolism could have been manifest." And then she concludes her article with the observation that "... poorer Chinese patients who came to gynaecological clinics before the war were not suffering from amenorrhoea, although they were living on a diet similar to ours. . . ."

In a previous communication (March 9, p. 347) I reported on 39 cases of menstrual delay in the W.A.A.F., and I found that in spite of an adequate protein diet of over 100 g. per day, 46% of all recruits could expect amenorrhoea for a varying period up to six months after entry into the Service. In every case the menstrual period immediately succeeding entry was absent. That mere entry into the W.A.A.F. was probably the operative factor was illustrated by a number of girls who stopped bleeding on the day they donned uniform, when the menstrual period had lasted only one or two days, and whose normal menstrual bleeding time was five to six days. Menstruation usually returned after a delay of six to seven months, although no radical improvement in their diet had occurred during that time. It appears therefore that the exciting factor was the sudden change of environment.

However, to state that the symptom-complex is due to "change of environment" or "emotional shock" is not enough. We must attempt to explain why psychic trauma resulting from environmental stress can inhibit one of the most fundamental biological processes in the human female. What link in the endocrine chain which leads to menstrual bleeding is broken? As Dr. Grieve says, this is a matter of conjecture.

But I should like to advance a hypothesis which is in accord with the clinical and experimental data at our disposal. The hypothalamus is recognized as the centre for autonomic control, and in response to an environmental stimulus will bring about the release of adrenaline and acetylcholine. It has been shown by Taubenhaus, M., and Soskin, Samuel (*Endocrinology*, 1941, 29, 958) that acetylcholine placed directly on the pituitary gland leads to the production of luteal hormone and hyperaemia of the uterus, while adrenaline inhibits the luteal hormone. In response to environmental stress some women will secrete an excess of adrenaline, thus preventing menstrual bleeding, due to either (1) a deficiency of luteal hormone and consequently corpora lutea, or (2) insufficient vascular dilatation of the endometrium.

Our knowledge of the control of the menstrual cycle, and in particular of the bleeding phase, is as yet incomplete. It is to be hoped however that others like Drs. Sydenham and Grieve will come forward with their experiences so that the various pieces of this puzzling phenomenon may be accurately fitted together.—I am, etc.,

Bray, Eire.

N. SHER.

Clinical Pathology and General Practice

SIR,—Dr. G. A. Harrison (Aug. 24, p. 278) suggests that family doctors should be trained to do simple laboratory tests. I believe G.P.s should undertake such tests, first, as aids to diagnosis, and secondly, to maintain interest in medicine when overwork tends to diminish it. Clinical judgment is fallible, and the G.P. puts his trust in laboratory test results. Pathologists say laboratory tests are fallible and trust should be put in clinical judgment.

I suggest that the Association of Clinical Pathologists should select and standardize certain simple laboratory tests for G.P.s with detailed instructions, so that the practitioners' results may be trustworthy, comparable, and worth knowing. For example, how to make a blood film should include how to clean and keep clean glass slides. Obermayer's reaction is simple to do,

but is it worth doing? It is easier to be confident of the results of an Esbach test than of the interpretation of a blood film. Until recently I used to estimate the sedimentation rate by Westergren's method and took comfort if in some obscure case the result was within normal limits. I took the first hour's reading only, as I was usually out on visits after that. A pathologist informed me that a single sedimentation rate was without significance, that he ignored the first hour's reading, that the test was more for prognosis than diagnosis, and that there were better methods than Westergren's.

Dispensers can be taught to do some simple tests—e.g., albumin, sugar, acetone in urine. One retail pharmacist told me he could not care less about anything than clinical pathology. Dr. Harrison mentions the difficulties of securing help from trained laboratory technicians. So we shall have to do the work ourselves. But who is to train us, Dr. Harrison?—I am, etc.,

Stoke-on-Trent.

P. H. KENDALL.

A Case of Presumed Hypoglycaemia

SIR,—A man aged 30, having apparently cycled from London to Hove (over 50 miles), was found collapsed beside his damaged bicycle. He was brought into hospital in a disorientated and hilarious condition, and soon became comatose. Before becoming completely unconscious, in reply to questioning, he denied having diabetes. When seen he was pale and had evidently recently sweated profusely. His pupils were wide and his eyes roving. He could not be roused. There was no smell of alcohol in his breath, nor evidence of poison in his mouth. Examination revealed no physical injury. He had not bitten his tongue nor been incontinent. His muscle tone and reflexes were normal. His respiration was normal, and he was not cyanosed. His heart was normal, and pulse strong and regular at 80 beats per minute. His blood pressure was 125/80. A specimen of urine obtained by catheter contained neither albumin nor sugar.

It was thought that he might be suffering from hypoglycaemia, narcotic poisoning, or post-epileptic coma. Facilities for obtaining a blood sugar estimation not being immediately available, and the giving of glucose being a harmless and simple procedure, it was decided to do that before considering whether to wash out the stomach in search of a hypothetical narcotic poison. Accordingly 30 ml. of a 50% solution of glucose was injected intravenously. Five minutes later the patient was in full possession of all his faculties.

The patient stated that he had often cycled from London to Hove, but that on previous occasions he had eaten a packet of raisins on the journey. He could recollect trying to dismount from his cycle, overbalancing, and damaging it.—I am, etc.,

*Brighton.

R. S. SAXTON.

Postgraduate Study for American Doctors

SIR,—The question of providing facilities for postgraduate study in this country for American, Colonial, and foreign practitioners is of importance not only from a medical but also from a national standpoint. London has always attracted a number of Canadian, South African, and Australian postgraduates who have come to this country in order to obtain a higher qualification, such as the M.R.C.P., F.R.C.S., or one of the special diplomas; and these students have been catered for in the same way as British postgraduates.

Before the war a considerable number of American and Colonial practitioners used to attend postgraduate courses in Vienna. These courses were very popular—not only affording members an opportunity of advancing their knowledge, but also giving them an interesting European holiday. At the end of a short course of one to three months' study at one of the hospitals of the Vienna Poly Clinic a certificate was awarded which gradually came to be regarded as a tangible mark of professional achievement.

It will obviously be some years before Vienna is rehabilitated. I have had an opportunity of obtaining the opinions of a number of American doctors on the question of postgraduate study in London, and I have received enthusiastic support from

a large number. There are many reasons why we should welcome American doctors to this country, and if the value of the postgraduate teaching in the London hospitals were suitably brought to their notice, coupled with the attraction of a certificate after a short period of study, I have no doubt London could become the new Mecca for American doctors desiring postgraduate study. There is abundance of clinical material in London, and many of our teachers would be only too pleased to welcome American doctors to their clinics. I think the time is now very opportune for furthering this project. There are various postgraduate organizations in this country, and I would welcome correspondence from those interested.—I am, etc.,

London, W.1.

J. LANDMAN.

Colonial Medical Service

SIR,—I should like to congratulate "Another West Coast" (June 15, p. 931) on his lucid exposition of the conditions in the Colonial Medical Service. His words are, I consider, equally applicable to conditions on the East Coast, and they might with advantage be substituted for the official misrepresentations that appear as advertisements for the service.

There is undoubtedly a certain fascination in working under primitive conditions. In earlier years professional rustiness, from working under these conditions, was remedied by study leave; while a reasonable margin between salary and expenses enabled a decent vacation leave to freshen the intellect. Now unfortunately a rise in cost of living, officially admitted as over 66%, and a very considerable increase in taxation both direct and indirect, have wiped out any margin, leaving a mere existence without the advantages in return that may be obtained in Europe. It is, I think, a pity that short service commissions on any lines could not be instituted. These would enable men to see for themselves the advantages and disadvantages and to leave without financial sacrifice if they considered the latter to predominate.—I am, etc.,

"EAST COAST M.O."

SIR,—The conditions described by "Another West Coast" in his letter apply equally well here in Northern Rhodesia. I would add to the maxims for the worldly-wise that the medical officer should tread delicately in his dealings with missionary societies; and he should not stress unduly the need for improvement in the conditions of his hospitals, as this means expenditure of money—a commodity of which most Colonies are short.—I am, etc.,

"NORTHERN RHODESIA."

State Medical Service and Free Speech

SIR,—Many questions have been raised in connexion with service in a State Medical Service. I am prompted to ask whether freedom of speech will be retained intact; or whether permission to express an opinion or criticism will be obligatory, as it is, for instance, in certain other medical services? I cannot help feeling that a hint of constraint may creep in if published letters have to bear some such addition as: "Approved by the Deputy Under-Commissar; Medical Division, Dept. 46A; Region 89; Ref. 6584/vft34/t9."

Possibly it is fortunate that salt mines are not a feature of the British countryside.—I am, etc.,

GLASGOW, C.3.

J. RONALD.

Entertaining Allowance, Royal Navy

SIR,—The recent Admiralty Fleet Orders (453-457) set out the entertaining allowance for Executive Officers, Royal Marine Officers, Wren Officers, Engineer Officers, Supply Officers (Paymaster Branch), but no mention is made of the Medical Branch. For many years the Medical Branch have felt that they have a very justified grievance in that senior officers have no entertaining allowance and yet are expected to give hospitality to Admiralty visitors and anyone whom Parliament wishes to be entertained at the hospital. During the war years this was a very heavy item and numerous foreign and allied officers were given hospitality on many occasions.

It seems that every branch of the Navy is given entertaining allowance except the Medical Branch and this surely should be put right.—I am, etc.,

London, W.1.

CECIL P. G. WAKELEY.

Obituary

A. TUDOR EDWARDS, M.D., M.Ch., F.R.C.S.

Arthur Tudor Edwards died suddenly at the age of 56 on Aug. 25 while on holiday at St. Enodoc, Cornwall. He had been in poor health for some weeks before this, but though the serious nature of his underlying illness was known to his friends and colleagues his death has come as a severe shock and a cruel blow.

He was the elder son of William Edwards, J.P., of Swansea and was educated at Mill Hill School and St. John's College, Cambridge. From there he went to the Middlesex Hospital and qualified in 1913. He served as surgical registrar and obtained his M.Chir. and F.R.C.S. in 1915 and then joined the R.A.M.C., in which he attained the rank of major. At the end of the 1914-18 war he was appointed assistant surgeon to the Westminster Hospital and surgeon to the Brompton Hospital for Diseases of the Chest. There now followed years of intense surgical activity which continued almost unchecked until the beginning of the recent war, and which rapidly earned him an international reputation at an early age.



[Howard Carter]

Although his reputation rests almost entirely on his pioneer work in thoracic surgery it should not be forgotten that Tudor Edwards was also an unusually able general surgeon, a fact that is not without significance in considering the excellence of his thoracic work and in regard to the present tendency for young surgeons to undertake a major speciality before they have attained general skill and experience. In addition to his years of general surgery at the Westminster Hospital he was for many years surgeon to Queen Mary's Hospital, Roehampton, where the difficult and complex problems of the war pensioners demanded the skill of a surgeon of his high calibre. While he was building his reputation as a thoracic surgeon he was at Queen Mary's doing excellent work on the abdomen, notably in connexion with the aftermath of the large numbers of cases of gastro-jejunostomy performed during the 1914-18 war. His experience in gastro-jejunal ulceration and gastro-colic fistula must have been second to none in this country.

The brilliance of his life-work lay, however, in thoracic surgery, and it may be said that he found it an almost untouched field and left it a sturdy, established, and flourishing speciality. It is indeed remarkable to consider that in 1921, when he first joined the staff of the Brompton, the surgery of the thorax scarcely existed in England, apart from an occasional immature thoracoplasty or operation for empyema. The experiences of the 1914-18 war had shown that the interior of the chest tolerated intervention better than had been thought, but the major problems of bronchial carcinoma, bronchiectasis, carcinoma of the oesophagus, intrathoracic cysts and tumours had been quite untouched. The surgery of pulmonary tuberculosis was slightly more advanced but was still in its infancy and had engendered but little confidence. It can truly be said that the name of Tudor Edwards will always be associated with the magnificent development of the surgery of these conditions, the success of which is now so well recognized as to need no emphasis. The way was undoubtedly hard and at times bitter, for in addition to the difficulties of technical achievement there were the difficulties of reaction and conservatism. It needed a surgeon of Tudor Edwards's brilliance and drive to overcome them, but soon he was finding a steady and increasing stream of thoracic surgical material referred to him which rapidly became a flood-tide. At the peak of his career as an operating surgeon he was doing an enormous amount of heavy surgery, and there can be little doubt that

the physical strain and attendant mental anxieties of this difficult work contributed to the development of the illness which eventually overtook him.

His ordinary afternoon operating sessions at the Brompton Hospital, which often went on until after 9 p.m., were always attended by a large crowd of visitors, sometimes including representatives from as many as a dozen different countries. As an operator he was superb, and as soon as he began a major thoracic case it was clear that he was a truly gifted surgeon. He was at his very best in those difficult intrathoracic problems that had in the past defeated so many surgeons. Besides being a skilled operator he was an experienced clinician—an attribute that contributed in no small part to his success. To work with Tudor Edwards was the ambition of most young thoracic surgeons, and many were the requests received from aspirants all over the world to act as his assistant. There are many established thoracic surgeons now who owe their training to what they learnt from him. There are very few thoracic surgeons indeed who have not benefited by his teaching and influence even if they have not actually served as his assistant.

In addition to a large consulting practice he held numerous other hospital appointments, notably consultant surgeon to King Edward VII Sanatorium, Midhurst, thoracic surgeon to the L.C.C., in which he was responsible for organizing thoracic surgical units, and to Queen Alexandra's Hospital, Millbank. In 1936 he was invited to take charge of a newly formed Department of Thoracic Surgery at the London Hospital, and in accepting this post resigned from his surgeoncy at the Westminster Hospital and devoted his whole time to chest surgery. The volume of work that he was doing is shown by his Harveian Lecture in 1939 on 199 cases of bronchiectasis treated by lobectomy and pneumonectomy. His writings on thoracic surgery were numerous and covered aspects of the whole field. His last important contribution was in the first number of the new journal *Thorax*, in which he summarized his experiences in over 1,000 cases of bronchial carcinoma, including 70 cases in which he had performed pneumonectomy or lobectomy. This was the first presidential address to the new Association for the Study of Diseases of the Chest, in the formation of which his activity and influence had played a notable part. It was largely due to his patient and wise counsel that *Thorax* made its appearance this year under the joint auspices of the Association for the Study of Diseases of the Chest and the British Medical Association.

A year or two before the recent war he had a severe illness, but appeared to make a good recovery, only to suffer a relapse in the autumn of 1939. In spite of this he threw himself unstintingly into the numerous duties and tasks which befell him as the acknowledged leader of thoracic surgery in Great Britain. He organized the whole of the centres for the reception of thoracic casualties throughout the country, a work that entailed much long, difficult, and harassing travelling under war-time conditions. He was civilian adviser in thoracic surgery to the War Office, and as civilian consultant to the Royal Air Force he organized a special centre at Midhurst, the success of which was ensured by his undertaking regular frequent visits there for operating himself. In addition to all this and his numerous commitments on committees of national importance he accepted nomination and was elected to the Council of the Royal College of Surgeons in 1943. Although he well knew that he should avoid extra strain he shirked nothing, and this enormous zeal for work must have contributed to his sad and early death.

His loss is a great one. To his friends and colleagues he is irreplaceable. His death sees the closing of a chapter in the development of thoracic surgery in which, largely by his efforts, Great Britain was pre-eminent throughout the world. The success of the new chapter will be in part due to his teaching, training, and example. He was a charming and courteous colleague, kindly though intolerant of incompetence and ultra-conservatism. He was of handsome appearance, dark, and clearly possessed of a striking personality. It is sad that he did not live to enjoy the years of honour, renown, and achievement that were still due to him. He was at one time president of the Society of Thoracic Surgeons, was an Honorary Fellow of the American Society of Thoracic Surgeons, and had received honorary degrees in addition to other marks of recognition

from several European universities and learned societies. His married life was a very happy one, and he is survived by his wife, Evelyn, daughter of Dr. T. Hoskin. Her sorrow at his loss is shared by all his friends and associates and the numerous patients throughout the country and in many parts of the world who have cause to be grateful for his successful treatment.

Sir GORDON GORDON-TAYLOR writes: I knew Tudor Edwards for 35 years from the time that he came from Cambridge to Middlesex Hospital. He was my dresser, my house-surgeon, and he has remained my friend.

Tudor had set out from boyhood days to become a surgeon. He approached the specialty which he has done so much to advance and which has made his name world-famous through the proper avenue of general surgery. He served an apprenticeship with Bland-Sutton before the last Armageddon, learned fracture surgery at Wimereux under the guidance of that mechanical wizard Maurice Sinclair, studied his fellow-men amid the duress of the trenches in that icy winter of 1916-17, and established his reputation as a most skilful and brilliant surgeon in No. 6 Casualty Hospital at Barlin in an Army which rejoiced in Cuthbert Wallace as its consulting surgeon, and in which he could compete in friendly rivalry with that band of enthusiastic, able young surgeons gathered together under Wallace's aegis, all destined to attain first rank in the years to come.

The cessation of hostilities released one whose high surgical destiny seemed assured. Westminster Hospital, Brompton, the Ministry of Pensions were not slow to embrace the opportunity which lack of vision elsewhere had placed on their doorstep, and later on the London Hospital honoured Tudor by inviting him within their own portals.

The limitless opportunities which Brompton and his other large hospitals afforded Tudor enabled him to attain a reputation which extended from Orient to Occident, and from Norwegian waters to the lands under the Southern Cross. The written word is often a meretricious avenue to international reputation: Tudor Edwards's fame has rested and will rest on his deeds rather than words, although 33 papers under his name are chronicled in the *Cumulative Index* and there were other contributions to works on war surgery and various memoranda for the assistance of those called on to deal with injuries of the chest.

Tudor's chest-surgery was learned from no pioneer, but carved out of the hard rock of experience. He would have been the first to acknowledge the help, the vision, and the confidence of the physicians at Brompton who gave him opportunity, and in the early days particularly that of Dr. R. A. Young; his work was facilitated by the advances of anaesthesia, and his debt to Ivan Magill especially was always freely acknowledged; but his own brilliance, wisdom, experience, and courage made him the greatest thoracic surgeon of the world of his day.

Those who are reckoned great in surgery must among other obvious qualities have inspired their pupils and provided for their own succession. The torch of thoracic surgery which burned so brightly in his hand is already blazing in the grasp of his juniors, and the future of thoracic surgery is full of golden promise. Some may remember those lines from Homer's *Odyssey*: "For nothing is greater or better than this, when man and wife dwell in the house in harmony, a joy to their friends, but they know this best themselves." Tudor Edwards's home life was a happy one: a boy-and-girl friendship became a life-long devoted union.

His remains were interred in a country churchyard looking out over the waves towards that principality which has cradled not a few of those who have initiated, advanced, and adorned the thoracic surgeon's art. There Tudor Edwards "sleeps under the wings of Renown."

A colleague in the R.A.F. writes:

With the passing of Tudor Edwards the Royal Air Force has lost one of its very good friends. Early in the war he was appointed consultant in thoracic surgery to the R.A.F., but before this he had done much unselfish and often entirely gratuitous work for members of the Service. There are many present and past members of the R.A.F. walking about to-day who will hear of his death with deep regret, for they owe their good health and often their lives to his wonderful skill and care.—A. F. R.

Dr. HENRY W. P. YOUNG died on Aug. 15 in Streatham, where he had gone to live after retirement at the end of 1945. He settled in Norbury 45 years ago after a brilliant career at Cambridge, where he went with an exhibition to Caius College, taking a first in the Natural Sciences Tripos. Going to St. Bartholomew's Hospital, he qualified M.R.C.S., L.R.C.P. in 1896, and M.B., B.Ch. in 1897, proceeding to M.D. in 1901. After sundry appointments he settled in Norbury, then a small offshoot of Streatham, where he passed the remainder of his professional life. Shy and somewhat reserved, he gained the confidence of his patients, and in that young and growing district he soon held a commanding position in maternity work and children's illnesses. Painstaking and thorough, he never seemed to tire, and was always happiest when the work was hardest. In the first world war he joined partnership with a colleague in order to "do his bit" and in 1918 he returned with an added zest. Most careful in all his work, he was a first-rate diagnostician and his clinical judgment was seldom at fault. His health broke down in 1927, and he underwent an abdominal operation, but in three months he was back at work, and never slackened till, in 1945, he began to tire easily, and later in that year had the first of two serious operations, the second taking place two months later. Growing weaker, he recognized that he would be unfit for further active practice, and he retired at the end of that year. Dr. Young joined the B.M.A. 43 years ago, and was twice married. The constant care of his wife, a trained nurse, eased the burden of his last days. Much sympathy has been expressed for her in her bereavement.

FREDERICK WILLIAM BRODERICK, who died at Bournemouth on Aug. 19, was born in South Africa on Oct. 6, 1881, the second son of George Broderick. He qualified L.D.S.Eng., M.R.C.S., L.R.C.P. in 1905 after serving an apprenticeship with the late Mr. Dancer Whittles of Birmingham. After qualification he entered partnership with the late Mr. Stephen Coxon at Wisbech. While in practice there he read for and in 1912 was called to the Bar. In 1913 he moved to Bournemouth, where he established himself in practice. At the outbreak of the 1914 war he obtained a commission in the R.A.M.C. and was immediately posted over-seas to the B.E.F., obtaining thereby the Mons Star. He was invalided home in April, 1915. The Dental Services then were in chaos, and he was soon given the task of organizing them in the Southern Command, being the first dental inspecting officer appointed, with the rank of major. He it was who originated the first central dental laboratory, requisitioning part of the Birmingham Dental Hospital. On the cessation of hostilities he returned to practice in Bournemouth. There he immediately became immersed in a problem that had always interested him: the causation of caries and pyorrhoecia. He first postulated the theory that these were opposite and distinct diseases, and on this theory he worked till the day of his death; indeed a communication from his pen on this subject has appeared in a very recent number of the *British Dental Journal*. His work on these lines has been perpetuated in his book *Dental Medicine*. It may truthfully be said that he had a transatlantic reputation, for he gave at their request an extended series of lectures to various United States Universities. Though everyone may not agree with his ideas *in toto*, few will be found to say that he was entirely wrong in his conception. Much more work is required on this subject, but it may well be found that he has sown a train of thought which may bear great fruit. He died in 1910 Marion Leach, of Wisbech, and is survived by a son, and two daughters.

ELLA G. A. WEBB, who died on Aug. 25, was the widow of G. R. Webb, Fellow of Trinity College, Dublin. A daughter of Charles T. Ovenden, D.D., she was born in Dublin on Oct. 16, 1877, and went to school at Queen's College, Harley Street, London, and at Alexandra College, Dublin. In 1896 she entered the Catholic University of Ireland and won honours and an exhibition when graduating B.A. in 1899, and again when taking her medical degrees in 1904; she proceeded M.D. in 1906. Dr. Webb had been demonstrator of physiology in the Women's Department of the Medical School of Trinity College and also at the Medical School of the Catholic University before being elected to the visiting staff of the Adelaide Hospital as assistant physician to the Children's Department; she also held other medical appointments in Dublin. Her chief interest was paediatrics, and she carried out several pieces of research on rickets and other diseases of childhood. She was lady district superintendent of the St. John Ambulance Brigade at the outbreak of war in 1914 and was awarded a medal for her gallantry during the Sinn Féin Rebellion in 1916. Her work for first-aid was recognized by appointment as M.B.E. and Lady of Grace of the Order of St. John of Jerusalem.

The sudden and tragic death of Dr. JOHN FORBES CAMPBELL removes from the Totton and Southampton area a greatly respected and popular member of the medical profession. Born in 1892 at Auchenblae, Kincardine, he was educated at the Mackie Academy, Stonehaven. He obtained his dental and medical qualifications in Edinburgh in 1916 and 1917 respectively, and for a time worked at the Royal South Hants and Southampton Hospital. Joining the R.A.M.C., he carried out useful work in Mesopotamia and Persia during the first world war. On demobilization he took up general practice in Totton, and during his very busy career he earned the devotion of his patients and the respect of his medical colleagues, and his never-failing good humour and generosity gained him many friends. Despite the calls of a busy practice he found time to take a leading part in the work of the St. John Ambulance Brigade and the British Legion. In connexion with the latter he acted as the president of the Totton branch of the Legion since its inception eleven years ago. He was also hon. surgeon to the Fenwick Cottage Hospital, Lyndhurst, and medical officer to the Government Training Centre at Redbridge. He was a member of the Southampton Division of the B.M.A. and of the Southampton Medical Society. Dr. Campbell was a fine clinician, and his wide knowledge and broad outlook on life enabled him to be the generous friend and adviser to the many who sought his advice. Too busy to indulge in much social activity he obtained some relaxation from his work in an occasional game of golf. His partners and friends will ever remember his unfailing cheerfulness, kindness of character, and his skill as a raconteur. In 1930 he married Dr. Laurel Heny, and to her his medical colleagues extend their deep sympathy in her immeasurable loss.—S. N. L.

The following tribute to Dr. HOWARD HENRY, M.C., comes from Mr. Gilbert Ranson, Clerk of the East Suffolk County Insurance Committee: My committee has learned with sorrow of the death of Dr. Henry. He joined the committee's medical list when he returned to Suffolk in 1926. He was appointed by his colleagues to represent them on the committee in 1931. He so identified himself with the work, serving on most sub-committees, that he was appointed vice-chairman in 1941 and held that office until his death. He was also chairman of the Panel Committee, and in his dual position he was always ready to try to smooth out any difficulties that arose. Though he lived twelve miles from the committee's office and had a large country practice, he seldom allowed more than a week to elapse without visiting me, when he was prepared to discuss any medical questions. He probably shortened his life by undertaking, during the war, most of the work of an absent colleague along with his own. He was most assiduous in seeing that this practitioner received all that was due to him under the Protection of Practices Scheme. He has left a gap which it will be difficult for the committee to fill.

SIR KAYE LE FLEMING: MEMORIAL SERVICE

A memorial service for Sir Kaye Le Fleming, held in Wimborne Minster, was very largely attended. The service was conducted by his brother Canon Hugh Le Fleming, assisted by the head master of Canford School and the Rev. J. Mahon, priest-in-charge of the Minster. The British Medical Association was represented by Dr. S. Watson Smith, past President, Dr. J. A. Pridham representing the Council and the Dorset and West Hants Branch of the B.M.A. and the Dorset Panel and Insurance Committees, with Mr. John Whittingdale, chairman of the West Dorset Division, and many other colleagues and friends.

Dr. O. C. CARTER, of Bournemouth, gave an address of remembrance, in the course of which he said that though they mourned the death of their friend they thanked God for his life, devoted to healing the sick and guiding his profession through many of the difficulties which had arisen in the past 40 years. His own close friendship with "E. K." (as he was affectionately known) and all the help and kindness he received during nearly 30 years would be a cherished memory. Sir Kaye Le Fleming was an outstanding man of his time and would have made a success in whatever walk of life he had pursued; but instead of devoting his energy, great ability, and leadership to his own advantage, he spent his life in the interests of his fellow men. Dr. Carter, in a tribute to Sir Kaye's many-sided career, said that he was a man of striking personality and presence, with the lawyer's clarity of mind and eloquence of speech. He stood out among a small group who played

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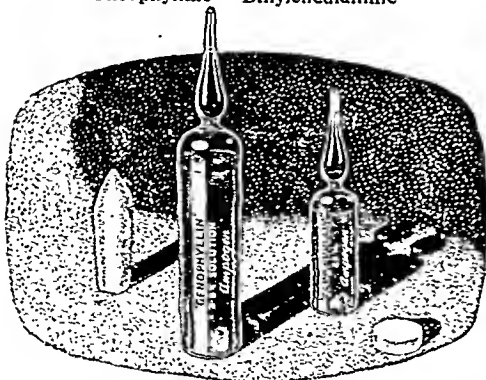
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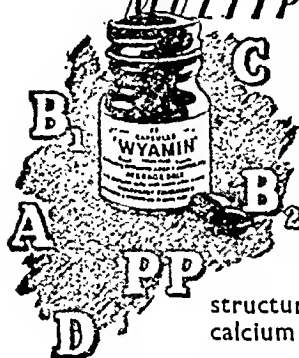
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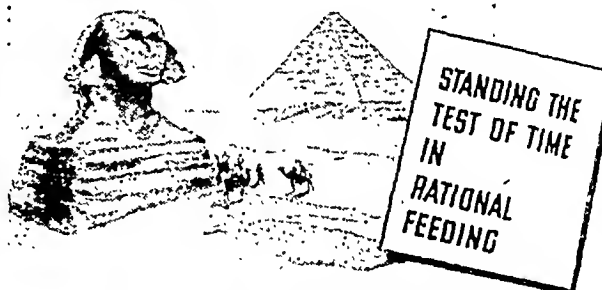
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decisive part in guiding the medical profession through the changing years after the first great war. It was in 1912 that he became a leader in local committees during the inception of the National Health Insurance Act. He always fought for the interests and welfare of insurance patients, at the same time maintaining the honour and dignity of the profession. He never lost sight of the fact that the interests of the patient and those of the doctor were identical. In his own Division he was a pillar of strength and a wise and friendly counsellor. In 1922 he was elected to the Central Council of the B.M.A. It soon became evident that his was the voice of a leader, and by the middle of that decade he was marked for high office. He became chairman in succession of the Panel Conference, the Representative Body, and the Central Council. As a chairman Le Fleming was outstanding: he was a master of procedure, long and difficult agendas were disposed of with the utmost efficiency and attention to detail, and when he spoke everyone listened. After mentioning Sir Kaye's many public activities and distinctions Dr. Carter said that it was the personal attributes he had in such large measure which made him an outstanding success as a leader of his own profession. His charm of manner attracted men to him and his great gift of fellowship won him a wide circle of friends. He had great power of concentration and an unusual degree of foresight and of vision of things to come, and his boundless capacity for work and an orderly mind got things done. His propelling force was the desire to help his fellows and forget himself, and this he did not only for those around him but in a wider sphere. The high example he set, and the affection in which they all held him, would ever live in their hearts.

Universities and Colleges

SOCIETY OF APOTHECARIES OF LONDON

At a recent meeting of the Court of Assistants, with Dr. H. F. Powell, Master, in the chair, Dr. Christopher Thackray Parsons was elected Master, and Dr. John Prescott Hedley and Prof. E. C. Dodds, Wardens, for the ensuing year.

Prof. Dodds was appointed to represent the Society at the British-Swiss Medical Conference at Basle, Sept. 16-21, and Sir Cecil Wakeley on the governing body of the British Postgraduate Medical School and the British Postgraduate Medical Federation.

It was unanimously resolved that the Society's Gold Medal in Therapeutics for 1946 be awarded to Sir Alexander Fleming and Sir Howard Florey in recognition of their discovery of penicillin.

The resignation of Mr. W. T. Withers, Bedel, who entered the service of the Society in Feb., 1887, was received with profound regret. It was decided to record on the minutes the unanimous expression of the Court's deep appreciation of his unswerving loyalty, devotion to duty, and the outstanding value of his work to the Society during nearly sixty years. Mr. E. J. Dearman was appointed Bedel to the Society from Sept. 1.

The Diploma in Industrial Health was granted by examination to the following candidates: A. Anderson, K. Biden-Steele, M. P. Fitzsimons, O. G. Bennett, G. F. Keatinge.

The Diploma of L.M.S.S.A. was granted upon examination to the following candidates: F. W. Flight, D. Rivers, C. M. M. Severn, P. R. Needham, I. T. Holloway, A. Macarthur, F. Deutscher, D. A. Bailey, H. Walker, G. Steinberg, R. Cartledge, W. F. Belsham, J. M. Jones, C. C. Gibbons, R. N. H. Vann, R. M. Michelmores, R. M. Jenkins, E. J. Rich, A. Culiner, J. L. Struan-Marshall, K. R. W. Müller.

The Services

Surg. Cmdr. H. T. Rylance, R.N.V.R. (ret.), has been awarded the R.N.V.R. officers' decoration.

Major D. C. Bowie, O.B.E., R.A.M.C., has been mentioned in dispatches in recognition of gallant and distinguished services in the defence of Hong Kong in 1941.

17th London British General Hospital.—The reunion dinner will be held at Oddenino's Restaurant, Piccadilly, on Oct. 25. Information and tickets can be obtained from Dr. C. H. Atkinson, 53, Park Street, London, W.1; Dr. D. Batchley, 2 Chatsworth Road, Chiswick, W.4; Dr. S. P. Rea, 84, Banstead Road, Carshalton, Surrey.

Medical News

On Oct. 4 the Scottish members of the B.M.A. are making a presentation to Dr. R. W. Craig, O.B.E., to signalize his retirement from the position of Scottish Secretary. A reception and dance will be held at B.M.A. House, 7, Drumsburgh Gardens, Edinburgh, which all subscribers are invited to attend. Each subscriber may bring one guest. The cost of a single ticket will be 12s. 6d. and a double ticket one guinea.

The British Red Cross Society has established its own Department of Welfare Service. This Department is concerned with the extension of welfare and aftercare services to distressed or disabled members of the civilian community. Dr. Harold Balme, F.R.C.S., medical officer in charge of rehabilitation to the Ministry of Health, has been appointed director of welfare services. These will operate in three main directions: (a) welfare services and aftercare for civilian disabled; (b) the aftercare of invalid and crippled children, in co-operation with the Central Council for the Care of Cripples, the Invalid Children's Aid Association, and similar bodies; (c) the welfare of aged infirm. A conference on welfare service to be held at Gas Industries House, Grosvenor Crescent, S.W., on Sept. 25 and 26 will open the campaign for the winter months. Air Marshal Sir Harold Whittingham, K.C.B., K.B.E., F.R.C.P., has recently been appointed medical adviser to the British Red Cross Society.

The Fuel Efficiency Committee of the Ministry of Fuel and Power has arranged for a conference on "Fuel and the Future" to be held in London on Oct. 8-10, 1946. The Minister of Fuel and Power, Mr. Emanuel Shinwell, will open the proceedings on the first day, and the Minister of Health will speak on "The Fuel Requirement of the Housing Programme." Delegates will be mainly concerned with the use of fuel in industry, but on the afternoon of Oct. 8 Prof. James Mackintosh, Dean of the London School of Hygiene, will discuss comfort in the home in relation to human needs.

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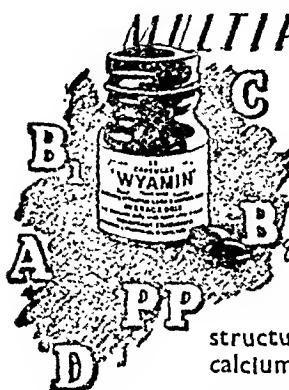
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MULTIPLE VITAMIN THERAPY



Upon the presence in sufficient quantity of the major vitamins depends the healthy functioning of nerve tissues, skin and other epithelial structures and bone, and normal calcium absorption.

The system of vitamin measurement in international units makes it possible to supplement any suspected deficiency by regulated dosage in simple capsule form.

Each capsule contains Vitamin A, 4,500 int. Units Vitamin D, 675 int. Units. Vitamin B₁, 100 int. Units Vitamin B₂, 100 int. Units. Vitamin B₆, 100 int. Units. Vitamin C, 100 int. Units. Nicotinic Acid (P.P. Factor), 5 mg.

Their administration is indicated in all cases where deficiency cannot be ascribed to one specific vitamin

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allaying the feeling of hunger and, because of its buffering action, relieving pain. It provides also the nitrogenous food needed for tissue repair.

'Pronutrin' may be given in hot, cold, or iced water; combined with meat extract; stirred into milk or soup. Literature on request.

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“Isn't there something I can take, doctor?”

Pretty often-heard question in these days of food shortages. The majority of the questioners probably do feel a real need to 'take something'.

Fortunately for those whose chief trouble is lack of calories, fats and vitamins, there is now no shortage of pure cod liver oil. Seven Seas' trawlers have been back on the job for some time, so there is plenty of even Seas cod liver oil in the chemists' shops for all who need it—both liquid oil and capsules.

For some time we have been trying, through advertising, to make people realise that our sea-fresh cod liver oil is a highly nutritious fatty food—the only one available in sufficient quantity to make good the cut in the fat ration, for example. Moreover, it is the only natural source of concentrated vitamins (A and D) which is both home-produced and plentiful. We are giving as much publicity as possible to these facts, in the hope that our efforts may in some measure help the public to combat the effects of continued “belt-tightening”.

STANDARD OIL: Vitamin A 20,000 I.U.; Vitamin D 2,500 I.U. per oz.
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BRITISH COD LIVER OILS (HULL & GRIMSBY) LTD.
ST. ANDREW'S DOCK, HULL, ENGLAND



One successful method of infant feeding alone can compete (in antiquity) with the Sphinx. Doubtless, when the latter at last succumbs to Time, breast feeding will still remain the unchallenged method of laying the foundation of health and vigour. For more than 40 years Cow & Gate Milk Food has provided a reliable and effective substitute when breast feeding proves impossible. It can therefore claim to have been “Tested by Time” even though this is measured in years rather than in centuries. During this period the application of increased knowledge of infant requirements and of process refinements has been continuous. The two standard foods in the Cow & Gate range are as follows:—

FULL CREAM

This food is found to be of suitable composition for the great majority of normal infants. It conforms approximately to the fat content of average breast milk. It is prepared from finest quality milk powder produced under carefully controlled conditions to ensure closest possible uniformity of quality. It contains 320 I.U. vitamin D per oz. and 1 mg. of iron per oz.

HALF CREAM

When foods other than breast milk are first introduced, some children require a reduced fat intake. In a smaller number of cases it is advisable to continue with the lower fat content for several months. The half cream food, which contains the same vitamin and iron supplements as the full cream variety, has this reduction of fat and addition of carbohydrate in the form of milk sugar.

Particulars of these and other Cow & Gate preparations for specialised infant feeding, will be gladly forwarded on request.

COW & GATE LTD.

GUILDFORD SURREY



decisive part in guiding the medical profession through the angling years after the first great war. It was in 1912 that he became a leader in local committees during the inception of the National Health Insurance Act. He always fought for the interests and welfare of insurance patients, at the same time maintaining the honour and dignity of the profession. He never lost sight of the fact that the interests of the patient and those of the doctor were identical. In his own Division he was a pillar of strength and a wise and friendly counsellor. In 1922 he was elected to the Central Council of the B.M.A. It soon became evident that his was the voice of a leader, and by the middle of that decade he was marked for high office. He became chairman in succession of the Panel Conference, the representative Body, and the Central Council. As a chairman Le Fleming was outstanding: he was a master of procedure, long and difficult agendas were disposed of with the utmost efficiency and attention to detail, and when he spoke everyone listened. After mentioning Sir Kaye's many public activities and distinctions Dr. Carter said that it was the personal tributes he had in such large measure which made him an outstanding success as a leader of his own profession. His charm of manner attracted men to him and his great gift of fellowship won him a wide circle of friends. He had great power of concentration and an unusual degree of foresight and of vision of things to come, and his boundless capacity for work and an orderly mind got things done. His propelling force was his desire to help his fellows and forget himself, and this he did not only for those around him but in a wider sphere. The high example he set, and the affection in which they all held him, would ever live in their hearts.

Universities and Colleges

SOCIETY OF APOTHECARIES OF LONDON

At a recent meeting of the Court of Assistants, with Dr. H. F. Powell, Master, in the chair, Dr. Christopher Thackray Parsons was elected Master, and Dr. John Prescott Hedley and Prof. E. C. Dodds, Wardens, for the ensuing year.

Prof. Dodds was appointed to represent the Society at the British-Swiss Medical Conference at Basle, Sept. 16-21, and Sir Cecil Wakeley on the governing body of the British Postgraduate Medical School and the British Postgraduate Medical Federation.

It was unanimously resolved that the Society's Gold Medal in Therapeutics for 1946 be awarded to Sir Alexander Fleming and Sir Howard Florey in recognition of their discovery of penicillin.

The resignation of Mr. W. T. Withers, Bedel, who entered the service of the Society in Feb., 1887, was received with profound regret. It was decided to record on the minutes the unanimous expression of the Court's deep appreciation of his unswerving loyalty, devotion to duty, and the outstanding value of his work to the Society during nearly sixty years. Mr. E. J. Dearman was appointed Bedel to the Society from Sept. 1.

The Diploma in Industrial Health was granted by examination to the following candidates: A. Anderson, K. Biden-Siele, M. P. Fitzsimons, O. G. Bennett, G. F. Keatinge.

The Diploma of L.M.S.S.A. was granted upon examination to the following candidates: F. W. Flight, D. Rivers, C. M. M. Severn, P. R. Needham, I. T. Holloway, A. Macarthur, F. Deutscher, D. A. Bailey, H. Walker, G. Steinberg, R. Cartledge, W. F. Belsham, J. M. Jones, C. C. Gibbons, R. N. H. Vann, R. M. Michelmores, R. M. Jenkins, E. J. Rich, A. Culiner, J. L. Struan-Marshall, K. R. W. Miller.

The Services

Surg. Cmdr. H. T. Rylance, R.N.V.R. (ret.), has been awarded the R.N.V.R. officers' decoration.

Major D. C. Bowie, O.B.E., R.A.M.C., has been mentioned in dispatches in recognition of gallant and distinguished services in the defence of Hong Kong in 1941.

17th London British General Hospital.—The reunion dinner will be held at Oddenino's Restaurant, Piccadilly, on Oct. 25. Information and tickets can be obtained from Dr. C. H. Atkinson, 53, Park Street, London, W.1; Dr. D. Batchley, 2 Chatsworth Road, Chiswick, W.4; Dr. S. P. Rea, 84, Banstead Road, Carshalton, Surrey.

Medical News

On Oct. 4 the Scottish members of the B.M.A. are making a presentation to Dr. R. W. Craig, O.B.E., to signalize his retirement from the position of Scottish Secretary. A reception and dance will be held at B.M.A. House, 7, Drumsheugh Gardens, Edinburgh, which all subscribers are invited to attend. Each subscriber may bring one guest. The cost of a single ticket will be 12s. 6d. and a double ticket one guinea.

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Dr. Syed Hassan Alavi, Director of a department of the Iranian Army Medical Service, is visiting this country to renew contacts with London hospitals, and to study the administration of the Ministry of Health and the R.A.M.C.

The Ministry of Labour has appointed a blind man, Mr. A. E. Wilson, to be senior temporary assistant of its Disabled Persons Branch in London. He is a native of Lincolnshire and an expert on blind welfare.

Mr. Geoffrey Parker, D.S.O., F.R.C.S., has been appointed a Chevalier de la Légion d'Honneur and awarded the Croix de Guerre, with Palm.

The Queen recently opened a new plastic surgery centre at St. Barnabas's Hospital, East Grinstead, Sussex. £100,000 has been contributed to the cost by the British War Relief Society of America.

EPIDEMIOLOGICAL NOTES

Typhoid Epidemics

The combined incidence of typhoid and paratyphoid was the largest for five years although the notifications of typhoid decreased by 36. Cases of typhoid notified at Aberystwyth during the four weeks ending Aug. 17 were 1, 54, 48, and 19. The largest return for any other area during this period was 8 for Warwickshire. There have been no new cases at Aberystwyth over the past week, and there were altogether 135 notifications with 4 deaths up to Sept. 3. A few cases in returned holiday-makers are still being reported from other areas. Cardiff City Isolation Hospital has admitted 1 case and there is 1 case at the Belper Isolation Hospital and 1 at Port Talbot.

At Coatbridge, Lanarkshire, as in the Aberystwyth epidemic, an ice-cream vendor who was a typhoid carrier was responsible for the recent outbreak. By Sept. 4 there were 105 cases under observation, most of them children.

Outbreaks of Paratyphoid

More information is now available about the 22 cases of paratyphoid infected at Woolacombe between June 26 and July 9. In the opinion of the M.O.H. 19 of these cases were infected by contaminated ice-cream. The other cases may have been infected while bathing near a sewer which opens into the sea. The organism responsible was found in samples of sea-water taken near the outfall and in the sewage tanks, which have since been chlorinated.

There are now 17 cases of paratyphoid in the North Staffordshire area, 11 in Stoke-on-Trent and 6 in Newcastle. There appears to be no common cause for these or for the earlier cases in this area.

Yorkshire West Riding has had 37 notifications (Halifax C.B. 25) and there have been 23 other cases of paratyphoid widely distributed throughout the country.

Discussion of Table

In *England and Wales* there were increases in the number of cases of whooping-cough 187 and paratyphoid fever 47, and decreases in the notifications of measles 587 and typhoid fever 36.

The increase in cases of whooping-cough was mainly confined to the northern section of the country. The largest rises were Warwickshire 50, Yorkshire West Riding 35, and Lancashire 25.

The sixth consecutive week there have been fewer notifications of measles. The largest falls during the week were Essex 95, Durham 94, and Lancashire 65.

The only alterations of any size in the local trends of diphtheria were decreases in London 11 and Durham 9. The largest returns of cases of dysentery were London 13 and Lancashire 12.

In *Scotland* a rise of 11 was recorded in the notifications of diphtheria, dysentery, and whooping-cough, while a fall was recorded for measles 38. The rise in diphtheria was contributed by the western area. Dundee had 12 and Glasgow 11 cases of dysentery.

In *Eire* the notifications of diphtheria increased by 7. Of the 44 cases of diarrhoea and enteritis 37 were recorded in Dublin C.B.

Week Ending August 24

The notifications of infectious diseases in *England and Wales* during the week included: scarlet fever 665, whooping-cough 2,058, diphtheria 285, measles 2,140, acute pneumonia 299, cerebro-spinal fever 39, acute poliomyelitis 30, dysentery 52, paratyphoid 66, typhoid 36.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 17.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	47	2	14	1	—	39	2	14	1	3
Deaths	—	2	—	—	—	—	—	—	—	—
Diphtheria	251	19	85	34	5	351	13	113	69	27
Deaths	3	—	—	—	—	8	1	3	—	—
Dysentery	70	13	32	1	—	259	22	72	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	—	4	2	—	—	—
Deaths	—	1	—	—	—	—	—	—	—	—
Erysipelas	—	—	27	8	2	—	—	31	7	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	44	—	—	—	—	97	—
Deaths	39	2	10	19	1	49	4	6	20	7
Measles*	2,712	255	67	26	3	1,327	66	35	24	2
Deaths	6	3	—	—	—	—	—	1	—	—
Ophthalmia neonatorum	56	4	25	—	—	56	2	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	60	1	(B)	1	(B)	4	—	2	(B)	2
Deaths	3	—	—	—	—	1	—	—	—	—
Pneumonia, influenzal ..	300	15	1	1	1	275	16	—	4	3
Deaths (from influenza)† ..	6	—	—	—	—	3	—	—	—	—
Pneumonia, primary ..	—	—	100	20	—	—	—	96	11	—
Deaths	—	15	—	3	—	—	11	—	4	4
Polio-encephalitis, acute ..	1	—	—	—	—	1	—	—	—	—
Deaths	—	1	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	33	3	2	2	—	27	4	—	4	2
Deaths	—	—	—	—	—	—	1	—	—	—
Puerperal fever	—	3	14	—	—	—	1	7	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡ ..	136	6	9	3	—	129	10	6	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	690	48	119	19	16	922	65	165	8	—
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	53	2	8	8	—	5	—	—	3	—
Deaths	1	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,097	148	40	29	35	967	47	22	—	—
Deaths	51	—	2	—	—	11	—	—	—	—
Deaths (0-1 year) ..	316	30	44	26	10	265	29	31	—	—
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still births) ..	3,691	558	481	156	97	3,617	522	524	120	—
Annual death rate (per 1,000 persons living)	—	—	10.6	10.0	—	—	—	11.1	12.6	—
Live births	8,461	1339	1055	489	255	5,745	695	764	341	—
Annual rate per 1,000 persons living ..	—	—	21.2	31.3	—	—	—	15.5	22.5	—
Stillbirths	274	43	42	—	—	175	15	11	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	38	—	—	—	—	21	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the total are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Aitology Vestcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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M.A. SCOTTISH OFFICE: 7, Drumshough Gardens, Edinburgh.

ANY QUESTIONS?

Blood Sugar Level

Q.—Is the blood sugar level for a fasting individual a constant for that individual? At the same number of hours after two exactly similar meals is the blood sugar level the same?

A.—The blood sugar level for a fasting individual is not always the same but may vary within the normal limits of 80 to 120 mg. per 100 ml. of blood. It depends on the individual's general state of health, and may be on the low side of normal, say, just after a holiday, and on the high side of normal when a holiday is needed. It may vary slightly from this and similar causes, but in general varies little from day to day.

Prognosis in Prematurity and Immaturity

Q.—Does the prognosis in a premature infant differ from that in an immature infant? If so, in what way?

A.—The terminology is perhaps unfortunate. Because of difficulties in determining the precise length of gestation in many instances, the term "premature" is loosely used when what is really meant is "immature." By definition, for the purpose of comparison of records, the standard taken is 5½ lb. (2,500 g.) or less. On this weight standard it will be found of course that the prognosis is invariably proportional to the weight. The more immature the functions of the baby—i.e., if it has difficulty in breathing, or digestion, or maintaining body temperature—the less chance it has of survival. The premature baby born accidentally is usually better able to survive than that born prematurely (especially by induced labour) of a mother with a toxæmia. To sum up, the more immature the baby the worse the prognosis. Immaturity can be roughly gauged on the weight standard irrespectively of the degree of prematurity based on the estimated duration of gestation.

Fly-proofing with D.D.T.

Q.—What is the most efficient method of fly-proofing a room with D.D.T.? Should it be applied to the whole area of walls and ceiling and furniture to be effective? What are the effective concentrations, and what vehicle should be used?

A.—The cheapest and most effective way of using D.D.T. to fly-proof a room is to apply it as a 3 to 5% spray in kerosene. The 5% spray will be slightly more effective, but it can be prepared only with crude kerosene: refined, "odourless" kerosene will not dissolve more than about 3%. Certain recent tests have suggested that D.D.T. deposits are slightly irritant to flies and mosquitoes, and that they may not settle for long periods on treated surfaces. Therefore it seems undesirable to rely on small treated patches, for the flies may not rest on them long enough to acquire a lethal dose. It is therefore probably best to spray the ceilings, lamps, and hanging fixtures, and the upper third of the walls. Polished furniture should not be sprayed with a kerosene solution for obvious reasons. The method of use of D.D.T. against house-flies is fully described in an article by P. G. Stock and J. R. Busvine in *Monthly Bulletin of the Ministry of Health and E.P.H.L.S.*, p. 147, July, 1945.

Mushroom and House Pests

Q.—(i) What is the nature of the small grub often found in field and cultivated mushrooms burrowing into the head? Is there any risk in eating stewed or fried mushrooms which may have hidden in them any of these small grubs?

(ii) Are there any handy books on household pests—beetles, cockroaches, wood-lice, fleas, silver fish, earwigs, clothes moths?

A.—(i) The small grubs found in mushrooms are larvae of the mushroom midge *Sciara* spp. of the family Mycetophilidae. These larvae would be killed by the heat of stewing or frying, so there should be no actual danger from eating cooked mushrooms.

(ii) There does not seem to be a very comprehensive treatise on domestic pests published in this country, but *Domestic Pests*, by L. Hunter (J. Bale and Sons, London, 1938, 7s. 6d.), is a fairly good elementary handbook. The inquirer is reminded that the British Museum (Natural History) produces a very good series of pamphlets dealing with most of the pests to which he refers.

Corporal Punishment in Schools

Q.—What is the law concerning corporal punishment in schools? I am frequently consulted by parents whose children attend schools where they may be caned or slapped by a "teacher." The schools in question are council schools, and the parents are economically unable to remove their children. Has any other adult, having temporary charge of a child, right to administer such punishment? If none exists, can such teachers be restrained by law?

A.—Physical correction in the classroom has never been regarded as a common assault *per se*, and the court will always inquire whether in the particular circumstances the amount and nature of the force used were reasonable. This therefore would be the issue whether the parent charged the teacher in the magistrates' court or sued him in the county court. The best plan in practice would be for the parent to write to the county education officer. The local education authority would in all probability investigate the complaint seriously, withholding the name of the complainant; for quite apart from its conception of what is fitting it would not willingly invite the publicity of litigation. Neither the authority nor the court, however, would be likely to concede that physical correction should be unconditionally forbidden.

Protein Digest Material

Q.—(i) Of what value is protein digest material in treating gastric ulcers and pre- and post-operative partial gastrectomies?

(ii) Using the ordinary post-operative partial gastrectomy régime, would a protein digest be irritable to the stomach at a time when a Ryle's tube may be in use to prevent accumulation of fluid, or when alternate hourly feeds with sterile water and citrated milk are the only other foods by mouth?

A.—(i) American work, particularly that emanating from Co Tui, appears to indicate that protein digests fed orally hasten recovery. Apart from the buffering effect, it is difficult to see what advantage this method of treatment offers over administration of intact protein in bland foodstuffs. Even in a partial gastrectomy there should be sufficient digestive power remaining in the other parts of the alimentary canal to obviate any pre-treatment of a hydrolytic nature. Clinical evidence supports the view that under hospital care ulcers heal rapidly.

(ii) There is no real indication for the administration of a protein digest in the circumstances described. Protein digests are not very palatable, and on that account might upset the patient.

Excessive Granulation Tissue

Q.—How often should excessive granulation tissue be treated with silver nitrate? Is this the best treatment for a discharging umbilicus in a babe aged 4 weeks, where granulation tissue covers the lesion?

A.—If excessive granulation tissue continues to form after two or three applications of silver nitrate there must be some

special cause hindering healing, and further investigation is needed. Granulation tissue at the umbilicus in a babe of four weeks may simply be due to delayed healing of the stump of the umbilicus. Sometimes a small granuloma the size of a raspberry may form and require removal. In other cases there may be a persistent portion of the vitelline duct or of the urachus beneath the granulation tissue. In any case of doubt a surgeon experienced in diseases of children should be asked to see the patient.

Desensitizing Solutions. Insecticides

Q.—(i) *What is the technique of preparing desensitizing solutions of horse-hair, dust, etc., for administration to allergic patients, and the correct dosage?*

(ii) *D.D.T. has been hailed as the most efficient means of disinfection. Why does liberal sprinkling of the inside of my trousers twice in twelve hours with 5% D.D.T. powder not cause cessation of flea activity? I find pyrethrum, at present unobtainable, to be more efficacious.*

A.—(i) The processes involved in the preparation of "desensitizing" solutions for horse-hair and house dust are defatting, extracting, filtering, sterilizing, and testing for sterility, while evaporating and sterilizing may be desirable. The detailed technique for all the common allergens is excellently presented by Leon Unger in *Bronchial Asthma*, pp. 627-39 (Charles C. Thomas), together with the dilutions used for intradermal testing.

The initial dose in treatment is 0.1 ml. of the dilution which just fails to give a positive skin reaction. The injections are at first given twice a week and later once a week. The dose is increased by 50% until local reactions occur and then by 30%.

The danger of severe constitutional reactions when using horse-hair extracts must be fully realized, especially when assessing the initial dose, and when the larger doses are being given. It is advisable to do scratch tests first and only to do intradermal tests with a dilution which is negative on scratch testing; while when the larger doses are being given the increases should be about 15%. The maximum dose is about 1 ml. of 1 in 100 solution, but this depends on the degree of sensitivity, and the maximum dose is that at which the patient is improved. House dust rarely causes severe constitutional reactions, and the maximum dosage is about 1.0 ml. of the 1 in 10 solution. It is usually advisable to continue house dust injections for from six to eighteen months, depending on the response of the patient.

(ii) Pyrethrum kills fleas immediately, while D.D.T. does not kill immediately and will not prevent individual bites. Powders are available in which both D.D.T. and pyrethrum are incorporated.

Menopausal Hypertension

Q.—*Is endocrine therapy of any benefit in menopausal hypertension?*

A.—Most but not all observers claim that menopausal hypertension responds to oestrogen therapy, and it is claimed that in such cases the systolic pressure can be reduced by as much as 35 to 50 mm. Hg. At the menopause, however, the blood-pressure can undergo considerable variations spontaneously, so it is not always easy to judge the effect of treatment. A relatively small dose (e.g., oestrone, 0.1 mg. t.d.s. by mouth, 0 mg. twice weekly by injection) is said to be sufficient an effect.

INCOME TAX

Employment of Assistant

R. W. inquires as to the effect on taxation of the two alternative methods of paying an assistant, (a) at a salary of £x, with free use of surgery premises for residential purposes, and (b) at a salary of £x+£y, out of which the assistant is required to pay £y as rent of such premises. The premises are owned by R. W.

* * R. W. can in either case claim the expense he incurs. In (a) he can deduct £x and also the amount at which the premises are assessed to income tax under Schedule A. In (b) he can claim to deduct £x+£y as an expense, but must account for tax not only on the

Schedule A assessment but also (under Schedule D) on the excess of £y over that amount—less some allowance for repairs. Broadly, therefore, R. W. will receive the same deduction whichever alternative he adopts. But that is not the case as regards the assistant. Under alternative (a) the assistant would be liable for tax on £x only; under (b) he would be liable on £x+£y.

Cost of Postgraduate Course

D. S. asks whether instances can be cited of the admission of the cost of a postgraduate course having been allowed for income tax purposes.

* * No. In general a postgraduate course is taken to improve or extend professional knowledge, and as such the cost would be regarded as an outlay of capital rather than an expense of the practice. If the course were a "refresher" course there would be some grounds for contending that the cost should be allowed on the analogy of the replacement of medical textbooks with more up-to-date editions.

Married Woman in Industry

J. M. is married and is fully employed as an assistant medical officer in a factory. Is she entitled to the relief given to married women in industry?

* * Yes—i.e., the special allowance of £110 for 1946-7. (The corresponding amount for 1945-6 was £80.)

LETTERS, NOTES, ETC.

D.D.T. Preparations

Dr. A. LEWIS (London, W.9) writes: There are a number of firms selling D.D.T. in the form of a spray for household use. One firm admitted on the label that the strength of their spray was only 0.5%. I inquired about the strength of other makes and found that those who would admit their figure at all also gave it as 0.5%. This is surely an inadequate amount, and it is probably based on a fear that a proper 5% solution might be absorbed by the skin with toxic effects. It should be pointed out that this is extremely unlikely in ordinary household use, and that the inadequate strength at present being sold is liable to bring a valuable substance into disrepute.

Swallowed Kirby Grips

Prof. CHARLES WELLS (Liverpool) writes: I was interested in the question and answer (Aug. 3, p. 184) about Kirby grips swallowed by children. Very often these get held up in the second part of the duodenum, being unable to negotiate the difficult double turn and cross the vertebral column to enter the jejunum. In children there is a minimum of fatty padding around the duodenum and kidney, and I believe that a Kirby grip coming to rest in this situation should be removed without waiting too long. When the operation is undertaken it is best to pass the Kirby grip back into the stomach, if possible, before taking it out.

Daffodil Dermatitis

Dr. P. E. S. PALMER (Hayle) writes: With reference to the question and answer on daffodil dermatitis (June 15, p. 940), may I refer your questioner to the article in the *Lancet* (1934, 2, 755) on this subject by Palmer, W. H., and Freeman, J., and express surprise that whoever answered your question could not have referred to one of the standard textbooks—*Common Skin Diseases*, by A. Roxburgh, London, 1944—in which this article is quoted. It contains a satisfactory method of prevention of this very troublesome condition.

The fourteenth report of the Memorial Ophthalmic Laboratory at Giza, Cairo, covers the five years 1939 to 1944. It contains a selected list of publications by the staff, together with a list of papers not included in this report. J. O. W. Bland, in a review on the aetiology of trachoma, attempts to bridge the gap between the contending supporters of a rickettsia origin and a virus origin of the affection. R. P. Wilson gives a useful survey on the significance of the acute ophthalmias in Egypt, and together with Bland discusses the value of the sulphonamides and penicillin. There are several other papers dealing with the chemotherapy of the acute ophthalmias and of trachoma. Egyptian workers do not seem to have found the sulphonamides effective in trachoma, but there is no indication that they have tried intensive local therapy. They are enthusiastic on the value of the sulphonamides administered orally in the acute ophthalmias, and rather dismiss penicillin as a local therapy, though there is no evidence that they have tried this out in a suitable concentration and suitable frequency. The report also contains a short paper on schistosomiasis of the conjunctiva, and another one on leishmaniasis of the eyelid, both by Ahmed Kamel.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 7 1946

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1 member to be appointed by the General Practices Committee.
1 member to be appointed by the Hospitals Committee.
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PHYSICAL MEDICINE GROUP COMMITTEE

(Shortly to be elected)

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Vacancy.
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- 3 *Representatives of Royal Scottish Medical Corporations:*
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Sir Henry Wade, Edinburgh.
Dr. J. H. Macdonald, Luss.
- 2 *Representatives of Society of Medical Officers of Health:*
Dr. G. F. Buchan, London.
Dr. R. H. H. Jolly, Wolverhampton.
- 1 *Representative of Medical Women's Federation:*
Dr. Mary Esslemon, Aberdeen.
- 1 *Representative of Society of Apothecaries:*
Dr. H. Seward Morley, Midhurst.
- 1 *Representative of Association of Honorary Staffs of Major (Non-undergraduate Teaching) Voluntary Hospitals of England and Wales:*
Mr. H. J. McCurrah, Hove.

is representing 52,000 members of the profession, and is painstakingly trying to ascertain the wishes of its members, and of those non-members who are willing to let it represent their views. The motion as re-drawn by Dr. R. W. Cockshut of Hendon, "That in the view of this Representative Meeting no registered medical practitioner should accept membership of any committee or board established under the National Health Service Act, until the results of the forthcoming plebiscite are available," became an expression of opinion on an important ethical matter by an overwhelming majority of the R.B. And I would here mention Dr. Guy Dain's wise statement earlier in the meeting: "It is continually put to me that it may be that this Representative Body does not represent the profession. For my part, I am prepared to stand by the decisions of this Body! We are not prepared to believe that the representatives come here, and vote for things—as they did last May—for which they have no authority in their constituencies." And finally, may I point out that, among the four decisions taken in May, decisions which appear to make a conflict with the Minister of Health inevitable, was one which declared, by a vote of 210 to 29, that the S.R.M. was opposed to the State ownership of hospitals?—I am, etc.,

VICTOR RUSSELL,
Chairman, S. Staffs Division, B.M.A.

Wolverhampton.

SIR,—Dr. Frank Bodman deplores the passage of the amendment outlawing the Regional Boards. Does he not realize that the only way in which the medical profession can compel the Government to alter the proposed National Health Service is for them to be united absolutely in their refusal to serve on any board, council, or committee? The Act could not then be put in force. We have a good example of what result this sort of action can produce in the iron and steel industry.—I am, etc.,

Farnham.

G. HUMPHRY WARD.

Correspondence

The Representative Body and Regional Boards

SIR,—I read with interest and some amusement Dr. Frank Bodman's letter (Aug. 24, p. 69). As the "opportunistic hot-head with a persuasive tongue" who talked the R.B. round into voting against its better judgment, I should like to say that—vastly though I am flattered by this tribute to my supposed powers—I am not conspicuously hot-headed, and that I brought this matter up on the specific instruction of my Division and with the support of all my group, which represents an entire county.

Obviously, Dr. Bodman was not present at the A.R.M., and equally obviously he is one of those who are in favour of accepting invitations from the Minister of Health to serve on his administrative bodies—before the profession has decided whether it will work the Health Service Bill or not. If the majority of the profession expresses itself in favour of working the Bill, that will be the time for its members to entertain such invitations. Those who are in such a painful hurry to accept invitations now would not only prejudice our entire position before the profession's collective will had been expressed but would lay themselves open to the suspicion that they were hastening to climb on to the Ministry's band-wagon in the hope of stealing a march on more scrupulous colleagues. At all events, since the profession's decision will probably be known in November, why this haste on the part of a few to ingratiate themselves with the Minister?

The "antic behaviour" of the A.R.M., at all events in this instance, was conspicuous by its absence. The amendment was quietly and carefully discussed—very few, if any, representatives being absent—and when it was thought advisable to alter its form and present it as a motion the necessary three-quarters majority for a suspension of Standing Orders was obtained, and when the motion was put to the vote it was carried by a majority of about eight to one, with few, if any, abstentions—and that, whether Dr. Bodman likes it or not, is democracy in operation!

No. Dr. Bodman's complaints just will not do. He leaves no doubt that he disapproves of what happened, and even that he feels personally sore about it, but he does contrive to leave a doubt as to whether he would consider himself bound, regarding professional policy, by an overwhelming vote of his colleagues.

To conclude, Dr. Bodman asks if the B.M.A. is to legislate for every medical practitioner. It is not legislating at all, but it

SIR,—Dr. Frank Bodman's witty criticism of the Representative Body (*Supplement*, Aug. 24, p. 69) raises an important and urgent problem. Is the present machinery of the R.B. efficient? I confess that my experience as a delegate for the past five years suggests that the R.B. is unwieldy, verbose, and swayed by the able and eloquent tongue of the present Chairman of Council, Dr. Dain.

Do the delegates express the majority view of their colleagues, whom they represent? I wonder! I was elected together with my fellow delegates from Birmingham at a full meeting of the profession to consider the report of Council. Rarely are there more than thirty doctors present. The apathy of the rank and file is the unknown quantity that must be overcome now or else we shall surely drift into a National Health Service the conditions of which we shall have had no part in implementing. For a brief period during the war years the study groups were started to discuss matters of importance and forward their views back to headquarters. Can this method be introduced now? I doubt it. But it might be well worth while to ask this direct question through the local Branches: Are you in favour of the Negotiating Committee discussing terms and conditions of service or not? Leave it to local secretaries to determine the best way to make contact with all their members, and perhaps an answer might be obtained. At all events it could not be worse than the present appalling position in which loyal members of the B.M.A. are debarred from serving on Regional Boards on account of a resolution passed by an R.B. exhausted by a mass of motions and amendments, the speakers to which are rarely able, often dull and prosaic, and always, if given a chance, long-winded and pointless.

As a result it is with a feeling of relief the delegates listen to the Chairman of Council, and the spontaneous cheers from all present are in part due to the sporting instinct of the members appreciating a good stroke even if it fails to score. Dr. Dain has laid stress on the united vote of the R.B. against the purchase and sale of practices, and there can be no doubt that he places his hopes of a successful battle with the Government on these majorities.

This period of uncertainty must cease and only the Council of the B.M.A. can bring this about. The National Health Bill has now passed through the House of Commons, with little or no change since the first reading. The Government was not

impressed with arguments raised against the controversial parts by the leaders of the medical profession, and what is more important it has been stated all too often by members of the Government that the profession as a whole is not with its leaders. There lies a challenge. It is up to the Council of the B.M.A. to find out the true answer, and find it out now, or cease to lead.—I am, etc.,

Birmingham

R. C. L. BURGESS.

N.H.I. Capitation Fee

SIR,—The Insurance Acts Committee and the Spens Report both agree that the capitation fee should have been 12s. 6d. in 1939 and 15s. now. Considering the additional burdens placed upon us during the war years, many of which we still bear, and the ever-increasing costs of living and running a practice these figures are on the low side. We have been grossly underpaid for many years and unless we assess our work at its real value and insist on being paid accordingly we shall go on being underpaid, and this would be detrimental to the profession, to our patients, and ourselves.

Now the Minister of Health magnanimously tells us that he will increase the fee to 12s. 6d., retrospective from Jan., 1946. One can assume that if we agree to this it will again be our fee under the coming National Medical Service, and if this assumption is near the mark the sooner we show a united fighting front the better for the future of the profession. Instead of discussing if we will accept service under the National Medical Service why not let the Minister of Health see now that we can act as a united body and refuse to accept inadequate remuneration under the N.H.I. at present?

I suggest that under the leadership of the B.M.A. and the M.P.U. we tender our resignations under the N.H.I. as from April 1 next if the Minister does not agree to a capitation fee of 15s. retrospective from Jan., 1946, and also that this figure applies only to the N.H.I. and that the fee under the N.H.S. be discussed later when more details of conditions of service are known to us. If we allow this incident to slide by we shall regret our weakness. Surely we have been dilatory enough in the past in pressing our just claims for adequate remuneration. Let us act without further delay.—I am, etc.,

Wetherby.

S. T. PYBUS.

Ethics of Contract Medical Practice

SIR,—As a practitioner of thirteen years' experience who has for the first time in his life come in contact with panel practice, I was very interested to read Dr. A. G. Badenoch's article on the ethics of contract medical practice (Aug. 17, p. 63). Few will dispute his views as applied to panel practice in England; but there are other types of contract practice to which his criticisms do not apply.

Before the war I was a member of a firm of British medical practitioners practising in a foreign city in a sub-tropical country. The practice consisted mainly of British employees of the local municipal council, public utilities, and commercial firms, with which contracts were arranged, the principle being recognized that the employer was responsible for the medical care of his employees.

Our contracts covered the medical care, at office and home hospital, of all from boss to office boy, divided into three e-groups—viz., up to £500 p.a.; £500–£1,000; over £1,000 p.a. The average fee was £2–£3 p.a. Extras were operations, midwifery, anaesthetics, and courses of intravenous injections. These were also at standard rates, operations being classified as (a) major; (b) minor with general anaesthetic; (c) minor with local. The rates for these extras were similarly scaled according to income and were very reasonable, about £25 being the average fee for a major operation.

Any doctor wishing to operate this scheme was almost necessarily obliged to practise "group medicine." Our firm comprised two F.R.C.S.(Eng.), one M.D., M.R.C.P., one M.D., D.P.H., D.T.M.&H., and two M.B., B.S. Each member did his share of the general practice and specialized in some branch, referring his cases to the appropriate partner. The two main hospitals catering for European patients were open to all recognized practitioners and three classes of accommodation were provided according to income groups, as well as free wards maintained by the municipal council.

Competition was keen, there being at least three firms practising group medicine and able to provide a comprehensive service. No sense of inferiority was engendered in the patients as everyone was in it from boss to office boy; all patients were treated with the same consideration, as a row over the office-boy could easily lead to cancellation of the entire contract.

From the practitioners' point of view, the scheme was nearly ideal. He felt he was well rewarded for his labours and, being able to live off fewer patients at higher rates than the panel, was able to give better individual attention. He could follow his cases right through hospital and the operating theatre in conjunction with his colleagues. He was kept mentally alert and keen to develop a specialty. He was not continuously harassed by considerations of the patients' pockets, though any tendency to extravagance was checked by possibility of losing the contract. Any misunderstandings or complaints could be expeditiously dealt with over the telephone or by personal contact; there was no amorphous and anonymous Ministry to deal with.

The patients' benefits were obvious. General and specialist attention given by doctors personally known to them; freedom from worry over medical bills; confidence inspired by the stress on preventive medicine, so necessary in a sub-tropical climate (routine smallpox vaccination, T.A.B., and cholera inoculations were given annually, and periodic inspection of places of work and homes were included in the contract. Classes of instruction in first-aid, sick nursing in the home, etc., were held for scouts, guides, women's institutes, etc.). Self-employed and retired individuals were also allowed to enter into contracts for themselves and families at the same rates. Private patients were few and were mostly visitors or temporary residents.

In the course of thirteen years' practice in three continents, I have never met a more stimulating or harmonious atmosphere of general practice. Critical ability of the patients was high and a high standard of proficiency was expected from their doctors. Competition with Continental and transatlantic colleagues brought out the best and most progressive; while intimate contact with the public health authorities, mission doctors, laboratory and research workers, through a very active medical society, gave one a sense of satisfaction and fulfilment, so different from the deadening drudgery, the hardening of heart and narrowing of interest, which remain the lot of too many panel doctors in England.—I am, etc.,

Henley-on-Thames.

I. G. ANDERSON.

Medical Unemployment

SIR,—I feel that I must join issue with those practitioners who are complaining of difficulty in finding employment on their release from the Services. I have been seeking an assistant, with or without a view, or a partner since February, 1945. I have interviewed at least 50 men (in many cases entertaining them and their wives, some even staying the night) and have written to over 100 more and I have encountered the following difficulties:

First. No acknowledgment of my letters in at least 30 cases. Secondly. Failure to notify me that they have accepted another post after coming for interview in at least 20 cases, and in most of these I was put to the expense of sending a telegram to find out the position.

Thirdly. A standard wording in many of the letters and advertisements is "furnished house and full use of car essential." "Ex-R.N.V.R." (Aug. 24, p. 70) states, "most of us who suffered financially." Surely he realizes that most of us who were "fortunate" enough to stay at home, apart from excessive overwork, also suffered financially and we cannot afford the expense of providing furniture, house, and car, while assistants' salaries are double what they were before the war and professional fees have only increased by 20%. In spite of the Government statement on cost of living index, the cost of running a professional house is over double what it was pre-war and in many cases three times. Practically all drugs are considerably increased in price and many are subject to purchase tax. Even our telephone bill is surcharged, every letter and account we send costs twice as much, and charges for motor repairs and new or second-hand cars have reached fantastic levels.

The doctors who have applied fall into the following categories: (1) Men who try to rush a get-rich-quick deal.

(2) Those who wish to rush into partnership without any adequate consideration or investigation, presumably because I have a house available. (3) Those who cannot make up their minds. (4) Those who are insisting on some particular district and will consider no other.

To prevent misunderstanding I would point out that this is a semi-rural practice in very lovely surroundings, although only 9 to 10 miles from Birmingham centre. Incidentally, I am offering £600 p.a. plus the usual emoluments, which brings the figure to over £850 p.a. I have made every attempt to engage an ex-Service British doctor but without success. I cannot employ an invalid assistant as this is a fairly busy practice. I shall be delighted to hear from any ex-Serviceman who really wants a job. Scorning to sign myself "Weary G.P.," which I am in more ways than one,—I am, etc.,

Alvechurch.

F. HARMAN VOLLAM.

SIR,—In reply to the numerous letters from unemployed Service doctors, I feel that there are many of us who would be only too happy to offer them employment if, firstly, we were able to find them accommodation, and, secondly, if they were prepared to accept a salary comparable with that which we received prior to the outbreak of war. They must appreciate that, although all expenses in connexion with general practice have risen, we are unable to "unload" these expenses on our private patients. Furthermore they realize the meagre increase that has been offered to us for panel patients, at least half of which will be repaid to the Inland Revenue twice annually.

If I may make a suggestion to these doctors, it would be that they should expend their energies against the Minister of Health, forcing him to provide them with suitable living accommodation in preference to health centres. Most principals are able to provide working accommodation, whereas living accommodation is quite impracticable, by reason of the fact that our wives have been excessively overworked throughout the war years, and still there are no prospects of any reasonable domestic help.—I am, etc.,

Ipswich.

WILFRED KNIGHT.

Recruitment of Civilian Specialists

SIR,—During the past months we have avoided taking part in the correspondence regarding the release of Service specialists and their replacement by E.M.S. specialists. We feel, however, that the letter signed "Two Specialists" (Aug. 24, p. 69) should be answered. We presume, of course, that those of us who have served as full-time specialists in the E.M.S. are included in the category of civilians. There are many aspects of this that we could discuss but we do not wish to obscure our main argument, which is that the majority of us who entered the E.M.S. in a senior capacity at the beginning of the war were invited to do so and the initiative did not come from us either directly or indirectly. We did not at any time take steps to avoid military service. We have served between six and seven years and are now being recruited for a further two years. Those of us in our very late thirties may not be called up for a further year or so. We may therefore find that we have had to put in a minimum of eight years and quite possibly ten. We feel that, in less emotional moments, even our Service colleagues will consider this unfair.

With regard to new appointments there is an aspect of this with which Service specialists may be unfamiliar. Hospital authorities are showing a natural reluctance to appoint men who are liable to be called up. Furthermore there is no doubt that many appointments committees are giving those who are or who have been in uniform preferential treatment. One of us has had ample proof of this in recent interviews.

In conclusion may we say we sympathize deeply with our colleagues whose release is so long delayed. At the same time we feel they will agree that the solution lies rather in the latter part of their letter and in calling up those with permanent appointments to return to rather than inflicting gross injustice on men who have been on national service for many years and who, like many serving specialists, have no such permanent appointment.—We are, etc.,

TWO E.M.S. SPECIALISTS.

Financing the Young Doctor

SIR,—Much play has been made by the Minister of Health of the miserable plight of young doctors crippling themselves by debt in order to find sufficient money to start in general practice. In fact this was one of his most cogent arguments for insisting that a basic salary should be supplied at once, and that a capitation remuneration would complete the happiness of every newly qualified doctor. Having supplied the salary, the Government—or rather Mr. Bevan—then insisted that he could direct the recipient. At this stage the Government—or again Mr. Bevan—found that they "abhorred" the buying and selling of practices. And this "abhorrence" fitted in easily with the principle of a basic salary; for the possession of a private practice was not compatible with "direction" and a Civil Service salary.

Now, if the Minister of Health is truly worried and concerned about the crippling effect of young doctors borrowing money at qualification, why should not the Government offer to supply the struggling young doctor with say £2,000 to put him on his feet? Or even earlier during his medical training. This sum would be a loan repayable at some specified time, say twelve to fifteen or twenty years, and I would suggest *without interest*. The doctor would of course undertake to submit particulars of the outlay of this money to the Government, but the Government do not buy the heart and soul of the young doctor nor direct him where to settle. The Government has the satisfaction of starting a much-needed medical man serving the public with a minimum of outlay—i.e., they do not pay him £1,200 a year but start him with the wherewithal to fend for himself. The doctor has a debt, I agree, but without interest. It is not every young doctor who would need to avail himself of this scheme or borrow so much. Suppose 2,500 doctors availed themselves of this loan each year at the maximum of £2,000; that would amount to £5,000,000. This sounds a lot, but is nothing compared with £66,000,000 which Mr. Bevan is calmly taking from the public, *with nothing whatever to show for it*. This £5,000,000 is to return in good time. It is not just subsidizing the profession. It is providing the public with a body of young doctors proud and independent as every Briton should be, able to look to a future of ownership, and not worried about the difficult business terms for their loans which carry a burden of interest varying with security.

I have myself now fought through two wars, and I am heartily glad to be out of the Service for the second time and to be my own master once again in my own private practice. This sense of ownership and the feeling that one is building for the future are such a joy after six years with "no future in them." In such a State Service one cannot build. I shall lose my trusted partner, I shall lose every tangible asset which I can call my own. I resent this vehemently, particularly after six years of exile.

If Mr. Bevan is a true friend of the medical profession and truly wishes to serve his public as a Minister should he must give that public a happy, grateful, and satisfied profession. The above is one way of going to work. Intolerance, dictatorship, and mistrust appear to be the basis of the present National Health Service Bill.—I am, etc.,

Croydon.

J. W. WAYTE.

Salaries of Specialists

SIR,—Rising specialists will welcome the recommendations of the Presidents of the Royal Colleges (*Journal*, July 27). Perhaps more than anything else the position of "the 800" is due to the low salaries offered for the more senior B1 type of house job. In the *Journal* of Aug. 17 salaries of £200 per annum are offered for appointments in which preference will be given to Fellows of the Royal College of Surgeons. This of course is ridiculous, and any clerk, tradesman, or general labourer aged 30 can earn more.

An immediate improvement in the present position would occur if the Presidents of the Royal Colleges recommended a minimal salary of, say, £550 and emoluments for holders of higher qualifications and those qualified more than five years. Hospitals declining to accept these recommendations would not be recognized for F.R.C.S., M.R.C.O.G., etc.—I am, etc.,

RISING SPECIALIST.

Demobilized Specialists

SIR,—It would appear from reading the correspondence in your columns that most medical officers released from the Services have some complaints of civilian life whether they be specialists or general duty officers.

The letter from the Presidents of the Royal Colleges (*Journal*, July 27) will be welcomed by the demobilized specialist and graded specialist, but their proposals will increase the difficulties of those men who have returned after having spent their whole service as general duty officers, but who had hoped and planned to specialize had not their studies been curtailed by their call-up.

The so-called Group I referred to by the Presidents in their letter have fared much better than their contemporaries in the Services. For the most part their Service time has been spent in hospitals or in an atmosphere of clinical medicine or surgery, and now it is proposed to give them the best of both ends of the stick. The selection of specialists for training was a very haphazard affair—being in the right place at the right time and knowing the right people were often more important qualifications than clinical ability—and in the Royal Navy there was no organized training at all. If these men are to be allowed to monopolize the registrar posts until the Bill comes into force it is tantamount to closing the door to specializing to the demobilized general duty officer.

I would propose that the post of registrar should be limited to twelve months for those who have acted as graded specialists in the Services for over a year. A man should be able to obtain his higher qualification by that time. Then they should be appointed to posts as clinical assistants or salaried full-time appointments as proposed for the Group II specialists. There being such a dearth of specialists there should be no difficulty in finding or creating such appointments.

Those who were not so fortunate to receive specialist training in the Services—training which was gratis while on full pay and allowances, with the probability of increased specialist pay—should be allowed to act as registrars for two years and be paid £550 plus £100 for maintenance for the full period if they had completed 12 months as a hospital resident before call-up, or £350 plus £100 for the first 6 months and then £550 plus £100 if they only had 6 months as a resident before joining the Services. One assumes that tenure of such posts would be governed by the postgraduate deans, who would select the candidates.

I believe that these proposals would be a more just solution to one of the many problems that beset the demobilized doctor.—I am, etc.,

Wirral.

THEO L. SCHOFIELD.

H.M. Forces Appointments

ROYAL NAVY

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Cmdr. (Retired) N. Parry-Price to be Surg. Capt. (Retired).
Surg. Licut.-Cmdrs (Retired) R. D. Bradshaw and D. A. Imrie to be Surg. Cmdrs. (Retired).

Temp. Acting Surg. Licut.-Cmdr. S. L. Townsend to be Temp. Licut.-Cmdr.

Temp. Surg. Lieuts.: D. J. Chapman, D. Craddock, B. R. D. D. E. Jewitt, W. J. H. Lord, B. L. C. Phillips, I. B. T. Lee, R. Tringham, L. E. Wear, W. H. E. Allen, R. E. H. T. Davenport, W. J. F. Davies, J. W. L. Edwards, M. W. J. W. B. Forshaw, A. M. Fraser, R. Hierons, D. A. Knock, F. A. Lennan, N. M. Panton, E. H. Taylor, G. E. Robinson, H. B. Andrews, H. C. Ashworth, T. C. Barras, P. V. G. Dawson, G. T. Johnson, P. Millyard, F. A. F. Mackenzie, S. J. T. Robertson, R. W. Tonkin, R. G. White, H. Y. Wishart, G. L. W. Bonney, A. W. Gardner, A. Kelly, T. C. McAsthan, W. W. McPhail, B. Conneannon, A. P. M. Forrest, S. D. Holloway, G. B. Hopkins, A. Ingram, N. K. Macrae-Gibson, B. G. P. Oakenfull, J. R. Smythies, G. S. Taylor and J. A. White to be Temp. Surg. Lieuts.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. T. L. Fraser, O.B.E., has retired on retired pay and has been granted the honorary rank of Col.

Lieut.-Col. L. S. C. Roche, M.C., having attained the age for retirement, is retained on the Active List supernumerary.

Major (War Subs. Lieut.-Col.) C. A. Levy to be Lieut.-Col.

Short Service Commissions.—War Subs. Major J. C. Babbage and Capt. T. B. Harrison have been appointed to permanent commissions.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Majors P. B. Wilkinson and P. E. C. Manson-Bahr have relinquished their commissions and have been granted the honorary rank of Lieut.-Col.

War Subs. Capt. J. R. McGregor and H. MacL. T. MacDon have relinquished their commissions and have been granted honorary rank of Capt.

War Subs. Capt. H. W. A. Baron has relinquished his commission on account of disability and has been granted the honorary rank of Capt.

War Subs. Capt. H. N. Wong has relinquished his commission.

Association Notices

Branch and Division Meetings to be Held

WESTMINSTER AND HOLBORN DIVISION.—At City Hall, Charing Cross Road, W.C., Thursday, September 12, 8 p.m., Divisional meeting. Agenda: Receive reports from Representatives to A.R.M.; consideration of formation of Study Groups to deliberate on National Health Service. 9 p.m. Dr. W. S. C. Copeman; The Rheumatic Diseases.

POSTGRADUATE NEWS

The Tuberculosis Educational Institute has arranged two refresher courses to be held at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C. For tuberculosis officers and medical practitioners, Sept. 23 to 28, fee, four guineas for health visitors, almoners, social workers, and chief clerks, Sept. 26 to 28, fee, ten shillings. Applications should be sent to Dr. H. Williams, Tavistock House North, Tavistock Square, W.C.1.

WEEKLY POSTGRADUATE DIARY

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre, Edinburgh Royal Infirmary, Thurs., 4.30 p.m. Dr. I. G. W. H. The Electrocardiogram in Coronary Disease.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—1/8 8 p.m. Prof. W. J. B. Riddell: Irregular Dominance in Hereditary Nystagmus.

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Dr. Horsfall: Classification and Treatment of the Anaemias.

APPOINTMENTS

FISHER, R. E. W., M.B., D.P.H., Chief Medical Officer, South Metropolitan Gas Co., London.

GLoucestershire ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester. Appointments to Consulting Staff: Surgeon, A. Alcock, M.B., B.S. General Surgeon and Gynaecological Surgeon, R. L. Haines, M.R.C.S. Physicist, D. E. Finlay, M.B., B.S. Radiologist, J. Goss, M.B., B.Ch. New appointments: Surgeon and Radiology Officer, W. J. Wilkin, F.R.C.S. Surgeon and Urological Surgeon, P. M. Birks, F.R.C.S. Edin. Gynaecological Surgeon, H. A. Hamilton, M.B., M.R.C.O.G. Physician, R. F. Jarrell, M.B., M.R.C. Radiologist, E. W. Hyde, M.B., D.M.R. Assistant Surgeon to Ear, Nose and Throat Department, C. F. Evans, F.R.C.S., D.L.O. Anaesthetist, T. I. Hughes, M.R.C.S., D.A., A. Tom, M.R.C.S., D.A.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BAGSHAW.—On August 29, 1946, at Mill Road Infirmary, Liverpool, to Jean (née Campbell), wife of H. Bernard Bagshaw, F.R.C.S. Ed., twins (girl and boy).

BRINTON.—On August 24, 1946, at Nuffield House, Guy's Hospital, to Barbara (née Lyall), wife of Dr. W. D. Brinton, 75, Victoria Road, W.8, a daughter.

BROOKER.—On August 27, 1946, at Hammersmith Hospital, to Kathleen, wife of Dr. A. E. W. Brooker, a son—John.

HILL.—On July 22, 1946, at Ayr Nursing Home, to Etta, wife of Dr. Robert Hill, G.M., M.B., Ch.B., F.R.F.P.S., a son—Christopher Robert John.

SANDILANDS.—On August 19, 1946, at Plymouth, to Cynthia, wife of James Sandilands, a son—Robert John.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Mr. A. Seymour Philips, F.R.C.S., at 104, Harley Street, W.1 (Welbeck 5900); Miss Margaret Salmond, F.R.C.S., F.R.C.O.G., at 121, Harley Street, W.1; Mr. A. H. M. Siddons, M.Ch., F.R.C.S., at 140, Harley Street, W.1 (as from Sept. 29).

LONDON SATURDAY SEPTEMBER 14 1946

POSTGRADUATE EDUCATION AND THE NATIONAL HEALTH SERVICE*

BY

Sir FRANCIS FRASER, M.D., F.R.C.P.

The Regulations governing this Lectureship state that the subject "shall be one of interest connected with medical learning science," and the selection of postgraduate medical education the subject for this occasion will, I trust, fulfil these requirements and meet with the approval of the Founder and of our college. It is a subject that has been much discussed in recent years, and it has acquired a new interest with the prospects of National Health Service in the immediate future.

Postgraduate medical education has, of course, existed as long as the profession of medicine, but it has engaged serious attention in this country in an organized form only since the beginning of this century. I do not propose to review what has been accomplished in the past, because it has been of necessity inadequate, but I must pay a tribute to the medical profession of Edinburgh, its University and the Royal Colleges, for the enterprise and efficiency of their pioneer contributions during the past forty years.

Purpose and Policies

The aim must surely be to enable each member of the medical profession, no matter what his professional field may be, to be in constant touch throughout his career with the leaders and teachers of medicine and with wiser and more experienced colleagues. His undergraduate education is designed to make him observant, receptive, and critical, to enable him to use experience that he may grow in learning and in wisdom; but he will fail to make full use of his intelligence and training unless he can share the experiences and learning of his colleagues and keep his faculties of observation and criticism always sharpened by contact with those whose role it is to educate and to instruct. There is no reason to think that this has not been the aim of all who have provided postgraduate education in the past, but it has not been possible to reach this goal for reasons which are largely economic. The public requires the help and services of doctors at all times, and the latter cannot leave their patients unless adequate replacements are available. Replacements have not been available in the past in the necessary numbers. The medical profession is fully occupied, and more, in carrying out its daily duties, and it will be necessary to expand it materially in order to free any considerable number for the pursuit of postgraduate studies. Nor have the numbers of trained and experienced teachers been adequate to enable postgraduate education to be provided on anything like the scale required. There have, of course, always been medical men, both general practitioners and specialists, who have continued to keep in touch with centres of progress and learning, but they have been a minority. In some instances this is effected by private and individual arrangements, in others advantage is taken of local organizations, and the latter are important as they afford experiences that are useful for planning on a wider scale.

In order that the Government's plan for a National Health Service, involving as it does a comprehensive service for all, may be successful a large expansion of the medical profession will be necessary in the spheres both of the general practitioner and of the specialist. This will require a number of years and involve a considerable increase in the accommodation available

in the medical schools of the country. In due course, however, there should be the numbers of experts and teachers required for postgraduate education, and there should be the necessary replacements to give every medical man the time required for his continuing education and training. The National Health Service will be based on a regional organization, each region centred for professional guidance on a University and its medical school, and composed of areas or divisions each of which will provide all the ordinary hospital and specialist services. The main divisional hospital or group of hospitals will be staffed by specialists in each of the major branches of medicine and surgery, including general medicine and general surgery, and it is largely through this staff that the necessary expansion in postgraduate education can be provided. This staff will be in constant contact, on the one hand with the teaching staffs of the University and medical school of the region, and on the other with the general practitioners of the area and the staffs of the smaller local hospitals. The professors and other teachers in the University departments should be fully occupied in the education of undergraduates and in advancing their subjects by research, and should not, except occasionally, be diverted from these essential duties to take part in postgraduate instruction; it may well be advisable for the Universities to institute chairs and departments expressly for advanced and postgraduate education in those branches of medicine and surgery that belong more especially to the postgraduate field. In London, with its peculiar circumstances of size and influence, this has already commenced and is being further developed as rapidly as possible.

The report of the Interdepartmental Committee on Medical Schools assumes that the Universities should be responsible for the development of postgraduate medical education and makes a valuable contribution to the subject. The Government has accepted this report and the Treasury and the University Grants Committee have indicated their willingness to help financially. The acceptance by the Universities of this responsibility is most welcome, for it ensures that the education provided will be of University standard. This is a vague term without any exact connotation, but surely it means that the instruction will not be merely technical and vocational, but will also be rational, co-ordinated, and cultural.

This appears to me to be of the greatest importance. There are many procedures in the practice of medicine, both in diagnosis and in treatment, that require technical skill of a high order if our patients' lives are to be saved and their health preserved. Some of these procedures can be isolated and entrusted to medical auxiliaries, others are part of more complicated procedures requiring the co-ordinated knowledge and judgment of the qualified specialist. Many fall between these extremes. There are, therefore, many essentials to successful practice that are technical, and it is tempting to fill courses of postgraduate instruction with descriptions and demonstrations of mechanical ingenuity and manual dexterity. By entrusting postgraduate medical education to the Universities this danger will, I trust, be avoided. The Nation requires from the medical profession something much more than technical skill. The individual looks to his doctor for help and guidance when his efficiency is impaired, whether the cause be spiritual or material.

* The Frederick Price Lecture for 1946 at the Royal College of Physicians of Edinburgh, July 12.

To train our doctors to this high calling, to enable them to shoulder their patients' burdens, requires teachers who by example and precept will inspire them with ideals of service and give them pride in cultural attainments as well as instruct them in professional skills. And it is to the Universities that we look to select and train the teachers we require.

We are passing through difficult times with important years of reconstruction ahead. The supply of competent teachers inspired and instructed by the older generations has been interrupted by two wars, and a National Health Service might easily produce a corps of time-servers. The maintenance of its standards is therefore a vital problem now for the medical profession, and the answer to the problem is largely an educational one and one for the medical schools to supply.

We can look forward, then, to the National Health Service providing in due course the increased number of experienced teachers and the opportunities and time for both general practitioners and specialists to attend postgraduate studies. As the plans for the new Service are developed, we must watch that they do provide what is required, for the success of the Health Service depends to a large extent on the professional standard of the medical men that will staff the Service at all levels. The need for a Service such as the Government now proposes has been questioned, and it has been suggested that the medical care of the Nation is quite satisfactory. Those who voice such opinions are, I would submit, basing their view on the condition in some particular part only of the whole, limited perhaps to locality or perhaps to a section of the profession. Those who have been concerned with the administration of the Emergency Medical Service in the war and have had an opportunity to see the standard of service available over the country as a whole are unable to agree. The knowledge and skill available for the preservation of health, the care of patients, and the treatment of disease were not accessible to large sections of the population, partly because of lack of co-ordination between the different sections of the medical services and difficulties in the pooling of resources, but largely because of ignorance on the part of medical men of what could be done and of how much better someone else with greater facilities and assistance at his disposal could serve their patients' needs. The breaking down of the barriers to the exchange of knowledge and experiences and frequent contact with centres of teaching and research should correct these faults to a large extent and improve the standard of medical practice. It will increase also the confidence of the medical profession in their ability to perform their high calling and give them cause for pride and happiness in their chosen careers. To my mind these are strong reasons why the medical profession should welcome the general principles embodied in the Government's proposals and the Nation support them; they depend on an efficient scheme of continuous postgraduate studies, and the ability of the medical schools to provide the instruction required and to realize the importance of maintaining and of raising their standards.

The report of the Interdepartmental Committee on Medical Schools has outlined the types of postgraduate education which the Committee regarded as essential and indicated briefly where they might be provided. They considered separately the training of specialists, including general physicians and general surgeons, and the postgraduate studies suited to the needs of general practitioners. They regarded the conditions in London as exceptional because of its large number of undergraduate medical schools and special hospitals, and because there was already within the University of London a medical school for postgraduate education only. The report includes recommendations for the development in London of the administrative organization required for the future. Since the publication of the report considerable progress has been made in carrying out the recommendations, and valuable experience has been acquired through providing training for specialists and for general practitioners returning to civilian practice on release from the Forces.

The Training of Specialists

It is generally agreed that the essential requirement in the training of a specialist in general medicine, general surgery, or one of their special branches is the holding of a responsible hospital appointment of the type known in different parts of the country as registrar, resident medical officer, resident surgical

officer, first assistant, chief assistant, and clinical tutor. posts are obtained after the graduate has held junior re-appointments. They are relatively few in number and the petition for them ensures that the holders have been carefully selected. The length of time during which such posts are held is not uniform and probably should not be rigidly defined. It seems to be generally agreed that a minimum period of 3 years of postgraduate training is required before a graduate can be regarded as competent for the responsibilities of a clinical specialist.

The holding of a responsible hospital appointment does of itself suffice. There must be adequate supervision by experienced teachers, one of whose duties must be to train candidates for their careers as specialists, and for this more is required than clinical material and the usual hospital environment. The duties assigned to the candidates should be sufficiently light to enable them to study their cases thoroughly. Laboratory facilities must be provided to enable them to do this, they should be encouraged by group discussions to discuss their problems and experiences, they must have ready access to libraries so that they can explore the literature of their subjects, they should be in close touch with other general special clinical departments, and it should be possible for them to spend part of their period of training working in one of the pre-clinical departments of a medical school or in a well-equipped pathological laboratory. They should be encouraged to undertake original investigations or share in the research of others, and should be given opportunities to show their aptitude for teaching. Above all they must be guided and supervised throughout their period of training. In short, the training of a specialist can be carried out only in the adequately staffed and well-equipped department of a medical school.

At present, with a few exceptions, only the undergraduate medical schools and their teaching hospitals and the University of London Graduate Medical School can provide the necessary conditions, and the appointments of the kind required at these hospitals are too few to train the specialists needed for the National Health Service and to make up for the loss of years of war, during which the number who received adequate training was below the normal pre-war figure. The release from the Forces within a period of months of many candidates for specialist careers has created an abnormal situation, and many of them have had to be appointed to hospital posts that cannot provide the necessary supervision, equipment, other facilities. The present arrangement must be recognized as an emergency measure and not as an indication of the standard that should be approved when conditions become normal once more.

The report of the Interdepartmental Committee on Medical Schools recommended that the number of appointments in teaching hospitals suitable for the training of specialists should be increased. There are ample clinical material and other opportunities for a considerable increase. Before the war the holders of these appointments were in general too busy to stop and think. Quiet thought, discussion, and reading under guidance are essentials for sound education. The number of new posts that can be created is limited by the clinical material available to properly equipped departments, but there is room for considerable expansion of University control over clinical teaching and clinical material; and the association of municipal and voluntary hospitals with the central teaching hospitals; and medical schools, as advocated by the Interdepartmental Committee, should enable still further appointments to be available for specialist training. This association should be readily accomplished under the regional system of the new health service. The different appointments will vary in the value and type of training they afford, and each will be peculiarly suited to some stage in the progress of the individual graduate. A system of transfer from one unit to another and one hospital to another should be arranged. In due course the divisional or area hospitals will be staffed by well-trained specialists from the University departments, many of them competent teachers and researchers, and a period of service at these hospitals could be included in the approved course of training. In these various ways the basic studies and practical training of the specialists required for a comprehensive service can be provided and high standards maintained.

Experience has shown that there is a need for types of instruction additional to hospital appointments for graduates entering careers in the specialties. Their provision is a problem that chiefly concerns London, but it concerns Edinburgh so to an extent that is only less in degree. Graduates from her educational centres in this country, from the Dominions, Colonies, and foreign Universities, come to London and Edinburgh, and to a lesser extent to other centres, for postgraduate study and are in many instances aiming at a higher degree or specialist diploma. They come at all stages in their training, say for varying periods, and are not necessarily seeking a full training in this country. They may plan to obtain their appointments in their own hospitals, or may be aiming at a career in general practice with one of the specialties as an additional accomplishment. For these graduates a course is required, extending over a period of about six months, which should provide the basic principles for the specialty and include lectures and demonstrations in applied anatomy and physiology and in pathology, and clinical responsibilities such as are allotted to medical clerks and surgical dressers. Such courses have been available at the Postgraduate Medical School and at certain of the special hospitals in London, and their educational value has been clearly demonstrated. By means of these courses the visitor's time is usefully occupied until he is ready to obtain a hospital appointment, and through them he becomes known to the school authorities and his suitability for appointments and for further specialist training can be assessed.

Many graduates from over-seas have already completed basic studies and obtained a practical training in their intended specialty before coming to this country. They wish to learn something of the methods, thoughts, and practice of the leaders of the profession here, and for them an advanced revision course consisting of lectures and clinical demonstrations would be invaluable. It should not be intensive, but should allow time for attendance at hospital practice and public lectures, and for reading. Such a course might extend over a period of about three months, and not only would meet the needs of the senior graduate from over-seas who is able to visit this country for a relatively short time, but would be suitable also for the graduate from this country who has completed his hospital appointments and requires his knowledge and experience revised, rounded off, and placed in proper perspective. A few such courses have been available in general medicine and general surgery, both in London and in Edinburgh, but more are required, and they should be available also in the principal special branches.

In the National Health Service there should be no difficulty in maintaining for specialists an uninterrupted connexion with centres of medical education. The regional organization will be based on a medical school, and the specialist staffs of the divisional hospitals will remain in close touch with the hospitals and teaching departments of the regional medical school. They would meet regularly at the University for discussion and for practical demonstrations, and would be encouraged to continue to advance their subjects by periods of work in the laboratories of the medical school, by co-operating in the researches of their University colleagues and by help and advice.

Further Education for General Practitioners

It may prove more difficult to provide continuous education for general practitioners. Intensive refresher courses have been offered for many years at several medical schools and have been so well attended that they clearly provide, to some extent at least, for the needs of the general practitioner. Those who attended were able as a rule to do so only at intervals of several years and were the more enlightened and progressive members of the profession. Courses of this kind were arranged on behalf of the Ministry of Health by the Postgraduate School in London shortly before the war for practitioners participating in the National Health Insurance Scheme. They were free of cost to the practitioner and allowances for travelling and maintenance and the cost of a locum tenent were authorized. At first these courses were held in London, but by the outbreak of war in 1939 the scheme had been expanded rapidly and courses had been planned in several other centres throughout the country. It was the intention that every doctor in the National Insurance Scheme should attend a course once in

three years. Shorter, intensive courses, usually on limited subjects and extending over two or three days or a week-end, were available here and there throughout the country, and they also were well attended. Courses of these types provide periodic contact only with educational centres. Experience has shown that they have considerable value, but they offer so much information in a short time that much of it is wasted and the educational value is disproportionate to the effort devoted to them by the teachers.

At some hospitals and centres, notably Newcastle-upon-Tyne, another form of contact has been practised for some years. The staff of the teaching hospital set aside one half day in each month when general practitioners visit the hospital and join in a discussion on a previously arranged subject, share in a demonstration of selected cases, or take part in a meeting of the local medical society. This more nearly fulfils the need for continuous education, but is dependent for its success on distance, transport, and other local conditions. At other hospitals similar sessions are held every week.

Each method that has been tried and found successful may well be included in the plans for the future, and it should prove easier under the National Health Service than it has in the past for the general practitioner to attend and for the teachers of experience to be available. Other methods have been suggested, and I have had opportunities of discussing them with considerable numbers of general practitioners released from the Forces who have been attending the two-weeks intensive courses arranged by the Universities under the Government scheme. As a result, I would suggest that a start be made with the following:

(i) Clinical assistantships at near-by hospitals;

(ii) One or two half-day sessions each month at the divisional hospital for meeting the hospital staff and for discussions, according to a prearranged programme;

(iii) Short courses lasting one or two days on recent progress in specific subjects at the regional medical school or teaching hospital; and

(iv) Intensive general refresher courses lasting a week or more, to be attended once a year at a centre remote from the place of practice.

(i) The clinical assistantship is the form of education that has met with the most general approval of the groups of practitioners we have consulted. It might be held for three months in the year and the practitioner would attend one or two half days a week, be assigned duties in an out-patient department, and have access to the wards of the hospital. The department to which he is attached might be a different one each year or he might prefer to concentrate on a few only. These appointments would be held at the divisional hospital or group of hospitals with their staffs of specialists, who would supervise the work and be themselves in constant touch with the regional teaching centre. This form of education could be arranged at first for practitioners in the cities and urban districts, and might be extended later to rural areas also.

(ii) The regular half-day session at the divisional hospital for meeting and discussion with the hospital staff would give the practitioner opportunities also for following the progress of his cases referred to hospital for treatment. The programme need not be confined to clinical subjects and might well include occasional discussions on administrative problems of common or local interest, on the preservation of health, and on historical or other subjects of cultural value.

(iii) From time to time new methods in diagnosis or treatment are developed sufficiently to become widely used, and it is essential that general practitioners should be informed of their possibilities and limitations. The progress in mass radiography, the use of sulphonamides, and the discovery of penicillin are recent examples. Courses of demonstrations and discussions lasting one or two days, and covering the principles as well as the practical applications of the new method, would be of great value. They should be given by experts who have been personally concerned with the development of the subject and should be conducted at the medical school of the region.

(iv) The intensive general refresher course lasting two or three weeks, and attended at intervals of several years, is not entirely satisfactory either for the practitioners attending or for the

teachers. The former are liable to suffer from mental indigestion, and the latter are frequently conscious that the time and energy they have given to preparing their demonstrations and lectures are largely wasted. I have been impressed with the opinion of a number of practitioners attending these courses that the expert in his subject who is not an experienced teacher is seldom satisfactory. And there is much truth in the suggestion that general practice is itself the most difficult of specialties, and that these courses rarely include any discussion or instruction on the common problems that concern them most. There is clearly a need for further experiment, but I have found general agreement that a week's course every year would be preferable to a longer course less often.

In order to carry out such a programme of clinical assistantships, conferences, specific short courses, and general courses of longer duration, and to provide them for all the practitioners in a region, it will be necessary to use the clinical material and the staffs of many hospitals. The undergraduate teaching hospitals cannot be expected to contribute much to these forms of postgraduate education, and the medical schools will need to enlist the co-operation of associated and divisional hospitals. It will be some years before these will be staffed on an approved basis, but a beginning can be made now and the experience gained recently in providing for the demobilized practitioners can be put to good account. The Interdepartmental Committee on Medical Schools advised the appointment of postgraduate deans or directors and a postgraduate committee in each medical school or faculty, and it would seem advisable that this should be done immediately at all Universities with medical schools, as a permanent feature in their post-war development.

The British Postgraduate Medical Federation

The conditions in London are peculiar because of the number of its medical schools, the great concentration of population and hospitals, and its position as the capital of the Empire. To make use of its unique situation in the provision of postgraduate medical education the University of London has established the British Postgraduate Medical Federation. This organization is designed to develop and co-ordinate for postgraduate education the many general and special hospitals, both voluntary and municipal, in so far as they are not required for undergraduate teaching. The aim is to develop University departments properly staffed and equipped for postgraduate students only in all the major specialties, including general medicine and general surgery. It will include from the first the Postgraduate Medical School, where University departments in general medicine, general surgery, obstetrics, and pathology have been established since 1935, and Institutes of Child Health, Laryngology and Otology, Neurology, Ophthalmology, and Psychiatry based on the schools already in existence at the special hospitals at Great Ormond Street, Gray's Inn Road, Queen Square, Moorfields, and the Maudsley Hospital. It was originally proposed that these teaching departments and institutes should be accommodated close to each other and to a central hospital or group of hospitals in a convenient and central situation in London, but this plan appears impracticable at present. A Central Office of the Federation has been established close to the University buildings in Bloomsbury and will co-ordinate to develop the scattered departments and institutes to co-ordinate their facilities for postgraduate studies. Accommodations suitable for the training of specialists will be provided at the hospitals, and courses of instruction on the lines already discussed and adapted to the specialties concerned are being arranged. Institutes in other branches of medicine and surgery, such as dermatology, orthopaedic surgery, genito-urinary diseases, diseases of the chest, and cardio-vascular diseases, may be included later as staff, equipment, and accommodation of a standard approved by the University can be provided, and their facilities for research and teaching can be developed; and there is need for extending those already included.

The Central Office of the Federation will be responsible also on behalf of the University for the organization of postgraduate studies for general practitioners in London and the Home Counties, and one of its most important functions will be to advise or provide for the large numbers of graduates from over-seas, from the Dominions, Colonies, and other countries who wish to come to this country for postgraduate work.

An International Centre of Postgraduate Education

For a variety of reasons a majority of the graduates coming to this country from over-seas look to London to provide what they require, but many of them have traditional loyalties to other centres, especially Edinburgh, and other centres in London can provide better facilities in certain special branches such as the treatment of industrial accidents, etc. The Central Office of the British Postgraduate Medical Federation in London should become a channel for distribution to all parts of the country, as well as having a peculiar responsibility for its own area, and a source of information on the postgraduate facilities available in the United Kingdom. Situated in the capital, the main port of entry to the country it would be able to gauge the needs of visitors and, if necessary, initiate arrangements for types of education not already provided or for the extension of provisions where these are inadequate.

Because of its geographical, economic, social, and political position the United Kingdom is suitable for the establishment of a great postgraduate medical organization that would attract and serve graduates from all over the world, and we have special duty to provide such an organization to meet the needs of the peoples and the Universities of the British Dominions and Colonies.

The first aim of this organization must be to provide medical education and training of the highest standard based on University departments staffed and equipped to provide opportunities for advanced study and research. Without this no arrangement, however satisfactory from the point of view of administration or of convenience for the visitors, will succeed, and it will take some years to build up departments on the scale and up to the standards required in all the special branches of medicine and to staff them adequately. In the meantime, much can be done to improve the amenities, to welcome the graduates from over-seas to enable them to spend their time here profitably, and to share our educational opportunities.

Graduates come to this country at various stages in the training and experience and for varying lengths of time. They can be divided roughly into those in need of further education and training and those already established in their chosen careers who come to this country for relatively short periods.

The educational needs of the first group have already been discussed, but in order that they may readily obtain the hospital appointments or places in courses of instruction best suited to their previous training and experience and to the time at their disposal, an extensive information service must be provided and they should be helped to find such essentials as living accommodation conveniently situated to the places where they work. For the second group an efficient service on these lines with help and opportunities to enable them to visit the leaders of the profession in this country and to spend their time here to the best advantage is a pressing need.

As the report of the Interdepartmental Committee on Medical Schools points out, the ideal arrangement in London would be a general hospital and postgraduate medical school with specialist hospitals and institutes grouped around it, constituting a postgraduate medical centre. It should be geographically related to the University, the Royal Colleges, the Royal Society of Medicine, and other cultural bodies. Residential accommodation, dining rooms, reading rooms, library and other common rooms should be closely associated, and the Central Office for the Director of the British Postgraduate Medical Federation where detailed information would be available to visitors should be an integral part of the centre. Even if such a scheme is impracticable now in its entirety, it should be possible in the future, and it should be a duty of the hospital planning authority to be set up under the National Health Service to allocate a site for it as soon as possible. An influential committee is now considering what parts of the centre should be completed first in order that visiting graduates may be adequately received and their requirements met to the fullest extent possible under present conditions. Because of the destruction or closure of many cultural centres abroad the war has created conditions that make it urgent that we in this country should take action now, even though what is practicable should fall short of what is desirable. Every University and medical school in the country should prepare plans and each make its contribution now, for the help of all will be required. As has

already been explained each medical school will have an important part to play under the National Health Service in the postgraduate education of its own graduates and of the medical men in its area, and it will be able to offer a share in its culture, learning, and social life to our guests from over-seas. The first step should be to make these easily accessible to them, for that would be the strongest proof of our welcome and our fellowship with them. If we plan boldly and wisely now the ways and means are more likely to be forthcoming in due course. Medical men can influence the thoughts of individuals, races, and nations, and this country and its Universities have an opportunity to mould the ideals of millions of human beings through the postgraduate medical education they provide.

To obtain the best results it is important that the graduate should be suitably placed in relation to his previous training and attainments and in relation also to the particular career that lies before him. For this purpose visitors from over-seas should be sponsored by a body in the country from which they come and their applications should pass through approved channels. There are already a number of channels, perhaps too many, such as the High Commissioner for India, the Colonial Office, the British Council, and the Nuffield Foundation, each dealing with a special group of graduates, and it may be right that this should be so and that a rigid system would be inadvisable. There is certainly a need for some agreed method of assessment and approval of applicants in their country of origin by medical men and teachers who are aware of the conditions and facilities available in this country, and for a common procedure for placing in this country by a similar

group familiar with the requirements of graduates from over-seas. In this also the Universities should have an important part. The problem for them is not limited to medical graduates, for it includes graduates in all the faculties and also the placing of their own graduates in schools abroad suitable for their further education.

I have endeavoured to show that the National Health Service offers a peculiar opportunity for the successful development and organization of postgraduate education for the medical profession of this country and for ensuring that every medical practitioner, whether engaged in general practice or in one of the specialties, should continue in contact with centres of medical learning throughout his career. If this opportunity is wisely used it may prove to be a decisive factor in making the Health Service a success and a boon to the people of this country. Planned primarily for the medical profession of our own country, such an organization would provide also for graduates from the Dominions, Colonies, and abroad, and our medical schools and hospitals would become a centre of medical study and learning of world-wide importance. I have tried to indicate how a beginning has been made and the lines along which further development might be directed, and that the lead must come from our Universities and Medical Schools. Only they can maintain the requisite standards at this time of expansion and reconstruction, and they will, I hope, be able to raise them. They have the opportunity now, and if they wait till all the desired staff, accommodation, and equipment can be provided they may miss the opportunity. Now is the time to plan, and it is the time also to start boldly.

SOME PRINCIPLES IN THE SELECTION OF MEDICAL STUDENTS

BY

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The recent report of the Interdepartmental Committee on Medical Schools¹ (the Goodenough Committee) drew attention to some of the problems connected with the selection of medical students. The chief points stressed were the following: (1) selection should not be based wholly on examination results; (2) all candidates should be interviewed, preferably by a small committee; (3) great attention should be given to reports from head masters and head mistresses; (4) the machinery for selection should be supplemented by adequate arrangements for weeding out failures in the early part of the training; (5) there is room for experiment in methods of selection; (6) "the selection of students is such an important duty that it demands and should receive a great deal of time and thought from the authorities of the medical schools both in the planning and working of the arrangements." The first three of these points represent essentially the system which is in common use in most medical schools. The weeding out of unsuitable candidates has not in the past been practised on a very wide scale, and if the process is to be more widely applied a number of problems are raised; these will be discussed later. The suggestions about experiment would appear to be a recognition of the fact that existing methods of selection which worked well in the past may no longer be the best possible in changing conditions, and in fact force of circumstances has already compelled a number of medical schools to experiment in their method of selecting students.

Problems to be Solved

The problems of selecting the most suitable recruits for different occupations has been under serious consideration since the 1914-18 war. The tendency has been to try to replace the older methods of chance, tradition, heredity, social position, and economic pressure by conscious guidance of young people into occupations for which they are most suited. This tendency is seen in the attempt² to separate children at about the age of 11 into schools which can lead to a university course and into those which will encourage cultivation of other talents more useful outside the universities, and in the great development of tests for ability and aptitude for different occupations. Up till 1939 the medical schools had not been greatly affected by these changes, and while the field of recruitment for medical students was gradually widening no undue strain was put on

the machinery for selection. Since about 1939 the problems of the medical schools have been increasing, and it was probably with these facts in mind that the Goodenough Committee spoke of aptitude tests and experiments in selection. Some aspects of the matter have also been discussed by the report of the Committee of the Secondary School Examinations Council appointed by the President of the Board of Education in 1941³ (the Norwood Committee), by the Royal College of Physicians Report on Medical Education,⁴ and from time to time by the medical press; but all these reports have done little more than point out the problems, without discussing ways and means of solving them. The present time, when the future of education in general, of medical education in particular, and of the whole organization of the health services is in a state of transition, would seem to call for a detailed examination of the problem of selection of medical students.

The problem assumes its most concrete form when seen strictly from the standpoint of the selector, and accordingly it is presented from this aspect. The other interested parties are (1) the candidates themselves and their head masters and head mistresses; (2) the medical schools as represented by their governing bodies and by the teachers in the various subjects of the medical curriculum; and (3) not least the community at large, which is going to benefit or suffer from the results of the choice. The selector's duty is to be fair to each of these parties, but it sometimes happens that fairness to one party can be achieved only at the expense of the others. When such a conflict of interests arises the obligations to the medical school and to the community should always be placed before the obligation of fairness to the individual. In general the selector would seem to stand on surest ground if he asks in each case, "Is this candidate the most likely one out of those available to increase the reputation of this medical school, or at least is he or she a person whom we should like to claim as one of our students?" This attitude allows for a desirable individuality in different schools, and will in the long run best serve the general interests.

Applicant/Place Ratio

In the recruitment to any occupation there is a certain ratio between the numbers who wish to enter and the numbers which it is desirable to admit. In each occupation the ratio will

adjust itself to a certain value determined by a large number of complex factors, and will at times vary with changing conditions in the particular occupation or in the community at large. The value of the applicant/place ratio is an index of the task of the selector for each occupation. When the ratio is unity no problem exists; when the ratio has a value less than unity the problem is to attract more applicants; when it is greater than unity the work of selection begins and increases with each rise in the value of the ratio. When it reaches a value of 20 (as it has already done in the case of women applicants in some medical schools) the task of selection becomes a formidable one. In looking for causes of changes in this ratio it can be assumed that among other things the ratio must measure in some degree the popular conception of the conditions of work, the ability required, and the standard of living associated with each occupation. Is there any evidence to suggest the probable direction of change in the applicant/place ratio as regards medicine? This can best be seen by examining separately the two parts of the ratio—the number of places and the number of applicants.

Number of Places

The number of places available in the medical schools can be obtained approximately from the figure for the total annual entry of students, which for the year 1942-3 was 2,250. This figure represents a Government quota based on the average

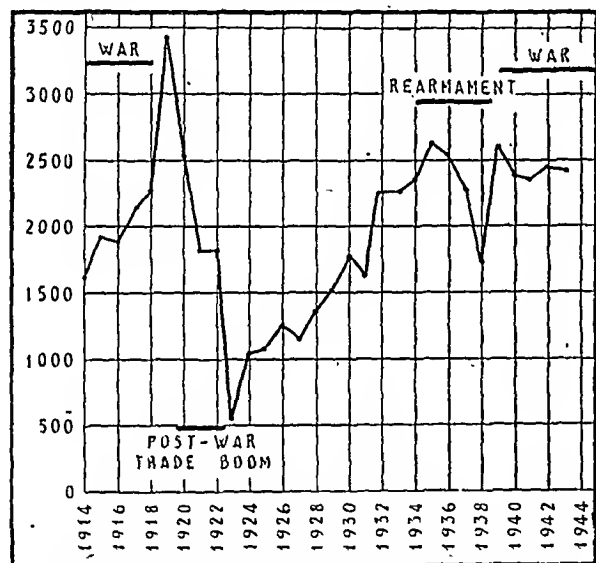


FIG. 1.—Annual entry of students into medicine, 1914-44.

numbers admitted for the three years 1936-9, and can be taken as the average number of places available just before the war. In the post-war years there are three possible factors which influence the number of places for new entrants into the medical schools: (1) the demand by applicants, (2) the desire of individual medical schools to alter the size of the entry, and (3) a definite national policy to alter the rate of recruitment to the medical profession. Demand for places was in the past a very large factor in determining the size of the entry, and when it increased, as after the last war, schools were willing to increase the numbers admitted. This is evident from Fig. 1, which shows the annual entry for the past 30 years. The demand for places can remain effective in determining the size of the entry only so long as the capacity for expansion of the medical schools has not been reached. As soon as further expansion becomes impossible then increased demand does not lead to an increase in the number of places but only to an increase in the number of applicants rejected. It seems likely that this stage is now being reached, and that numbers of applicants will no longer be a determining factor in the number of available places. The desire to increase or decrease the annual entry is a matter of domestic policy for each individual school. To a certain extent greater numbers mean increased prestige and increased staff and accommodation for research purposes. On the other hand, there is an optimum size for a

medical school. While some medical schools are probably still capable of expansion, some, at least in the opinion of the Goodenough Committee, have already exceeded the optimum size.¹ If the recommendations of the committee are taken as a basis for a rough estimate it would seem that a desire on the part of the medical schools to expand or contract to an optimum size might result in an increase in the number of places available to a total value of 2,500.² A last possible factor is a definite national policy to accelerate medical recruitment. On the whole it seems unlikely that there will be great alteration in the number of available places in the near future, and probably a more important factor in determining the size of the applicant/place ratio will be the number of applicants.

Number of Applicants

For various reasons it is not possible to get definite figures for the numbers who wish to start a medical career. In most medical schools there is no last date fixed for receiving applications, and places are filled up as suitable candidates present themselves. When enough have been selected and a number of reserves chosen no further applications are considered. Hence figures for the total number of applicants rejected after consideration do not give the total numbers who sought admission, and furthermore they will include applicants who sought admission to a number of schools. In spite of lack of figures, there is no doubt that the number of those seeking admission to a medical career is increasing. In the case of women students it is possible to give some figures which show the present trend. At University College in the early 1930's there were about twenty applicants for twelve places. This number gradually rose in the pre-war years, and by 1939 had reached three figures. From 1939 it rose sharply at a rate of about 100 a year till it reached 400, since when it has slowly risen.

It is true that these figures indicate the position in the abnormal period of war, and they are influenced also by the small number of London schools which accepted women, but nevertheless they demonstrate the very sharp rise in the applicant/place ratio. No corresponding figures for men are available, but the number of male applicants for the recent session at University College is about 500, and numbers approaching four figures are rumoured for some provincial medical schools. The important question is whether these figures are greatly swollen by the war and by demobilization, and whether the post-war years are likely to see the demand for places in the medical schools maintained. The analogy of the early 1920's cannot be considered a reliable guide in the present circumstances, as in many ways the situation following this war differs from that following the last; but it may be helpful to consider the points set out below:

(a) *Effects of National Service.*—From 1939 to 1945 training for medicine was a reserved occupation, but the war had two effects on recruitment. Many desirable applicants preferred to serve with the armed Forces, while on the other hand the total number of applicants was swollen by those who sought a career free from interruption by conscription. The future effects of national service are unpredictable till details of Government policy are known as regards its application to university students. Two different views on this subject have been expressed by authoritative bodies. The Norwood report³ favoured the possibility of a six-months break between school and university for a period of national service, while the Committee on Scientific Man-power⁴ thought that science students should be allowed to complete their university courses before undertaking national service. Preferential treatment of any one group—e.g., medical students—will undoubtedly affect recruitment in that group. The problem of demobilization is a more temporary one. It has swollen the number of applicants for 1946, and may cause an even greater problem in 1947.

(b) *Effect of Parental Influence.*—This is probably considerable, and some interesting information on the subject was recently obtained in a survey carried out by the British Institute of Public Opinion.⁵ In this survey the following question was put: "If you had a son starting out in life, what kind of work would you like him to take up?" Those who chose medicine as a career for their children amounted to 7.5% of the total number interrogated. (The number of doctors on the Medical Register is less than 0.2% of the population.) Of those choosing medicine 40% had a son not yet working, and of this 40% nearly half (42%) thought that the son would actually take up medicine. A nearly equal fraction (36%) thought that the son would not eventually take up medicine, and that he would be prevented by the expense of the training. The reliability

such a survey for prediction of the future is open to some doubt, nevertheless the figures do give evidence of the popularity of medicine as a career in the minds of parents. A leading article²¹ the *Lancet* suggested the probable reason. "We must consider popularity of medicine as a career to be greatly influenced by general belief that the material prospects are good."

c) The Ability Needed for a Medical Career.—Evidence on this subject has been obtained by a comparison of the abilities of those who have been selected as medical students with those of the population as a whole in a survey undertaken in Manchester by Younne-White.²¹ The purpose was to determine what fraction of the population outside the universities is capable of benefiting by university education. The method of study was to estimate by means of a "progressive matrix" tests the ability of the students in the different faculties of Manchester University, and to compare the distribution of intelligence with that in the general population. While it is known that between 1.5 and 2% of the population actually receive a university education, the survey showed that 6% of the total population had an ability equal to the average university student, and 24% an ability equal to the university students who could probably complete their courses successfully. In regard to medicine 9.1% of the population had an ability equal to that of the average medical student, while 17% had an ability exceeding the lowest quartile of medical students. Taking the 1931 Census figure of 709,000 for the size of the 18 age group the number of those at the age of university entrance with ability greater than the average medical student would be 63,000, and the number with ability greater than the lowest quartile of medical students would be 120,000. Since the actual number of medical students admitted to the universities is less than 2,500 it is clear there are fairly large untapped resources, at least as regards ability. Considering now the proportion of parents (7.5%) who wish their children to undertake a medical career it would seem that about 50,000 of those of the 18 age group will be under some parental influence to choose medicine, while over 100,000 will have the ability. No doubt many of these will be unsuited on other grounds for a medical career, but the determination of this unsuitability will rest more with the selector than with the applicants or their parents, and the figures suggest that the post-war demand on the medical schools is more likely to increase than to decrease.

Financial Considerations

(d) The Economic Factor.—If inclination and ability to enter the medical profession are of the order just suggested, the numbers of applicants must be restricted by other factors. Burt²² studied the general problem of opportunity for university education by inquiring what proportion of the non-fee-paying school population are capable of profiting by a university education, and what proportion of these fail to get it. Out of 700,000 in the 18 age group about 660,000 belong to the non-fee-paying class, while only 43,000 belong to the fee-paying class. Yet of the former group only 5,000 enter the universities, while of the latter more than 6,000 do. In other words, 0.7% of the non-fee-paying class have a university education, compared with 15% of the fee-paying class. Burt inquired whether these figures could be explained by the fact that average ability is actually higher in the higher income groups. He rejected this idea on the ground that the wide range of ability within each income group, combined with the very large size of the lower income groups, must mean that a big proportion, estimated by him at about 40%, of the children in the non-fee-paying class possessed an ability of university standard, and the barrier which stood between these "mute inglorious Miltons" and a university education was clearly the economic one. The effect of financial hardship was not to reduce the ability of the sufferers but to restrict the achievement which might result from that ability.

Data related more specifically to medicine were obtained by Collier²³ in an investigation into the social origins of entrants to Glasgow University. Undoubtedly conditions in Glasgow cannot be taken as typical of those in the country as a whole. The students are drawn from a very large industrial area, and 36% can be classified as of working-class origin. Glasgow has felt more than most other areas the effects of trade depression. Its entrepreneur class, as Collier points out, contains few "merchant princes." In addition the respect for and the ambition to achieve a higher education are more pronounced features of life in Scotland than in England. (The ratio of numbers of university students to total population is 2.5 times higher in Scotland, and the export of university graduates has long been a feature of Scottish life.) Nevertheless, the figures obtained by Collier are instructive. He divided the entrants to the University into the five social classes based on income level recognized by the Registrar-General. Of all the children born into the top class (the upper and middle professional class) 1 in 70 entered the medical faculty, while of the children born into the lowest social class (the unskilled class) the ratio was 1 in 6,000. During the last few decades there has been an increase in the numbers of those admitted to Glasgow University from the lower social groups, but this wider recruitment has affected much less the

more expensive degrees of medicine and of law than the cheaper M.A. degree. These results of Burt and of Collier give objective evidence on a position which is very generally appreciated, that the economic barrier is one of the most active agents in the selection of medical students.

Under the economic heading one must also consider the effect of the general economic conditions on the entry into medicine. The figures for entry for the past thirty years (Fig. 1) illustrate the inverse relationship between general economic prosperity and entry into medicine. The years of depression in the early 'thirties were accompanied by a rise, while the subsequent economic recovery was associated with a fall. In Glasgow, where entry to the University is probably more closely bound with local prosperity than in some other places, Collier found that the depression in the early 'thirties caused a fall of 7.5% in the total entry to the University. This was, however, entirely due to a fall in entrants for the M.A. degree. The numbers in the other faculties actually rose, and of this rise medicine accounted for 62.5%. This inverse ratio between economic prosperity and entry to medicine is usually attributed to the relative stability of a medical career in times of uncertainty, and there can be little doubt that for the next few years uncertainty about the future will be part of the background of the thoughts and actions of a large section of the population.

There is one further aspect of the economic factor in the selection of medical students. Whatever principles we use for selection, the economic consequences cannot be disregarded, and however long the reckoning the cost must eventually be met. The balance sheet in such a complex process is not one which can be easily visualized, but at least the outlines of it are suggested in two citations by Burt.²⁴ "No extravagance is more prejudicial to the growth of natural wealth than the wasteful negligence which allows genius that happens to be born of lowly parentage to expend itself in lowly work"; and again: "Stupidly organized investments in children's capacities, like other stupidly organized investments, will yield little return; well-organized investments adjusted to the natural abilities of the children affected hold out large promise."

(e) Schemes of Financial Assistance.—If parents' income is of major importance in restricting entry to medicine, then a limiting factor will be the ease with which financial assistance can be obtained. Assistance may come from a number of sources: (i) university scholarships and exhibitions; (ii) leaving scholarships and exhibitions from the schools; (iii) State scholarships; (iv) assistance by local authorities; (v) various funds and trusts catering for particular kinds of needs. It is difficult to obtain accurate figures of students receiving some kind of financial aid. The figure of 25% was arrived at by means of a questionnaire sent out by the British Medical Students' Association.²⁵ The Goodenough report²⁶ gave 11% for an English and 43% for a Scottish university.²⁷ From the point of view of the selector the important questions are: (i) Is the scale of financial assistance likely to increase or decrease? (It is this which will influence the numbers of applicants for medicine.) (ii) Is the award of financial assistance in itself evidence of more than average ability in the recipient—i.e., Is it of any value to the selector to know that an award has already been made? In regard to the first of these questions the Norwood report²⁸ stated: "The aid is inadequate both as regards the total sum available and the sums made available to individuals." The Goodenough report²⁹ was more cautious. In Scotland "the faculty of medicine was drawing students from all classes of the community, and given adequate ability lack of means was not a bar to becoming a medical student." In England and Wales, "while a boy or girl with the necessary aptitude need not be hindered by poverty from entry to a medical school, in fact the medical schools are not recruiting from as wide a field, embracing all sections of the community, as other faculties in the university. . . . There is a strong tendency for parents with small incomes not to give any thought to the profession of medicine as a career for their children." The report³⁰ of the Royal College of Physicians stated boldly: "The field from which medical students are to be selected should be widened by making all university education free, and by the provision of maintenance grants to those students in need." Action on the basis of any or all of these reports is likely to result in financial assistance on a wider scale than at present, and thereby, as we have seen, to increase the problems of the selector.

As regards the ability of the recipients both the Norwood³¹ and Goodenough³² reports criticized the unevenness of the standard required. In some cases it is very high; in others it involves passing Higher School Certificate and being accepted by a medical school. The L.C.C. regulations state: "Candidates who do not satisfy the requirements for an award of a scholarship may apply for a major county exhibition if they have been accepted by a university and have passed the Higher School Certificate or other approved examination." Clearly awards in this class are of no help to the selector, and actually the onus of determining the recipients is put on the selector. But this attitude of local authorities is not illogical. How better could they select the recipients for their awards than by leaving it to those who have experience in selecting for the

profession which the candidate desires to follow? This view was endorsed by the Goodenough Committee: "Provisional acceptance by a medical school should precede the making of an award"; and the report goes on to record the views of other witnesses "that acceptance of a candidate by a medical school should be regarded by the bodies awarding financial assistance as sufficient evidence of ability." Clearly the future developments in provision of financial aid are likely to increase the number of aspiring entrants to medicine, and the general argument developed in this and the preceding sections must point to an increase both in the volume of work of selection and in the responsibility associated with it.

Let us now turn to a consideration of how that work can best be carried out.

Methods of Selection

The basic method of selection in most medical schools is the personal interview, and this is generally agreed to be desirable. Will it be possible in future to interview all applicants, and, if not, what other methods are available to assist the personal interview? Selection by interview is efficient, and indeed physically possible, only when the number of applicants seen can be kept within a certain limit. When that number is greatly in excess of the number of places a preliminary selection can be made by various methods: (1) Closure of entries when enough suitable candidates have been chosen.—This only piles up the number of applicants for the following session. (2) Elimination on strict age limits.—This only postpones younger candidates till the next session. In the case of older applicants it raises some problems, which are dealt with later. (3) Selection on recommendations from head masters and head mistresses.—School testimonials are valuable, but the number who can be eliminated on testimonials is small (the general problem is considered later). (4) Giving preference to certain schools of proved worth.—It is valuable to have contacts with good schools whose head masters help the selector, but the number of schools putting forward good candidates is increasing. (5) Adopting a "zoning" system, in which only applicants from a restricted area are considered.—This happens in some provincial medical schools. The argument probably is that, as the money for the training is raised locally, local candidates should benefit. The grave disadvantage is that it prevents mixing of students from different parts of the country. (6) Holding some kind of preliminary test or examination to assist with the selection—possibly including vocational or aptitude tests.—This is the possibility which offers the most profitable line of experiment and deserves most consideration.

What kind of tests are most likely to pick out the applicants we want?

Qualities and Aptitude

In every discussion of selection of medical students the term "aptitude test" is used. The implication is that objective tests can disclose the possession of qualities specially suited to a medical career. The operative word is "aptitude," and everything depends on how this is interpreted. In the United States aptitude tests have been used for the selection of medical students for some time. The testing was started in 1929, and was soon taken up by the American Association of Medical Colleges, which carried out tests on a wide scale, modifying from year to year. The kind of test used can be seen from the account given by Flack²² of the 1931 tests. These consisted of: (1) scientific vocabulary; (2) visual memory for anatomical drawings; (3) memory for descriptive material; (4) premedical information; (5) learning and retention of material; and (6) understanding of difficult printed material. Flack drew the general conclusion that "aptitude tests have gone a long way towards solving the problems of the medical schools." Just what problems were solved is made clear in the report delivered to the association in 1935, from which it was seen that success was judged by the correlation between the results of the aptitude test and those of the medical examinations. The author was aware, however, that this was not the final criterion of success, as the student who had done best in the examinations did not necessarily make the best general practitioner. He held out no hope of finding a measuring stick which will say, "Here is another Hippocrates, Harvey, Osler, or even Mayo."

It is clear, then, that the word "aptitude" means different things to different people. The "aptitude" tests used by the

American schools were successful in selecting qualities which were not necessarily the ones needed by doctors. The technical meaning of aptitude was not the popular one. As the present discussion is from the medical aspect rather than the psychological one it is perhaps worth while to consider the meaning of aptitude tests, starting from first principles. We can do most logically by inquiring what are the qualities we wish to desire in the final product of our training.

The qualities needed in the various branches of medicine cover a wide range and certainly include the following: intellectual capacity, integrity, ability for hard work, conscientiousness, sympathy, tact, ability to deal with people, organizing ability, manual dexterity, cheerfulness, resourcefulness, ability to make decisions, self-confidence, patience, enthusiasm, interest, staying power, common sense, and many others. In fact there are few useful abilities which can be turned to advantage in some or other branch of medicine. If we consider specific ability in different fields of work, then we must admit that skill or ability in physics, chemistry, zoology, electrical and mechanical engineering, photography, drawing, mathematics, handling and care of animals may find an outlet. So wide is the field of modern medicine that so diverse its problems that scarcely anyone would venture suggest which of all these qualities or which combination of them is most valuable. When one speaks of vocational aptitude tests for medicine it is rather difficult to understand exactly what is meant. The Goodenough Committee's doubtless thinking more of experimental work than of application of any specific tests.

It is known that various tests have been developed in the Services during the war in connexion with selection of personnel for specific tasks, but these are not yet available. Pending further information about such tests it must be confessed that in general the words "vocational" or "special aptitude" applied to tests for selection of medical students are extremely vague if not almost meaningless.

A Simplified Approach to the Problem

At the risk of some over-simplification the large number of qualities which have been listed above as desirable in the medical student might be put into a much smaller number of groups—a process which makes a realistic approach to the problem easier. All the qualities might be arranged into one or other of three classes, which we may call (1) intellectual capacity, (2) character, and (3) interest. (Perhaps manual dexterity could hardly be fitted into one of these groups, but it is of decidedly minor importance and applies to specialized fields within medicine.) Under intellectual capacity is included a number of things: (a) ability to pass examinations; (b) ability to think in abstract terms; (c) ability to form logical inferences from data; (d) ability to record one's experiences and to utilize the recorded experiences of others; (e) ability to subject opinions and ideas to critical examination. In the term "character" we include those virtues, like sympathy, tact, staying power, etc., which all are agreed are among the qualities we desire. By interest we mean something which without ability and character is of limited value, but combined with the other two is likely to be a powerful ingredient in the make-up of the successful student in medicine or any other field. Of these three groups perhaps those qualities classified under intellectual capacity are the most concrete and objective, those coming under character the most nebulous and subjective, while interest is possibly the most difficult on which to obtain any reliable information.

Assessment of Interest

The measurement, or perhaps more correctly the prediction, of interest is extremely difficult if not quite impossible. It is more liable to change than is intellectual ability or character, and it develops only in active contact with a particular occupation. As medical work more than most other occupations differs so much from anything which the candidate has experienced before, an alleged interest must be of limited value, particularly since it must appear to strengthen the applicant's case. On the matter of interest the school testimonial does not always help, as the future interests of the adolescent are sometimes difficult to predict. As the Norwood

eport¹² says: "For some pupils the horizon of occupation is emote." On the whole, attempts to judge applicants by their interest in medicine are not likely to be a reliable or profitable method of selection, and we are left then to make our choice in intellectual capacity and character.

Testing for Intellect and Character

Let us assume that we can apply some sort of test for intellect and character. When we have a small number of applicants it may become necessary to decide which of the two qualities is the more important. To have to make such a choice is always unsatisfactory; the incompetent though well-meaning doctor can be as dangerous as his abler though less honest colleague. In the words of a *British Medical Journal* leader¹³: "It is true that stupid students often make successful doctors, but it is doubtful if they ever make good doctors." This not to advocate ability at the expense of character, but to claim that a combination of the two is necessary. It has been pointed out that a large untapped reservoir of ability exists for the recruitment of medical students. It is just as likely that past methods of selection have left an equally large reservoir of character. The problem tends to offer its own solution by the increasing number of applicants. Provided we can test for character and ability, then each increase in the number of applicants is likely to see an increase in those who will come up to standard in both qualities. Rejection of those who fail in either should give us the candidates we are seeking. When the number is high our standard of both character and ability can be raised accordingly. We want, then, two independent tests or sets of tests—the one for ability, the other for character.

Intellectual ability can be measured by some kind of written examination or test, while character, it is generally felt, can be assessed only by personal contact. With large numbers it is least laborious to subject all applicants to a written test for intellectual ability, and on the results of this a smaller number can be picked out for interview and assessment of character. The problem of selection is now resolved into: (1) What is the best kind of written test for intellectual capacity? (2) What is the best way of conducting an interview for the assessment of character? The two problems are independent. We can experiment with each separately, and a failure in one will still leave us the fruits of the other. If we call neither of these processes aptitude tests we shall avoid the mistake of thinking that our tests are more specific for their purpose than they actually are.

Written Tests of Intellectual Ability

It might seem that the ability of the modern child was as thoroughly assessed as possible by the existing examinations, but actually when candidates seek admission to a medical school there is usually little objective evidence on which to judge ability. The Higher School Certificate Examination might be assumed to be the best standard of assessment, but very few who apply between October and June for admission in the following October have yet sat for this examination. It is usually taken about three months before the time at which entry to the university is sought—i.e., in June for the session commencing in October—and the results are not known until September—i.e., a few weeks before the university session begins. The Ministry of Labour requires candidates to be accepted at a medical school before their eighteenth birthday, and so acceptance, or provisional acceptance, must be given before the Higher School Certificate results are known. Apart from this difficulty, which may be temporary, the different Higher School Certificate examinations vary widely. In addition to those of London, Oxford, Cambridge, Oxford and Cambridge Joint Board, Northern Universities Joint Board, Central Welsh Board, Durham, and Bristol, there are the Intermediate Science Examination and the First M.B., often taken instead. While most candidates for medicine offer physics and chemistry, they differ considerably in the choice of other subjects, the usual being botany, zoology, biology, and mathematics. This diversity of examination and subject makes the Higher School examination unsuitable for comparing the merits of candidates. There are other objections to the Higher School Certificate as a university selection test.

The Norwood Committee¹⁴ questioned the value of examinations based on syllabuses as the best means of selecting entrants to the universities, and particularly of the Higher School Certificate. Another aspect of the problem is the value of the usual written examination as a reliable index of ability (see Hartog and Rhodes¹⁵). All this shows that from the standpoint of the selector the Higher School Certificate is of limited use. It is therefore not surprising that some medical schools are experimenting in examinations for selection of their students, and there may soon be a multiplicity of entrance examinations to the different schools.

There are obvious objections to this development. For the medical schools there is much overlap of effort, and much time and energy of the academic staff is taken away from teaching and research. For the applicant there are still greater disadvantages—only too clearly visible in the case of women now seeking admission to the medical schools. Because of the scarcity of vacancies for women, candidates are advised to apply to several schools, and so have to satisfy the conditions of entry at each. This must lessen the educational benefits of the last years at school—years which should be used to widen the pupil's horizon. School-teachers recognize the problem, and at the 1946 conference of the Assistant Mistresses Association¹⁶ asked that the position of entry of women should be clarified and made more uniform between the different medical schools. An immediate solution to the problem is not obvious. Further experiments in the selection of students are required which must cause a certain amount of difficulty, but it is hoped that teachers and pupils will put up with these temporary setbacks in the interests of a general improvement in the methods of selection.

The difficulties can be lessened by an examination for selection which does not require a fixed syllabus and for which the candidate cannot make special preparation. The only break in school work is the examination itself, and the pupil's education need not be interrupted. This type of examination has already been used by a few medical schools experimenting with selection methods, and it may come to be employed more widely. Such an examination has emerged from a series of experiments during the past five years in the selection of women students at University College, and may be of general interest. Before describing this some possible criticisms may be anticipated. The examination was not an amateurish attempt to disregard the experience of those responsible for the development of the present system of examinations. It is not put forward as the best method for selecting students or even as a good method. Its functions may be better carried out by the suggested reorganization of secondary-school examinations. It represents only an experiment in dealing with a problem which had become too difficult for the existing methods, and details may be of interest to others with a similar problem.

An Experimental Examination

A written test for the selection of women students was first held at University College in the spring of 1942. This examination was a somewhat hurried reaction to a rapid increase in the numbers of applicants, which was making the method of interview unworkable. It proved a great help, and so has been continued with modifications. From 1943 onwards it was advertised in the prospectus and a last day was fixed for receiving applications—originally April 1 but now Jan. 1, which seems to be suitable, and is the date used by some other schools. Most final-year pupils who are contemplating a medical career have made up their minds by that date, and as the results are known before Easter it gives unsuccessful applicants time to change their plans for the following session.

Our earlier attempts to devise an examination depended on interested members of the staff, who thought out questions giving scope for ingenuity, invention, or originality on the part of the candidates, combined with elementary knowledge of physics, chemistry, or biology. For example, we asked:

(a) As a test of ingenuity:—What kind of an experiment would you design to show that saccharin is 500 times as sweet as sugar?

(b) As a test of reasoning:—What is wrong with the reasoning in the following sentence: "The horse obeys man because its eye magnifies man?"

(c) As a test of elementary scientific knowledge:—If you sit down at the dinner-table you notice that (i) your knife feels cold, (ii) the mustard on your tongue feels hot, (iii) the table-cloth is neither hot nor cold. Actually all three are about the same temperature. How do you explain this?

(d) As a test of powers of description:—Describe in detail one of the following operations: (i) making a cup of tea; (ii) filling a fountain-pen; (iii) making a bed.

We also asked arithmetical questions involving the use of logarithms and calculations based on simple chemical or physical problems. There were two groups of candidates in each year—those who wished to enter the first-year course and those who wished to enter the second. At one time we set different papers for the two groups, while at other times we set the same paper. As the examinations were competitive for both groups the differences in standard of first- and second-year candidates did not matter.

Assessment of Results

The answers were marked on a basis of α , β , and γ . Examiners were asked to be economical with α 's and very liberal with γ 's, so that candidates who got several α 's were probably much above the average. From the result of the examination candidates were selected for interview. The examiners had no doubt that the examination was an improvement in selection, or it might be more accurate to say that it seemed to make the selection less a matter of chance, and it certainly reduced the work of interviewing. We did pick out some good students by these examinations, though it must be confessed that some we picked out were not very good. It certainly reduced the number of failures of women students in the Second M.B. examination.

A few years' experience of examinations of this kind showed some weaknesses and difficulties, and also the possibility of improvements. Our amateurish attempts to test general ingenuity provided many questions which looked ingenious, but which were less so when it came to assessing the answers. Or it would be more correct to say that the results could have been assessed with more certainty if the number of scripts had been 40 instead of 400. Certainly the number of candidates severely limits the kind of questions which can be asked. It also means that assistants have to be called in to help with the marking, and then much of the ingenuity of the question loses its point, as the person who thought out the question is always more interested in looking for the subtleties of the answers.

Experience also showed that numerical questions were relatively limited in value. Their greatest virtue is simplicity of marking, but this is apt to be of the "all or none" kind. If a candidate has done well on other questions one hesitates to exclude her on the grounds of a numerical error, while so many candidates get the correct answer that it does not help much with the selection. A similar kind of objection can be made against questions in physics or chemistry put into a numerical form. The ability to write and understand one's own language we considered an important quality, and we tried to assess this by asking for accurate descriptions of things in prose or by means of a précis. The marking of a formal essay was too terrifying. Both these tests—description and précis—proved very difficult to assess. Different examiners felt that they would not like to guarantee a high degree of reliability in their assessments. It must be remembered that we were using as examiners not experts in English but members of the academic staff in the medical faculty. We did this because (a) in an experiment of this kind, where much labour is involved, one has to rely largely on the help of people really interested in the particular problem, and (b) it seemed reasonable not to look for qualities in prospective medical students widely outside the range of those who were to teach them.

Limitations and Drawbacks

The system of marking results as α , β , and γ is widely used, but it has its limitations and drawbacks. It seeks to avoid the appearance of the fictitious accuracy of a percentage, but it is subject to the same causes of variability as the percentage. Particularly in the type of question we are discussing and with

large numbers of scripts there is certain to be a wide variation in the standard of assessment. The latitude in judgment allowed by the α , β , and γ system of marking may sometimes encourage examiners to take less care in trying to arrive at the most accurate assessment possible, and this tendency is increased when the number of scripts to be read is very large. Experience of conducting an examination of this kind makes one consider whether some more objective method of assessment is not available.

There was one other, perhaps more serious, drawback to our examination. The examination should have two functions. It should do the immediate task of picking out the best candidates available at the time; and this our examination did more or less successfully. But it should do something more. It should enable one to accumulate data which can be used in the future. Whether our selection system is good or bad is not something we can know by intuition. We can find out only by recording both the examination assessment and the performance of the students selected. In this way alone can we eliminate what is worthless in our methods and retain what is of value. Actually the kind of questions we used and the system of marking left us with data of little value for future work. Looking back on past results, it was impossible to know or even guess why a particular assessment had been given in any one case and what special feature of the candidate's answer had impressed the examiner. It was also difficult to form an opinion as to the relative value of any particular question for selection purposes. The system did not lend itself easily to progressive experimentation.

In setting out to improve an entrance examination by an experimental method it is important not to underestimate the magnitude of the task. Even if we can record the results and the methods used in assessing there still remains the problem of assessing the product of the selection. At least two or three years must follow after selection before the student reaches the hurdle of the Second M.B. examination, and even then it is difficult to predict how he will do in his clinical studies. Nor is Final M.B. itself the measure of success. The ability to do whatever work is undertaken after qualification is the real ability we should like to test. It is evident that the problem of improving selection by an experimental examination is a long process, and is certainly not one to be solved by any individual or even by any one medical school. Hence the great importance of finding a type of examination to provide more definite data on which the future selector can work.

The "Short Answer" Question

For these various reasons we were led to experiment with a type of question used more extensively in the United States and in this country by those who are interested in the assessment of ability. In the following discussion I propose to call this type of question the "short answer" type in contrast to the "essay" type. The word "essay" is used here not in the sense of the formal essay intended to occupy one to two hours but in the sense that the answer is moulded in essay form—i.e., expressed in the student's own words in properly constructed sentences and arranged more or less into logical paragraphs. The basis of the short-answer question is to substitute for one question of essay type a series of short questions which can each be answered by a few words or sometimes by a single word only. As this type of question has not been used extensively in relation to medical training and examinations it is worth while to consider some of its advantages.

In the ordinary kind of examination there are three factors—the candidate, the examination, and the examiner. For most purposes the candidate is the unknown and we think of him as the only variable. Actually the examination can also be considered as a test either of the particular questions set or, alternatively, of the capacity of the examiners to assess the results. The variability of examiners is known to be at a maximum with just such general questions as we had been using. If we can eliminate one of the three variables—the examiner—we leave only two—the candidate and the examination—and these are the things which we really want to test.

The first advantage of the short-answer question is the elimination of the examiner as a variable, and this is achieved by posing questions to which only one answer is possible, so that discussion of the correctness of the answer cannot arise. The entire elimination of the examiner can be achieved by phrasing the question so that the candidate is offered a number of possible answers out of which the correct one must be chosen. But to retain at the same time the possibility of the candidate's scoring something between 0 and 100% it is necessary to have a large number of questions of graded difficulty, and this also reduces the element of chance in just happening to ask something which the candidate either may or may not know. The second advantage of the short-answer question is to make it possible to deal with very large numbers of candidates without undue labour and without fear of changing standards in assessing results. In fact, the answers can be marked by a reliable clerk. As against this there is the time spent in setting the questions. These need to be carefully constructed so as to yield the best results; but the time spent is at least interesting, and any lapses do not result in injustice to any particular candidate.

When the marks of the short-answer question have been collected it becomes possible to assess the value of the question or selection purposes in a fairly definite way by drawing a frequency curve of their distribution. How this can be used to assess the question will be explained presently, with examples.

One of the purposes of the non-syllabus type of examination is to prevent special coaching, but even dearer to the heart of the "coacher" than the syllabus are copies of old examination papers. Since in the short-answer question the answer is actually written on the question sheet, which must therefore be handed in, the examination paper never becomes public property.

A Preliminary Experiment

In a preliminary experiment along these lines five sets of questions were chosen, which were intended to be a test of (a) elementary science, (b) use of English, (c) capacity to draw inferences from the written word, (d) general knowledge. In the interests of experiment we combined these with essay questions to be answered in the more usual way.* We will deal here only with the short-answer questions, but a statistical analysis of the results of all the questions has been made elsewhere in this issue (p. 367) by J. S. Wilkie. For various reasons it is not desirable to publish the questions in full, but their general form can be seen from a few examples.

1. *Test in Elementary Science.*—Candidates were asked to complete a series of sentences by insertion of a word or a few words in the appropriate space; for example:

Distance is measured in.....
A volt is a unit of.....

The sentences were graded in difficulty. The easiest could be answered by nearly all, the hardest by very few.

2. *Test in Use of English.*—A list of adjectives was given, chosen to include words with a fairly definite derivation, or words with a very precise meaning, or words likely to be confused with others. A series of sentences, each with a blank space, was given, and the candidate was asked to complete each sentence by inserting an appropriate adjective. All the adjectives given did not have to be used. In the following examples the word which ought to have been chosen in each case is given in brackets.

The desire for food is [innate] in the newly born child.
Some animals have [prehensile] tails.

3. *Ability to Form Judgments and Draw Inferences.*—An abstract was given setting out certain arguments, and conclusions based on these. At the end of the abstract a number of statements were made which might or might not agree with what was contained in the abstract. The candidate was asked to say in each case whether the statement was (a) correct or (b) incorrect; or (c) that no evidence was available whether it was correct or incorrect. The judgment of correctness or otherwise was to be based on the information in

the abstract, and not on any other knowledge of the subject which the candidate happened to possess.

4. *General Knowledge.*—Two sets of questions were asked. One was to test general knowledge of a "general" kind. The other was to test general knowledge which might be found specially in people intending to take up a medical career; this was meant to be an approach to the question of interest in medicine.

The Results

The candidates' answers give us certain information about their knowledge of elementary science and of general affairs, and of their ability to use words correctly and to draw inferences. What is the value of these results?

(a) *Elementary Science.*—It is not pretended that the short-answer question gives us a better assessment of the candidate's knowledge of elementary science than does Higher School Certificate. What it does give is a numerical assessment by which different candidates can be compared as regards their knowledge of certain elementary aspects of science, and we hope that this is correlated with their knowledge of other aspects of science. Suppose we had asked a different series of questions, should we have got exactly the same results? Probably not, but the fact that we asked a large number of questions (about 25) graded in difficulty and covering a wide range makes it likely that our assessment will be as reliable as asking a single question demanding a more detailed answer. What we can say with some definiteness is whether the particular set of questions was of a suitable standard of difficulty for our purpose of selection. Fig. 2 is a frequency curve showing the percentage of candidates

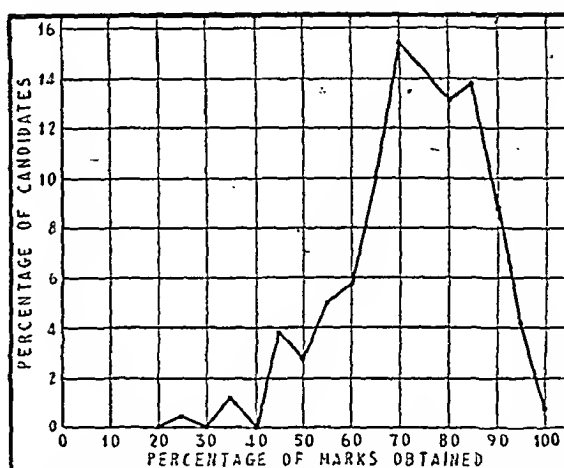


FIG. 2.—Distribution of marks for questions on elementary science (senior group).

who obtained various percentages of marks for the questions in elementary science. The curve is obviously skewed towards the higher percentages. If we had set the examination to eliminate a small number of weak applicants the questions would have been very suitable, but as we wanted to select a small number of the best they proved to be badly chosen. The inclusion of a greater number of difficult questions would have resulted in a skewing towards the lower percentages and would have been much better for our purpose. This is the kind of information which is fairly easily obtained in the short-answer question and is of considerable value for the future. A little consideration will show that if an "essay" question had been set of an equal standard the request to examiners to give a small number of a's and a large number of γ's would have been absurd, and if complied with would have given a distribution of marks which did not correspond with the candidates' performance. With the essay form of answer the absurdity would not have been obvious, and examiners who tried to be helpful might still have complied with the request.

(b) *Use of Words.*—Does the numerical assessment we have obtained here represent in any way the candidate's ability to use the English language to express her thoughts? The answer is that we do not know, and we could find out only by correlating the results of our test with some more certain assessment (if this exists) of the ability to use English. It should be made clear that mistakes in the answers did not represent failure to appreciate subtle shades of meaning but were much more in the nature of "howlers," and left no doubt about the lack of knowledge—e.g., "The desire for food is diabolic in the newly born child," or "Some animals have extraneous tails." The numerical assessment obtained we accept as a measure of some kind of ability in the use of words, with the

* For referring to the statistical analysis by Wilkie it should be noted that the questions cited here appeared in the examination in the following order: (1-5) Questions of essay form not discussed here. (6) Elementary science. (7) Use of English. (8) General knowledge with special reference to medicine. (9) General knowledge. (10) Scientific inference.

proviso that if candidates who do well turn out subsequently to be illiterate we reject the test as a bad one.

(c) *Making Inferences.*—Here perhaps we are on safer ground, as the capacity to make inferences probably varies less from one case to another than does the capacity to know the meaning of a certain word or to reproduce a piece of information. In this particular form of question, however, chance plays a part in the result. In each individual section of the question the candidate had three options—"correct," "incorrect," or "no evidence." If she wrote these answers purely at random she had a chance of scoring correctly in one case out of three, so that zero level of assessment is not 0% but 33%. An examination of the frequency curve of the marks

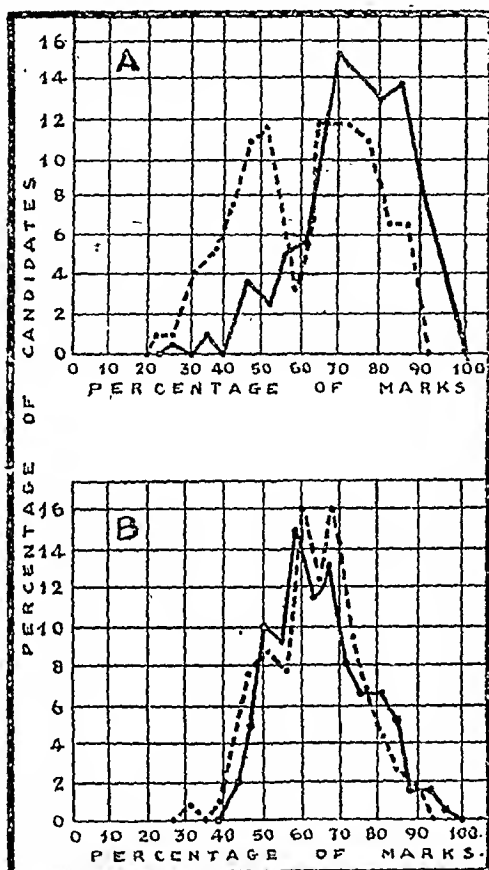


FIG. 3.—Comparison of distribution of marks for first- and second-year candidates in questions on elementary science (A) and inference (B). — — — First year; — Second year.

shows that this is actually the case (Fig. 3) and the curve is fairly symmetrically arranged between 100% and 33%. The element of chance could be reduced by providing a greater selection of answers from which to choose.

It was of some interest to examine the frequency curves for the candidates applying for the first and second year, and to compare these with the curves for first- and second-year candidates obtained in the question on elementary science (Fig. 3). For the inference questions the two curves were roughly the same, whereas for questions on elementary science they were strikingly different, the second-year candidates giving a better performance. This indicated that in the one case—elementary science—we were testing something which depended largely on the extra year's tuition at school, whereas this was not so in the former. Both kinds of qualities—capacity to learn and ability independent of tuition—are of course of interest to us.

The value of the assessment is least certain in the general knowledge question. The argument for using general knowledge as a selection test is that it picks out the person of wide interests and the one who follows current events intelligently. It may also pick out the person with the pigeon-hole kind of mind which can retain names and facts without having any particular capacity to make use of them. It is perhaps best to regard the general knowledge test as very experimental and to keep an open mind on its value. The inclusion of the part of the general knowledge of a more or less medical connexion was an attempt to test for medical interest.

Assessment by Marks

The selection of the successful candidates must be made by some kind of numerical classification of the results. If we have obtained a definite mark for each question, might we have added up and the best candidates chosen by a procedure of arithmetic? Before doing so there are some factors to be considered. In the first place not all the questions are of equal selection value. For example, general knowledge may be more important than ability to make inferences. In making decisions of this kind it is well to remember the arbitrary nature of choice. The modern professional tester of abilities forms his judgments on the relative value of tests much more objectively. He prefers to rely more on a study of the correlation results of different tests than on his feeling as to what is or might not be a test of importance. However, as amateurs we may regard some questions as more or less important than others. Also the meaning of the numerical assessment is always the same. For example, in the question on inference we have already seen that 33% represents the zero mark. The simplest and safest method of assessing the total performance is to arrange the marks of all the questions so that candidates can be divided into quartiles or percentiles. In order to set up a list for interview, candidates in the bottom two quartiles in all questions are eliminated. If this leaves too few, those in the last quartile are eliminated. If it leaves too many, one can begin at the upper end and pick out for interview those who come into the top two quartiles in all questions, or perhaps those who come into the top two quartiles in questions to which we wish to attach more importance. By a continuation of this process a list of any desired size can be made. If one adds to this any candidate who appears in the top quartile of any question, then the chance of overlooking any candidate through a freak bad result in one question is eliminated. The final adjustment of the list will be made in a somewhat arbitrary manner, taking into consideration school testimonials in the borderline cases.

General Conclusions

Our general conclusion with regard to these experiments on short-answer questions was that they were of great value and deserved further trial and experiment, and this is supported by the statistical investigation carried out by Wilkie (see p. 3). The chief advantages were: (1) very great reduction of labour in correcting scripts; (2) greater feeling of confidence that the same standard had been maintained for all candidates; (3) more exact knowledge of the grounds for the numerical assessment in each question, and associated with this more standardization of the selection method, more opportunity of collecting data about the results, and more possibility of seeing how questions could be improved in subsequent examinations. To the psychologist it may seem that we are starting rather naively on a problem which has already been brought to much more advanced stage, and that our experimental efforts to standardize our methods could be short-circuited by the adoption of well-known already carefully standardized tests. It must be remembered, however, that we had to deal with the problem as amateurs, and the presentation of our results is for amateurs like ourselves. If the results of our experiments convince us of the need for professional assistance, then they will not have been in vain. The question of selection by experts is discussed later.

Testing for Character

We have assumed that testing for qualities of character is to be left to interview. All authorities have stressed the importance of character as distinct from ability. Is it possible to adopt any principles for testing character? The case for leaving this as the most important function of the dean of each school has been well stated by Lord Moran, "who the Goodenough Committee" suggested that interviewing was probably best done by a small committee, and that attention should be given to methods developed in the Services. These are made known we must approach this difficult problem independently.

The specific questions we have to answer are the following:
(1) What qualities is the selector looking for in each case?
(2) Can these qualities be quantitatively measured?

rded? (3) How can the results of the selection be ssed? and (4) How can we pick out for the job of ction the people with the greatest aptitude for it?

o tell anyone how to judge character at interview, even if knew, would not be easy. Ability to judge character is of the qualities most people think they possess in high ree, and certainly medical men are no exception. It is cult to know on what each one bases his judgment, as ed it is to know on what one bases one's own judgments. practice all one can say to one's selecting colleague at the of an interview is, "How do you like this candidate?" each person's views, whatever the basis for them, are illy expressed as a like or a dislike. The liking or disliking st then be the thing on which the ability of the selector is be measured. The good selector is he who "likes" candi- es who ultimately turn out to have the traits of character require. The quantitative assessment of like or dislike can roughly recorded in several ways. Each candidate might be into one of a fixed series of classes: e.g., Class 1—a candi- e to be had at all costs; Class 2—a very desirable candidate; ss 3—a good candidate if no better available; . . . Class *n*— t to be taken under any conditions. Another method is to ord each candidate's assessment at interview by a figure for ercentage desirability," based on some arbitrary scale. What se figures mean in relation to the character of the candidate open to some doubt, but what they mean to the selector is rly clear.

In looking for a method of assessing the results of selection e turns to the somewhat analogous problem of assessing the ults of clinical treatment. In comparing different operations e surgeon is not satisfied with an impression that one procedure rather better than the other. He looks for objective evidence the "follow-up." The treated cases are re-examined and air symptoms recorded 6 months, 1 year, 5 years after treat- ent, and a figure is obtained which expresses the value of e treatment in a more or less objective way. Could a similar ethod be applied to the work of the selector? It would mean me officer of the medical school giving a good deal of time collecting periodical reports on the "character" of the idents from members of the teaching staff most in contact h them. One may feel slightly alarmed at the possibility 'this developing into a "Gestapo" system of checking the idents' activities, but this of course is not what we want. tactful dean could find out much of value to record about e students' traits of character without becoming a detective. e process would depend, as even the most objective physical eassessment ultimately depends, on the person entrusted to rry it out.

The selection of medical students has been criticized from any quarters. The British Medical Association in their idence to the Goodenough Committee¹ stated: "The ethods of selection fail to exclude a number who, though ole to pass examinations, have not the necessary aptitude, aracter, or staying power for a medical career." In the orld of sport, when the performance of a representative team ills to satisfy its followers the question is soon asked: "Who lects the selectors?" Let us apply this question to the medical hools.

Selecting the Selectors

The selectors are appointed in different ways in different hools. In some cases the dean or other officer of the aculty makes the selection; in other cases a committee is hosen for the purpose. The dean of the medical school is roably not chosen specially for his selecting abilities, but ore for his general administrative capacity and leadership. he members of the committee are chosen probably as repre- enting various interests within the medical school. Selecting ility may be present in either case, but is probably not very onsciously picked out. It may be that experience is more mportant than innate ability in selecting, but it would seem ossible that there is such a quality as ability to judge character. f there is, then it should be used; if not, much humbug could e saved by recognizing its non-existence. The following ethod might elucidate this point and also help us to find he best selectors.

The candidates, already selected with regard to ability, appear before the dean or the committee. As a result of the interview each

candidate's desirability is expressed and recorded. In the case of selection by committee there may be a joint interview or a series of separate interviews. In either case it is important that an independent assessment should be made by each member of the committee before there is any general discussion of the candidate's merits. Subsequent discussion must lead to the final assessment which will decide the candidate's immediate fate, but for purposes of selecting the selectors we are interested in a permanent record of each independent individual assessment. These individual assessments will be kept and subsequently compared with the results of the 1-year, 2-year, 5-year, or *n*-year follow-up. Initially each person would undertake to serve on the selection committee for a certain term—e.g., 3 years. By this time some results of the follow-up would be available. If it appeared that someone had made more bad guesses than his colleagues he would retire from the selection panel, and be replaced by a new selector. Those who seemed to be more successful would be asked to continue with the work.

If this method seems clumsy, laborious, and uncertain, let us bear in mind that so is the clinical follow-up in many cases. "The object of science," said Galileo,² "is to measure what can be measured and to make measurable what can be made measurable." In the process of investigating ability to select we must consider ourselves at the stage of making measurable rather than of measuring, but then in every new field of work this is the natural order of progress.

Weeding out the Unfit

The view of the Goodenough Committee¹ with regard to weeding out the unfit at an early stage in the training can be interpreted in two ways. It might mean the process as carried out at present, with perhaps a little more strictness in the application. This means essentially weeding out those unable to pass their examinations after a certain number of attempts. In spite of selection the occasional academic failure³ will probably still be found. But weeding out misfits could be applied in another way. We might accept a greater number of medical students than we intend should complete the training, and then at a given stage select an arbitrary percentage of these for further training, or at least select the really successful students, in contrast to the present system of eliminating the obvious failures. The greatest difficulty in this process would be the responsibility of rejecting students on any other than academic grounds. Another great difficulty would be that with the present medical curriculum the rejection, if it were to be at an early stage, would have to be made before the students had started any clinical work—i.e., before it could be seen how they developed in this most important part of their career. In the Services the selector could weed out the misfits at any stage of the training, and they could turn to another occupation with no great feeling of injustice or without waste of time and money in commencing a training which was not to be completed and put to use. But a medical training has little in common with the special short Service courses, and the ruthless weeding out of misfits would raise difficult problems in civilian life. Browning⁴ has suggested wholesale weeding out from a large number of starters as the basis of selection of future medical personnel. It would be of interest to know exactly what the Goodenough Committee had in mind when they spoke of weeding out the unfit. Did they think of weeding out on any other grounds than academic failure, and did they consider the full implications of this?

Some Miscellaneous Factors in Selection

Age

A present tendency is to draw candidates from a rather wide age group. On the youthful side this is because of fear of not being accepted before the eighteenth birthday, and also because of a feeling that the long medical course needs as early a start as possible. Against these fears most medical schools rightly insist that applicants should reach a certain maturity and educational standard before acceptance. The problem of the older applicant is more difficult. We shall omit the case of the Service man, who must receive special consideration. What consideration should be given to the applicant of 25 to 40 whose claims compete with those of the 18's and 19's? The usual story is that the older applicants always wanted to do medicine but could not afford it, and that change in circumstances now makes a medical career possible. If the problem is looked at from the general interest standpoint then it must

we shall see, the difference between the correlations of the two years is not significant.

Taking the average correlations for the two years together, we find:

Questions 1-5, average of the ten correlations: 0.447 ± 0.04
 " 6-10, " " " " " " " " 0.588 ± 0.03

The difference is 0.141, and its standard error is 0.05. It may therefore be taken that the difference is significant.

If we now remove Question 10 from the second part and sum its correlation with those of the first part, we shall obtain a contrast between those questions which might be supposed to depend on intelligence or general scientific ability and those (Questions 6-9) which appear to depend rather on general knowledge or culture. Here the averaged correlations are:

Questions 1-5 and Q. 10, correlated with the totals of the test (12 correlations): 0.4415 ± 0.042 .

Questions 6-9, correlated with the totals of the test (8 correlations): 0.6309 ± 0.031 .

Difference: 0.189 ± 0.05 .

These differences are all in favour of the second part of the test, and this remains true even if we consider the "general knowledge" questions of this second part alone—that is, after the removal of the "intelligence" Question 10. The differences are not very great, but they allow us to say that the general knowledge questions have *at least* as much weight in the totals as have the other questions.

Value of the General Knowledge Questions

So far we have taken the totals as reliable—that is, we have assumed that the test as a whole does select the desirable candidates, and have considered the value of the parts in relation to the whole. Admitting that the test is at least as much one of general knowledge as of intelligence or scientific ability, we still have to attempt an answer to the questions: How far does general knowledge of the kind investigated by the test constitute a desirable part of such a test? How does it correlate with general scientific ability? The questions include no standardized test of intelligence, but we may assume that Question 10 is a test of intelligence and possibly of other qualities desirable in a medical student. For instance, the mode of application of intelligence is one which would be useful in the treatment of scientific problems. It is also possible that some other ability is tested by this question; it might be also a test of self-confidence—but again this is not an undesirable quality in a medical student.

In the absence of any other measure of intelligence let us accept this question as such a measure and see how it correlates with the other parts of the test. As a preliminary study this question was correlated with each of the questions in the first part (Questions 1-5) in the first year. These questions might be expected to correlate highly with a test of general scientific ability, but in no case was there any significant correlation; in some cases the correlation actually obtained was negative. This does not mean that no positive correlation exists, since the numbers are small (118) and the difficulty of marking is great, but we may be sure that there is no *high* correlation between these questions and the one (Question 10) chosen as *intelligence*.

It may here be noted that Question 4 was unusual in that the score of the first year did not differ significantly from that of the second year. This might be accepted as proof that this question is a test of "intelligence" (it also bore signs of exceptionally careful marking); nevertheless it did not correlate significantly with Question 10. It follows, then, either that the absence of a significant difference in averages is not a sufficient proof that a test is one of intelligence, or that the application of intelligence is of various kinds. It is in fact usual in an intelligence test not to rest content with one type of question, but to give a wide range, so that all types of application may be sampled.

Having, in this preliminary trial, failed to find significant correlations, a more extensive investigation seemed to me to be indicated. I now took the figures from the second year, in which the number was greater (258), and, so as to overcome to some extent the unreliability of marking in the first five

questions, I added together the marks for all five questions for each student and made my correlations with the resulting marks.

The results of correlating the totals of Questions 1-5 with Question 10 are given below. For comparison, the results of correlating the totals of Questions 6-9 with Question 10 are also given.

Qs. 1-5/Q. 10..... $r=0.206 \pm 0.060$
 Qs. 6-9/Q. 10..... $r=0.294 \pm 0.057$

It will be seen again that, though the difference between these correlations is not great, it is in favour of the general-knowledge questions. It appears, then, that on the results of this test the questions in general knowledge,* besides their intrinsic value in the selection of medical students, are at least as reliable as tests of intelligence and general ability as the more academic type of question represented by Nos. 1-5.

In comparing the first and second years one question which arises is whether, in any case, one group is more consistent than the other—that is, whether it has a greater or lesser scatter. This can be judged by comparing the standard deviations. In no case was any significant difference found.

Questions Separately Considered

The next part of our study consists in considering each question separately. Here the chief interest centres about the differences in average scores for the two years; in other words, which year did better as a group on each question. As we should expect, on the whole the second year has an advantage over the first, except in those questions which in general form approximate most closely to those of standard intelligence tests. There are, however, two interesting exceptions: In the first two questions the first year did significantly better than the second year.

Without being too litigious I think we may say that this is an additional defect of the first part of the test. It is difficult to imagine what useful quality could be better developed in younger students. Intelligence certainly would not be more fully developed at an earlier age than at a later, and all training and acquisition of knowledge should give the advantage to the older student. However, without further investigation it clearly would not be wise to insist on this point. It is not difficult to think of circumstances which might have had a prejudicial effect on some of the studies of the older group, since both groups received their education during the war, but at different periods.

(Note: In repeating the figures of correlations I have simplified some of them so that they do not agree exactly with those given above. The significance of the figures is of course in no way affected.)

Question 1.—This question involved observation of some easily seen physiological reactions of the human body. The correlations with the total scores were:

First year: $r=0.385 \pm 0.08$
 Second " : $r=0.281 \pm 0.06$

The correlation in the case of the second year was the lowest obtained in correlating the results of the separate questions with the totals.

Average of first year: 53.6
 " " second " : 50.0

The first year did better on this test, the difference being 3.6 and the standard error of the difference 1.3. Hence the difference is significant. I do not know why this should be so.

Question 2.—A question concerning methods of teaching two school subjects. The correlations with the total scores were:

First year: $r=0.482 \pm 0.07$
 Second " : $r=0.444 \pm 0.05$
 Average of first year: 50.4
 " " second " : 45.8

The first year did better than the second, the difference being 4.6 ± 1.7 . It may be that the younger group were in a better position to remember the details of teaching of school subjects.

* This does not, of course, apply to any questions in general knowledge, but only to those given in this test. No prediction can be made about a question till it has been tried out.

Question 3.—A question in general biology, not to say agriculture and fisheries. The correlations with the total scores were:

First year: $r=0.436 \pm 0.07$
 Second „ : $r=0.447 \pm 0.50$
 Average of first year: 38.2
 „ „ second „ : 42.4

The second year did significantly better than the first, the difference being 4.24 ± 2.13 . The difference is thus probably, not certainly, significant. The second-year students may have been able to apply their better knowledge of biology.

Question 4.—This was a set of questions more like those of the familiar intelligence tests; it involved the use of the concepts of proximate genus and differentia of species. The relations with the total scores were:

First year: $r=0.616 \pm 0.06$
 Second „ : $r=0.539 \pm 0.04$
 Average of first year: 43.14
 „ „ second „ : 42.64

The difference was 0.50 ± 2.06 ; hence the difference was not significant. This was the only case, except Question 10, in which there was certainly no significant difference between averages. Considering the form of the question, it is probable that it is in fact a test of intelligence, though not of the same mode as Question 10.

Question 5.—This was a straightforward calculation of the length of a chemical solution, given the necessary data. The relations with the total scores were:

First year: $r=0.385 \pm 0.08$
 Second „ : $r=0.400 \pm 0.05$
 Average of first year: 27.7
 „ „ second „ : 36.32

The difference was 8.62 ± 2.54 .

Question 6.—This was set in questionnaire form, involving the use of scientific terms in the appropriate context. The correlations with the total scores were:

First year: $r=0.549 \pm 0.06$
 Second „ : $r=0.451 \pm 0.05$
 Average of first year: 60.8
 „ „ second „ : 75.5

The difference was 14.7 ± 2.04 . Even for the first year the question was too easy, and very much so for the second year. Comparison of this question with the previous one is interesting, because the students knew the terms but could not do the calculations.

Question 7.—This was a questionnaire involving the use of unusual adjectives in appropriate contexts—the context being given, the adjective to be chosen from a given list. The correlations with the total scores were:

First year: $r=0.806 \pm 0.03$
 Second „ : $r=0.680 \pm 0.03$
 Average of first year: 46.7
 „ „ second „ : 53.3

The difference was 11.6 ± 2.2 . The correlation of the first year in this question was the highest obtained. This is not surprising, since vocabulary is known to correlate highly with intelligence, and might also be expected to do so with general knowledge.

Question 8.—This was a questionnaire involving the display of general interest in the history of medicine and in the treatment of medicine in literature. The correlations with the total scores were:

First year: $r=0.701 \pm 0.05$
 Second „ : $r=0.596 \pm 0.04$
 Average of first year: 38.3
 „ „ second „ : 44.4

The difference between the average scores of the two years was 3.6 ± 1.83 .

Question 9.—This was a questionnaire designed to test the general knowledge of the candidates by asking them to specify

for what certain persons of the past and present are famous. The correlations with the total scores were:

First year: $r=0.638 \pm 0.05$
 Second „ : $r=0.624 \pm 0.04$
 Average of first year: 37.54
 „ „ second „ : 41.30

The difference was 3.76 ± 1.93 . Hence the difference is not certainly significant.

Question 10.—This is an elaborate test in deductive reasoning in a scientific context. The answers are given in the form of a questionnaire. Since it was possible to score 30% by chance, the examiners gave 0 for any candidate who did not score more than this. The correlations with the total scores were:

First year: $r=0.327 \pm 0.08$
 Second „ : $r=0.504 \pm 0.05$
 Average of first year: 42.20
 „ „ second „ : 45.35

The difference was 2.95 ± 2.05 . Hence there is here almost certainly no difference between the scores of the two years, and for this reason, as well as because of the form of the question, it has here been accepted as a test of intelligence in the absence of any standardized test. The difference between the correlations of the first and second year is 0.177 with a standard error of 0.09—hence of doubtful significance (see above).

Summary

The test consists of two parts, the first being in the form of questions to be answered by continuous passages of prose—in fact, like any other written examination. The second part is in the form of questionnaires—that is, each question consists of a number of short sentences (subquestions) to which the answer can be given in one word. The purpose of this analysis is to discover whether the first part is in any way superior to the second as a selective test: if it is not, then the practical advantages of the method of the second part are so great that this form would certainly be preferred.

On the given figures, which are for most purposes very reliable, there can be no question of the first part having any advantages over the second. The conclusion, therefore, is that a test set exclusively in the form of questionnaires is as reliable for selection of candidates as one set in the usual form of a written examination.

THE MEDICAL COUNCIL OF INDIA

BY

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History

The establishment of medical colleges at Calcutta and Madras in 1835 marked the beginning in India of State-organized education in modern medical science. Ten years later the Grant Medical College was opened at Bombay, and in 1860 a medical college was started at Lahore. Although a number of medical schools sprang up to provide training for hospital assistants and sub-assistant surgeons, later known as licentiates, it was not until 1906 that the need for expansion of the teaching for the university standard was recognized. The medical college at Lucknow was established in 1911, an example followed by other centres, and in 1925 there were ten university medical colleges in India, including the Lady Hardinge Medical College, New Delhi, exclusively for women. In the early days the medical colleges granted their own diplomas, but in 1857 the medical college at Calcutta became affiliated to a university and others followed suit.

There was no central or provincial body to register the qualified medical men, to improve their status and standard of education, and to regulate the practice of scientific medicine in the country. Medical education was in the hands of the members of the Indian Medical Service who were qualified in the United Kingdom. In 1892 Part II of the British Medical Act, 1886, which conferred on the General Medical Council the duty

of ascertaining the sufficiency of the examinations leading up to the qualifying examinations, was applied to India, and before 1920 the General Medical Council had accepted for registration the degrees and diplomas of the Universities of Bombay, Calcutta, Lucknow (Allahabad), Madras, and the Panjab. Between 1912 and 1936 all the Provinces in British India, except the North-west Frontier Province and Sind, enacted their Medical Registration Acts in pursuance of which medical councils were established in each Province. These councils, however, were concerned only with the standard of medical education in their respective provinces. There was thus no central or other co-ordinating authority empowered to maintain a minimum uniform standard of medical education for the whole country. Therefore in 1921 the G.M.C. addressed a questionnaire to those Indian universities whose qualifications were recognized by it, and, from the replies received, that Council felt that the teaching of midwifery did not, except in Madras, reach a standard which would be recognized for a university in the United Kingdom.

In 1922, on the invitation of the Secretary of State for India, Sir Norman Walker visited India. In his report he expressed the opinion that each university could bring its regulations sufficiently in accord with the requirements of the G.M.C. to enable that Council to continue to recognize its diplomas. Consequently Colonel Noddham was appointed as Inspector of Medical Teaching in the Indian Universities, and on his reports the G.M.C. continued to recognize the Indian degrees. The Calcutta University did not agree to such inspections by an outside authority, and therefore the G.M.C. withdrew recognition of the qualifications of that university from Nov. 30, 1924. This was, however, resumed on May 13, 1928. The necessity for a central co-ordinating body was more keenly felt after the war of 1914-18, as some colleges were unable to attain the uniform standard required by the G.M.C. and regular inspections by that Council were resented. Early in 1926 a non-official Bill dealing with the subject was introduced in the Council of State, but as it met with opposition in various quarters it was dropped.

Sir Norman Walker again visited India, and in 1928 the question was taken up by the Government of India, and subsequently, in July, 1929, a conference of Provincial representatives was convened. As the conference was opposed to the establishment of such a central authority, the matter was again dropped for the time being. Meanwhile, to meet the criticisms and objections of the G.M.C.—which, since 1922, had recognized the Indian degrees for limited periods only, on the basis of reports submitted by the inspectors appointed on its behalf, and which in 1927 expressed itself in favour of the establishment of an All-India Medical Council with which it could deal direct—the Government of India proposed to appoint a whole-time Commissioner of Medical Qualifications and Standards in India. In view of the opposition the proposal evoked, both inside and outside the Legislative Assembly, it had to be abandoned. The abandonment of this proposal and the non-acceptance by the G.M.C. of an alternative proposal for the appointment, as a temporary measure pending the establishment of an All-India Medical Council, of a board to supervise medical qualifications, led the G.M.C. in February, 1930, to withdraw the recognition of all the Indian medical degrees. A decision of the G.M.C. completely changed the whole sphere and made it imperative to establish a central council. Therefore, in June, 1930, a second conference, consisting of the representatives of Provincial Governments and of all the Indian universities, was convened by the Government of India, and it was resolved that the establishment of an All-India Medical Council was essential and acceptable to it in principle, and that a Bill should be drafted and legislation undertaken to bring the council into existence. Accordingly, a Medical Council Bill was introduced in the Legislative Assembly in September, 1932, and was referred to a Select Committee. The Bill was passed in the Autumn Session of 1933, and the Indian Medical Council Act No. XXVII of 1933 was brought into force with effect from Nov. 1, 1933. In pursuance of this Act, the Medical Council of India came into existence on Feb. 15, 1934.

So much for the history of the formation of the Council. Let us now turn towards its constitution and achievements since its inception.

Constitution and Functions

The constitution of the Council was slightly changed under the Adaptation of India Laws Order, 1937, and now it is composed of: (a) One member from each Governor's Province nominated by the Central Government. (b) One member elected by each British Indian university having a Medical Faculty, to be elected from among the members of the Medical Faculty. (c) One member from each Province where a medical register is maintained, to be elected from among themselves by persons enrolled on the register who possess recognized medical qualifications or medical qualifications granted by a British Indian university. (d) Four members to be nominated by the Central Government.

For the first four years of the Council's constitution the preside was nominated by the Governor-General-in-Council. Maj.-Gen. S. C. A. Sprawson, C.I.E., K.H.P., I.M.S., was nominated as the first president, and he held office till Feb. 13, 1937, save for four and half months when Maj.-Gen. Sir Frank Connor, D.S.O., K.H.P., I.M.S., was nominated in his leave vacancy. After the former's retirement Maj.-Gen. E. W. C. Bradfield, C.I.E., O.B.E., K.H.P., I.M.S., was nominated, and in February, 1938, he was elected by the Council as its first elected president. He was succeeded by Dr. B. C. Roy as the first non-official president, and in October, 1945, Dr. Abraham S. Erulkar was elected to this office.

The secretary was nominated by the Governor-General-in-Council for the first four years from the beginning of the Act. Mr. Farquhar Macrae, M.B., C.M., was the first nominated secretary, and in May 1935, he was succeeded by Lieut.-Col. G. T. Burke, I.M.S. From Nov. 1, 1937, the Council appointed Khan Bahadur Dr. K. A. Rahman, O.B.E., as its secretary. In February, 1946, he was succeeded by Khan Bahadur Dr. A. H. Butt.

The vice-president and the members of the executive committee are elected by the Council from amongst its members. The executive committee consists of seven members, of whom five are elected by the Council, and the president and the vice-president are *ex-officio* members and are also president and vice-president respectively of the executive committee. A member of the Council holds office for a term of five years, and under the regulations framed by the Council the term of office of the vice-president and the members of the executive committee has been fixed for two years.

The medical qualifications recognized under the Act are contained in two Schedules. The First Schedule is composed of medical qualifications granted by medical institutions in British India, and the non-Indian medical qualifications are given in the Second Schedule. Inclusion in the latter Schedule is sufficient qualification for enrolment on any Provincial Medical Register. The Schedules are attached as Appendices I and II.

The functions of the Council fall under two heads: (1) The maintenance of a uniform minimum standard of higher medical qualifications for the whole of British India; and (2) The furtherance of the recognition of these qualifications in States and countries outside British India, with its corollary, the recognition in that country of approved qualifications of such States or countries.

Maintenance of Uniform Standard

Immediately after its constitution the Council drew up its Recommendations on Professional Education and on Professional Examinations. In view of the latest developments and suggestions for, the improvement of the medical curriculum, a revision of the former was undertaken in 1936. The modifications recommended came into operation from 1940. With a view to uniformity in the syllabus of the pre-medical course the Council appointed a board of experts, who formulated the minimum requirements in the basic scientific subjects. Their findings have been forwarded to the Inter-University Board for necessary action. The Council has also laid down minimum qualifications necessary for the appointment of teachers in a medical college.

The first round of inspections of courses of instruction and of examinations of all the British Indian universities was carried out between 1934 and 1938. As a result of this much improvement was effected, and the qualifications of all the universities are now included in the First Schedule. On the recommendation of the Council the M.C.P.S. qualification granted by the College of Physicians and Surgeons, Bombay, has also been placed on the Schedule and is recognized when granted after April 30, 1944. The Council has been engaging itself in inspecting the courses of instruction, and the

ilities for teaching and examinations in the pre-clinical and clinical subjects.

In consequence of the Council's recommendation to the Central Government to ask the Provincial Governments either to abolish the medical schools or to raise them to university standard, the Agra Medical School, Stanley Medical School, Madras, and Amritsar Medical School have been raised to college standard. Steps in this connexion are being taken in other Provinces, and new colleges are being established under the post-war reconstruction schemes. An amending Act, 1942, powers have been vested in the Council to appoint visitors in addition to inspectors.

The Women's Christian Medical College, Ludhiana, and the Lancy Medical College, Amritsar, were visited on behalf of the Council. The Agra Medical College has been inspected, but before deciding the question of the recognition of the M.B., B.S. degree granted by the Agra University, the Council has appointed visitors in order to find out how far the necessary improvements suggested by the inspectors have been carried out.

The Council accorded temporary recognition to certain qualifications—viz., D.M.S. Madras, L.M.S. Panjab State Medical Faculty, S.M.F. Panjab and U.P., M.M.F. Bengal—for purposes of recruitment to the Emergency Cadre of the I.M.S. After a visitation, the M.B., B.S. degree granted by the Osmania and Mysore Universities was also given similar temporary recognition as a war measure. As regards permanent recognition, the Osmania Medical College was inspected on behalf of the Council, and the reports are under consideration. The Mysore University is not yet ready for inspection. Emergency commissions for holders of foreign qualifications not recognized by the Council were disposed of on individual merits by the president.

The executive committee of the Council did not approve of the Government's suggestion that during the war the period of training of medical students should be cut short or the standard of examinations lowered. It was, however, decided that if a member of the staff of a medical college joined the Army, his work might be carried out by the senior students, provided suitable arrangements were made to continue their studies.

In 1937 the Council made recommendations regarding admissions of licentiates to the M.B., B.S. degree. In 1943 certain concessions were allowed, operative during the war and for three years thereafter. These were followed by further concessions, and the periods of training of the different categories of licentiates for the degree have been clarified. The Council has been moving the universities in this connexion, and as an interim measure it requested the Central and Provincial Governments to take steps to provide suitable teaching facilities to the licentiates to obtain the M.B., B.S. degree, by utilizing so far as possible the medical schools and colleges already in existence, and by establishing new institutions wherever possible and necessary.

The Council's proposal for an All-India Medical Register is receiving the consideration of the Central Government. It is intended to include licentiates as well as Indian National holders of foreign qualifications not recognized by the Council but borne on the Provincial registers up to a fixed date. In 1937 the Council made a survey of the teaching in the subject of midwifery, and the information so collected was compiled in a pamphlet. A further survey was made in 1942. The Council has drawn the attention of the universities to the desirability of paying special attention to the teaching of orthopaedics because of its growing importance due to the war. It also suggested that special instruction in the diagnosis and treatment of leprosy on modern lines be provided for students of medical colleges.

Recognition of Qualifications

With a view to making provision relating to medical diplomas granted in the United Kingdom or Burma, which is referred to in subsection (1) of section 120 of the Government of India Act, 1935, the Medical Diplomas Act, 1939, has been enacted by the Indian Legislature.

As a result of negotiations the G.M.C. has accepted for recognition the medical qualifications granted by the British Indian universities included in the First Schedule, except Andhra University. This matter is under the consideration of the G.M.C. It has also been informed of the recognition by the Medical Council of India of the qualification of M.C.P.S. Bombay. In view of the defects pointed out by the inspectors

of the G.M.C. regarding the qualifications granted by some of the Licensing Bodies in the United Kingdom, the Medical Council of India has recommended discontinuance of the recognition of such qualifications; the matter is receiving the attention of the Central Government.

After negotiating with countries and States outside British India, the Council entered into schemes of reciprocity, in some cases direct and in others through the G.M.C., and in 1937 the Second Schedule was revised accordingly. In 1940 the Council did not favour indirect reciprocity, and on its recommendation the Schedule was further amended whereby reciprocity now exists only with Malta, New Zealand, and Burma. The question of mutual recognition of medical degrees between this Council and the South African Medical Council is under consideration by that Council. Medical qualifications granted in Italy and Japan are now recognized only when granted on or before Oct. 10, 1940, and Dec. 8, 1941, respectively.

The Council has asked the Central Government to set up a General Reciprocity Board to facilitate reciprocity between India and the countries comprising the British Commonwealth of Nations, and also to remove, by mutual discussion, any difficulty in the way of establishing reciprocity with these countries, and to maintain it when once established. The matter is being examined by the Central Government and the India Office.

It may be borne in mind that the Medical Council of India has to function both internally and externally within the four corners of the Act under which it has been constituted. It is neither an administrative nor a legislative body. It cannot amend, alter, or change the Act. Even for its finances it has to depend solely on the Central Government. Within its limitations the Council has been doing its best towards the attainment of efficiency at home and honour abroad.

APPENDIX I

FIRST SCHEDULE.—Recognized Medical Qualifications Granted by Medical Institutions in British India and approved by the Medical Council of India

Medical Institution	Recognized Medical Qualification	Abbreviation for Registration
University of Allahabad	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. All.
University of Bombay	Licentiate in Medicine and Surgery	L.M.S. Bom.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Bom.
	Doctor of Medicine	M.D. Bom.
	Master of Surgery	M.S. Bom.
University of Calcutta	Licentiate in Medicine and Surgery	L.M.S. Cal.
	Bachelor of Medicine	M.B. Cal.
	Doctor of Medicine	M.D. Cal.
	Master of Surgery	M.S. Cal.
	Master of Obstetrics	M.O. Cal.
University of Lucknow	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Lucknow
	Doctor of Medicine	M.D. Lucknow
	Master of Surgery	M.S. Lucknow
University of Madras	Licentiate in Medicine and Surgery	L.M.S. Mad.
	Bachelor of Medicine and Master of Surgery	M.B., C.M. Mad.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Mad.
	Doctor of Medicine	M.D. Mad.
	Master of Surgery	M.S. Mad.
Panjab University	Licentiate in Medicine and Surgery	L.M.S. Pan.
	Bachelor of Medicine	M.B. Pan.
	Doctor of Medicine	M.D. Pan.
	Master of Surgery	M.S. Pan.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Pan.
Patna University	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Patna
	Doctor of Medicine	M.D. Patna
	Master of Surgery	M.S. Patna
Andhra University	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Andhra
	Doctor of Medicine	M.D. Andhra
	Master of Surgery	M.S. Andhra
	Licentiate in Medicine and Surgery	L.M.S. Andhra
College of Physicians and Surgeons, Bombay	Membership	M.C.P.S. Bom.*

* A recognized medical qualification only when granted after April 30, 1944.

APPENDIX II

SECOND SCHEDULE.—Recognized Medical Qualifications Granted by Medical Institutions outside British India

Country	Qualifications		
UNITED KINGDOM	Registrable qualifications admitting primarily to the <i>Medical Register</i> granted by licensing bodies in the United Kingdom, as shown in Table F set out in the <i>Medical Register</i> .		
Other Countries	Registrable Qualifications		Abbreviations
	Title	Nature of Qualifications as Stated on Diplomas	
AUSTRALIA			
<i>New South Wales</i>			
University of Sydney|| .. .. .	M.B., M.D., Ch.M., B.S.	Medicine and Surgery	U. Sydney
<i>South Australia</i>			
University of Adelaide* || .. .. .	M.B., B.S., M.D., M.S.	"	U. Adelaide
<i>Victoria</i>			
University of Melbourne†	M.B., M.D., B.S., M.S.	"	U. Melbourne
BURMA			
University of Rangoon	M.B., B.S.	"	U. Rangoon
CANADA			
<i>Alberta</i>			
College of Physicians and Surgeons of the Province of Alberta† ..	Member	"	C.P. and S. Alta.
University of Alberta†	M.D.	"	U. Alberta
<i>Manitoba</i>			
College of Physicians and Surgeons of the Province of Manitoba†	Member	"	C.P. & S. Man.
University of Manitoba†	M.D., M.D., C.M.	"	U. Man.
<i>North-West Territories</i>			
College of Physicians and Surgeons of the Province of North-West Territories†	Member	"	C.P. & S.N.W. Terr.
(When held in conjunction with Licence of the College of Physicians and Surgeons of the Province of Saskatchewan or the Province of Alberta)			
<i>Nova Scotia</i>			
Nova Scotia Provincial Medical Board* || .. .. .	L.M.S.	"	N. Scotia P.M. Bd.
Dalhousie University* || .. .. .	M.D., C.M.	"	Dalhousie U.
<i>Prince Edward Island</i>			
Prince Edward Island Medical Council†	L.M.S.	"	M. Co. P.E.I.
CEYLON			
Ceylon Medical College* || .. .. .	L.M.S.	"	Ceylon M. Coll.
HONG KONG			
University of Hong Kong* || .. .. .	M.B., B.S., M.D., M.S.	"	U. Hong Kong
ITALY			
All Royal Italian Universities‡ §	M.D.	"	
JAPAN			
All Imperial Universities‡ ¶	M.B. (Igakushi), M.D. (Igaku Hakushi)	"	
Any Government or Prefectural special colleges designated by a Minister of Education of Japan‡ ¶	M.B. (Igakushi)	"	
MALTA			
Royal University of Malta	M.D.	"	U. Malta
NEWFOUNDLAND			
Newfoundland Medical Board†	L.M.S.	"	Nfld. M. Bd.
NEW ZEALAND			
University of New Zealand	M.B., Ch.B., Ch.M., M.D.	"	U.N. Zealand
UNION OF SOUTH AFRICA			
University of South Africa†	M.B., Ch.B.	"	U.S. Africa
University of Cape Town* || .. .. .	M.B., Ch.B., M.D., Ch.M.	"	U. Cape Town
University of the Witwatersrand, Johannesburg* || .. .. .	M.B., Ch.B., M.D., Ch.M.	"	U. Witwatersrand
STRAITS SETTLEMENTS AND FEDERATED MALAY STATES			
King Edward VII College of Medicine, Singapore* || .. .. .	L.M.S.	"	Singapore Med. Coll.

* The qualification must be included in Table I of the *British Medical Register*.

† When granted on or before Oct. 31, 1937.

‡ The qualification must be included in Table J of the *British Medical Register*.

|| When granted on or before March 31, 1942.

§ When granted on or before Oct. 10, 1940.

¶ When granted on or before Dec. 8, 1941.

Medical Memoranda

Post-operative Occurrence of Exophthalmic Goitre

As I have been unable to trace any similar recorded case I feel the following may be of interest.

CASE HISTORY

inese merchant seaman aged 40 was admitted to the Chinese's Home at Birkenhead complaining of a swelling in the oin, with occasional attacks of pain. He stated that the g had always been there but had been lately increasing in The pain had been present for only a month or two.

Examination showed him to be a healthy male. The heart, lungs, and central nervous system appeared to be normal. The pulse was slow, about 64. The right side of the scrotum was empty, and there was a right inguinal hernia. The undescended testicle was indefinitely palpable. The patient was aware of the condition and was anxious to have the testicle placed in the scrotum. When it was explained to him that there was little likelihood of accomplishing this successfully, and even less likelihood of the testicle functioning, he was very distressed, as he was most anxious to return to China and raise a family. By the aid of interpreters it was eventually made clear to him that his remaining sound testicle was quite sufficient. He was greatly relieved at this and cheerfully consented to have his hernia operated upon and, if necessary, his undescended testicle removed.

At operation, under chloroform and ether, it was found that the testicle was only about the size of a thumb-nail and obviously useless. It was therefore removed, and the hernia dealt with in the usual manner. The inguinal canal was completely occluded. The general

condition during the operation was excellent, and the immediate post-operative period passed without incident.

Fourteen days after operation the patient complained of a swelling in the right side of the neck. During the next six days this increased to about the size of a pigeon's egg. At the end of this time a smaller swelling occurred on the left side. On examination it was evident that the swellings were due to enlargement of both lobes of the thyroid gland. Two or three days after the first swelling started it was noticed that the patient's eyes were beginning to "stare." This went on to quite evident exophthalmos. The pulse rate crept up in ten days from his normal of 64 to the region of 85-90. No tremors were present. An obvious diagnosis of exophthalmic goitre was made. No family history of a similar complaint was elicited.

COMMENT

It must be a comparatively rare event for a patient to develop exophthalmic goitre while actually in hospital. The possibility that it was just coincidence is extremely unlikely. It seems improbable that there was any connexion between the fact that an endocrine gland was removed at operation and that a disease involving another gland followed, especially as the testicle was atrophied. The most obvious explanation of the onset is the emotional factors surrounding the operation. One would, however, expect more such cases to occur. The rapid onset of symptoms in the above case brings the apparent cause prominently to the foreground.

I am indebted to Dr. Wilson, the Medical Superintendent, for permission to publish this case.

WILLIAM MCKENZIE KELSO, M.B., Ch.B.,
Surgical Officer, Chinese Seamen's Home, Birkenhead.

Reviews

PRACTICAL ANATOMY

Practical Anatomy. By W. E. Le Gros Clark, D.Sc., F.R.S., F.R.C.S. Professor of Anatomy in the University of Oxford. (Pp. 470; 251 illustrations. 5s. net.) London: Edward Arnold and Co.

Knowledge of the main facts of topographical anatomy is essential for the medical student. Many teachers of anatomy now believe that the student should not be asked to memorize details of topographical anatomy which may be of little value to him in his subsequent clinical studies. While there is general agreement with regard to the main facts which must be taught, there is less unanimity as to what minutiae should be included. By the drastic elimination of superfluous details Prof. Le Gros Clark has succeeded in producing a dissecting manual in one volume. This book is designed to include all aspects of dissecting-room anatomy which will be required by medical students for the 2nd M.B. examination or its equivalent and for their subsequent clinical work. The author makes it clear that the book does not treat of the details of topography which are of importance to the specialist for operative technique. He, like many anatomists, believes that these details should be acquired after qualification. It is only by the elimination of any of the topographical minutiae that time can be found, in an irriculum which is overcrowded, for the teaching of other aspects of anatomy—surface and radiological anatomy, embryology, and post-natal growth—which are of more importance to a student than small points of topographical anatomy.

The book is divided into the following sections: the upper extremity, the lower extremity, the head and neck, the brain, the thorax, and the abdomen. In each section instructions are given concisely and clearly for the exposure and recognition of the main structures, and in addition the dissector is referred to preliminary and supplementary studies before and after the dissection of each region. It is unfortunate that the illustrations do not attain the standard of the text; some of them are too small and diagrammatic to be of much value to the student. In addition the absence of colour in vessels and nerves in some instances makes the illustrations look unduly complicated.

This book will be welcomed by teachers and students alike and will undoubtedly have the success which it deserves in this and subsequent editions.

TEACHING BIOCHEMISTRY

An Introduction to Biochemistry. By William Robert Fearon, Sc.D., M.B. Third edition, revised throughout and enlarged. (Pp. 569. 21s.) London: William Heinemann Medical Books. 1946.

A Textbook of Biochemistry. By Philip H. Mitchell, Ph.D. (Pp. 640; illustrated. 25s.) New York and London: McGraw-Hill Book Company. 1946.

Human Biochemistry. By Israel S. Kleiner, Ph.D. (Pp. 573; 70 text illustrations and 5 colour plates. 30s.) London: Henry Kimpton. 1945.

Of these three textbooks on biochemistry one is now an old friend. It is always a pleasure to handle a new edition of Fearon; first, because this is an indication that the previous edition has probably sold out, which it certainly deserved to do; secondly, because one is confident that the author will have carried out the revision in such a way as to give the student every opportunity of following the advancing fringes of the subject. So, in this welcome third edition, Prof. Fearon now gives full recognition to the importance of Frazer's views on fat absorption; he discusses the uses of tracer isotopes in biochemical research; he uses the logical Levene system for describing the optical rotation and configuration of substances, such as amino-acids, ultimately derivable from tartaric acid, and describes this clearly. On the other hand there seems to be no reference to the fundamentally important work of Tatum and other American geneticists, which lies on a new "borderland of science" and may help to revolutionize our whole method of attacking problems of intermediate metabolism. Some reference might also have been made to the now widely used microbiological methods of assaying amino-acids. The reviewer has noted few statements in this book to which he could take exception on grounds of inaccuracy. But surely the co-enzyme of tyrosine decarboxylase is pyridoxal, not pyridoxyl, phosphate, and must be described in connexion with

the facts now known about the "vitamin B₆ group"? Further, he wonders whether Prof. Fearon could give any literature reference for his explicit statement about the active carotinoids that "transformation of the pro-vitamins into the vitamin takes place in the liver." Possibly, even probably, it does, but where is the experimental evidence to support the possibility? The tendency to over-simplification, of which this is an example, is almost unavoidable in a textbook, unless one is prepared to risk "scattering and confusing" the student. Another instance is to be found in the definition of a vitamin; for man, two of the most important fat-soluble vitamins are not "micro-constituents of the diet," for vitamin D can be made from the pro-vitamin in the skin, the pro-vitamin being almost certainly of endogenous origin (otherwise how do fruitarians get their cholesterol steroids?) and vitamin A is completely "dispensable" from the diet, provided this contains enough of certain carotinoid pigments.

These observations—comments rather than criticisms—serve but to emphasize the outstanding characteristic of Prof. Fearon's admirable book, now a stand-by on the shelves of most British and Irish biochemists. It compels contemplation, comment, even argument. Written with the utmost clarity, simplified to the ultimate possible point and very rarely beyond it, illuminated with flashes of Hibernian wit and with philosophical reflections, implicit as well as explicit, that reveal the traces of that great school of biochemistry from which the author admittedly draws much of his inspiration, showing a willingness not only to consider criticism calmly, but to make use of it in later editions—such are a few of the qualities of what still remains, in spite of competition from overseas, the best general textbook of biochemistry in the English language.

Two of the competitors are also under review. It seems as though no department of an American university were complete without its own professors, associate professors, and other staff members and its own textbook. Otherwise it is difficult to explain the steady stream of new "introductions" to biochemistry that cross the Atlantic. One is by Prof. Philip Mitchell of Brown University and the other by Prof. Israel Kleiner of New York Medical College. Like Prof. Fearon, they have both written with the student first and foremost in mind, but Mitchell's book covers a somewhat wider field at a slightly higher pedagogic level. On the other hand it is devoid of the descriptions of numerous simple practical tests that are a feature of Fearon's book and show that author's contempt for the arbitrary lines drawn by some between work done sitting on benches or standing at the bench. Mitchell's book, on the other hand, wanders far enough from the field generally held to be legitimately the biochemist's as to include a (final) chapter on chemotherapy, which can hardly yet be held to have been systematized into the biochemist's province. This textbook is 12.5% longer than Fearon's (in pages) but nearly twice as heavy in the hand; of such is American book paper.

Kleiner's book is also a useful addition to the large and still growing number of these textbooks. His curious title indicates, according to the author's own explanation, an attempt to link up the medical student's incursions into biochemistry with those problems of human health that will—or should—be his concern. This attitude towards the teaching of students begs certain fundamental pedagogic issues that have frequently been the subject of intense discussion in the columns of this *Journal*. It is not intended here to be drawn into any controversy on the subject. Suffice it to say that Prof. Kleiner's own explanation of his title suggests that it might perhaps more illuminatingly have been called "Humane Biochemistry," to indicate the author's kindly attitude to his student readers. It is perhaps significant that Mitchell's book also includes a preface explaining his attitude towards the writing of textbooks. Fearon, on the other hand, has not reproduced in the present edition his prefaces to the first or second; he gives the baldest of introductory comments and then plunges *in medias res*. There remains to record one curious fact which applies to all three of these books. In each of them there is a specific direction to Rosenberg's *Chemistry and Physiology of the Vitamins* (1942) as a standard work of reference, which it certainly still is. In none of them is there any mention of Prescott and Bicknell's *The Vitamins in Medicine*, which is (in its 1946 edition) naturally more up to date than Rosenberg's book.

A. L. B.

REVIEW OF PHYSIOLOGY

Annual Review of Physiology. Volume VIII. Editor, James Murray Luck; Associate Editor, Victor E. Hall. (Pp. 658. \$5.00 or 30s.) California: Annual Reviews Inc., Stanford University P.O. London: H. K. Lewis and Co. 1946.

This kaleidoscopic presentation of physiological activities appears in its usual form though there are 116 fewer pages than in Volume VII and one review less. In spite of this contraction no one who usually welcomes this work as a means of keeping aware of current advances on many physiological points will be disappointed in the current volume. Since the majority of the reviews cover a one- or two-year period to about the middle of 1945, the contributors have had to deal with a diminishing number of papers, and these published mainly in American journals. Consequently, as a glance at the bibliography attached to any of the reviews will show, the accounts are chiefly of advances in American physiology. It is impossible for a reviewer to read and evaluate critically in the time at his disposal the whole of the 658 pages of concentrated material making up the volume, and only a general impression can be given. The year-by-year reviews on such subjects as "Heart," "Respiration," "Digestive System" each has its particular high lights; thus in the review on the heart there is a timely appreciation of the newer methods of measuring cardiac output. The functions of the cerebral cortex are usefully surveyed in the review on "Somatic Functions of the Central Nervous System," while fresh consideration is given to the so-called antagonism of the sympathetic and parasympathetic divisions of the autonomic system in the allied review "Visceral Functions of the Nervous System." "Applied Physiology" gives an outline of the methods, with their limitations, for assessing physical fitness. It also considers some of the wartime research, now available for publication, on the factors concerned in the acclimatization of the body to extremes of temperature. The same subject is also dealt with to some extent in the review on "Skin," which, however, surveys more fully nutritional factors.

Naturally the reviews are unequal in their standard because this depends on both the author and the material, but it is evident that the editors have persevered with their policy and have endeavoured to choose contributors who would "evaluate with discrimination the present status of the subject" instead of undertaking mere compilation. This seems to be an important attitude to maintain if there is to be any effective synthesis of the great mass of published work in physiology, and in other subjects, and one which might be insisted upon more strongly by the editors of other publications which devote themselves to reviews.

A STUDY OF NORMAL UNDERGRADUATES

What People Are. A Study of Normal Young Men. By Clark W. Heath. (Pp. 141; illustrated. \$2.00 or 11s. 6d.) Massachusetts: Harvard University Press; London: Oxford University Press. 1945.

The old maxim that prevention is better than cure is becoming much more seriously considered in medicine to-day than it ever has been before. But if we as doctors are to keep people normal and healthy we must be much more certain what we mean by normality. Our early physiological training in normal functioning has been too much overlaid by pathology and interest in disease, so that we are apt to think of the normal person as one who does not suffer from illness rather than as one who has certain positive qualities. It was with the purpose of establishing this positive view of normality that the Grant Trust was formed. The present volume describes the findings of investigators under this Trust in a group of apparently normal, healthy, well-adjusted Harvard students. The approach was a wide one: physiological, psychological, anthropological, medical, and social.

It is interesting to note that, in spite of the apparent normality of these young men, 91% had problems which they wished to discuss and in 22% the problems were serious, but the investigators deprecate the assignment of normal people into pathological types such as cyclic, schizoid, paranoid, etc., as they do not think these are valid for the normal. The members of the group were classified according to their general soundness as A, B, or C, and in accordance with their basic characteristics. Some correlation was found between these two classifications, but not always that which was expected. The influence of home

background (economic and social factors, broken homes, etc.) was not nearly so potent in the normal as it was in the abnormal, and the sounder the personality the less did he suffer from conflict. The attitude of this group to such things as delay in physical maturation, divergent interests and capacities, and to frustrations is of great interest. There was a marked variation in morphological characteristics and in physiological reactions, and for this no valid explanation—racial, economic, or other factor—has so far been found.

On medical examination very few of these undergraduates were found to be 100% free from minor blemishes, and a high proportion had been subjected to operative intervention such as tonsillectomy or appendicectomy. It would appear, therefore, that we must not think in terms of an individual example of normality, but rather of a "band" coming within which an individual may be rated as normal, just as in intelligence testing relatively few are found to have an I.Q. of exactly 100% but the vast majority have I.Q.s ranging from 85 to 115%, all of whom can be regarded as normal. Five case histories are interesting, especially in respect of the discussion as to their suitability for university education.

Altogether this is a highly stimulating study, and it is to be hoped that much more work will be done along these lines. Normality is a subject which should be much better understood by members of the medical profession, whether practising in general or in special departments.

Notes on Books

Dr. CHARLES NEWMAN'S *Medical Emergencies* has reached the third edition (J. and A. Churchill; 10s. 6d.). He has been able to condense this admirable book in several ways, particularly by the removal of the section on war gases, as it is to be hoped this will no longer be needed; in any case it would be out of date. On the other hand, the sections dealing with the sulphonamides and penicillin have been added to extensively. The author points out that though there are, of course, many more surgical than medical emergencies, treatment in the latter must frequently be instituted within minutes or even seconds to be of any avail. He defines a medical emergency as being a condition in which accurate diagnosis and prompt treatment are necessary to save either life or great suffering. The various chapters are well compiled, giving the requisite information in a most concise and practical manner. To that end he admits to being dogmatic; at such times it is useless to distract the practitioner's mind between alternative methods. Therefore, in general, he gives only the method which has served him best. A refreshingly practical book.

Introduced with references to *Religio Medici*, and to Oliver Wendell Holmes, *The Physiology of the Newborn Infant*, by Prof. CLEMENT A. SMITH, comes at a time when there has been a great renewal of interest in the care of the baby, especially at this age period. The difficulties in the study of the newly-born are great, which partly explains the comparative neglect of the subject now discussed. But already in this country the work of Barcroft, McCance, and others has indicated what can be done to study the physiology of the foetus and infant. Prof. Smith has gathered together a large amount of work into a series of chapters which are in effect monographs on, for example, respiration, jaundice, the blood, metabolism, and so forth. The nervous system has not been considered, largely because there does not exist any physiological study of this system comparable with what has been attempted in others. Each chapter is carefully documented and a good bibliography for each monograph makes this an excellent work of reference. Not only does the text give a valuable summary of the published work, but anyone specially interested can easily start on a study of original documents. Obstetricians and paediatricians will find this new book a valuable addition to their libraries. It is published in the U.S.A. by Charles C. Thomas of Springfield, Illinois, at \$5.50 post paid.

C. D. DARLINGTON and E. K. JANAKI ANIMAL'S *Chromosome Atlas of Cultivated Plants* (George Allen and Unwin; 12s. 6d.) is an impressive book, for information is provided regarding no fewer than 10,000 species. The word "atlas," incidentally, is applied in its less usual meaning of a conspectus of a subject, and there are no illustrations. It will be of great value to the geneticist, the systematic botanist, and especially to the practical improver of cultivated plants. A brief but admirable introduction shows that the newly acquired knowledge of recent years does indeed provide a bird's-eye view of the whole process of the evolution of genetic systems in flowering plants, and as the authors say: "... already in some sense it shows the plan and proportions of Nature."

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SELECTION OF MEDICAL STUDENTS

The interest devoted in the last few years to improving the work of the medical profession has inevitably led to the serious consideration of two questions. What kind of training will equip the future doctor for making the most useful contribution to the health of the community, and how should the best students be obtained? The "Report of the Inter-Departmental Committee on Medical Schools" (the Goodenough Committee) answered these questions with proposals based on comprehensive considerations. On the subject of selection the Committee stressed the need for the authorities and officers of the medical schools to give this subject serious attention. Certain principles in the selection of medical students that are generally agreed were listed, and the suggestion was made that medical schools should carefully consider the extent to which special aptitude tests could be usefully applied. Attention was drawn, in this connexion, to the experience of the services in selecting officers.

That methods of selecting students might be made more scientific has not been ignored. Experiments have been carried out in recent years at various medical schools in the use of certain aptitude tests, chiefly tests of intelligence; but the limited correlation between performance in these tests and examination success has tended to be discouraging. It has also been unfortunate in maintaining the belief that the technician in the field of assessing human assets and liabilities has little to offer of practical value because these tests are the chief "objective" measures he has to hand. Actually, a high correlation between intelligence test scores and examination success would not be expected by the technician, for success is a product of capacity and effort. That is not to say, however, that the estimation of intellectual capacity is unimportant; it merely means that other highly complex factors have to be taken into account. Making an assessment of the potential development of the human being is notoriously difficult. In the physical field there is no one "objective" test for the physical health of the individual. Nevertheless, the physician uses many tests of isolated physical functions in collecting the evidence upon which he bases a judgment. In the psychological field, however, expectations are still widely prevalent that some magical test should be produced that will give "the answer."

The article by Dr. Smyth in this number of the *Journal* is of great value in clarifying many of the issues involved in this complex task of choosing the student. He rightly points out the current confusion associated with the term "aptitude test" in relation to suitability for a career in medicine. "In fact there are few useful abilities which cannot be turned to advantage in some or other branch of medicine." What then is to be sought? If desirable qualities are listed the array begins to create the picture of a somewhat superhuman individual. Smyth wisely notes that the field of medical work is so diverse that few would care to suggest "which of all of these qualities or

which combination of them is most valuable." He then proposes a simplification into three groups in each of which it might be more realistic to attempt an assessment. These are (1) intellectual capacity, (2) character, and (3) interest. Of the last of these he concludes that attempts to judge this are "not likely to be reliable or profitable," because interest can be so much a product of subsequent experience in an occupation. Intellectual capacity, on the other hand, lends itself to relatively objective approaches. The common criteria at present for intellectual capacity are the various certificates or entrance examinations for which the prospective student sits while still at school, and, as Smyth indicates, there are many limitations to the value of these. He describes some experiments with women students made at University College, on the basis of which he found that a short-answer type of question in the fields of elementary science, use of English, capacity to draw inferences from the written word, and general knowledge gave results of great value. Wilkie in his paper (page 367) showed by careful statistical analysis that the assessments made from these short-answer questions were as good as those made from the traditional essay type of question for the purpose of selection. It is therefore possible to get assessments of intellectual capacity by methods much more economical in time and with more consistent standards.

In regard to the judgment of character Smyth assumes the interview to be the most appropriate method of collecting data, and he does not make any suggestions beyond indicating how judges might grade their likes and dislikes. However, he does suggest that judges be assessed in the light of follow-up findings and that those who proved good should be retained, while those who made many mistakes should cease to serve on a selection committee.

The value of Smyth's contribution does not, however, lie principally in his experiments. Indeed, of these he admits that his efforts could be regarded as naïve in view of the vast amount of work by psychologists that has already answered many questions about the technique of examinations. Its value lies rather in the way in which he has considered wider issues than questions of testing procedures. He examines the sources of supply of students and accepts the evidence to show that the resources of the community are not being fully tapped in this respect, largely because of financial barriers. He also points out that the nature of the procedure used will be governed by the applicant/place ratio. In this connexion his survey would indicate that the supply is likely to be much greater than the demand—or rather the capacity to absorb students—for several years to come and that this will be best dealt with by screening procedures. It is here that the psychologist's tests will be likely to be of great value, for they can be used to provide common standards for rejecting all those below a certain standard of ability which is considered desirable if adequate professional competence is to be achieved. Further investigations of the more complex variables such as character and interest can then be devoted to those who pass this first hurdle.

It is gratifying indeed to find that so much careful thought is being given to this serious task. From the standpoint of a modest layman in the field a contribution of importance has been made. What can the expert add? As Smyth remarks, "there is even sometimes a feeling of alarm at the idea that psychologists should take part in selecting medical students." It is probably in this very

issue that the value of the Service experience is most helpful, and it is unfortunate that this experience has not yet been made available. The question put by Smyth, "Should the amateur select when the expert is available?" is not perhaps the right question to ask. Sufficient is known, for example, of the work of the War Office Selection Boards for some of the fundamental questions to be answered in the light of their experience.

The nature of these Boards, the pattern of which was evolved by the technical advisers in the Army, is clearly important, for their wide adoption by the British Army, by several of the Allied Armies, and by the Civil Service for its higher-grade appointments proves that fundamental dilemmas of this kind have been resolved. In these Boards it is a basic principle that the responsibility for the decisions about candidates rests with the President of the Board. He is assisted by regimental officers and by a technical department which includes a psychiatrist and a psychologist. The role of the specialists is two-fold. First, they provide a joint opinion to the President, as do other members, about the candidate. This is based on the results of written tests, observation in various practical situations, and on interview. Secondly, they develop testing techniques for the layman, so that he can make observations and gather evidence in a way that is appropriate to his background of experience in the Service and from which his intuitive judgments derive. Although interesting developments took place in the matter of test methods for assessing "character" and "interest" (particularly with candidates applying for university courses prior to being commissioned in technical arms), the Army experience is just as valuable in the broader questions of planning.

If the selection of medical students is to be advanced in the near future a planned attack must be made on the problem. The overcoming of financial barriers to widen the supply of candidates will mean that entrance to the various schools must be co-ordinated. Common standards must be attempted, otherwise there will be injustice; and the good will and co-operation of the candidates must be secured. This is not to destroy the individuality of the Schools. Each of these will require its own Selection Board, and if the Service experience means anything the Board should comprise a President (the Dean or a Senior member of the Faculty), assisted by other members of the teaching staff and by psychological advisers who include psychiatrists and psychologists. The psychologist has advanced our knowledge of testing abilities, but the major developments in methods for investigating personality have come from medical psychologists. The trend of research in America and other countries in recent years has emphasized the need for medical and non-medical psychologists to work together in teams if their contributions to such practical social problems as selection are to be made as effective as the total range of methods available to the human sciences makes possible.

The task is a complex and urgent one, yet the scientific method is just as applicable as in the somatic field. There is a research problem here of urgent importance. It will include the adequate investigation of methods of getting the best applicants, making a job-analysis from which grounds of selection can be evolved, and working out a procedure which will be satisfactory to the selectors, scientifically adequate to the expert, and manifestly just and helpful to the candidate.

Job-analysis, as the word implies, is an analysis of the work the doctor has to do. In medicine there is perhaps a wider variety of jobs than in any other professional calling. A "doctor" may be an administrator in central or local government, a ship surgeon, a panel practitioner in an industrial city, a medical superintendent, a research worker in physiology or clinical medicine, or a member of the honorary staff of a voluntary hospital. But in all these jobs there are common factors, such as a basic medical training, which provides a minimum of technical competence and draws out a supposed concern for the welfare of fellow human beings. Any method of selection must be based on a full analysis of these common factors. A student selected on this basis, and accepted, has such a wide field of opportunity open to him in medicine that it should not be difficult for him to find a niche that suits him. Analysis of the various jobs available should make the continued process of selection possible. Up to the present the medical student has had to make do with the somewhat haphazard method of self-selection. The role of a selection procedure in relation to training will have to be worked out in practice. To think that selection by itself should produce good doctors is like thinking that the health of the members of an institution would be secured solely by conducting a physical examination on entrance. If the selection procedure is thought of as an initial appraisal its findings can be used throughout training so that the best can be got out of all students. In other words, the more the selection findings can be used for guiding the student and helping him, the easier will it be to achieve both good selection and good training—and enable the qualified doctor to find the job to which he is best fitted.

AN INTERNATIONAL POSTGRADUATE CENTRE

London, with Edinburgh and other academic centres in Great Britain, may yet become the home of a great international postgraduate organization attracting graduates from universities all over the world, and especially from the British Dominions and Colonies. Elsewhere in this issue Sir Francis Fraser, to whom the shaping of the British Postgraduate Medical Federation is mainly due, discusses this possibility. As a pendant to this not immediately realizable prospect is the programme announced by the Nuffield Foundation of fellowships designed to enable medically qualified persons from the British Dominions and India to obtain in the United Kingdom such postgraduate training and experience as may be necessary to prepare them for teaching and research in their own countries. Meanwhile the postgraduate services which London and other centres are building up will be available to those general practitioners who wish to refresh their knowledge, to keep themselves up to date, or perhaps to adopt some form of specialism.

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undergraduate discipline. Undergraduate study has all the advantages of directness, continuity, compulsion, and specific purpose. It leads to examination, qualification, and the practice of a profession. Postgraduate study, on the other hand, is apt to be diffuse, spasmodic, often casually undertaken, uneven in method and uncertain in approach, and, of course, it is optional to the student. The instruction may be systematic and well thought out, or it may be loose and include no definite curriculum or periods of study. It may be inspirational and cultural, in line with the tradition of a university, or it may consist largely of the demonstration of technical procedures. It may mean a vacation course at a clinic, an intensive week-end or two, regular instruction at a selected hospital in general medicine or some approved special subject, or attendance at lectures and discussions arranged by a local medical society. Not that these last are to be disparaged. Osler said that a well-conducted medical society should be a clearing-house in which a doctor could obtain his intellectual rating and estimate his assets and liabilities.

It is because of this lack of uniformity and of authoritative direction that postgraduate education has tended to be unequal in its value and in the quality of its results. This was true in some measure of the Continental schools which during the century between the end of the Napoleonic Wars and 1914 offered postgraduate opportunities to British doctors. Paris was the first of these Meccas, and its principal attractions were the admirable clinical teaching, with at the time no parallel in this country, and the opportunity for studying morbid anatomy. Later in the nineteenth century the wards of the Paris hospitals gave place to the great amphitheatres of Berlin, Munich, and Leipzig, and presently there arose the school of Vienna, which in some respects surpassed all others. Serious study in the famous clinics and laboratories of the Continent was undoubtedly a fruitful and memorable experience in the career of many British doctors. But the quality of the instruction was not always what was claimed for it. It suffered from its very popularity. In a survey of medical education in Europe, undertaken in 1912 for the Carnegie Foundation, Abraham Flexner, brother of the famous pathologist, was very critical of these Continental postgraduate schools. This was at a time when at a number of Continental universities short courses of every description could be arranged. Such courses were indeed the main support of many docents and assistants and constituted the "foreign study" of most of the graduates from Great Britain and other countries. In Vienna the courses ran customarily for five weeks and were held at one or other of the twenty-six different hospitals. Flexner thus describes a clinical course which he attended:

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One promising experiment in postgraduate education which was being tried successfully in London and in other centres before the war was the institution of intensive two weeks' or one week's refresher courses for insurance practitioners. The intention was that every insurance practitioner should attend such a course once in three years and that his expenses, including the cost of a locum tenent, should be met. The Ministry of Health is now contemplating the reintroduction of such courses subject to the willingness of the universities to continue during 1947 the courses of postgraduate instruction they have been providing for demobilized officers. The discussion in the Insurance Acts Committee on the Ministry's proposals will be found reported at page 391 of this issue. All these arrangements are preliminary and without prejudice to those which will be necessary under the National Health Service proposals. The new Service will require an efficient scheme of continuous postgraduate study, and there must needs be such an easing and facilitation of the work of practitioners that they will have time and opportunity to take advantage of it.

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UNESCO AND MEDICAL CONGRESSES

A little less than a year ago an international conference was held in London to draft the constitution of the United Nations Educational, Scientific, and Cultural Organization—UNESCO—as a specialist agency of the Economic and Social Council of UNO. The headquarters of UNESCO will be in Paris, and a general conference of the new organization will be convened there in November of this year. The following statement defines the general objective of UNESCO: "The States parties to this Constitution, believing in full and equal opportunities for education for all, in the unrestricted pursuit of objective truth, and in the free exchange of ideas and knowledge, are agreed and determined to develop and to increase the means of communication between their peoples and to employ these means for the purposes of mutual understanding and a truer and more perfect knowledge of each other's lives." Among the functions of UNESCO are the maintenance, increase, and diffusion of knowledge by, among other measures, "initiating methods of international co-operation calculated to give the people of all countries access to the printed and published materials produced by any of them."

The work of UNESCO is to be done through various divisions, and medicine will find its place in the Natural Sciences Division, at the head of which is Dr. Joseph Needham, F.R.S., assisted by Dr. I. M. Shukova and others. Medicine offers a fruitful field for co-operation among the various countries of the world. The problems of medical science are international, and in these days no doctor in one country can afford to be ignorant of what doctors in other countries are doing—this quite apart from the question of the spread of infection across national frontiers now facilitated by air travel. Before the war some attempt was made to diffuse medical knowledge through the holding of international medical congresses in various special subjects. It is, however, not unfair to say that the arrangements for these congresses were fitful and depended often enough upon the enthusiasm of individuals. Not only was there some lack of continuity in the congresses arranged for a special subject, but there was no co-ordination between the various congresses in respect to either time or place of meeting. It would, for example, be a great convenience if congresses in related subjects could be held at the same place in a given year with an interval, say, of two or three days between each. A gynaecologist attending an international congress of obstetrics and gynaecology would find it a great convenience to pass straight on to, say, an international congress on endocrinology if he knew well in advance that these two congresses were to be held in Paris in a certain year, with an interval of one or two days between each. On occasion two congresses might overlap in time with a view to giving up one or two days to joint discussions. There is no need to labour the point further, but if in fact some central co-ordinating mechanism could be devised much time, effort, and money could be saved, and the world of medicine would benefit greatly.

The Natural Sciences Division of UNESCO under Dr. Needham is now considering what steps could be taken to achieve this desirable end. The moment could not be more opportune, because various international organizations are now trying to pick up the threads of their peacetime work and are revising their constitutions and planning future congresses—but all this in ignorance

of what other similar organizations are up to. The Natural Sciences Division of UNESCO hopes that it may be possible some time next year to hold a conference in Paris of delegates of the various international medical congresses and societies with a view to forming some small central organization within UNESCO which will help the various congresses in their numerous problems and so co-ordinate meetings to the greatest convenience of those taking part in them. What might emerge from such a conference would be a Permanent Commission of International Medical Congresses with a small secretariat linked to the Natural Sciences Division of UNESCO. In this way congresses could be arranged so that there would be no confusion of time and place in the various meetings and so that meetings of congresses in related branches of knowledge could be correlated. With the funds that will be at their disposal UNESCO could obviate some of the financial obstacles to travel in the case of those in need of assistance as well as facilitate the transit of delegates from different parts of the world. Through its field science co-operation stations in different countries UNESCO would also be able to secure the co-operation of various national organizations. To diffuse as widely as possible the information that would be forthcoming in the various conferences the proceedings of the various meetings could be published in full in an international journal at whatever frequency experience might show desirable. A monthly bulletin could also be issued which would give details of future meetings, of arrangements for travel, and of the help that UNESCO would be able to extend to various national delegates. This work, too, would presumably be linked with that of the World Health Organization.

These plans are yet in the formative stage and can come out of this stage only if the full and willing co-operation of those now responsible for the work of the various international congresses is secured. It is much to be hoped that co-operation will not be withheld. In a world still sadly out of tune because of national discords the world of medicine has here a chance to show how professional groups, through unity of interest, can give a useful object lesson to the politicians whose rantings so often tend to smother the small voice of reason. We would urge those interested in the plan outlined above to communicate with Dr. Joseph Needham, F.R.S., at the Headquarters address of UNESCO, Natural Sciences Division, 19, Avenue Kléber, Paris, XVI^e.

MEDICAL STUDENTS IN WARTIME

The teaching hospitals unfortunately suffered badly from aerial bombardment during the war: buildings and great quantities of equipment were destroyed often overnight, travelling facilities disrupted, and the time of students and teachers sometimes occupied by dealing with emergencies rather than by an orderly educational programme. The London schools suffered most severely, and the circumstances prevailing in the latter half of 1940 enforced their rapid dispersal throughout the sectors of outer London. This physical displacement, combined with the anxieties aroused by our critical situation in the early years of the war and by the blitzes, laid a heavy burden on students already encumbered with the longest of all academic curricula. That these trials were overcome as successfully as they were—an achievement that will be appreciated

especially by those who had any experience of the ineptitude of the young medical officers in the German Army—is due as much to the untiring devotion of depleted and overworked teaching staffs as to the sense of duty displayed by the students themselves. Medical students were of course reserved from military service; the production of doctors was as important as that of bombers; and the duty laid upon teachers and students alike of producing a sufficiency of suitably qualified men was accepted with praiseworthy vigour.

Education as judged by examinations was maintained at a sufficiently high standard; but what of those less easily measurable qualities that exist in all corporate educational institutions—the relationships between students and teachers, the fellowship among the students themselves? To a certain extent the breaking up of the schools was compensated by that sense of national solidarity that pervaded the whole country during the war. Pride at being a member of an honoured and ancient institution naturally declined, but the feeling of being a valuable member of the community as a whole replaced it; the student found in his class something of the comradeship originating in a common and compelling purpose that the soldier derived from his unit. In many cases closer relations between students and teachers were established than had been customary in peacetime; the smaller groups and the difficulties under which they lived (not the least of which was the shortage of textbooks) favoured the growth of oral discussion. A greater variety of clinical cases was often available for teaching purposes; and ingenious expedients and improvisations performed by doctors in general practice, and normally obscured by the perfect organization, plenitude of supplies, and suitable accommodation of teaching hospitals in peacetime, were brought to the notice of the student and incorporated almost unconsciously into his knowledge of medical practice.

Perhaps in the long run the defect in wartime education most to be regretted will be that arising from the lack of any leisure. The student's life was immersed in the acquisition of medical knowledge and the overcoming of obstacles to that end; there was little time for the pursuit of those cultural interests that make a man something more than an efficient technician. This tendency has been apparent in the medical profession for the last twenty-five years; the recent war has done much to accelerate it. It should be the duty of teachers in the immediate future to stress the importance of the epithet "learned" when speaking of our profession. *Gray's Anatomy* conveys no philosophy of life except perhaps the discipline of minute observation; and however necessary this may be to the medical student he will find that his patients will expect him to be not only acquainted with the innervation of the tongue but also able to put that organ to such good use that he may be regarded as a man of uncommon wisdom.

THE MEDICAL WOMAN GRADUATE

The quotas of admission at the various medical schools appear to show that about 500 places are available to women students. This is about one-fifth of the total admissions for the year. The figure given in the Goodenough report for the academic year 1942-3 was 470, or about 21% of the total. The Goodenough Committee came down strongly on the side of co-education, holding that this should be the normal practice in every medical school, and even recommended that Exchequer grants should be conditional upon the schools' admitting a reasonable number of women students. By a "reasonable number" it explained that it meant about one-fifth, though exactly

on what basis that proportion is decided is not clear. At one of the schools (Leeds) from which we received information about the new session it was stated that during the war the proportion of women students to men had risen steadily until it reached rather more than one to three, and in spite of this increase approximately thirty applications were received last year for each place that could be allocated to a woman, while for the coming session the number of applications was still larger. If that is the general experience of medical schools the number of young women desiring to enter the profession must be much greater than is commonly supposed. With the opening of more school doors to women there will be less frustration than has been experienced in the past.

In 1944 the Senate of the University of London set up a committee under the chairmanship of Sir Henry Dale to report on the provision of facilities for the medical education of women in London, and, like the Goodenough Committee, this body also urged the opening of all medical schools to women on terms of equal opportunity. The principle of co-education, if it were carried out in London, would have the curious result of admitting men to the London School of Medicine for Women. This school was established to overcome the difficulty which women had in obtaining admission to the medical profession, and it has done excellent pioneering work. It has stated that in the interests of equality it is prepared to make the innovation whereby men as well as women students would be admitted. Another school which during the war years accepted women students only is the West London Hospital Medical School. It is not a pre-clinical school, but its acceptance of about thirty clinical students annually has been of considerable service. Glasgow is a university in which, not in the faculty of medicine alone, women students have always been found in large numbers. In the medical school they are admitted on equal terms with men, and it is stated that owing to the relatively larger number of women applicants the educational standard of the women admitted is conspicuously high. Everywhere the tendency seems to be towards co-education, and one day sex discrimination will be as extinct in medical education as it is in other education and professional fields. But if women are to be admitted they should be ungrudgingly admitted. There is nothing at all to be said for a policy of opening the door to admit a stated minimum and making them feel that they are unwelcome. If the thing is to be done it should be done graciously and gallantly. It is important also that not only should women be admitted to the schools, but that they should have a fair chance of appointments afterwards. The British Medical Association for the last forty years has done much to champion the cause of equality between the sexes with regard to medical appointments and to the emoluments attaching to them. It was not always so even in the history of the Association. It is true that in 1873 Elizabeth Garrett Anderson, who had qualified L.S.A. eight years previously, and had afterwards obtained the diploma of Doctor of Medicine of the University of Paris, was elected by the Metropolitan Counties Branch as a member of the Association. She was not, by the way, the first Englishwoman to obtain a medical degree. The first was Elizabeth Blackwell, who graduated M.D. at the University of Geneva, New York State, in 1849, but was unable to get her name in the first *Medical Register* of 1858. But after Elizabeth Garrett Anderson's election there arose a considerable controversy on this subject, and a plebiscite taken in 1878 showed a majority of three to one against the eligibility of women for membership of the Association. The restriction was broken down in 1892, and since then women have been elected on a perfect equality with men.

EXAMINATIONS

MEDITATIONS ON A PAINFUL THEME

BY

FF. ROBERTS, M.D.

The important part which examinations are destined to play in our lives is impressed upon us at an early stage in our tutelage. On our arrival home for the holidays we were invariably greeted by our elders with the rather impolite question, "When do you go back?" This we could bear, but worse followed: "Have you passed your School Certificate?" (or "your Higher," or whatever it might be). These unsolicited reminders of our shackles were, it is true, intended as compliments, for it was assumed that a positive answer would be forthcoming; if we happened to have failed there followed a profusion of embarrassed condolences. Of these tactless attentions medical students receive more than their fair share by reason of the long series of examinations which fall to their lot.

Considering their formidable nature, examinations have a remarkable capacity for acquiring pet names—Little-go, Mods, Inter, Stinks Trip, and (formerly at Cambridge) Bugs and Drugs. But such euphemism is not surprising; it is only one example of man's age-long habit of trying to placate evil spirits by pretending to credit them with virtues which they are far from possessing. We give the most painful diseases the loveliest names; the Greeks called the Furies the Eumenides, and sought to make the Black Sea less stormy by changing its name from "Αἰετος to Εὐχαιρος."

Rather naturally, examinations are a favourite subject for oratory at prize-givings and at openings of new sessions. Here examiners are wont to be exhibited, frolicsome as elephants at a circus and human as film stars at a theatrical garden-party, and there is no doubt that students thoroughly enjoy these back-stage revelations, secure in the knowledge that the tiger (to change the metaphor) is safely behind the bars of the ceremonial occasion. After relating a few "howlers" from their unlimited repertoire the distinguished speakers deliver themselves of the old clichés, such as, "Examinations are good servants but bad masters." They then proceed to condemn examiners who "try to find out what you don't know," thereby leaving it to be inferred that they themselves are not of that category. In descending to such banality they ignore the fact that discovering what a candidate knows and discovering what he does not know are essential parts of the same process. His knowledge stands against a background of ignorance. An examiner would rarely have any difficulty in finding out a candidate's deficiencies if such were his intention. He is, however, at any rate in written examinations, bound to a rigid code and to a standard controlled by his colleagues, by the Examining body which employs him, and by the traditions of the examination. Moreover (candidates may believe it or not), most examiners in correcting papers are obsessed with the fear of being unjust and will go to more pains than candidates deserve in deciphering bad handwriting and in striving to comprehend confused expressions, though they may in the process become prejudiced against the scribblers. Candidates, on the other hand, have far more ethical freedom. They have merely to "satisfy the examiners" in the literal meaning of the term, and they may employ window-dressing as freely as their cunning can suggest. If their bluff comes off the more fool the examiner. An undergraduate may steal a policeman's helmet if he can get away with it, but the policeman may not steal the undergraduate's cap.

The Nature and Purpose of Medical Examinations

At the period of life when Nature imposes the strain of physical growth modern civilization finds it necessary to add a mental strain the like of which is rarely experienced after maturity is reached; and strangely enough we display more intelligence in assessing Nature's handiwork than we do in assessing our own. We judge the rate of physical growth by height and weight, and by races, games, and other feats of endurance, taking care that these trials do not cause over-strain and that we test no more than the maximum capacity obtaining at the time. What we test is ultimately the effect of the assimilation of food and environment on the growing body. The

scientific education given to medical students, however, is concerned neither with assimilation nor even with complete digestion, but rather with partial digestion, and the examinations are nothing more than test-meals of the crudest kind. After a period of forcible feeding vomiting is induced and samples are laboriously analysed. Conditions are as unphysiological as they can possibly be, for what is being tested is not a normal end-product but an abnormal intermediate stage. Nor is any trouble taken to make the pabulum assimilable. The pure wine of the reasoning faculty reaches the consumer only after being adulterated by the process of rebottling in successive editions of textbooks. Hence examinations are, in the true sense of the term, the morning after the night before. This explains, too, the discrepancy which has been found to exist between the results of intelligence tests of the matrix type and the results of the basic and preclinical examinations. The former are tests of inborn mental capacity alone, while the latter are tests of inborn mental capacity with its natural development often warped by clumsy and uninspired direction.

Let us, however, take medical examinations as we find them and consider their purpose and nature. Their purpose is to ensure that the student has acquired enough proficiency to pursue his vocation to the benefit of the community. This purpose is fulfilled by the final examinations directly, but by the earlier examinations only indirectly, since these do no more than ensure a knowledge of groundwork believed to be necessary for the appreciation of the final subjects. Owing to this difference in their purpose the preclinical (including the basic) examinations differ from the clinical in their character. First, the preclinical are concerned with subjects to which candidates do not intend to devote themselves. What is to their examiners a life-study is for them only a stage to be hurried through impatiently. Their knowledge is only elementary, and question and answer are cut-and-dried. Clinical examinations, on the other hand, are concerned with subjects which candidates intend to pursue as their examiners do. The examiners are chosen from teachers between whom and the candidates there exists a community of thought rarely experienced at the preclinical stage. Teachers and students, though poles apart in experience, have approached problems together and the students have followed the processes of thought going on in their teachers' minds.

Secondly, while in the preclinical examinations the subject-matter is sharply defined, in clinical examinations there is always the element of doubt. In the former, candidates have a legitimate grievance if there is any ambiguity as to the answer; in the latter they have none. While a physiologist has no right to show a candidate a badly stained slide, a physician has a perfect right to show him a patient who cannot express his symptoms clearly. In practical preclinical examinations, although examiners may avow that they want correct methods rather than correct results, the nature of the experiments is such that the results are a test of the correctness of the methods. In clinical examinations, on the other hand, methods really are more important than results. There is room for wide disagreement about medical treatment and there may be doubts even about diagnosis, though this rarely happens because the examiner enjoys the advantage of having had his own diagnosis confirmed in a pre-view by his colleagues. One wonders what would happen if clinical cases were as fresh to the examiners as they are to the candidates.

Medical examinations are of four kinds: written, practical, theoretical-oral, and clinical-oral.

The Written Examination

The written examination is the best test of systematic knowledge, since it gives the student time to express his knowledge in his own way, to amend what he has written, and to insert afterthoughts undisturbed by criticism or interrogation. Complaints about unfair questions are rare. This is because great care is taken in their composition, and because in a subject which changes but slowly at the undergraduate level questions must in some degree be stereotyped. The commonest fault consists in setting papers which are too long. This results in good candidates spreading themselves over some questions to the neglect of others. It is very difficult to convince students that if they answer only four questions out of five they automatically reduce their potential maximum by 20%. It is giving

away no secret to say that in most pass examinations the higher marks are more difficult to score than the lower in almost geometrical progression. The time spent in polishing an answer so as to make it worth 8 instead of 7 out of 10 is better spent in scoring the lower marks on another question. Question-papers are more effective in distinguishing between good and bad candidates if they err on the side of brevity.

The Practical Examination

Practical examinations should satisfy three criteria. First, the conditions of the experiments should resemble closely the conditions obtaining in normal practice. They should be as free as possible from artificiality. Secondly, if the procedures are simple or are based directly on standard scientific truths they should be performed without books; but if they are of a complex nature involving a succession of operations and a knowledge of quantities, book-directions should be allowed. Such assistance does not mar their value as tests of proficiency. Thirdly, no experiment should be set which contains an element of chance. It is arguable that careful supervision of class-work should make practical examinations unnecessary, but, students being what they are, these examinations provide a better incentive than anything else which can be devised. All the same, it is a good practice to allow candidates to produce at examinations attested records of their class-work.

The Theoretical-Oral

By theoretical-oral I mean an examination where the candidate sits in front of the examiner and answers questions on book-work without the opportunity of giving demonstrations. This type of examination seems to me to serve no useful purpose. It is supposed to enable the examiner to cover more ground than can be covered in the papers, but this is achieved only by flitting about from one part of the subject to another—a practice which puts a premium on knowledge that is merely superficial. If half an hour is considered necessary for answering one question on paper it is clear that, even allowing for the greater speed of the verbal answer, very little substantial ground can be covered in an oral of 15 or 20 minutes—a period which a candidate experienced by previous failures can skillfully reduce by saying that he doesn't know the meaning of the question. Moreover, the candidate is at a great disadvantage. He cannot arrange his thoughts except under the examiner's eyes, and if the examiner happens to start with a question on which he is weak he has great difficulty in recovering himself, knowing all the while that his fate will be sealed when the bell rings. He may repudiate a statement, but he has no assurance that he has expunged from the examiner's mind the impression which his mistake has made. There is a belief that an examination of this sort provides an opportunity for asking questions which are of the nature of riders. But when such questions are asked the candidate looks up to the ceiling in silence. Then, after appearing to say to himself, "Ah, I remember! That's on the top of the right-hand page," forthwith delivers himself of a torrent of textbook stuff. Theoretical-orals are necessary only for testing the capacity for making rapid decisions in emergencies, such as the treatment of an epileptic fit. Apart from this use they should be abolished, their place being taken, if necessary, by additional papers.

The Clinical-Oral

The clinical-oral tests observation, judgment, and logical thought as no other examination can, and it provides the best means of estimating how candidates would acquit themselves in a position of responsibility. It is therefore the ideal form of examination for clinical subjects, and should be regarded as of far more importance than papers. From the candidate's point of view it has the advantage over the theoretical-oral that the object which he is required to study shades him, at least initially, from the (to him) fierce glare of the examiner's eyes, and gives him time to adapt himself to his surroundings.

Like witnesses in court, candidates are liable to the mistake either of saying too little or of saying too much. If every word has to be dragged out of them the examiner cannot cover sufficient ground, while if they say too much they risk making a mistake which they need not have made but upon which the examiner may fasten to their discomfiture. But the worst fault is hedging—a vice calculated to drive the most angelic examiner

into a fury of exasperation. Risks must be taken in orals as in other situations, and he who refuses to take them deserves what he gets. Hedging is usually inborn, but not always: it may be the result of an unfortunate experience at a previous attempt. There are some examiners who preserve a non-committal blandness of manner or display affable agreement, giving the candidate no indication of the correctness or otherwise of his answers, and allowing him to build up an argument on a false premise. When afterwards informed of his failure he says, "I don't know why I failed; I thought I answered everything correctly." He spends the next few months in perpetual uncertainty as to whether he knows his work or not; and at his next attempt, imagining the questions to be more subtle than they appear, or suspecting a catch where none exists, he cannot be induced to give a straight answer to a straight question. A candidate's mistake should always be pointed out to him, and if he has acquitted himself poorly he should be given a strong hint of the fact towards the end of the interview. The information may be devastating at the time, but at least he knows where he stands, and the knowledge spurs him to more vigour for his next attempt.

Humour has no place at orals, since however innocent the joke the candidate is not in a mood to believe that it is not being made at his expense. Scorn and sarcasm are of course unpardonable, because the candidate is undergoing an ordeal and because he cannot answer back. The conduct of an oral is indeed a difficult art; it is the art of putting a candidate at his ease, grading the questions so as to bring out the best in him, knowing when to encourage him, and knowing when to pull him up. I am strongly of the opinion that it should not be learnt at the expense of candidates, and that before anyone becomes an oral examiner he should be obliged to spend a probationary period as an observer, studying examiners' methods and candidates' reactions.

Reform

No examinations can be perfect. The personal element can never be wholly eradicated, since examiners are subject to moods and whims just as much as others who sit in judgment. "A good, contented, well-breakfasted jurymen," said Mr. Perker, "is a capital thing to get hold of. Discontented or hungry jurymen, my dear Sir, always find for the plaintiff." The fact that the results are usually in conformity with the predictions of tutors may seem to show that examinations serve their purpose adequately. To say this, however, is to admit that they are but the reflection of teaching, and to assume that all is well with teaching. But now that medical education is the subject of so much adverse criticism we may well inquire into the relation between teaching and examinations. It is the old question of the chicken and the egg, but in another form: the question is not which comes first, but which, if either, ought to come first. There is no doubt that it is the examinations which now set the pace. "What sort of questions are they likely to ask us?" inquire students plaintively, to the despair of the educational purist. It has to be admitted, too, that their influence upon teaching is often far from good. The snap question-and-answer into which the theoretical-oral so easily degenerates encourages the "rag" classes conducted by junior members of hospital staffs and by the coaches. Let it not be imagined, however, that I am scornful of the coaches. Under present conditions they fulfil an essential function. It is a polite fiction of the academic beau-monde that they do not exist, but students have to visit them, for from them they obtain that warmth and satisfaction which grey-eyed Athens is too frigid to provide. The absurd practice of questioning candidates on the use of surgical instruments has stimulated instrument-makers to hold gratuitous demonstrations in their showrooms on the previous night—a form of instruction which can hardly be regarded as of University standard. Moreover, the system of combining external with internal examiners, necessary as it may be to prevent a lowering of standards and to protect internal examiners from charges of favouritism, is undoubtedly one cause of the conservatism of medical education, for it reduces the schools to a dull uniformity and prevents them from embarking on imaginative experiments in education.

Of any beneficial effect of examinations upon teaching there is little evidence. Some may find the explanation in the fact that examiners are themselves teachers, and the solution in the

appointment of examiners who are independent of the teachers. Examination by independent examiners, however, has not saved the School and Higher Certificates from adverse criticism, and in a subject so practical and individual as medicine the separation of the two functions could not fail to have a bad effect. The combination of the two functions in the same persons should indeed be a source of strength in both capacities; for examinations provide opportunities for passing judgment not only on students but on the way they are taught, and medical examiners who are also teachers should realize that they are examining themselves and each other no less than their candidates. Now that we are beginning to study medical education we shall find that examinations provide a valuable source of material with which to fertilize the educational field. Improved methods of teaching will benefit examinations, and examinations thus benefited will in turn improve medical education.

THE MEDICAL SCHOOLS

Return to Peacetime Conditions

The opening of the second year of peace finds almost all the medical schools returned to normal establishment. This is true even of the London schools, which suffered most from wartime disorganization and dispersal. In most of the schools the buildings are in full use, though in some the licence to repair is still awaited. The teaching staff is up to—or almost up to—normal strength. This holds good for the schools associated with Middlesex Hospital, Westminster, St. Mary's, and the London. It holds good also for Charing Cross, except for some buildings which are partly unused owing to war damage, and of the London (Royal Free Hospital) School of Medicine for Women, where the buildings, which were heavily damaged in the later stages of the war, are expected to be fully repaired by October. St. Bartholomew's still has 700 beds housed and staffed at St. Albans, but the school buildings are in temporary repair and the teaching staff at normal strength. At St. Thomas's one year of the clinical course is still taken at Hydestile, near Godalming, where in-patient clerking and dressing are done, but with more beds available in London this wartime expedient will cease. Guy's is back on a pre-war basis, save for the portions of the hospital destroyed by enemy action. All senior members of staff have returned, and, with few exceptions, all the junior staff. Beds are still retained at Orpington for special departments (orthopaedics, genito-urinary, and ear, nose, and throat).

Decentralization: An Adverse Verdict

It seemed worth while inquiring of the deans of the London schools whether they considered that any features of their evacuation experience should be permanently retained. The answer from one of the schools was, "No. God forbid!" and most of the others were scarcely less emphatic. The dean of Charing Cross, however, said that the corporate life afforded by a hostel had some advantages which might be beneficially retained, and that consideration was being given at his school to that subject. The verdict of the dean of the London Hospital Medical College was that, on the whole, evacuation has shown that decentralization of undergraduate medical education is not satisfactory, and that teaching can best be based on a hospital of approximately 1,000 beds, which provides as far as possible for all branches of diagnosis and treatment. It was also his opinion that anatomy and physiology should be taught in close conjunction with clinical work. Residence at a fever hospital, and possibly at a mental hospital, is desirable, but on the whole decentralization has more drawbacks than advantages.

The dean of King's College Hospital Medical School considered that there was one thing worth retaining from the evacuation experience, namely, the visitation of students to other hospitals.

The Schools outside London

At most of the provincial schools the return to normal has been more easily accomplished than in the several schools of London. At Liverpool the reduction of the curriculum from six years to five, which operated during the war, is coming to

an end; the next lot of candidates who graduate will have been at the school 5½ years, and by June, 1948, the normal six years' course will be in operation. The teaching staff at Liverpool is not quite up to normal numbers, but the school buildings, which were partly damaged by enemy action, have been restored to usefulness, even though some of the restoration is incomplete and temporary.

Manchester is for all practical purposes on a peacetime basis, and the staff is almost up to normal strength.

At Sheffield the school is in process of organizing and developing in accordance with the Goodenough report and the recommendations of the General Medical Council. The buildings here are more than fully in use, and additional accommodation is urgently needed. The teaching staff is up to pre-war level, but a considerable expansion is called for and is taking place as opportunities arise.

At the other Yorkshire school—Leeds—the members of the teaching staff who served in the Forces have, with one or two exceptions, returned, and many additional appointments have been made. Steps have been taken to restore the M.B., Ch.B. course to its normal length of five and a half years, and the transition from the shortened course will be completed next session. Until then the total number of students in the school remains below the pre-war level.

Birmingham is not yet on an entirely peacetime basis, though it is rapidly approaching that condition in the pre-medical and pre-clinical subjects. But it still has four clinical teachers in the Forces, all of whom rank as assistant clinical lecturers, and owing to this and other circumstances the school may actually be worse off for clinical teachers during the coming season than at any time during the war.

Newcastle-upon-Tyne (University of Durham) has its school buildings fully in use and its teaching staff at normal strength, with several departments undergoing expansion.

At Bristol some portion of the department of anatomy has been only partially replaced. Temporary buildings are now being erected to relieve the congestion, and entirely new buildings to accommodate at least 80 students a year (instead of the present entry of 60) are being planned and will be erected as soon as possible.

The Welsh National School of Medicine is working at normal level, and the same is true of the Scottish schools, though at Aberdeen and Glasgow the teaching staff is still not quite up to normal strength.

At Edinburgh, where many new developments are envisaged, the teaching staff is at normal numbers, but considerable increase will be necessary in the future.

More Open Doors for Women

Several of the London schools now admit a proportion of women students. Apart from the London School of Medicine for Women, which normally has about 450 students, pre-medical, pre-clinical, and clinical, and admitted 103 new students last session, University College Hospital takes twelve women students a year, Westminster will have six women students entering the pre-clinical department (at King's College) in October, St. Thomas's will break with tradition with a 15% entry of women students in 1947, and at the London Hospital Medical College women students up to 20% are expected to start the first M.B. in October of this year, and the second M.B. in October, 1947. At Charing Cross women students will be admitted when the school buildings, still partly unused owing to war damage, are restored. At St. Mary's, Middlesex, and St. Bartholomew's no women students will be taken until October, 1947, at earliest.

During the war the proportion of women students to men rose steadily at Leeds, and is now more than one to three. In spite of this increase approximately thirty applications were received last year for each place that could be allotted to women, and this session the number of applications is still greater. At Sheffield between 20 and 25% of the students are women, again a mere fraction of the applications. At Birmingham, again, women students make about one-fourth of the entry list. At Liverpool before the war the proportion was fixed at one-fourth, but during the war it reached 40% at one time; it is the intention to return to 25% as soon as possible. The number to be admitted in 1946

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depends upon the number of eligible ex-Forces applicants by the beginning of September. At Bristol, where 25 of the last autumn entry of 60 were women, the proportion is likely to be considerably reduced in the future. At Newcastle women are admitted on equal terms with men, though in smaller numbers. In the Welsh National School of Medicine, by the charter of the university there is no restriction on the admission of women candidates, and the same is true of Scottish schools. At Glasgow, owing to the relatively larger number of women applicants, the educational standard of the women admitted to the Faculty of Medicine is very high. At Aberdeen, where about 25 women students have been admitted annually during the war, the entry is expected to be reduced owing to ex-Forces candidates.

The West London Hospital at Hammersmith also serves a useful purpose in training women medical students. This is not a pre-clinical school, and the majority of the students come from King's or University Colleges (University of London) or from Oxford or Cambridge. Only women students have been accepted during the war years, and at present the acceptance is about 30 clinical students annually. This hospital was recognized by the University of London and other licensing bodies in 1937 as an undergraduate school, but it appears to be the policy of the University to remove recognition from this school in a few years' time in accordance with the Goodenough report, and it has been suggested that the future of the school should lie in the postgraduate field in association with the Federation of Postgraduate Medical Schools which has been instituted by the University.

Altogether, disregarding for the moment the forecast in some schools of a lowered quota of admission, it appears that there are about 500 places for women clinical students in the year's entries.

Ex-Forces Candidates

Arrangements are very general for the admission of ex-Forces candidates up to 90% of the total available vacancies; in accordance with the recommendation of the Ministry of Labour. At the London Hospital preference is given to ex-Forces candidates, both men and women, for admission as undergraduate students, and every effort is made to carry out the Government scheme for the rehabilitation of demobilized medical officers. An introductory course in elementary medicine and surgery, lasting three months, on the lines recommended in the Goodenough report, was given during the last academic year and proved a great success. Pre-medical education for "London" students is carried out at Queen Mary College (University of London), Mile End Road, and in view of the fact that this is inadequate to meet post-war demands from demobilized officers who have not taken their first M.B. from school, like scholar applicants, arrangements have been made by the London for their pre-medical education at various polytechnics. The majority of entries at the pre-clinical school at Guy's for the coming year are ex-Service men.

Westminster Hospital School not only gives the 90% priority but has doubled the number of registrar and B2 posts for postgraduate training. At St. Thomas's, again with 90% priority, a special bureau, under the control of a late member of the staff, has been maintained since the end of the war to help all old graduates returning from the Services. Several resident appointments are filled by these ex-Forces people, and about sixty, including many working for higher degrees, are attending a six months' rehabilitation course. At the West London Hospital Medical School arrangements have been made to appoint a certain small number of ex-Forces medical men to junior teaching posts.

No school mentions any readjustment or shortening of the course for ex-Forces applicants, and indeed the large majority of these people will be required to take the pre-registration course, which may add a full session to their training, and is not normally taken by the students at some schools, where the higher school certificate in physics and chemistry at recognized standard is accepted as satisfying pre-registration requirements. This is so at Leeds, where postgraduate instruction is also being provided under the Government scheme for the further training of demobilized medical officers.

Birmingham hopes to accept all suitable ex-Forces candidates who live in the Midland area. At Newcastle normal matricula-

tion requirements are not deemed indispensable provided the applicant can show that he has the ability to undertake the course. Manchester has a special examination known as the "mature matriculation" for those who have not satisfied the requirements for entry. Liverpool anticipates having about 65 ex-Forces people in the first M.B. and about eight new admissions to the second M.B. In addition about ten ex-Forces candidates were admitted or readmitted in the first and second M.B. courses during 1946, and most of these will be in the second M.B. course beginning in October. Priority is also given at Liverpool to ex-Forces applicants for postgraduate degrees and diplomas, and 90% of those accepted for the three degrees are from the Forces.

At Edinburgh, with the return of former students from the Forces, arrangements have been made to provide them with special courses and other facilities for revision of their previous work. The usual priority for admission to this school is accorded to ex-Forces applicants, but no shortened course has been instituted. At the medical school of Queen's University, Belfast, ex-Forces men and women of Ulster origin or sons and daughters of graduates have priority for admission. Ex-Forces students are also granted certain concessions in examinations; for example, it is possible for them to be credited with a pass in individual subjects of the curriculum provided they complete the examination within one year, unlike the ordinary student who is required to pass the full professional examination.

The Mechanics of Teaching

It seemed appropriate to address a question to the deans on any developments in the mechanics of teaching, such as the use of the film. A committee of the British Medical Association, under the chairmanship of Sir Lionel Whitby, is exploring the use of the film in medical education, and much preliminary work in the same field has been done under the auspices of the Royal Society of Medicine. The epidiascope and the film projector seem now to be installed in all medical schools and to be used alike in the pre-medical, pre-clinical, and clinical courses. At Westminster Hospital Medical School a visual education unit has lately been established, specializing in clinical photography and in the production of lantern slides, film-strip, and films; a film library is being formed there. From Leeds it is reported that the use of films in medical education is increasing steadily; the students there have formed, jointly with the local medical profession, a film society. Newcastle is trying to arrange a department in which photography and all aspects of visual education will be concentrated. At Liverpool, in addition to the usual methods, mechanical appliances are used in the school museum in the form of special models to illustrate physiological and pathological exhibits. But it is evident from the remarks of several of the deans that certain limitations of the film as an instrument of education have not yet been overcome, and at Sheffield it is stated that mechanical methods have not been introduced to any great extent because it is thought there is some danger of the film leading to a stereotyped and mass-produced instruction.

Developments at Some London Schools

The University of London still has the Goodenough report under consideration by the relevant University committees, and until the Senate has considered the matter it is not possible to make any general statement on future policy. One thing, however, may be said, namely, that the wartime arrangement permitting candidates to enter for the M.B., B.S. examination after a clinical course extending over thirty months instead of thirty-six months has been withdrawn in respect of all students who passed the second examination for medical degrees in, or after, March, 1945.

Some of the London schools are facing large developments. St. Thomas's, with an annual entry of some 80 students, is now back in its old home facing the Houses of Parliament. Its medical and surgical units are being re-formed and await the appointment of their new professors. The pathological department has expanded into a chair of bacteriology, and an occupational therapy department is being developed. The library plays an active part in school life, and the museum will soon be open. The future for St. Thomas's holds great changes. A new school is to be built at the corner of Westminster Bridge

and Lambeth Palace Road, with hostels for students opposite the present hospital, which is going to be largely rebuilt and extended. A new out-patient department is scheduled for early erection. All the departments for pre-medical and pre-clinical teaching will be much enlarged, with adequate facilities for teaching and research. A midwifery and gynaecological unit is to be created, and a chair of social medicine is in contemplation for a later date. Facilities exist at St. Thomas's for students to take the B.Sc. degree in their second M.B. subjects before beginning clinical work in the hospital. The academic year is divided for the pre-medical and pre-clinical periods into three terms and the clinical period into four.

Westminster Hospital Medical School, which in building and equipment is the newest in London, has at the moment 130 male students (clinical); this number will be increased to 150 in 1947-8, and to 200 by 1951-2. The latest entry is 24. Long-term plans include affiliation with St. Stephen's, an L.C.C. hospital with 700 beds, for an increase in clinical facilities generally, with the Infants Hospital (100 beds) for the teaching of paediatrics, with the Grosvenor Hospital (58 beds) for the teaching of diseases of women, and with the Gordon Hospital (40 beds) for the development of teaching in rectal diseases. These last three hospitals are all in Vincent Square, within five minutes' walk of the hospital.

The entry at *Charing Cross* is at present 30 a year, but when the school buildings are fully in use it will be 45. Fevers is the only subject taken extra-murally. Plans are now in an advanced stage for the rebuilding of the school and hospital at Harrow. The repairs which are proceeding will enable the instruction in the pre-clinical subjects of anatomy and physiology to be resumed at Charing Cross—a development which is regarded as of the very greatest importance.

At *St. Bartholomew's* the latest entry is 125. Arrangements for pre-medical students are now the same as before the war. Certain long-term plans are set out in the report of a Policy Committee, but the main immediate objectives are, first, the permanent rebuilding both of the damaged hospital and college, and, secondly, the establishment of additional whole-time chairs to enlarge the teaching in clinical subjects, for example, therapeutics and radiotherapeutics.

Middlesex Hospital has its buildings fully in use and can take 80 students annually. Students are admitted to the recognized courses of study for the first M.B.

London (Royal Free Hospital) School of Medicine for Women, with an annual entry of 100, is resuming its pre-medical course at the school itself as in pre-war times. During the war, and until the present session, its physiology and organic chemistry departments enjoyed the hospitality of Guy's.

St. Mary's, Paddington, has an annual entry of about 66. Here again the arrangements for pre-medical students are as before the war. The long-term plans include rebuilding and expansion to an annual entry of 100.

King's College Hospital, Denmark Hill, which is now wholly a peacetime basis, with its teaching staff up to normal, takes between 50 and 60 new students each year. The future long-term plans make provision for 100 new students in a year. Women students have been admitted to King's College Hospital since 1917. The pre-medical and pre-clinical students receive their education at King's College, Strand. It is hoped that practically all the clinical students will have returned to Denmark Hill in October, 1946, when courses on a pre-war basis will be held.

Guy's pre-clinical school has been working to capacity during the year, and the majority of the entries for the coming year are ex-Forces men. Applications for admission have been heavy, but acceptances are limited by accommodation available.

St. George's Hospital Medical School at Hyde Park Corner has returned to normal; indeed, its teaching staff is above pre-war strength. This is one of the small schools, and "all the better for that," thinks the Dean. Its students at any time number not more than 120, which means an entry of about 30 a year. Women students at present represent 10% of the entry; in 1948 they will represent 15%. The school takes students from Oxford and Cambridge, and a few from other universities, but the majority of the remainder come from London, and almost entirely from King's College. At the present time fevers and obstetrics are taken extra-murally, but by the end

of the present academic year fevers only will be taken in that way. As for long-term plans it is well known that St. George's Hospital is to be rebuilt in another quarter of London—the south-west. The number of beds will be increased, but the principles of the Goodenough report will be adhered to—an entry of 100 students for 1,000 beds. At present there is an entry of 30 students for 350 beds. "The difficult thing we are trying to do at St. George's," said the Dean, "is to reconcile the tradition of a rather intimate small school with the enlargement of the hospital, and one thing we are resolved upon is never to take in more students than the number for which clinical cases can be provided. We feel that the actual contact of the student with the patient is all-important in medical education."

London Hospital Medical College takes 80 medical students a year, and this year the maximum number has been accepted. The rebuilding of the dental school (25 students a year) is the first priority, and reconstruction of the whole medical school and hospital the long-term plan. There is a hostel for 100 students, to be enlarged as soon as possible.

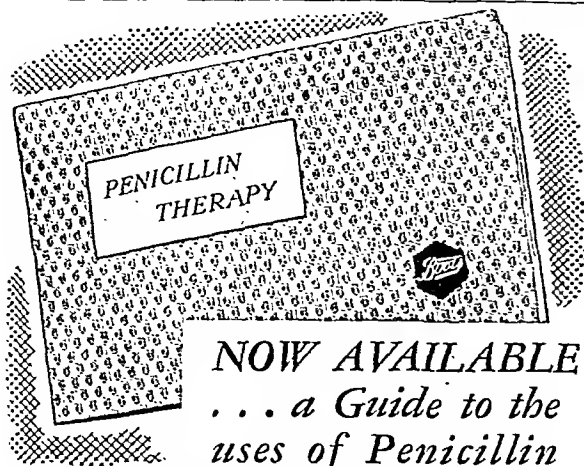
University College Medical School has arranged to increase its entry by 5%, bringing it to the maximum which can be taken with the present accommodation. The medical course is being revised to conform to the General Medical Council's proposals (36 months). Fevers and some obstetrics are taken outside the hospital. Pre-medical students are accommodated at University College and at Oxford and Cambridge. Future long-term plans include the extension of the school and hospital (1,000 beds) to take an annual entry of 100.

West London Hospital Medical School, although one hospital ward has still to be reopened, has more teaching beds available than ever before, thanks to the association with Fulham Hospital (L.C.C.). The only subject taken extra-murally is obstetrics, at the West Middlesex Hospital; demonstrations are given at special hospitals, especially in mental disease.

Post-war Policy at Oxford and Cambridge

Oxford.—The number of students to be admitted to the Oxford University medical course in 1946-7 is limited by decree of the University, which restricts the entry from schools to 55 men and 10 women, as well as by the regulation of the Ministry of Labour and National Service concerning preference for ex-Forces candidates. Owing to the limited number of places in the medical school a prospective student, after he has been accepted by a College, must be considered and accepted by the University committee set up to select the students making up the quota for the year. After this he is eligible to go into residence and is qualified for admission into the medical school, and thereby for deferment; subject to satisfactory reports of progress, by the Joint Recruiting Board, to which, if he was born after Sept. 30, 1928, he must have made application with his appropriate age group. Oxford is almost back to a pre-war basis, though the Honour School of Physiology is not compulsory for ex-Forces men matriculating before October, 1948. The school can take an annual entry of 70 to 80 for the pre-clinical period, and 25 for the clinical. The latest entry is 46 men from the schools, and 10 women. The number of ex-Forces students accepted outside the quota is not yet determined, but will probably be about 30. Future long-term plans include a new physiology laboratory, extended instruction in social medicine, and improved hospital service and facilities for clinical students.

Cambridge.—The general post-war policy at Cambridge University is to maintain the pre-clinical teaching at its previously high level and to develop a school of clinical research and postgraduate teaching both in specialties and in general medicine, rather than to attempt to found a complete undergraduate school. This is in accordance with the recommendations of the Goodenough report. Plans for postgraduate work have begun to materialize with the reopening of the department of medicine and the creation of a chair of experimental medicine and a chair of radiotherapeutics. Other special departments which are contemplated include paediatrics, dermatology, social medicine, and chemotherapy. In all these special departments there will be opportunities for research students and for training for long or short periods. In general medicine the experience gained with ex-Service postgraduate courses has indicated the need, for the future, of regular courses for



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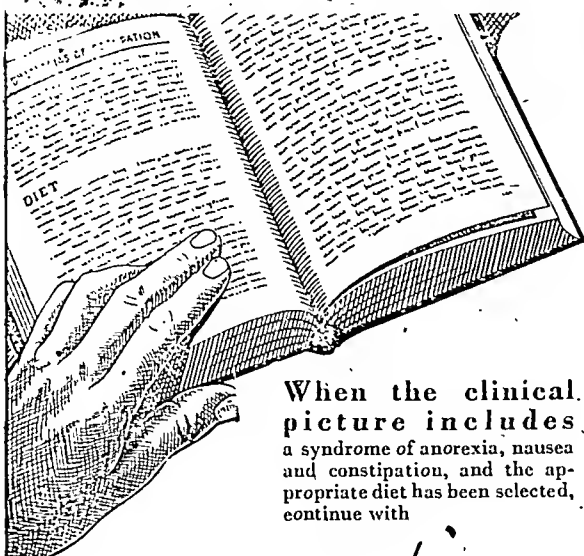
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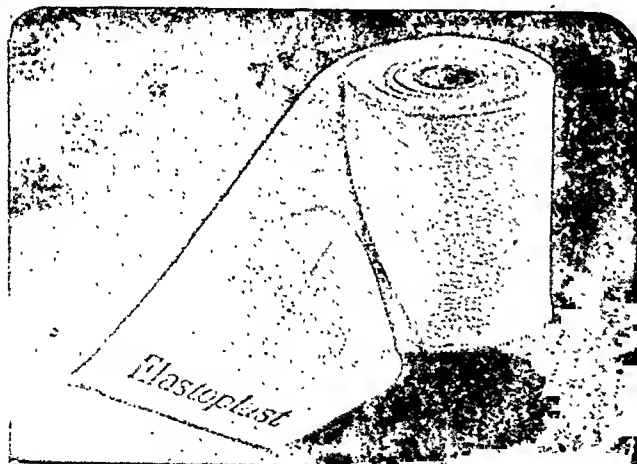
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general practitioners of scope and length adapted to their various needs. An essential part of this organization has been the creation of a closer liaison between Addenbrooke's Hospital and the University. The first step in this direction has been the assumption of responsibility by the University for the pathological and biochemical services of the hospital. In the same way it is contemplated that other services will come into close association with the University, including the regional laboratory services and a co-ordinated regional scheme for orthopaedic, thoracic, and neurosurgery. All these plans are designed to make the University the focus of medical research and teaching for the East Anglian region.

The Northern Schools

The annual intake of students at *Leeds* is limited to 85 in the first year, but to 75 in the second year; a larger number cannot be accommodated in the department of physiology, where the classes have for some years been held in duplicate. Immediate activities include the revision of the curriculum in accordance with the G.M.C.'s recommendations. The establishment of full-time chairs in medicine, psychiatry, and paediatrics has been approved and appointments have been made, and the position regarding surgery and obstetrics and gynaecology is under consideration. New chairs have been instituted also in chemical pathology, biochemistry, and pharmacology, and the administration of the school has been strengthened by the appointment of a medical man to a new post of senior administrative officer. Long-term plans include further increases in staff, the establishment of further new departments and sub-departments, the building of a new medical school, and the full utilization of the municipal hospitals for teaching purposes. A general need is the provision of more hostel accommodation.

Sheffield has an entry of about 50 a year at the present time, but hopes to increase it to 80-100 within the next few years. The arrangements for the pre-medical students require the courses in chemistry, physics, and biology to be taken in the University, except in very special circumstances. The long-term plans at Sheffield include a new medical school and teaching hospital, the appointment of a full-time dean, and generally development along the lines of the Goodenough report. At Sheffield, as at Leeds, the need for more halls of residence is felt.

The Medical School at *King's College, Newcastle-upon-Tyne* (University of Durham) can accommodate 380 medical students and 155 dental. The figures for the latest entry are not yet available owing to the recent Government regulations concerning ex-Forces candidates. The normal medical course is now reinstated to the full period of six years after the wartime adjustment. The pre-medical course may be taken in the University, and "first year" students sit the first M.B. examination after one year's study. In addition certain schools are recognized by the University for the purpose of instruction leading to the first M.B. Exemption may be granted from the first-year course and examination if the candidate has obtained the necessary higher certificate qualifications. At Newcastle whole-time chairs have been established in the departments of child health, surgery, and industrial health, and it is hoped to institute similar appointments in medicine and psychological medicine. Plans are also under consideration for the establishment of a department in anaesthetics under a reader.

Liverpool.—The number of student admissions to the Faculty of Medicine at Liverpool is limited at present by bench space. The limit has been put at 100 a year in the second year. The admissions for the first year of study are limited at present by the Faculty of Science to 70, and the number admitted directly into the second year is therefore determined by the number passing up from the first year. But there is no definite limit to the number admissible to the clinical school, and students from Oxford and Cambridge are often admitted after their pre-clinical years. Postgraduate students admitted during the past session numbered about 80, of whom 23 were for the D.P.H. For 1946-7 there will be larger numbers in the courses reading to the D.P.H., the M.Ch.Orth., and the new Mastership in Radiology. Pre-medical courses are covered by the first M.B. examination taken internally in the departments of physics, chemistry, zoology, and botany of the University. In addition the University of Liverpool, during the war, has accepted the

higher school certificate of any British Examining Board with passes at principal standard in physics, chemistry, and biology (or zoology and botany taken separately) as exempting from the first M.B. This wartime exemption on higher school certificate is still in operation.

Long-term plans at Liverpool are largely conditional on rebuilding, the accommodation being strictly limited. Future policy in respect of the curriculum will be reconsidered when the G.M.C.'s report on the subject is made public. Associated with the Medical School in the Faculty of Medicine are the School of Tropical Medicine, the School of Dental Surgery, and the School of Veterinary Science, all of which are undergoing increased development at the present time. The Medical School embarked on several new ventures during the war and contemplates others in the near future. A large and important department of child health has been constituted under a half-time director, who is also Professor of Child Health. This department has been granted special facilities and accommodation not only in the Royal Liverpool Children's Hospital, but also in the municipal hospital for children. A department of neurology with a professor in neurosurgery has been approved, and the appointment of the professor will be advertised shortly. Last year the University appointed its first full-time professors in clinical subjects, namely, in surgery and in obstetrics and gynaecology, and these departments are now in full swing and are undertaking considerable postgraduate activities, both in respect of the training of specialists and in research.

The *University of Manchester Faculty of Medicine* can take between 90 and 100 students per session. Pre-medical students are admitted in the normal way. Among the amenities of the school is a first-class physical education centre. A new department of industrial medicine was instituted at the University last year, and a chair has been founded in association with it. A dean of post-graduate medical studies was recently appointed with a committee to help him.

The Midlands, West of England, and Wales

Birmingham.—The Medical School at the Hospitals Centre, Birmingham, is designed to take 60 medical students a year, but this number is being increased in the near future to 120. This increased number will mean the duplication of many classes, particularly in pre-clinical subjects, and an increase in the staff. The latest entry is between 80 and 90. The majority of students take their pre-medical course at school, and rather more than a third of the number take the pre-medical course at the University. The readjustment of certain courses is contemplated, and in particular there is being started next year a preliminary instructional clinical period consisting of integrated classes in medicine, surgery, pathology, and pharmacology, as recommended in the Goodenough report, the course taking three months immediately after the examination in anatomy and physiology. Full-time professors in medicine, surgery, midwifery, and gynaecology, and in paediatrics and child health have recently been appointed, and the occupants of these chairs will take up work at the beginning of the next session. During the last year liaison between the preventive medical services and the City of Birmingham in connexion with child health and the Children's Hospital has been brought about. Close association with civic work is also maintained in the Department of Social Medicine and it is hoped that the clinical facilities of the municipal hospitals will be made available for students in the future.

Birmingham receives about 600 applications for the vacant places in the school and a number of these are from students overseas. It has undertaken to admit a certain proportion of colonial students, but with the limited accommodation it is unlikely that other overseas students can be admitted.

The *University of Bristol Medical School* takes an entry of about 60 students a year. The curriculum is now on its pre-war basis, the wartime shortening of the clinical period having been brought to an end. Pre-medical students are given special courses for the first M.B. Several have exemption from this examination by obtaining a higher school certificate in the subjects concerned.

The school has lately made arrangements for the reintroduction of the course for the D.P.H. It has also instituted diplomas in psychological medicine and in medical radiology and a certifi-

cate in public health. In addition, during the coming session, it is expected that a course will be arranged for the diploma in physical medicine.

The *Welsh National School of Medicine* at Cardiff continues to teach students mainly for the degree of M.B., B.Ch.(Wales). For admission to this degree candidates must possess a degree in arts or science normally involving three years' residence in the University College of South Wales and Monmouthshire before entering the school. During the war this requirement was suspended for those students entering the college who had been exempted from the pre-medical courses and examinations. The number of students admitted is governed by the available accommodation both in the college and the school, and is normally between 40 and 50. Any loss during the pre-clinical years is made up by the admission of a certain number of students to the school from other universities who are studying for qualifications granted by other licensing bodies. For the forthcoming session the University of Wales, like others, is required by Government decision to give absolute priority to ex-Forces applicants who are academically qualified for admission, and it is anticipated that few students, men or women, will be admitted direct from the schools. The school, jointly with the Cardiff Royal Infirmary, has formed a Future Policy Committee, which has under consideration the establishment of a university medical teaching centre, with a teaching hospital of 1,000 beds and providing for an annual intake of 100 clinical students.

The postgraduate courses for C.P.H. and D.P.H.(Wales) under the new rules of the General Medical Council are being conducted, and those for the tuberculous diseases diploma (Wales) are being resumed this session. The school is administering for the Ministry of Health the scheme for postgraduate training of demobilized medical officers. The placing of Class I officers in hospitals creates a little difficulty in finding resident posts for recent graduates, but an effort has been made to retain a sufficient number of vacancies for them. It is anticipated that this difficulty will not be of long duration and will not affect those now entering upon their studies.

The Scottish Schools

Edinburgh.—Very large numbers of candidates still apply for admission to the Medical School of the University of Edinburgh; last year the applications numbered 900, and this year they have reached the figure of 1,500. Approximately 200 new students are admitted in October of each year. Normally applications for admission must be submitted not later than July 1 of the year in which the student wishes to begin the medical course. Medical students in Edinburgh University undertake the full course of instruction, including the pre-medical subjects of physics, botany, chemistry, and zoology, in the medical school. The long-term plans at Edinburgh include broadly the extension on a large scale of accommodation and facilities for teaching and research and the establishment of hostels for students.

During the war Edinburgh afforded a home for the Polish School of Medicine. This school is still functioning in Edinburgh, but no decision as to its future has so far been reached.

Surgeons' Hall, the school of medicine of the Royal Colleges of Edinburgh, is a teaching body only; it offers courses for the qualifying examinations of the Conjoint Boards. The maximum number admitted in the first year is 72—a total of 360. After October, 1947, a pre-medical year of study will be introduced.

Glasgow.—The Faculty of Medicine of Glasgow University admits 180 students every year to first-year medicine and, in exceptional cases, a small number directly to the later years of the curriculum. Applications for admission to the Faculty have to be made during the last fortnight of May, for entry in the following October. Selected candidates are summoned for interview by the Selection Board, usually in July, but special arrangements have had to be made this year in view of the priority given to ex-Forces candidates. All entrants are required to possess the Scottish Universities Entrance Board Certificate of attestation of fitness, which is issued on the results of the candidate's school-leaving certificate. The curriculum in medicine at present extends over five years, but it is likely

that a six years' curriculum, which was ready to operate in 1939, will soon be brought into force. This new curriculum will first be reviewed in the light of recent official recommendations. The curriculum has not been shortened during the war, but the dates of the final examination have been changed, which has had the effect of enabling students to graduate in a minimum period of four years and nine months without reducing the period of instruction. This arrangement is being continued for the present.

At Glasgow four large general hospitals are associated with the University for the teaching of clinical medicine and surgery. Clinical obstetrics and gynaecology are taught mainly in the Royal Maternity Hospital, and paediatrics in the Royal Hospital for Sick Children, while special subjects are taught in the appropriate departments of the numerous hospitals in the area. In addition a large amount of postgraduate teaching is undertaken, and this is to be enlarged.

The Glasgow University General Bursary Examination is held in June and is open to men and women applying for admission to the Faculty of Medicine. The examination is on a competitive basis and about twenty bursaries in medicine are available each year.

Anderson College of Medicine at Glasgow and St. Mungo's College are extra-mural schools, offering courses in preparation for the examinations of the licensing boards and universities. Anderson College has an annual intake of 30 medical and 50 dental students. Here also 90% of admissions are reserved for ex-Forces people. The buildings of St. Mungo's are in the grounds of Glasgow Royal Infirmary.

The Faculty of Medicine of the University of *Aberdeen* takes about 95 students a year. The course in Aberdeen is a single course; there is no pre-registration. The curriculum was rearranged just before the war and now covers seventeen terms. The buildings in which the training during the three final years is taken are on a site common to the University and the hospitals.

The University of *St. Andrews* reverted to the peacetime pattern of examinations in 1944, and since then students have been taking their final examinations after 33 months of clinical study, instead of the wartime 30. The school takes 75 students a year. Here again the pre-medical subjects are taken within the University. The school contemplates a long-term policy of expansion in which the Dundee Royal Infirmary will be joined.

Ireland

Belfast.—The Faculty of Medicine of Queen's University, Belfast, draws the majority of its students from the North of Ireland, though there is usually a fairly good admixture from the Dominions, the Colonies, and foreign countries. There are certain priorities for entry, the first being local candidates, sons and daughters of graduates, and applicants from the British Commonwealth. There has been a limitation of the annual number of entrants since 1939 to 112, but as a special concession to those discharged from the Forces the number has now been raised to 130. The entry for 1946 has filled all available places, and well over 100 applicants have had to be refused. The only change in the curriculum has been the continuation of the wartime reduction of the six-year course to five and a half years, but from October next the six-year course will again obtain. Students are generally accepted only for the complete course. Applicants are required to pass University matriculation and also the pre-medical examination in chemistry and physics.

With increased grants there has recently been an extension of the medical staff. The chairs of medicine and surgery have been made full-time chairs with limited practice. The professors will be full members of the honorary staff both of the Royal Victoria Hospital and the Mater Infirmary. Lectureships in embryology, histology, applied pathology, and pharmacology, and tutorships in medicine, surgery, and obstetrics, as well as a number of positions of registrar in these subjects, have been established. It is intended to rebuild the clinical departments of the school, to expand the Institute of Pathology and the departments of anatomy and physiology, and to increase the laboratory facilities for research generally. A new curriculum, based upon the recommendations of the Goodenough report but using to the best advantage the local facilities for teaching

and research, comes into effect in October. Clinical studies are pursued at a number of teaching hospitals associated with the University, and altogether over 1,200 general hospital beds are available. Various special hospitals are also recognized by the Faculty. Three hospitals concerned with ophthalmology and otolaryngology have recently been fused into one centrally placed hospital.

Plans for the development at Belfast of a postgraduate school are under consideration. At present the postgraduate facilities are being used to the full in the rehabilitation of ex-Forces graduates, of whom 650 are now taking or awaiting them.

Dublin.—The courses and examinations leading to the degrees in medicine, surgery, and midwifery in Trinity College, University of Dublin, proceed as usual. The University is offering a diploma in obstetrics, for which a course is held at Trinity College and at the Rotunda.

The University Colleges of Dublin, Cork, and Galway are constituent colleges of the National University of Ireland. The work in the medical schools here also is proceeding as usual.

The Royal College of Physicians of Ireland grants to registered medical practitioners, after examination, licences in medicine and midwifery and membership of the College. Fellowship is by election from the members.

The Royal College of Surgeons in Ireland has under its direction the Schools of Surgery, including Carmichael College and Ledwich School. Together with the Royal College of Physicians of Ireland it grants a conjoint licence in medicine, surgery, and midwifery, a final registrable qualification.

THE MEDICAL REGISTER

Numbers Entering the Profession

The General Medical Council, the full title of which is the General Council of Medical Education and Registration of the United Kingdom, constituted under the Medical Act, 1858, is not an examining body. Its special function in medical education is to ensure that in the various schools and licensing bodies certain minimum standards of teaching and examination are required. This is done by means of recommendations and the visits of inspectors. The Council is responsible also for the discipline of the profession, an activity which brings it more prominently to the notice of the public, but its task in laying down the standards required for admission to the *Medical Register* is at least of equal importance.

A qualified medical practitioner is required to register with the General Medical Council before he is permitted to practise his profession. The names appearing in the *Medical Register* for 1946 number 75,133, of which about 47% are registrations in England, 27% in Scotland, and 13% in Ireland; 7% are colonial registrations, and 0.5% foreign. In addition 5.5% (comprising 4,168 names) are temporary colonial and foreign registrations, relating to persons temporarily registered in pursuance of the Medical Register (Temporary Registration) Orders, 1940 and 1941, made under Defence Regulation 32B. This number is now diminishing.

The number of names in the *Medical Register* on Jan. 1, 1946, was the largest ever recorded, being 1,487 more than on the corresponding date of 1945, 3,251 more than in 1944, 3,500 above the average of the last five years, and some 14,000 above the average of the last twenty. The number of persons on the *Register* in 1932 was only three-fourths of what it is at present.

At the beginning of the present century the number of newly qualified persons registered each year was about 1,300. During the war of 1914-18 it went up to 1,500, and in 1924 it suddenly rose to 2,800, this figure being the result of the greatly increased entry of students at the end of the war. It fell again in 1930 to 1,500, and subsequently it gradually crept up, rising consistently almost every year until 1942, when it reached a peak at 3,556. Since then the numbers have fallen, and for the year 1945 the number of new registrations was 2,666.

There is an annual wastage by reason of death of about 1,100 from the *Medical Register*, and anything from 50 to 80 names are removed annually under various sections of the Medical Act. The numbers added by registration during the

years since the beginning of the war, the numbers removed, and the state of the *Register* on December 31 of each year are set out in the following table:

	New Registra- tions	Removals	Names left on <i>Register</i>
1939 ...	2,968	1,027	63,360
1940 ...	2,384	1,102	64,679
1941 ...	3,296	996	66,992
1942 ...	3,556	1,127	69,428
1943 ...	3,532	1,091	71,882
1944 ...	2,971	1,218	73,646
1945 ...	2,666	1,190	75,133

Students' Registration

The number of students admitted to the medical schools in Great Britain and in Eire in 1945-6 is estimated by the General Medical Council to have been 2,610. This is almost identical with the actual number for the previous year (2,612), and above the average for the war years (2,480). The student entry in recent years has been as follows:

1938-39 ...	1,735	1942-43 ...	2,468
1939-40 ...	2,623	1943-44 ...	2,426
1940-41 ...	2,398	1944-45 ...	2,612
1941-42 ...	2,361	1945-46 ...	2,610

(estimated)

The figures of recent years accord with the Goodenough Committee's recommended entry of 2,500 to 2,600 as being desirable at present.

The address of the General Medical Council is 44, Hallam Street, London, W.1.

EXAMINING BOARDS

The English Conjoint

The Examining Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England examines candidates for the qualifying diplomas of L.R.C.P., M.R.C.S. Copies of the latest emergency regulations, issued in May, 1946, may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, London, W.C.1.

Four examinations have to be passed—a preliminary examination in general education recognized by the Board; a pre-medical examination conducted or recognized by the Board; a first examination in anatomy, physiology, pharmacology, and materia medica conducted or recognized by the Board; and a final examination in pathology and bacteriology, medicine, surgery, midwifery, and gynaecology. Candidates are required to complete the medical curriculum extending over not less than 54 months of study at recognized medical schools and hospitals, and to pass the professional examinations in accordance with the regulations after passing any two parts of the pre-medical examination. The examinations of the Board are conducted four times a year, and candidates are required to give notice in writing to the secretary of the Board twenty-one days before the examination. The Board does not itself conduct the preliminary examination in general education, but recognizes for the purpose a number of matriculation examinations conducted by, and entitling candidates to enter, the medical faculty of a recognized university, also the possession of certain school-leaving certificates.

The subjects of the pre-medical examination are chemistry (inorganic and organic), physics, and biology, including the elements of genetics. The first medical examination is in two parts: the first, anatomy (including histology and embryology) and physiology, being written, oral, and practical; and the second, pharmacology and materia medica, being oral only. In the final examination, in pathology, medicine, surgery, and midwifery and gynaecology, the second, third, and fourth parts are written, clinical, practical, and oral: the first part, pathology, is written and oral only, and may not be taken alone as the last part of the examination. The other parts may be taken in any order. Candidates who produce evidence of not less than 24 months' recognized clinical study subsequent to passing in anatomy and physiology are admissible to any one part

only of the examination, subject to production of certificates. On the completion of 27 months of recognized clinical study candidates are admissible to one or two further parts, or, if presenting themselves for the first time, to three parts, subject again to the production of the necessary certificates. Candidates may not enter for the last part of the examination until they have completed 30 months' clinical study.

Before being admitted to the final examination candidates have to produce evidence of having attended certain specified courses at a recognized medical school and hospital; of general out-patient and in-patient attendance at a hospital during 30 months, six months' medical clinical clerkship, six months' surgical dressership, and three months' gynaecological clerkship; of attendance at five labours by a teacher or member of the staff of an approved hospital, and of having subsequently conducted 15 other labours; of having received instruction in children's diseases and the care of infants, and in the eye, throat, nose and ear, and skin departments of general hospitals or at special hospitals, and of having received instruction in venereal diseases, radiology, and vaccination, and of having attended courses, including clinical demonstrations, at a fever and at a mental hospital. Finally—what cannot be very difficult in view of the length of this discipline—the student must show that he is at least 21 years of age.

The Scottish and the Irish Conjoint

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow have an arrangement whereby the student may obtain after one series of examinations the diplomas of all three bodies. Candidates for the examination of the Scottish Conjoint may work at any of the medical schools of Great Britain and Ireland. Details may be obtained from the registrar, 18, Nicholson Street, Edinburgh, 8.

The Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland issues a joint licence in medicine, surgery, and midwifery, and accepts candidates from most of the medical schools at home and overseas. The regulations can be obtained from the registrar, Royal College of Surgeons in Ireland, Dublin.

Apothecaries' Licences

The Society of Apothecaries of London grants the diploma of licentiate in medicine and surgery (L.M.S.S.A.Lond.) to candidates who pass in the primary examination, which is held quarterly, and the final examination, which is held monthly, except in September. The minimum period of study is normally five years. Further information may be obtained from the registrar, Apothecaries' Hall, Blackfriars Lane, E.C.4.

The Apothecaries' Hall of Ireland (95, Merrion Square, Dublin) grants the L.A.H.Dubl. to students who pass the professional examinations.

UNIVERSITY DEGREES

All the universities offer bachelor degrees in medicine and surgery, conferred on the results of examination. All the universities also confer on graduates holding a bachelor's degree the higher qualification of doctor of medicine or master of surgery. The requirements vary, and particulars should be obtained from the different universities. The degree of doctor of surgery, in addition to that of master of surgery, is offered at Durham. Liverpool offers the degree of master of orthopaedic surgery. The University of Dublin, the National University of Ireland, and Queen's University of Belfast offer the degree of Master of Obstetrics.

Higher Qualifications at Royal Colleges

The Royal College of Physicians of London confers its Membership (M.R.C.P.) by examination. A candidate is required to give at least 28 days' notice of his intention to present himself for examination and to transmit such medical and surgical qualifications as he may have obtained, together with a list of his public and other appointments, testimonials, etc. The pass examination for Membership consists of a written examination in the form of a paper on questions of medical anatomy, on pathology, and on the principles of medicine, a paper on questions on the practice of medicine, including the principles of public health, and on psycho-

logical medicine, a clinical examination in the medical wards of a hospital, and oral examinations. Fellows of the College are elected annually at a general meeting. (Particulars from the College, Pall Mall East, London, S.W.1.)

The Fellowship of the Royal College of Surgeons of England is granted to those passing primary and final Fellowship examinations. The primary examination is held in the months of April and October. The subjects are anatomy, including normal histology, and applied physiology, and the principles of pathology. This examination is partly written and partly oral. The final examination is held in May and November, and the subject is surgery, including surgical anatomy and pathology. This again is partly written and partly oral, and includes the examination of patients and the performance of operations on the dead body. Candidates who have passed the primary examination are admissible to the final on production of evidence of having been engaged in the acquirement of professional knowledge for not less than two years subsequent to the date of having obtained a registrable qualification, and of having held for not less than six consecutive months a recognized resident post in charge of general surgical patients in the wards of a general hospital recognized by the Council for the purpose. List of recognized hospitals is obtainable from the College, Lincoln's Inn Fields, London, W.C.2.

Membership of the Royal College of Obstetricians and Gynaecologists may be applied for by medical graduates who have been registered or eligible for registration for at least three years. The Fellowship of the Royal College is granted to members who are considered to have advanced the science and art of obstetrics and gynaecology. The address of the College is 58, Queen Anne Street, London, W.1.

Graduates may become Members of the Royal College of Physicians of Edinburgh on passing an examination, particulars of which can be obtained from the secretary at 9, Queen Street, Edinburgh, 2. It is a four-day examination—a written examination on the first day, a clinical examination on the second, on the third a practical examination with reference to the special subject the candidate has professed, and on the fourth an oral examination in medicine and therapeutics and the special subject. For the Fellowship of the Royal College it is necessary to have been for at least three years a member. Every proposal for election of a Fellow by the council of the college must be signed by four Fellows.

Fellowship of the Royal College of Surgeons of Edinburgh is granted to medical graduates who pass the necessary examination (particulars from the clerk of the College, Surgeons' Hall, 18, Nicholson Street, Edinburgh).

Fellowship, registrable with the General Medical Council as an additional qualification, is granted, after examination, by the Royal Faculty of Physicians and Surgeons of Glasgow. The candidate must be a licentiate of the Faculty or a graduate in medicine of a university or medical college approved by the Faculty, and may be examined either in medicine or surgery. Particulars from the office of the Faculty, 242, St. Vincent Street, Glasgow, C.2.

The Royal College of Physicians of Ireland grants membership on the result of an examination and elects Fellows by ballot from among the Members. The address of the registrar of the College is 6, Kildare Street, Dublin. Fellowship of the Royal College of Surgeons in Ireland (St. Stephen's Green, Dublin) is passed in two examinations, a primary in anatomy and physiology, and a final in surgery.

FACILITIES FOR POSTGRADUATE EDUCATION

Arrangements at the Universities

In describing the undergraduate arrangements at a number of schools in the foregoing account, postgraduate schemes have been incidentally mentioned. Every university in the country is making arrangements of some kind, although of course on a much smaller scale than in London, which bids fair to be the postgraduate centre of the country and indeed of the Empire (see the article by Sir Francis Fraser at p. 353). Preparations in many centres have been delayed owing to insufficiency of teaching staff, and priority has had to be given to the Government scheme for demobilized doctors, which has fully occupied the existing staff and equipment. This work is expected to have reached its peak in the present summer, and after this the facilities for postgraduate education should become available for graduates not only from this country but from overseas to an increasing extent. The experience gained in carrying out the Government scheme will itself prove of great value, both in the training of specialists and in the provision of courses for general practitioners.

The British Postgraduate Medical Federation

A little over a year ago the Senate of the University of London gave general approval to a scheme for a federated post-

graduate school as outlined in a report from the existing British Postgraduate Medical School at Hammersmith, and authorized that school to take steps to amend its constitution so as to give practical form to the proposals. Accordingly the central office of what is now known as the British Postgraduate Medical Federation was opened at first at the London School of Hygiene and Tropical Medicine, with a staff lent by the Ministry of Health, to carry out on behalf of the University of London the Government scheme for the postgraduate education of medical officers on release from the Forces. In November a move was made to No. 2, Gordon Square, London, W.C.1. Discussions were continued or newly entered upon with various hospitals in London with a view to establishing postgraduate institutes in the various branches of medicine.

Satisfactory progress was made with the Royal National Throat, Nose and Ear Hospital, the Royal London Ophthalmic Hospital, and the National Hospital, Queen Square. These hospitals have constituted their teaching schools separately from the respective hospitals, under committees of management and academic boards, and are able to provide sufficient accommodation for teaching and research to justify financial aid out of the block grant for their further development as institutes. The Institute of Laryngology and Otolaryngology began to receive financial assistance in January of the present year, the Institute of Ophthalmology in March, and the Institute of Neurology in April. The Institute of Child Health has been constituted a central activity of the University and will become a constituent institute of the Federation, as also will the British Postgraduate Medical School. St. John's Hospital for Diseases of the Skin has entered into negotiations with University College Hospital Medical School for facilities for teaching and research, so that an Institute of Dermatology may be expected to be a constituent institute of the Federation during the next academic year. Preliminary discussions have been held with the Brompton Hospital, the Heart Hospital, St. Peter's Hospital for Urinary Diseases, and the National Orthopaedic Hospital, though lack of accommodation for teaching and research makes it unlikely that specialist institutes can be formed during the next year.

It has been decided to petition for a Royal Charter for the Federation and a supplemental charter for the existing British Postgraduate Medical School. The new specialist institutes will be separately incorporated under the Companies Act.

For the training of specialists, to meet the demands of graduates coming to London, it is proposed to create "registrarships for specialist trainees" at the British Postgraduate Medical School and the special hospitals mentioned. One difficulty is that graduates may come to London at different stages in their postgraduate training, and as their capabilities and experience will be unknown to the hospital authorities they may not be able immediately to obtain suitable hospital appointments. It is proposed to provide training, including clinical experience, for such graduates, but without responsibility for the care of patients, so that it will be possible for their suitability for responsible appointments to be tested and for them to obtain such posts as vacancies occur. This would also meet the needs of those who visit London for shorter periods and do not require full specialist training. These courses of training are provided at the British Postgraduate Medical School, the Institutes of Child Health, Neurology, Laryngology and Otolaryngology, and Ophthalmology, and at Maudsley Hospital, but augmented or extended accommodation is needed. Another desirable innovation is a revision course in advanced general medicine or general surgery suitable for the specialist who has had sufficient practical experience but requires a short period of academic instruction to complete his training or to obtain a higher degree or diploma. It is also hoped to provide travelling fellowships open to graduates undergoing specialist training at the undergraduate schools as well as at the schools and institutes of the Federation, such fellowships to be held usually in the last year of specialist training.

Postgraduate Education for the General Practitioner

Under the Government scheme for demobilized doctors a series of two weeks' intensive general refresher courses for practitioners was arranged at non-teaching hospitals, voluntary

and municipal, in the London area; but it is hoped to go further and to accommodate the provision to special conditions of practice by the following methods:

- (1) Clinical assistantships requiring attendance on at least one half-day a week.
- (2) Monthly meetings in the hospital for demonstration of cases and discussion.
- (3) Whole-time intensive general refresher courses once a year, lasting one week.
- (4) Short—perhaps week-end—courses on subjects in which progress of practical importance has recently been made—for example, treatment by penicillin, blood transfusion, etc.

These facilities for general practitioners would be arranged at hospitals other than those occupied with undergraduate teaching or with the training of specialists, but the staffs of teaching hospitals would take part. The experience gained with the courses for demobilized doctors should be of considerable value, especially in selecting suitable hospitals. It is proposed to begin arranging provisions on these lines as soon as there is a lessening of the demands for facilities for demobilized doctors, but some of them will probably not be practicable until the National Health Service is in being.

The British Postgraduate Medical School

The British Postgraduate Medical School (Ducane Road, Hammersmith) has been a school of the University of London since its beginning in 1935. Increasing demands for postgraduate education from the Dominions, Colonies, and foreign countries, sponsored by the Government or the British Council, have made it necessary to expand the clinical facilities at the school, and arrangements were made with the London and Middlesex County Councils for the accommodation of twenty additional graduate students in general medicine and twenty in general surgery from April of this year.

The teaching in the clinical departments consists of bedside teaching, reinforced with lectures, clinico-pathological conferences, radiological and post-mortem demonstrations, and attendance at operations. Clinical teaching is continuous, but organized teaching is arranged in sessions of about fourteen weeks, roughly from September to Christmas, January to April, and April to July. At present there are no vacancies until 1947. House appointments are usually made from among the students, and facilities are provided for senior students who wish to carry out original research under the director.

The department of medicine is organized in five clinical units, three at Hammersmith and two at auxiliary hospitals. About 90 students can be accommodated, and resident appointments are available for about 20. The department of surgery provides training for general surgeons, but instruction in orthopaedics, otolaryngology, and urology is included. Teaching is so organized as to be continued from out-patient departments through the wards and operating theatres to follow-up clinics. Students do not themselves perform operations. There are at present no facilities for work in preparation for the primary F.R.C.S. examination. In the department of obstetrics and gynaecology teaching is conducted in the ante-natal and post-natal clinics and in the sterility clinic as well as in the wards and operating theatres. The department of pathology is organized in four main sections: (1) morbid anatomy and histology, (2) bacteriology, (3) haematology and clinical pathology, and (4) biochemistry. The course lasts for a year and starts in October. There are at present only ten places available in the course. Fortnight courses in practical anaesthetics are also given. In the department of radiology teaching is based on the requirements for the diploma in medical radiology.

The Special Institutes

It remains to glance at the present position in the various institutes whose origin has just been described. The committee of management and academic board of the Institute of Child Health has been constituted. Dr. Alan Moncrieff began his duties as professor in January last, and two assistants have been appointed, one to work mainly at Great Ormond Street Hospital and the institute there and the other mainly at the British Postgraduate Medical School at Hammersmith Hospital in connexion with the department of obstetrics. Negotiations

with certain boroughs for their co-operation in respect of their maternity and child welfare clinics are taking place.

The Institute of Laryngology and Otology has received a grant as from January of this year. A lease of premises in Gray's Inn Road, close to the Royal National Throat, Nose and Ear Hospital, has been obtained. Mr. C. Gill-Carey has been appointed part-time dean, and the teaching is being developed by the staffs of the Royal National and Golden Square Hospitals.

The medical school at the Royal London Ophthalmic Hospital, Moorfields, has been reconstituted, with a separate committee of management and an academic board, as the Institute of Ophthalmology. It has come to an agreement with the Central London Ophthalmic Hospital, and the combined staffs are available for the purposes of the Institute. It is hoped that other ophthalmic hospitals in London will co-operate. Mr. R. C. Davenport has been appointed part-time dean, and arrangements for teaching and research are being planned. The appointment of professor in the year 1946-7 is under consideration.

As for the other institutes, the establishment of the Institute of Neurology is going forward in association with the National Hospital, Queen Square. It is considered that no action is required for the inclusion of Maudsley Hospital as it is already a school of the University, but its inclusion in due course as an Institute of Psychiatry is desirable. A financial grant is being made to the school through the Federation during 1946-7.

In addition to the various hospitals mentioned, arrangements have been made for clinical facilities at one L.C.C. hospital (St. James's) and at two Middlesex C.C. hospitals (Redhill County and North Middlesex) for postgraduate students of the departments of medicine and surgery at the British Postgraduate Medical School, and it is hoped to make similar arrangements with Queen Charlotte's and Chelsea Hospital for Women for the students of the department of obstetrics. It is possible that the West London Hospital may be associated on similar lines. Hospitals under consideration as associated hospitals of the Federation are Brompton, the Heart Hospital, St. Peter's, and the Royal National Orthopaedic.

As already stated, all the universities are making postgraduate arrangements of some kind, although, of course, on a very much smaller scale, except perhaps in Edinburgh. We have already alluded to the plans for postgraduate work which have begun to materialize at Cambridge. Glasgow is undertaking a large amount of postgraduate teaching, and it is intended to enlarge this field. At Liverpool postgraduate research students are being accommodated. Queen's University, Belfast, is developing plans for a postgraduate school. Up to now, in most of the universities, the postgraduate facilities have been concentrated on the administration of the Government scheme for postgraduate training of demobilized medical officers.

The Fellowship of Postgraduate Medicine, founded in 1919, as a bureau at 1, Wimpole Street, London, W.1, which affords general information on postgraduate work in London and elsewhere. It arranges classes at hospitals, also special courses of intensive study for those entering for higher examinations.

Special Courses

The Royal College of Surgeons is embarking on a programme of postgraduate teaching, including the study of the basic sciences. The College has a noteworthy list of lectures in anatomy, physiology, and pathology, and in surgery which will be given in the autumn months, and a similar series is planned for the early part of 1947. Some forty lectures in the first of these series are planned for September and October, including twelve by Prof. R. A. Willis on the study of tumours. These will be followed in October and November by twelve surgery lectures by well-known surgeons.

The impressive contribution to postgraduate knowledge afforded by the lectures at the Royal College of Physicians must not be overlooked in any assessment of facilities. The Croonian, Fitzpatrick, Oliver Sharpey, Milroy, Goulstonian, Lumleian, and other series, to which is now added the Humphry Davy Rolleston lectures, afford opportunities for the presentation of work in medicine such as could scarcely be forthcoming in any other way.

Courses in Public Health and Tropical Medicine

The London School of Hygiene and Tropical Medicine (Keppel Street, W.C.1) furnishes a course for the diploma in public health and for the diploma in tropical medicine and hygiene. During the next session there will also be a course for the academic postgraduate diploma in bacteriology, but there are now no vacancies for this course, and applications for the subsequent session should reach the school by March, 1947, as the number of places is strictly limited. The course for the D.P.H. is designed primarily for qualified medical practitioners who intend to enter the public health service in this country as medical officers of health. The course begins on October 1 and lasts one academic year of nine months. Examination for the certificate in public health is held at the end of three months. All the vacancies for the full course for the diploma have been filled and there is a waiting list. Applications for the course beginning in the autumn of 1947 will be considered early next year. In view of the development and subdivision of medical work in the public health service, some places in the course for the certificate in public health have been reserved for practitioners who intend to engage in public health work other than as medical officers of health.

The course at the London School for the diploma in tropical medicine (D.T.M.&H.Eng.) is designed primarily to prepare qualified medical practitioners for the examination of the Conjoint Board for this diploma. It is open to any qualified medical practitioner, but students not holding a qualification registrable in England should consult the secretary of the Conjoint Board (8, Queen Square, W.C.1) regarding their admissibility to the examination. Two courses will be given during the next session, the first starting on September 30 and the second on March 3. The examinations that conclude these courses will be held in March and July respectively.

The Incorporated Liverpool School of Tropical Medicine is now on a normal peacetime footing, though the staff is not yet up to full strength. The two separate diplomas in tropical medicine and tropical hygiene formerly offered were combined this year to form a single diploma in tropical medicine and hygiene (D.T.M.&H.). Courses of instruction for this diploma are given twice yearly, and each lasts about four months. During 1946-7 these courses will start at the beginning of September and January. They are open to postgraduate students only, of whom about 40 to 50 a term can be accommodated. Women students are accepted on the same terms as men. The address of the school is Pembroke Place, Liverpool.

Many of the university courses for diplomas in public health have been suspended, but some are resumed or on the point of resumption. At Leeds the D.P.H. course will be resumed next session. The Royal Institute of Public Health and Hygiene (28, Portland Place, W.1) arranges courses of lectures and laboratory instruction by qualified teaching staff for the diploma in public health. Students completing the course are entitled to enter for examinations for the D.P.H. of universities and medical corporations of the United Kingdom. Examinations for the certificate and diploma of the Institute are held twice yearly in London and at provincial centres in general and school hygiene and in child welfare.

Postgraduate Education in Psychiatry

The provisional National Council for Mental Health (39, Queen Anne Street, W.1) arranges training courses in child psychiatry and mental deficiency. Fellowships are arranged to enable qualified psychiatrists to obtain special training in child guidance at a recognized training clinic. Preliminary qualifications for award of fellowship are D.P.M. or equivalent experience in the psychoses, psychoneuroses, and mental defect. Fellowships are tenable, as vacancies occur, at the Child Guidance Training Centre, Woodside Hospital, Muswell Hill; the Tavistock Clinic; Maudsley Hospital; Hill End Hospital, St. Albans; and at the Child Guidance Clinics at Aberdeen, Birmingham, Bristol, and Manchester. Ideally the course lasts for 12 months' half-time attendance, but in special circumstances six months' full-time may be arranged. The course is recognized by the Ministry of Education as a

suitable qualification for the medical director of an Education Committee's Child Guidance Clinic, and it is at present the only course of training recognized specifically for this purpose, though it is possible to get equivalent experience by personal arrangement.

At present the provisional National Council arranges two courses a year for school medical officers in mental deficiency, backwardness, and maladjustment. They last for two weeks, but it is likely that as from March next they will be extended to three weeks. They include lectures and demonstrations in mental testing, clinical mental deficiency, child development, and child guidance. They include the duties of medical officers in ascertainment under the Education Act, 1944. The course is recognized by the Ministry of Education. The fee is five guineas. Local education authorities defray the expenses of school medical officers, but the course is open to any qualified medical man or woman.

The Council also runs from time to time short courses of lectures for doctors on various aspects of psychiatry and psychology.

Psychiatry

The Tavistock Clinic (the Institute of Medical Psychology) has lately entered its new home at 2, Beaumont Street, London, W.1, and is contemplating the full resumption of its pre-war activities. For many years it carried out systematized training for doctors in medical psychology. Before the war systematic courses of training were taken, lasting two years, by those wishing to specialize, in psychotherapy, and, lasting one year, by general practitioners who wanted to gain a knowledge of psycho-neurosis for use in their practice. This work was regularly carried on until the outbreak of war, and postgraduate students of the Clinic are now scattered widely throughout the British Empire and the Dominions. In addition to systematic training short lecture courses and week-end discussion groups were held for doctors, and a wide variety of educational activities for lay groups were undertaken.

The recent creation, with the aid of a Rockefeller grant, of an "Institute of Human Relations" at the Tavistock Clinic has entailed a revision and extension of training facilities. It is intended to offer, beginning in February, 1947, a four months' course in social methods to suitably qualified students, medical and non-medical, affording a basic training in diagnosis and treatment of social problems. It is also intended to offer seminars on certain selected psychological topics, to begin in February. Existing provisions for training suitably qualified physicians in individual adult psychotherapy will be continued, and the first post-war course, which begins in October, is being revised to bring it into line with the new developments.

The Institute of Psycho-Analysis (96, Gloucester Place, London, W.1) provides training in psycho-analytic theory and technique. The course is part-time and lasts about four years. It includes a personal analysis, attendance at lectures and seminars (held in the evenings), and clinical work done under supervision. Students are required to obtain general psychiatric experience at other clinics and hospitals; the Institute does not set out to teach all aspects of psychiatry. Completion of the course to the satisfaction of the training committee qualifies the student for election as an associate member of the British Psycho-Analytic Society. In addition to this main course designed for those intending to specialize, the Institute gives briefer courses from time to time on the application of the principles of psycho-analysis to medical problems. These are advertised in the medical press.

POSTGRADUATE COURSES FOR INSURANCE PRACTITIONERS

Reintroduction Contemplated by Ministry of Health

It was reported to the meeting of the Insurance Acts Committee on Sept. 5 that the Ministry of Health was contemplating the reintroduction of postgraduate courses for insurance practitioners, pending the provision of such facilities under the National Health Service. It will be recalled that such courses were arranged in London and other centres until the outbreak of war caused them to be suspended. The new proposal is

dependent on the willingness of the universities to continue during 1947 the courses of postgraduate instruction for demobilized doctors, the demand for which will shortly decline. Ex-Service medical officers who wish to do so will be able to avail themselves of the courses, the arrangements being similar to those at present in operation under which the fees and subsistence expenses will be defrayed from Treasury funds.

The courses contemplated may be of several types, such as a two weeks' intensive course of 22 sessions in general medicine or in some approved specialized subject, a one week's intensive course of 11 sessions, again in general medicine or a specialized subject, or an extended course, such as two afternoons a week for eleven weeks. The syllabus will be subject to the general approval of the Minister. During 1947 a doctor will be allowed to take one two-weeks course or two one-week courses. To be eligible for financial assistance for meeting expenses, which will be paid from National Health Insurance Funds, an insurance practitioner must have at least 300 insured persons on his list if his practice is an urban one, or 150 persons if it is rural; at least three years must have elapsed since his qualification, and he must not have attended any of the courses for demobilized officers. Expenses will be paid as follows: course fee, 7½ gns. for a two-weeks course or 4 gns. for a one-week course; subsistence allowance up to £1 a day, if attendance necessarily entails absence from home at night, or otherwise actual expenses up to 5s. a day, and travelling expenses at third-class monthly return rates. The expenses of providing a locum tenet, where necessary, up to 12 gns. a week will also be met. Originally the Ministry suggested 10 gns. a week for a locum tenet, but later, on representations being made to them by representatives of the Insurance Acts Committee, agreed to raise the fee to 12 gns.

Under these arrangements, which will be without prejudice to future arrangements under the National Health Service proposals, an insurance practitioner will be given freedom of choice of the centres where courses are available. It is understood that the Ministry proposes to send a circular on the subject to every Insurance Committee, with copies to Panel Committees for their information.

When the provisional proposals came before the Insurance Acts Committee they were generally approved subject to certain qualifications. It was pointed out that 12 gns. was below the customary cost of a locum tenet; this cost as a general rule was at least 14 gns., and a Lancashire representative said that it was from 15 gns. to 20 gns. in the north-west. It was agreed to press for an upwards revision of this allowance to 14 gns., and also that first-class fares of the practitioner should be paid. It was further agreed to urge on the Ministry of Health that the 300 and 150 minimum of insured persons on the practitioner's list should not be rigidly adhered to as governing eligibility for the course, and it was pointed out that there might be a partnership in which the insured persons were entered on the list of one partner, but were attended equally by the other. The need for a certain amount of flexibility in this arrangement was expressed.

THE PUBLIC SERVICES

The majority of men and women after qualification and the filling of one or more resident appointments in hospital become general practitioners, usually starting as assistants and presently entering independent or partnership practice. Some, after a course of postgraduate study and obtaining the appropriate degrees or diplomas, become specialists or enter a branch of the public service. Laboratory work and medical research also offer interesting, though not highly paid, opportunities.

In the public health service a wide range of openings is now afforded in the shape of appointments under local authorities; there are also a number of posts of medical officers in Government departments. The senior posts in the public health service are now almost entirely administrative; junior posts may also be administrative, though more frequently they are mainly clinical, perhaps with some administrative responsibility. The effect of National Health Service legislation on the public health service cannot yet be fully estimated, but it seems likely that there will be an increased field for clinical preventive work.

New rules were promulgated by the General Medical Council to operate from Jan. 1, 1946, aiming at a more rational method of training for work in public health departments under modern conditions. The nature of the preliminary and final examinations has been indicated in the section headed "Postgraduate Education."

What was known as the Askwith agreement for many years determined the scales of remuneration in public health appointments, hospital and other, under local authorities. This agreement was terminated on March 31 of this year, and an interim agreement, without prejudice to an eventual settlement when conditions have become more stable, has been arrived at at a conference of the various associations of local authorities with the British Medical Association. Certain percentage increases on the basic "Askwith" rates hitherto in force have been accepted, benefiting more particularly those whose minimum is below £1,000. The new scales were set out in the *Supplement* of July 13 (p. 8).

The largest employer of public health medical officers is the London County Council, with its 76 general and special hospitals and its 21 mental hospitals and institutions for mental defectives. A proposal which the Council is pursuing is to divide London into some twenty districts, each to be served by a general hospital dealing with acute cases, with other hospitals related to it and supplying a complete medical service. In about half these districts the main hospital would be the council hospital and in the others a voluntary teaching hospital. Special units for certain types of medical and surgical treatment would be situated at suitable hospitals. Most of the general hospitals are already recognized training centres for candidates for the University of London M.D. examination, and a number of them for the diploma of Membership of the Royal College of Obstetricians and Gynaecologists and for the final F.R.C.S.

Apart from the London county mental hospitals there are 91 mental hospitals in England and Wales and 23 in Scotland under the control of local authorities, and some 20 in the whole of Great Britain administered by voluntary bodies. Assistant medical officers in mental hospitals are paid in accordance with the scales laid down in the former Askwith agreement, and to these the new interim scales will apply. Mental hospital medical superintendents and their deputies, however, together with some mental specialists, have been outside the agreement, and it is being represented that the new proposals should apply to them also.

Before the war there were about 50 whole-time and part-time medical officers in factories. During the war, owing to the Factories (Medical and Welfare Services) Order, 1940, which may require the owner of a factory at which any Government work is done to appoint doctors, nurses, and welfare supervisors, there was perhaps a twenty-fold increase in the number of industrial medical officers, and it is expected that many of these posts will become permanent. A very large proportion of factory workers, however, work in places too small to employ a whole-time medical officer. Something is being done in the way of grouping small factories for this purpose, and also in the employment of part-time factory doctors. The Association of Industrial Medical Officers (London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1) looks after the interests of these officers, and the British Medical Association publishes the *British Journal of Industrial Medicine*.

H.M. Forces offer openings for medical officers. Before the war candidates, who were normally required to be under 28 years of age, were accepted on a short service commission basis for a period of three to five years. At the end of their short service period they had an option of being considered for a permanent commission or of retiring with gratuity. The scheme for short service commissions is at present suspended, and all applications are dealt with by the Central Medical War Committee at B.M.A. House, London, or in Scotland by the Scottish Central Medical War Committee at 7, Drumsheugh Gardens, Edinburgh, 3.

The method of recruitment to the Indian Medical Service was altered during the war, and those wishing to be appointed are required first to join the R.A.M.C. After a course of instruction they are able to be posted to the Indian establishment and are then given the opportunity to transfer to the I.M.S. Full information regarding appointments may be obtained from the

Secretary, Military Department, India Office, Central Buildings, Matthew Parker Street, S.W.1.

The Colonial Medical Service offers many posts for men and women doctors. A candidate's preference for any particular colony is given full consideration, though it may not always be possible to meet his wishes. Vacancies occur most often in the larger medical departments in tropical Africa. Generally speaking, the initial salary is from £600 to £700 on a scale rising to £1,000 or £1,120 per annum, but there are a number of higher scale posts, both administrative and specialist, with salaries up to £2,000. Government quarters are provided, together with first-class passage to and from the territory. Officers in this Service have special opportunities in preventive medicine. Inquiries should be addressed to the Director of Recruitment, Colonial Office, 15, Victoria Street, London, S.W.1. A Colonial Medical Research Service is being formed.

Those who wish to put into the hands of a young man or woman a succinct and authoritative statement of the qualifications, training, and prospects of employment will find it in a threepenny booklet prepared by the Ministry of Labour and National Service, in the "Careers for Men and Women" series, No. 32, *Medicine and Surgery*. It is obtainable at H.M. Stationery Office.

HIGHER QUALIFICATIONS

Diploma in Public Health

The Diploma in Public Health, granted jointly by the two Royal Colleges (D.P.H., R.C.P.Lond. and R.C.S.Eng.) is open, after a stipulated interval, to those who have passed a recognized final qualifying examination in medicine, surgery, and midwifery. For admissibility to the preliminary examination the curriculum of study must extend over one academic year whole-time or not less than eighteen calendar months part-time. Both the preliminary and final examinations are normally conducted twice yearly—in June and December—and candidates must give notice to the Secretary of the Examining Board in England, Examination Hall, Queen Square, London, W.C.1, twenty-one days before the examination begins, and must furnish the necessary certificates.

The preliminary course consists of systematic instruction in the history of public health and public assistance, the functions of central and local authorities, social security, the statistical presentation of public health data, the causal agents of infection and their control, the influence on health of heredity and of environment, physical education, and the principles of education. The course must include practical demonstrations, exercises in epidemiological problems, and visits to places and institutions of importance to public health. The examination consists of two written papers and an oral session.

Those who pass this examination receive the "Certificate in Public Health" of the R.C.P.Lond. and R.C.S.Eng., and the possession of this certificate makes them eligible to begin the course of study required for admission to the final examination. The final course includes systematic instruction in a large number of subjects such as physiology, biochemistry, food, and nutrition in relation to public health; bacteriology, parasitology, and medical entomology, as applied to epidemiology; mass aspects of disease; sanitation; statistical methods and data; the law relating to public health; mental health services; and occupational health. Candidates are required to produce a certificate of having resided and received instruction for four weeks in an infectious diseases hospital or of having regularly attended at such a hospital for three months, also of having for not less than five months attended the health department of a local authority and personally studied the daily work of each section of such department under proper guidance. The examination consists of three written papers, a clinical examination in infectious diseases, an oral examination in that subject and in epidemiology and general and special hospital administration, and a general oral examination. The whole examination must be passed at one time. Candidates who pass the examination are then granted the diploma.

D.P.H. courses are being resumed at the Universities of Liverpool, Leeds, the Welsh National School of Medicine, and a number of others after suspension during the war.



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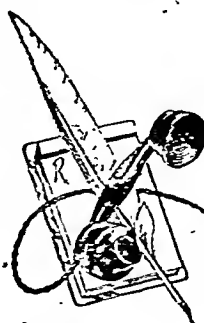
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Diploma in Industrial Health

The first examination for the Diploma in Industrial Health (J.I.H., R.C.P.Lond. and R.C.S.Eng.) will be conducted in December, 1946, Part I beginning on Dec. 13 and Part II on Dec. 27. Candidates are admissible to Part I 24 months after having passed a qualifying examination in medicine, surgery, and midwifery. The candidate is required to produce a certificate of regular attendance at a course extending over one academic term of not less than ten weeks of whole-time study or an equivalent period extending over not less than five months of part-time study, covering in either case not less than 300 hours. The systematic and practical instruction required is the same as for Part I of the examination for the D.P.H.

For Part II the candidate is required to have attended regularly at a recognized institution subsequent to having passed Part I, a course extending over not less than five calendar months of whole-time study or an equivalent period extending over not less than twelve calendar months of part-time study, covering in either case not less than 550 hours. Systematic instruction is required in the structure of industry and industrial relations, the development of industrial health and legislation relating thereto, the organization of a health service in industry, applied physiology in industry including mines, industrial psychology, placement of workers, industrial accidents and occupational diseases, rehabilitation and resettlement in industry, and special problems relating to employment of women and young persons. The practical instruction must include visits to industrial establishments, docks, shipyards, and mines, attendance at a skin and an ophthalmic clinic for 12 and for 6 sessions respectively, attendance at an accident department of a hospital for 12 sessions, six visits to recognized rehabilitation and retraining centres, and attendance at various works' surgeries and works under the instruction and supervision of industrial medical officers.

Each part of the examination consists of two written papers of three hours each and an oral examination, and for Part II a clinical examination also is required. Further particulars can be obtained from the Secretary of the Examining Board, Queen Square, London, W.C.1.

The Society of Apothecaries of London (Apothecaries Hall, Blackfriars Lane, E.C.4) has instituted an examination for the diploma in industrial health, embracing the history and legislation relating to industrial health, occupational diseases, the industrial environment, the practice of industrial medicine, and clinical medicine and surgery as applied to industry. The examinations are held in February, May, August, and November.

Other Special Degrees and Diplomas

The Examining Board in England (English "Conjoint") offers diplomas in laryngology and otology, ophthalmic medicine and surgery, anaesthetics, child health, physical medicine, medical radiotherapy, medical radio-diagnosis, psychological medicine, and tropical medicine and hygiene.

The Society of Apothecaries of London grants the Mastery of Midwifery (M.M.S.A.) upon examination in obstetrics, paediatrics, and public health. The examinations are held in May and November. The Royal College of Obstetricians and Gynaecologists grants a diploma to practitioners who have had special postgraduate experience in obstetrics.

Several of the universities normally offer diplomas in psychological medicine, but in some of them the course is still suspended. A D.P.M. course is normally held at Maudsley Hospital (L.C.C.) in the early months of the year.

The Faculty of Radiologists (Warden, care of Royal College of Surgeons, Lincoln's Inn Fields, W.C.2) grants a Fellowship to medical graduates of five years' standing who have spent at least one year in general clinical work at an approved hospital, have practised radiology exclusively for three years, and have held a radiological diploma for at least two years. The Universities of London and Edinburgh grant diplomas in medical radiology.

The University of Oxford grants a diploma in ophthalmology. University College, Dublin, offers a diploma in child health. Diplomas in bacteriology are ordinarily granted by the Universities of London and Manchester; the University of London offers a diploma in clinical pathology, and Liverpool University the

degree of Master of Surgical Orthopaedics. The Irish Conjoint Board issues diplomas in ophthalmology, anaesthetics, child health, and psychological medicine.

The Royal College of Surgeons of England is making application for a supplemental charter to enable (1) the F.R.C.S. to be obtained by ophthalmological candidates who pass the normal primary examination and a special final examination equal in standard and similar in form to the ordinary examination, and (2) to have power to grant a higher dental diploma entitled the "Fellowship in Dental Surgery."

TUITION AND EXAMINATION FEES

The fees charged at medical schools vary to a considerable extent as between one school and another, but the estimated average cost of training over six years, including books and instruments, is placed at between £320 and £360. To take a typical school—Charing Cross—£340 is mentioned as the total cost to qualification, provided the course is continuous and the examinations are passed at the normal times. This estimate covers the first M.B. in the case of degree students and the pre-medical examination in the case of students reading for the Conjoint diploma. The entrance fee is 10 gns., the tuition fees for the first M.B. are £40 per annum and for the second M.B. £44 per annum, and for the clinical courses there is a composition fee of 38 gns. The composition fee does not include the fee for the course in fevers and infectious diseases (3 gns.), the fee of 1½ gns. paid to the public vaccinator, and the sum of £5 per month which midwifery clerks, during their residence in hospital, are required to pay towards the cost of their board.

The examination fees for the University of London M.B., B.S. total 33 gns., and for the Conjoint Board 46 gns. The latter fee is made up of 6 gns. for the pre-medical examination, 8 gns. for Part I of the first examination and 2 gns. for Part II, and, for the final examination, 4 gns. for Part I, 10 gns. each for Parts II and III, and 6 gns. for Part IV. For admission to re-examination the fees are reduced, the fee for the final examination being 20 gns., as compared with 30 gns., for the first admission. The examination fee for the L.R.C.P., L.R.C.S. Ed., L.R.F.P.S. Glas. is £33, and the licentiate fee L.M.S.S.A. 25 gns. The fees for university degree examinations vary between £20 and £40. The qualifying degrees of the universities are the following: the B.M., B.Ch. of Oxford, the M.B., B.Chir. of Cambridge, the M.B., B.S. of Durham and London, the M.B., Ch.B. of the Victoria University of Manchester and of the universities of Birmingham, Liverpool, Leeds, Sheffield, Bristol, Edinburgh, Aberdeen, Glasgow, and St. Andrews, and the M.B., B.Ch. of Wales, Queen's University of Belfast, Dublin, and the National University of Ireland.

To the fees for tuition and examination given above the cost of maintenance must of course be added. Some investigations made at Newcastle recently showed that the total cost of six years' studentship worked out at £1,070 if the student lived at home and £1,380 if he was in lodgings; but there is a great difference in these costs as between London and the provinces, and between the provinces and Scotland. At Oxford the cost, in 1945, of the residential part of the course was about £250 per annum; this has risen slightly since that time as tuition fees have been increased.

Further fees for tuition and examination will of course be required if it is decided to proceed to higher degrees or diplomas. The fee to be paid before examination for Membership of the Royal College of Physicians of London is 10 gns., but this is reckoned as part of the fee for admission as a Member in the event of the candidate satisfying the censors' board of his competence. Before admission as a Member the fee to be paid is 40 gns., except when the candidate for Membership is already a licentiate of the College, when the fee already paid for the licence (15 gns.) is deducted from the larger amount. For the Fellowship of the Royal College of Surgeons the fee payable for admission to the primary examination is 8 gns. and to the final 15 gns., and the fees payable before the diploma can be granted, in addition to the fees for admission to the examinations, are 10 gns. for members of the College and 30 gns. for all other candidates. The fee paid by the candidate for the Membership examination of the Royal College of Physicians of Edinburgh is 35 gns., and when the Member is

raised to the rank of Fellow he is required to pay 38 gns., exclusive of stamp duty. The stamp duty on the Fellowship, payable to the Government, is £25.

The fee for admission to the examination for the D.P.H. by the Examining Board in England (the "Conjoint") is 6 gns. for the preliminary examination and 6 gns. for the final, and there is a diploma fee of 5 gns. The fee for admission for the D.T.M.&H. is 10 gns. At the Liverpool School of Tropical Medicine the fees for the course of instruction for the diploma are 30 gns., and for the revision course 22½ gns. For admission to the university examination the fee is 6 gns. and the fee for the diploma 3 gns. At the London School of Hygiene and Tropical Medicine the tuition fee is £40 for the D.T.M.&H., and £56 14s. for the D.P.H.

The young student should inquire concerning the numerous public secondary school scholarships and State scholarships which are available from school to university. A number of scholarships, exhibitions, and prizes are awarded directly by medical schools. The combined hospital university entrance scholarships are awarded every year to second and third-year students who have passed the intermediate examination in anatomy and physiology of a British university outside the London area. The arrangement covers three schools—St. Bartholomew's, Guy's, and St. Thomas's. The Royal College of Surgeons awards the Macloghlin scholarships to young men seeking to qualify themselves as members of the Royal College and who need financial assistance for the prosecution of their studies. The examination is competitive; and no scholarship is awarded to any candidate who does not obtain pass marks in all three subjects of the pre-medical examination—chemistry, physics, and biology. The scholarship may be tenable for five years and is of the value of £90 a year. Another prize of the Royal College is the Begley prize awarded to the candidate obtaining the highest number of marks in anatomy and physiology combined.

ON QUALIFICATION

At innumerable gatherings of final-year students and the newly qualified the advice is given to do two things on qualification: (1) to join the British Medical Association, and (2) to join a defence society.

The British Medical Association

The British Medical Association, with which the Canadian Medical Association is affiliated and the Medical Association of South Africa is shortly to be affiliated, has a membership of over 52,500. Medical practitioners are elected to membership by the Council of the Branch in the area in which they reside, or, if not resident within the area of a Branch (e.g., serving with H.M. Forces), by the Council of the Association. The ordinary subscription for members resident in Great Britain and Northern Ireland is 3 gns., but there are remissions of part of the subscription in certain cases and newly qualified practitioners admitted to membership within the first two years of their registration pay only 1½ gns. until the end of their fourth year. For members not resident in Great Britain and Northern Ireland the subscription is ordinarily 1½ gns., and for medical officers serving with the Forces (apart from the above concession to newly qualified practitioners) the subscription is 2 gns. Forms of application are obtainable from the Hon. Secretary of the Division or Branch or from the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The privileges of a member include participation in all the activities of the Association, local and central, the receipt weekly of the *British Medical Journal* and its *Supplement*, participation in the government of the Association and in the formulation of its policy, the use of the houses of the Association, with, at the London house, library and common room, and the advice and help of the central staff in professional matters. The Scottish House of the Association is at 7, Drumsheugh Gardens, Edinburgh, 3.

The Defence Societies

The London and Counties Medical Protection Society (Victory House, Leicester Square, W.C.2) has a membership of 22,000 and financial resources amounting to £143,000. During 1945 it received over 1,000 applications for advice and assistance. Practitioners

returning to civil life on release from the Forces have found it very advantageous to consult the Society.

The Medical Defence Union, which has recently celebrated its diamond jubilee, has 29,800 members, and has also undertaken much useful medico-legal work on behalf of its members. The cases which come into court are, of course, only a small fraction of those with which a defence organization is daily called upon to deal.

In Scotland the Medical and Dental Defence Union (113, St. Vincent's Street, Glasgow, C.2) has a membership of between 4,000 and 5,000. A standing joint committee with representatives of all three societies has been set up. It is an advisory body and recommends to the respective councils lines of action to be followed in appropriate cases.

BRITISH MEDICAL STUDENTS ASSOCIATION

The British Medical Students Association was established a few years ago with the active encouragement of the British Medical Association, which continues to afford it secretarial assistance and hospitality at B.M.A. House. It is the only body through which the medical students of this country can speak with a united voice on the subject of their future. Nearly all the British medical schools are members of the Association. Irish medical students have their own Association, but this is linked with the B.M.S.A., and observers from Irish schools attend its annual congresses. Some highly successful congresses have been held in London and have been addressed by Ministers of Health and others. The B.M.S.A. has been fortunate in its able leaders, though it is unfortunate in the fact that attainment of qualification so quickly sweeps them out of undergraduate life. On the other hand, there is no bashfulness on the part of first-year men, and there is a refreshing spirit of criticism among the rank and file.

The B.M.S.A. has endeavoured to elicit the opinion of students on many issues appertaining both to undergraduate and qualified status. One representative of the Students Association—a woman—serves on the B.M.A. Curriculum Committee now sitting. At no time has the Students Association gone deeply into the details of the curriculum, though quite a number of student bodies at the individual schools have done so. The Government's Health Service Bill has been the subject of a questionnaire with a view to collecting and summarizing student opinion on the subject. Schools have been asked to arrange meetings for discussion of the Government proposals and regional meetings have also been called. It should perhaps be stated that the B.M.S.A. keeps itself quite clear from any form of party political activity.

The Cost of Medical Education

The B.M.S.A. is collecting material on the cost of medical education and the extent to which financial help is available by means of scholarships, grants, or loans. Recent increases in student fees, especially at Oxford, have drawn attention to the fact that many colleges, in order to meet increased costs, are obliged to seek an increased income. The National Union of Students committee at Oxford has drawn up a detailed statement of the position, and on the basis of its conclusions the Union has formulated a three-point policy: (1) that where universities or colleges cannot meet increased costs the resultant deficit in their budgets should be made up by direct Treasury grants to the University concerned through the University Grants Committee, and not by an increase in the fees charged to students; (2) that there is a need for an increase in the number and amount of grants to students, but that such increases should be made in order to supplement the net income of the student and not merely to enable him to pay increased fees; (3) that in the case of Oxford University, where colleges have already increased fees or have announced increases, and of any other university where similar increases are foreshadowed, increased grants should be made and fees for students restored to at least the 1939 figure. The B.M.S.A. has sought the opinion of its members on this policy.

One important piece of work has been in connexion with medical films, and the B.M.S.A., in the absence of a more ambitious work of the kind, prepared a film catalogue. A questionnaire on the subject of medical films has been circulated. Many branches of the B.M.S.A. have appointed a film secretary, and have pressed their schools for the more general use of teaching films and sound projectors. The question of student health has occupied a good deal of attention, together with the parallel question of nutrition. College canteens are frequently only in the "C" category for the supply of rationed foods, and, in London schools particularly, the provision of the midday meal for students is a serious problem.

Much thought has been given to the question of student exchange as between home and foreign universities, and also as between medical schools and hospitals in this country. Student-staff committees have also been formed, enabling the students to put forward their views and proposals to the governing bodies. Finally, the B.M.S.A. has produced a journal, the first ordinary issue of which appears in the autumn.

THE INSURANCE CAPITATION FEE FAILURE TO APPLY SPENS REPORT PANEL CONFERENCE TO BE RECOMMENDED TO CALL FOR RESIGNATIONS

the following recommendation, which has been sent to all Panel Committees with a view to its endorsement for submission to the Panel Conference to be held in London on Oct. 24, was passed unanimously at a meeting of the Insurance Acts Committee (Dr. E. A. Gregg presiding) on Sept. 5:

That in view of the Minister's failure properly to apply the report of the Spens Committee to the current capitation fee—despite explicit government promises that this would be done—and in view of the inadequacy of 12s. 6d. as remuneration for assuming medical responsibility for an insured person for a year, it is recommended that all insurance practitioners in England and Wales, Scotland, and Northern Ireland to place their resignations from the National Health Insurance Service in the hands of the Insurance Acts Committee, and to authorize that Committee, at its discretion, to put in their resignations to Insurance Committees unless the Minister is willing fully to apply the Spens Report to the current capitation fee, with effect at least from Jan. 1, 1946, or, failing agreement, to refer to the Spens Committee or a representative section of that Committee, or other agreed independent body, the question of the interpretation of the Spens Committee Report in relation to the current capitation fee, both parties agreeing in advance to accept the findings.

The adoption of this recommendation came at the end of a three hours' discussion on the impasse created by the refusal of the Ministry of Health to give full effect to the findings of the Spens Report in so far as the present remuneration of insurance practitioners is concerned. At the previous meeting of the Insurance Acts Committee, reported in the *Supplement* of July 27 (p. 32), the earlier stages of this controversy were fully set out. At that meeting it was announced that the Minister had offered a two shillings' increase in the capitation fee, making it 12s. 6d., with retrospective effect to Jan. 1, 1946. The Spens Committee found that the remuneration of doctors general in 1939 was up to £200 (on average £170) below what should have been, and the contention of the Insurance Acts Committee was that this deficiency should be considered wholly or almost wholly in relation to the part of income derived from insurance practice, because in relation to his private fees the doctor was in a position of control, whereas his insurance income was based on a rate which he could not adjust. Taking the pre-war capitation fee of 9s., which was generally considered to be much too low, this addition would have brought it up to pre-war standards, to between 12s. and 13s., and if to this betterment factor of 22% was added to meet the change in values since 1939, it indicated a capitation fee of about 15s. The Committee, therefore, while welcoming the Minister's acceptance of the Spens Report, considered the proposed increase to 12s. 6d. as "gravely inadequate," and suggested that the Minister was unwilling to make the interim fee 15s. the Spens Committee itself should be asked to state the implications of its findings in relation specifically to the current remuneration of insurance practitioners.

The reply of the Minister was now reported. In the Minister's view it was impossible to consider separately the remuneration of insurance practitioners at present and the remuneration of general practitioners in the future National Health Service. Unless the two were discussed together he saw no useful purpose in a further meeting with the Insurance Acts Committee. In July 30 a further letter was sent to the Ministry giving chapter and verse for the claim that one of the objects in establishing the Spens Committee was to give effect to the undertaking of the then Minister (Mr. Ernest Brown) to have the object of insurance practitioners' remuneration approached new, in Mr. Brown's phrase, "from the ground up."

Your letter (the reply of the I.A.C. continued) goes on to repeat the argument that it is impossible to consider separately the question of future remuneration under a Bill which is not yet law, and that of the remuneration of insurance practitioners to-day. The Committee cannot accept this view. On a number of occasions it has been made plain to the Minister and his officers that the representatives of the profession have, as yet, no authority to discuss the mode and amount of remuneration in any new service which may be established. . . . The Committee is quite unable to appreciate

why the Minister maintains that the question of remuneration in the new service and that of the current capitation fee must necessarily be considered together."

The correspondence was closed with a further letter from the Ministry stating that the Minister felt that the probability that the new health service would be in operation in the reasonably near future produced a situation in which it was obviously right to consider the whole question of present and future remuneration as a single issue now, in the light of the Spens Report, and that all the Minister could do in the circumstances was to give effect to his undertaking to increase the existing capitation fee to 12s. 6d., retrospectively to Jan. 1, 1946, and this was done by a circular letter to Insurance Committees on Aug. 19.

A Critical Issue

In opening the debate in the Insurance Acts Committee on Sept. 5 Dr. R. W. COCKSHUTT said that this was a critical issue. Insurance practitioners would be right to take their stand on the principle that they wished their remuneration to be settled by the tribunal—the Spens Committee—to the setting up of which both sides had consented. If there was any doubt as to the relation of the findings of the Spens Committee to insurance remuneration it was the Spens Committee itself which should be asked to resolve it. He hoped that the necessary steps would be taken forthwith to obtain from the insurance practitioners of the country the necessary three months' notice to terminate their agreements. Here for the first time in its dealings with the Minister the profession had the opportunity of taking the initiative; hitherto the Minister had had it all in his own hands.

Dr. GREGG from the Chair reminded the Committee of the previous occasion when a similar conflict arose. This was in 1923 when the Minister of Health, the late Lord Brentford (then Sir William Joynson-Hicks), made an offer of a capitation fee of 8s. 6d. for three years or 8s. for five years. This offer was rejected by the Insurance Acts Committee of the time, and a request was made for arbitration, which was refused. The resignations of insurance practitioners were called for, and these were forthcoming in the extraordinary proportion of 95%. An arbitration court was then set up, before which the late Sir Henry Brackenbury presented the case with the skill of a trained advocate, and the award of the court was 9s.

Dr. J. A. PRIDHAM said that on this question the profession had been treated with contempt. It had been promised an investigation "from the ground up," the proposal to set up the Spens Committee was first announced by the Ministry to the Insurance Acts Committee, the Spens Committee was the obvious fulfilment of the promise given, the present Minister continued that Committee when he came into office, he had accepted its findings, but he now refused to apply them unless the profession consented to negotiate with him on something which had nothing to do with the present issue at all.

Remarks of similar tenor were made by Dr. W. D. STEEL, Dr. J. C. PEARCE, Dr. W. V. HOWELLS, Dr. KATE HARROWER, and other members.

The CHAIRMAN OF COUNCIL (Dr. Dain), who was asked for his view, said that he was in entire accord with these expressions. He agreed that this question would have an enormous effect on the voting in the forthcoming plebiscite, but he reminded the Committee of one point which it was necessary to bear in mind in dealing with their "weaker brethren" in the constituencies—namely, that insurance practitioners would receive with their next quarterly cheques an addition to the usual amount, and in the eyes of some this might obscure the principle involved. It was necessary to state quite definitely that such an addition must not be interpreted as an acceptance by the profession of the Ministry's view that 12s. 6d. was the appropriate fee. With regard to the previous arbitration the circumstances of which had been recalled, he thought that this time there would be less difficulty in collecting an overwhelming number of resignations than there was in 1923, because at that time there was some indecision and divided counsel among the leaders, nothing of which now obtained.

A Unanimous Conclusion

Dr. A. BEAUCHAMP said that the Minister had not made out any case for tying up the remuneration under the future

National Health Service and the current capitation fee. The nexus was simply in the Minister's own mind.

Dr. S. WAND agreed that this was the proper time and the proper ground for a trial of strength with the Ministry, but he wondered whether it was the right course to suggest any further resort to arbitration. To his mind the arbitration had already taken place, and the result had appeared in the report of the Spens Committee. The profession had been let down by the refusal of the Minister to give effect to that report. Dr. HOWIE WOOD expressed the same view. He considered that it would be a great mistake to ask for further arbitration. Similar views, questioning the necessity for any further arbitration, were put forward by Dr. A. CAMPBELL, Dr. LEWIS LILLEY, Dr. J. A. IRELAND, and other members.

The CHAIRMAN invited every member of the Committee to express his views and, as far as he could, the opinion prevailing in his locality, and every member did so.

Dr. J. A. BROWN (Chairman of the Panel Conference) said that it seemed clear that there had to be a fight with the Minister at some time or other, and it seemed to him that the present was the time. If this were allowed to slip by and the fight reserved for the wider issue on the working of the new Act so many other considerations would come in and so many controversial facets would be presented that they might lend themselves to the accusation of trying to fight on one issue in order to secure a decision on another. It was much better to fight now on the simple issue presented. Dr. C. F. R. KILLICK, speaking for the West Country, said that he was sure that if a stand were taken on this issue it would be of enormous advantage in the further struggle ahead. Dr. TALBOT ROGERS said that in Kent they spoke with one mind on this subject. Their only criticism was that the sum of 15s. should have been mentioned in the earlier resolution; in their view the amount should have been larger. Dr. F. M. ROSE said that he was in full agreement with all that had been said, but he thought from some knowledge of Lancashire that a good deal of staff work would be needed if those practitioners who medico-politically were apathetic were to be seized of the situation. Dr. S. A. FORBES said that in his part of Surrey he was confident that there would be full support for the policy of handing in resignations. Dr. F. GRAY, in speaking in full support of the action proposed, said that he thought some members were laying too much stress on the political complexion of the present Minister and too little on the habit and tradition of the department. This sort of thing had been part and parcel of the policy of the Ministry for many years before the advent of the present Government. Dr. D. J. B. WILSON said that he had no doubt about the response in his own county of Buckinghamshire, but there might well be a certain "tail" of practitioners who were imperfectly acquainted with the situation, and some canvassing would be necessary.

The Scottish representatives spoke in full support of the policy of the Committee, as did representatives from Yorkshire, Merseyside, Middlesex, and other areas. After all had been said the CHAIRMAN said that it was evidently the unanimous feeling of the Committee that a communication should at once go out to Panel Committees urging that a stand be made on this issue.

The resolution set out at the beginning of this report was then submitted. The principal discussion took place on the proposal, should the Minister be unwilling to apply fully the Spens report to the current fee, to refer the matter back to the Spens Committee or to some other independent body. It was pointed out that there might be difficulty in reassembling the Spens Committee, and that Sir Will Spens himself was now engaged on another big task concerned with the remuneration of dentists. A motion to delete the words "or other independent body" was lost, but eventually it was agreed to put in all three alternatives—the Spens Committee itself, a representative section of it, or an agreed independent body. In this form the recommendation was unanimously adopted.

It was agreed that the recommendation be sent forthwith to the secretaries of Panel Committees, who should be requested to call meetings of insurance practitioners in their areas, also that it should be circulated as soon as possible, with an explanatory memorandum, to every insurance practitioner, and that the memorandum should make it plain that the increase to 12s. 6d.

now current had not been accepted as satisfying the demands of the profession.

The date of the Panel Conference, at which this recommendation will be the outstanding business, was fixed for Oct. 24, and it was stated that the Conference might be expected to go into a second day.

NOTE ON THE CAPITATION FEE

At no time since the inception of National Health Insurance has the capitation fee been regarded by insurance practitioners as adequate payment for the work done and the responsibility involved. In 1913 the capitation fee, including a share of the so-called "floating sixpence," was 7s. 3d. After modest increases in 1918 and 1919 it reached a level of 11s. in 1920 and 1921. In the following year it began a downward journey, reaching its lowest level in the economy years of 1931-4, at 8s. 1½d. At the outbreak of war it stood at 9s., the level determined by a Court of Inquiry the findings of which—and the evidence of the Ministry to which—caused grave dissatisfaction to insurance practitioners. In 1942 there was added an additional 9d. to cover increased practice expenses and to include an undetermined amount in respect of the inclusion of non-manual workers with incomes up to £420 per annum. In December, 1943, there was added a further 9d., "calculated with regard to the war bonus given to those in the Civil Service and others, but not strictly or rigidly calculated."

Put briefly, the 7s. 3d. of 1913 had become 9s. by 1939 and 10s. 6d. by 1946. During the years 1913-46 the average number of items of service rendered to insured persons increased threefold and the cost of living rose by 105%.

It was believed that a new phase had been reached when Mr. Ernest Brown, then Minister of Health, undertook, in response to representations by the Insurance Acts Committee, that when the war was over the whole question of the capitation fee would be investigated "from the ground up."

In May, 1944, the Ministry of Health put forward a proposal which it was stated would satisfy the promise given by Mr. Ernest Brown as well as prepare the way, in one respect, for some form of national health service. This was the proposal of the appointment of the Spens Committee to report on the appropriate range of general practitioner remuneration. As Sir John Maude stated in his letter to the Association of May 17, 1944:

It seems to the Minister that what is required is to approach the whole subject afresh and with a clear field, and in co-operation with the profession to set on foot an inquiry by a small independent committee which would arrive at useful general standards, on which future arrangements between the profession and the Minister could be confidently founded. Such a course was, you will remember, also contemplated by Mr. Ernest Brown when he gave an assurance last year that the whole question of the basic capitation fees should be re-examined "from the ground up" as soon as opportunity offered.

Sir John further stated that the results of the proposed inquiry into general practitioner remuneration "would be equally valuable and usable no matter what forms of public medical practice may continue or may come into being, under the present law or under any future legislation."

In a further letter of July 10 Sir John Maude stated that the findings of the proposed Committee would apply:

Irrespective of the institution of any National Health Service and would directly bear upon existing conditions in the present National Health Insurance scheme. The object would be, irrespective of any particular form of national service, to approach the whole subject of public remuneration of the general practitioner with an open mind and a clear field—to give effect, indeed, to the assurance given by Mr. Ernest Brown last year that the whole question of public remuneration of the general practitioner should be approached anew "from the ground up."

In the light of these promises the profession agreed to co-operate in the establishment of the Spens Committee on general practitioner remuneration. In May, 1946, the report of this Committee was issued, and without delay the profession accepted the report. The Insurance Acts Committee met the Minister of Health to ask that, in accordance with the promises given to the Committee, the report of the Spens Committee

ould be applied to "existing conditions in the present National Health Insurance scheme." In reply, the Minister stated that he could not consider the Spens Committee report in relation to the current capitation fee without first considering in relation to remuneration in the proposed new service. In effect, he was prepared to discuss current remuneration only after discussing remuneration in a service not yet established by law and not yet approved by the profession. Such a course would necessarily involve discussing future methods as well as amounts of remuneration, including the salary method.

The Insurance Acts Committee resisted the Minister's argument, maintaining that the course he proposed was neither necessary nor desirable. Insurance practitioners had received explicit Government promises that the report of the Spens Committee could be and would be applied to the National Health Insurance service, irrespective of proposals and decisions on any future service. The Insurance Acts Committee was authorized to discuss only current insurance remuneration. Questions of remuneration for the new service would be dealt with by the Negotiating Committee if and when it had been authorized by the profession. The Committee demonstrated to the Minister that the Spens Committee's conclusion that pre-war general practitioner remuneration was insufficient by an amount averaging £170 a year could, without further delay, be translated into an increase in the capitation fee. The Minister replied that, while he was willing to discuss the application of the Spens recommendations, which he accepted, both to the new health service and to the current health insurance scheme considered together, he was unwilling forthwith to apply the Spens recommendations to current insurance remuneration. Without applying the Spens recommendations the Minister proceeded to raise the capitation fee to 12s. 6d. retrospective to Jan. 1, 1946.

Bearing in mind the range and character and responsibility borne by insurance practitioners, and the economic conditions in the post-war world, the Insurance Acts Committee regards a capitation fee of 12s. 6d. as gravely inadequate. In its view the application of the findings of the Spens Committee to current remuneration would eventually mean a capitation fee which is considerably higher than 12s. 6d. It had accepted the Government's promise that, quite apart from any new service, the Spens Committee report would be applied to the current capitation fee, and it has asked repeatedly that this should be done. It was willing that the Spens Committee itself should be asked what is the appropriate interpretation of its report in relation to the current capitation fee.

All these considerations have led the Insurance Acts Committee to submit to Panel Committees the recommendation set out below, with a view to its consideration at the forthcoming Panel Conference. Panel Committees will consult individual insurance practitioners at meetings to be called for this purpose and instruct representatives to the Panel Conference. It will be observed that the resolution asks not for any specific sum but for the fulfilment of the official promises, first, that as soon as the war was over the capitation fee would be examined "from the ground up," and secondly that the Spens Committee would undertake that investigation and that its report would be applied to the current capitation fee quite independently of its application to any future service.

The recommendation which the Insurance Acts Committee has submitted for the consideration of Panel Committees and the Conference is given in the second paragraph on page 395.

ROYAL ARMY MEDICAL COLLEGE

The Royal Army Medical College is a postgraduate Service Training Institution normally confined to the teaching of officers already commissioned in the Royal Army Medical Corps and the Indian Medical Service.

Senior Officers' Course

The Senior Officers' Course, held twice yearly, is divided into three separate parts. The first part is devoted to the study of tropical medicine and entomology, military surgery, pathology, military hygiene, and psychiatry, and is spread over a period of approximately three months. Practical instruction and demonstrations are given concurrently with this part of the course. The second part includes clinical instruction in medicine and surgery at London teaching hospitals and specific fevers at the Brook Hospital, Woolwich.

This part of the course is also for a period of approximately three months. Examinations are held at the conclusion of each part of the course, and thereafter officers are selected for training in the specialist subject for which they are mostly qualified or show aptitude. The third part is up to a maximum of twelve months, and is devoted to the study of specialist subjects such as medicine, surgery, hygiene, pathology, otology, dermatology, midwifery, etc., by such officers as have qualified for further study in the preceding part of the course. The work is carried out either at the Royal Army Medical College or at a recognized teaching hospital.

Junior Officers' Course

Before the war of 1939-45, junior classes consisting of officers of the Royal Army Medical Corps and Indian Medical Service joining the Service normally began the first of February, May, September, and November, and were of approximately ten weeks' duration. This period was devoted to the study of military hygiene, pathology, tropical medicine and entomology, and military surgery. In the last week of the course examinations were arranged. These junior officers' courses are in abeyance for the time being. At the present time short intensive courses in tropical medicine, entomology and hygiene are given to officers about to go over-seas on their first appointment to Emergency Commissions in the R.A.M.C.

General

The instruction in tropical medicine includes a course of lectures and clinical demonstrations. In addition instruction in entomology is given. The Entomological Department is very well equipped with specimens and material for this purpose. Besides the teaching of tropical medicine facilities are available for carrying out research on problems of importance to Service personnel.

The principles and practice of modern military surgery are taught. Courses are held as above and deal with the surgical lessons which have been learned as a result of war experience and cover both general and regional surgery; the lectures are illustrated by visual means, pathological specimens, diagrams, slides and films, and practical demonstrations of surgical methods are arranged. The surgery of tropical diseases has its due place in the syllabus, while stress is laid on the influence of tropical diseases on the management of surgical conditions in the soldier both at home and abroad—the facilities offered by a small but very adequate Department of Anatomy, together with an excellent library of reference works and journals, are of the utmost value to these officers under instruction.

The training at the Royal Army Medical College is as varied as it is comprehensive. As regards the teaching of pathology, the syllabus of lectures for the junior and senior classes is designed to cover the subjects taught in the classes of tropical medicine, surgery, and hygiene. Specialists in pathology receive all their training, except in the performing of necropsies, at the College. The syllabus includes separate courses of lectures on bacteriology in its widest sense, serology, haematology, biochemistry, histology, and histopathology, protozoology, and helminthology. In all subjects special attention is paid to the diseases of tropical countries.

The Vaccine and Serum Departments, now separately accommodated at the Emergency Vaccine Laboratory at East Everleigh, Wiltshire, are a part of the Pathological Department of the College and are responsible for the preparation of T.A.B. and cholera vaccines for the Army and for the preparation of standard reagents for agglutination tests.

The Hygiene Department of the College, in addition to the teaching of hygiene, has facilities for the carrying out of research of importance to the Army from the hygiene point of view, and much work of this kind has been accomplished in the past, and will be a feature of the activities of the College in the future. Well-equipped laboratories of adequate capacity exist for instruction in hygiene laboratory work of all kinds. There is also a well-organized hygiene museum. Those officers taking a specialist course in hygiene are given the opportunity of taking the Diploma of Public Health and the Diploma in Tropical Medicine and Hygiene, and most of the instruction for these diplomas is given at the Royal Army Medical College.

The course in psychiatry consists of lectures partly on clinical psychiatry and psychopathology, and partly on the applications of psychological principles to morale, discipline, personnel selection, and other purely military matters. There are also demonstrations on clinical cases held at Banstead and Sutton Emergency Hospitals and demonstrations of selection tests by a Personnel Selection Officer.

The School of Radiology which exists within the College for the training of radiologists and radiographers affords ample material for teaching radiological diagnosis to officers on the course.

Courses for Other Ranks

Laboratory Assistants.—Before the war of 1939-45 a couple of eight months' training in laboratory methods—culture media, apparatus, laboratory technique, chemical analysis and hygiene—were held. The course was divided into two parts—4 months in pathology and 3 months in hygiene. Examinations were held at the end of each part.

Similar courses are at present in being at the College but in a modified form.

Correspondence

Medical Literature for Liberated Countries

SIR,—Reports and requests from U.N.R.R.A. missions in Europe make it abundantly clear that the greatest expressed need of doctors in the liberated countries is for medical literature covering the war years, so that they may bring themselves up to date with advances in unoccupied countries. From time to time appeals for medical literature for individual countries have appeared in the medical press, and the British Council, the Ministry of Information, the Royal Society of Medicine with its microfilm scheme, and other bodies have done something to cope with the problem, but as a whole the needs of Europe have hardly begun to be met. Even if U.N.R.R.A. could spend its now scanty funds on medical re-education—which it is authorized to do only in the limited sense of informing doctors how to use drugs and other medical supplies supplied by U.N.R.R.A. with which they may be unfamiliar—a special difficulty arises in the case of British medical and nursing literature on account of the paper shortage.

I am therefore appealing for complete sets of general and specialist medical and nursing journals covering approximately the war years. They should be sent to Dr. H. Hadaway, Room 1934, Health Division, U.N.R.R.A., 19, Portland Place, London, W.1 (Telephone: Langham 3090/341), and carriage will be repaid if requested. If it is felt that the sets cannot be given free of charge a price should be stated before the sets are forwarded to us, and we will try to obtain authority for their purchase. A particular request which we have so far been unable to meet is for a complete set of the *Lancet* (1939 to 1945 inclusive) for Hungary.—I am, etc.,

NEVILLE M. GOODMAN.
Director of Health,
European Regional Office, U.N.R.R.A.

London, W.1.

Sir Almroth Wright and Anti-typhoid Inoculation

SIR,—Sir Almroth Wright has just passed his eighty-fifth birthday and the *Times* has reminded us that this year is also the fiftieth anniversary of the beginning of his work on prophylactic inoculation against typhoid fever. That work was an outstanding landmark in the history of medicine not only because of its immense practical results but because it demonstrated the possibility of evaluating the changes in an inoculated person's blood which result from successful immunization. From that time immunization ceased to be a hit-and-miss procedure. Wright himself, in his first paper on the subject, was careful to point out that the idea of using prophylactic immunization against typhoid fever (and also the use of a non-living vaccine for the purpose) had come to him from Haffkine, who had applied a similar procedure in combating cholera in India. It is however beyond doubt that the whole credit for working out anti-typhoid immunization and for getting it adopted in the British Army in spite of considerable opposition from some in high places belongs to Wright.

In view of this it is surprising to read in Dr. Guthrie's recent *History of Medicine* that "During the South African War of 1899–1902 typhoid fever was a more formidable foe than the enemy and accounted for twice as many deaths as his weapons. In the Great War typhoid fever was relatively rare and even in the most unhealthy centre, that of Gallipoli, the incidence was very small, and the enormous improvement was almost entirely due to the success of anti-typhoid inoculation. This happy result may be traced to the labours of one man, Sir William Boog Leishman (1865–1926), a medical graduate of Glasgow." And in a later sentence: "Along with Sir Almroth Wright, who preceded him as Professor of Pathology in the Army Medical College at Netley and whose name is closely linked with the discovery of vaccine therapy, Leishman set himself to devise a system of inoculation against typhoid. . . ." The reference given in the above quotation is to page 1058 of Sir Harold Scott's *History of Tropical Medicine*, but it is difficult to see how the relevant sentence on that page can support Dr. Guthrie's statement. It reads as follows: "In 1897 he (Leishman) returned to England and was posted to

the Victoria Hospital, Netley, as medical officer. Netley was at that time the headquarters of the Army Medical School, later transferred to Millbank as the Royal Army Medical College. Dr. (later Sir) Almroth Wright was then Professor of Pathology and Leishman gained experience under him, and together they inaugurated inoculation against typhoid fever. He also assisted Wright in his work on anti-typhoid inoculation in the South African War and in opsonic investigations of the *Staphylococcus* and *Brucella melitensis*." On another page Sir Harold Scott refers to "Sir Almroth Wright's anti-typhoid vaccine."

It is to be noted that Wright's anti-typhoid work began in the summer of 1896 (*Lancet*, 1896, 2, 807), whereas, according to Sir Harold Scott's statement, Leishman was posted to Netley in 1897 as medical officer. It is also noteworthy that Leishman's name appears as joint author of only one of the series of five important papers on anti-typhoid inoculation published by Wright between 1897 and 1901, this one appearing in the *British Medical Journal*, 1900, 2, 122, that is, three and a half years after the beginning of the work. In order to check up my memory (not at first hand) of these events I recently wrote to one who was a pupil of Wright's at Netley and himself took part in the early work on anti-typhoid inoculation. He replied that in his view "Wright and Wright alone was the originator of anti-typhoid inoculation with killed vaccine"; and he adds that Leishman was not even on the laboratory staff at that time. "He had nothing to do with the introduction of anti-typhoid vaccine."

It would seem then that Dr. Guthrie has in some way been misinformed on this matter. I hope therefore that in honour of the greatest figure in English bacteriology this mistaken attribution of credit may be put right before it gets copied into other books.—I am, etc.,

Birmingham.

LEONARD COLEBROOK.

International Medicine

SIR,—Your article (*Supplement*, Aug. 24, p. 68) on the International Medical Conference to be held in London raises problems which I feel are of such importance to the future development of British and European medicine that I venture to make some comment on the question of international medicine. Undoubtedly German and Austrian medicine had a great influence on the practical and scientific medical outlook and progress on the Continent before Nazification brought about its decline and the war its final destruction. Great Britain should fill this gap, and it is certainly best suited to take the lead in creating something like a fellowship among the medical professions of different European nationalities.

Occasional international conferences alone, desirable as they are, will not create the bond which is necessary to achieve this aim. What is needed and what Germany and Austria used to provide is a far more personal and individual contact with the doctors and medical scientists of other countries, enabling them to receive up-to-date postgraduate training when they desired; to become conversant with the methods, progress, and problems of modern medicine, and to take home with them knowledge which will stimulate their own work and their own thoughts. The publication of abstracts of world literature is a very valuable method of making knowledge generally accessible and will be a much needed substitute for the German *Zentralblätter*, which used to be of the greatest help to anyone who was engaged in scientific work. But even this will not solve the whole problem.

It was the amount of clinical research done by workers in Germany and Austria that established the reputation of individuals and schools and induced foreign doctors to go there for instruction and work. Clinical research work in Great Britain may need some stimulus to achieve the same result. Besides this, these countries had a comprehensive scheme to attract and instruct foreign doctors, and I think some similar institution may have to be established over here. In Berlin, for instance, the following arrangements existed: (1) Regular vacation courses of five to fourteen days' duration on varying medical and surgical subjects, which were held at the Institute of Postgraduate Studies in conjunction with the big hospitals and the faculty of medicine. These courses were advertised in the foreign medical press, and foreign universities received

syllabus; the lecturers were well-known men who had the material of hospitals, sanatoria, etc., at their disposal. Several courses on different topics were held at the same time. (2) A series of individual and private courses by a number of university teachers, the list of which could be obtained abroad and which could be arranged at any time. These courses covered the whole field of medicine including practical instruction in diagnostic and therapeutic methods; each course was proposed to last for a fortnight or a month and provided first-class theoretical and practical tuition even in specialized branches of medicine. One of the attractions to the teacher is the comparatively high fee.

It would be easy to make similar arrangements in London, perhaps in connexion with the teaching hospitals, the postgraduate schools, the professional colleges, and the University. There is no place in western Europe where it could be done better. Vacation courses should be combined with visits to hospitals, social welfare institutions, research laboratories, pharmaceutical factories, etc. Some of the courses may also be arranged in French for those who do not possess sufficient knowledge of the English language. No difficulty or expense would be too great to provide Europe with an international centre of medical instruction and postgraduate teaching which is urgently needed.—I am, etc.,

London, W.1.

H. UCKO.

"The Closed Shop": a Parallel

SIR,—In the course of an admirable leader in the issue of Aug. 28 on the ethics of the "closed shop" policy the *Times* expressed the editorial view as follows: "No one can gainsay that to make a man choose between throwing up his job and joining a union is to impose a limitation on his personal freedom. To make membership of one particular union the sole passport to work in a particular industry, with incapacity to obtain employment the only alternative, is indeed a grave social decision, requiring the most powerful and cogent arguments of individual as well as social advantage before it can be justified."

Further on in the course of the leader the *Times* voiced its apprehension that the policy might spread from industry to professional occupations such as journalism: "In a wide range of professional occupations, involving the independent exercise of individual skill and judgment, the community's interest can scarcely admit the case for the closed shop. In journalism it might even invest unionists with an unwarrantable power of control over freedom of expression."

The principal objections to the "closed shop" are summarized in another passage: "The most serious objection to the closed shop, as important as the argument about personal freedom, of which it is indeed a particular facet, is the power over their members which it gives to trade unions. If in the last resort a man can leave his union with a chance of finding work, the official leaders must always have in mind the necessity to meet his needs. If he has no escape, it may well increase the temptation to undemocratic leadership, of which some already complain."

If one were to substitute "The 100% State Medical Service" or "the closed shop" and "the Minister of Health" for "the unions," could it be contended that these arguments lose any of their cogency? The position of the doctor who exercises his option to remain outside the State Medical Service seems to have received less consideration than it deserves, and there would appear to be an ominous parallelism in the "closed shop", on which our profession would do well to ponder.—I am, etc.,

Camberley.

E. S. PHIPSON.

Health Service Bill

SIR,—Reading the correspondence since the Annual Representative Meeting induces one to doubt whether the meeting was altogether a success, and whether it did in fact represent the considered opinion of the profession, especially the younger members. Many of the statements used, though greeted with loud applause, would be difficult to substantiate.

What proof is there that not every doctor will be free to enter the Service; surely the official statement during the Third Reading of the Bill was emphatic enough to confute this allegation? The remark as to the direction of doctors has

been shown to be no more than a nightmare, and to be a real improvement on the present troublesome method of getting a practice. Again, on what grounds can it be asserted that the reason for the payment of doctors by part salary is the Minister's desire to obtain more control over the profession, though he explained that to a man starting practice it might be a useful, often essential, help? We may expect an increasing number of medical men starting practice in the coming years, men who by the help of county council scholarships have been enabled to qualify, and whose parents will not be able to maintain them during their early years of making a competence. A medical man whose continued inclusion on the list is found on inquiry to be prejudicial to the Service is in no worse case than he would be under N.H.I. regulations, except in the matter of degree, though in either case his continuance in any sort of practice afterwards will be fairly unsatisfactory, his private practice only barred so far as his reputation is concerned.

If the referendum to be taken is to be the last word and the profession decides to refuse service, how are the general practitioners, especially the younger men, to subsist after the Act comes into force? Strangely, no practical discussion is recorded on this point. Incidentally, as the Minister has stated that the Service cannot be properly worked until there are many, very many, more doctors, can we bargain with him that there should be no attempt to put into practice a Service that might be discredited if not meanwhile worked satisfactorily, and (as was pointed out later by a medical man) the profession could not honestly undertake the work knowing that there would not be enough medical men to carry it out properly? There are many things in the new Service that doctors now in practice may not like, just as before 1912 they feared the Approved Societies, whose administration they now regard with satisfaction.

Than Dr. Dain no one has done more during those long years of invaluable service to the profession, so that one regrets that, on this occasion, the desire to encourage and unite the profession in a great fight persuaded him to make a fighting speech less logical than is his wont. I trust that he will not take amiss this criticism, by an old friend, of the A.R.M. just held.—I am, etc.,

Westbury, Wilts.

CHAS. E. S. FLEMING.

SIR,—I have been following with great interest the articles and letters in the *British Medical Journal* about the Health Service Bill, and now I see that it has been read a third time in the House of Commons in spite of the long and determined stand made against it by the medical profession. However, I noted that Mr. Bevan admitted that without the co-operation of the medical profession and all health workers the scheme was bound to fail.

As a lover of freedom—especially individual freedom—the freedom in which most British people ardently believe and for which they are prepared to die if need be, I have felt strongly and deeply about the struggle which the British medical profession is making against its threatened loss of freedom. At first it seemed that they had no hope against the avalanche of opposition which confronted them, just as Britain seemed lost when the Germans overran France in 1940. But then the inherent qualities which the British people possess, especially their burning love of freedom, gave them the courage, the resolution, and the stamina to withstand an almost irresistible power that threatened to overwhelm them. The brave people of the little island won eventually and saved not only their own but the freedom of the world. The medical profession of Britain, having fought for national and individual freedom during the war, now fights for the individual freedom of doctors and of patients, and for the right for each and every doctor to live and practise where he wants, to say and write what he believes to be true and best in spite of what the great and mighty may say to the contrary, and to work along lines for which he knows he has the greatest aptitude and liking and whereby he will consequently render the greatest good to the people for whom he works.

This is a great cause for which the doctors of Britain are fighting, and the medical men of the rest of the world are following the struggle very closely and with anxiety, for we all know that the main torch of individual freedom burns in

Britain. Should it be extinguished, other countries will no doubt follow Britain's example and individual freedom of action, thought, and expression in medicine will be hampered and restricted to the detriment of mankind. Knowing the sterling qualities of British doctors and their love of individual freedom, I have no doubt that the doctors of Britain will not lose in this their greatest fight of all time.—I am, etc.,

Adelaide, Cape Province, S. Africa.

F. A. LOMAX.

SIR,—I sincerely trust that the medical profession will beware of accepting such points of view as are put forward by your correspondent Dr. Peter Waddington (Aug. 31, p. 307), for he uses the very arguments which led to the Nazification of Germany—namely, that no man may think for himself but must accept whatever views are dictated by the Government of the moment. From Dr. Waddington's letter it would appear that because less than one-half of the electors in this country, voting in an election held under most abnormal conditions, returned a Labour Government to Parliament it is incumbent upon everybody, doctors or otherwise, to swallow whole anything that this Government chooses to do. It is not a question of State Medical Service versus no State Medical Service. Every political party is committed to that, and so is the B.M.A., with whom the idea really originated. Therefore we can have no quarrel with the Government for introducing the Bill. According to Dr. Waddington, however, we have no right to object to any terms which the Government may impose in the Service. We are not to take exception to the fact that the Bill entirely negatives certain basic principles which have been laid down by the profession as essential in the interests of both patient and doctor. We are not to object to placing our necks under the heel of a dictator who by the terms of the Bill takes to himself such a measure of absolute power as has never before been accorded to any Minister of the Crown. In fact we must have no voice or opinion except such as may be dictated by the powers that be. Almost every day the newspapers report strikes among various types of workers who find the terms offered to them unacceptable. Apparently doctors alone must take whatever is coming to them. The docker strikes for his democratic rights; the doctor (according to Dr. Waddington) appears to have no rights at all.—I am, etc.,

Hove.

NORMAN MAPLE.

SIR,—Dr. G. H. Urquhart's letter (Aug. 31, p. 307) is one I hope every medical man, especially the younger ones, will read. Yes, we have an opportunity which will never come again of making a firm stand against tyranny and totalitarianism, which the public and future medical men will bless us for. All through the country a fight is being put up by all classes against the threat to our rightful liberties and freedom by a power calling itself National Socialism; a power with the same name and teaching the same ideology that brought us to Germany. Surely an educated and honourable profession such as ours is not going to be caught in this trap.

The Insurance Health Act of 1912 had at least one redeeming point: it did not do away with private practice. If this Bill is accepted as it is, let there be no mistake, private practice will cease to all intents and purposes. At the will of one man or woman, whether ex-lawyer, miner, or bus-conductor, a medical man can be turned out of the Service without even right of appeal to a High Court. If this happens his position will be very serious, there will be no private practice for him to turn to and he will probably find himself conscripted into one of the fighting Services. With such a possibility threatening them may they become servile servants of the Minister and seek to curry favour in various ways, and no member of our profession should place himself in such a position. Lastly, bad as it will be for us, it will be equally bad or worse for the public, and it is for us to protect them.—I am, etc.,

Mersham.

HOWARD M. STRATFORD.

SIR,—Dr. A. H. Holmes (Aug. 24, p. 272) mentions the differing methods of remuneration—by capitation system, a salary, or payment per item of service—and by reference to the existing Midwives' Act suggests a support of the latter method from the fact that he has not heard any adverse criticism of such

legislation. I am happy to provide this for him, as such criticism embraces the necessary adjustments to existing terms of service before contentedness of working conditions is achieved.

The remuneration afforded under this Act has always been less than the minimum private fees for the varying items described therein. Of recent years an increase of remuneration has been stipulated, varying approximately from 10 to 25%, although the cost-of-living index has risen 100%. Notwithstanding, this form of administration received my sincere support, and Forms of Medical Aid received priority.

Coincident with the increase in the scale of fees I found I had to render an additional "form of account" on private note-paper, and I also found that payment rendered ceased to be itemized by the local authority. This lack of itemization rendered it impossible to check payment with accuracy, although it became apparent over a period of time that a steady deduction from the accounts rendered had taken place. Insistence on itemization of accounts paid then revealed the fact that these deductions had occurred without notification and solely according to how the local authority had accepted or interpreted the Act. A typical instance of such deduction is the rendering of an account for an obstructed labour for which summons was issued and which was treated with priority, and the payment for treatment of a post-partum haemorrhage and ruptured perineum which was effected, the original emergency for which summons was issued having passed before arrival at the case. There is a 50% difference between the remuneration of the differing items.

The Minister concerned is not able to offer direction to the local authority regarding amendments in their methods of business administration, and he rules that a practitioner is not paid for the emergency for which he is summoned but for the emergency or otherwise which he finds on arrival at the case.

Surely no one but an overt masochist would work under such terms and conditions, considering that private fees are already reduced in order to assist the functioning of the Act. There furthermore cannot be any logic in such ruling when, as in the case of a dependant of a member of H.M. Forces, the private fee is refunded.—I am, etc.,

Tipton.

L. H. EUNSON.

SIR,—The point that refusal to join the new Service would not be flouting the law has been made on several occasions, but I do not consider that sufficient consideration has been given to this fact in relation to the proposed plebiscite on: Should negotiations on regulations be made? A "Yes" to this question may be given by doctors who subsequently will not join the Service because the negotiations may not meet with their approval. A "No" may come from doctors who will subsequently join the Service because there may be negotiations which will meet with their approval. The "Yes" or "No" is a personal decision taking many external factors and a prophecy of the future into consideration, and the percentages of "Yes" and "No" are a potent factor controlling the future if they mean anything. But would they mean anything real? The percentages expressed by the simple issue of the plebiscite may be changed on the day of reckoning, and therefore, though the answer is an attempt to control the future, it is known that the answer may be a totally unreliable control of the future. Surely a paradox?

For the plebiscite to be of any real value as a mandate for the Council it is necessary that further questions be asked, and one at least of these further questions must be entirely different for those who answer "Yes" and those who answer "No" to the simple question. To the "Noes": "If negotiations do take place do you intend to join a Service the form of which has been agreed between the Minister and the profession by consultation mainly in accordance with the expressed principles of the profession?" To the "Ayes": "If negotiations do not take place do you intend to join a Service the form of which has been decided mainly by the Minister in accordance with the control conferred on him by the Bill?" I consider these questions to be essential for clarification of the wishes of the medical profession, but further questions would be useful—e.g., "If you are in a 25% minority will you co-operate with the majority?" "Do you consider that the interests of doctor and community could be better served by a national organization than they are now?"

The above part of my letter should be read in conjunction with the excellent letters by Dr. E. W. Broster (Aug. 10, p. 206), Dr. Ayton-Ormston and Dr. Brown (Aug. 24, p. 273).

I am entirely in agreement with the spirit of the Bill and with the spirit of the principles of the profession, but I disagree with much of the letter of the Bill and with little of the letter of the principles of the profession. Dr. Collier (Aug. 31, p. 308) has drawn attention to the soundness of Principle 2, but I would like to show my dislike for the wording of Principle 5—"Every registered medical practitioner should be entitled as a right to participate in the public service"—why "right"? If doctors demand rights then the public and the Minister will demand their rights. Only the community has rights, and these exist only when individuals submerge their rights and do what is right for the community. The spirit of Principle 5 is that doctors should be free to join or leave the Service according to the current interests of the community, but the wording demands participation (perhaps of the salary without any work) anywhere at any time, even contrary to the interests of the public and the Minister. Surely the wording and the spirit could be better expressed than at present?—I am, etc.,

Birkenhead.

ALEX. M. FRASER.

SIR,—The Minister of Health stated in the House of Commons that "in a recent plebiscite there were a majority of doctors in favour of the abolition of the sale and purchase of practices" (*Hansard*, July 26, col. 473). This may be untrue, but no denial was made in the House, and I have seen nothing from the Public Relations Officer of the B.M.A. in the Press. On the other hand the Chairman of Council, Dr. Guy Dain, stated that the voting of the Annual Representative Meeting on this issue was 12 in favour and 229 against. This is the Principle 1 referred to, and the matter should be made clear at once.

It is difficult to believe that doctors will part with the goodwill of their practices to the State for paper money the value of which now stands at only one-third of its purchasing power in 1911 and must depreciate further with a profligate Government. Whether they are foolish enough to do so or not, the difference in the statement of the Minister and that of the Chairman of Council should be made clear, so that even a Member of Parliament may know the facts, and the dictator refuted.—I am, etc.,

Beckenham.

A. E. BLACKBURN.

Principle 2 and the Health Service

SIR,—Dr. Howard E. Collier (Aug. 31, p. 308) writes: "In my opinion Principle 2 is the only solid ground on which opposition to the new Service can be rightly undertaken, and that only after the Act has been given a trial." This means presumably that we should agree to eat, sleep, and work in handcuffs in order to find out how we like it. If we find such control irksome we must then get the handcuffs removed. But will this be possible once Mr. Aneurin Bevan has snapped them on and removed the key? Even a tame rabbit would hesitate to be so foolish.—I am, etc.,

Bournemouth.

MARGARET VIVIAN.

Health Service Bill and the Public

SIR,—In the impending struggle over the National Health Service Bill it is vitally important that we as a profession should carry public opinion with us. Unfortunately two things are rather painfully obvious. First, that while most people think highly of their own doctor they have nothing like as good an opinion of doctors in the mass. Secondly, that we have not on the whole had a good press, while many of the things said against us in the press are based on misunderstandings of our ideals and motives. If we could transform this situation we could transform our whole outlook.

The silly part of it all is that we could have an excellent press if we went the right way about it. I have discussed this matter with a number of journalists—and journalists as a whole are men who know just how many beans make five—and they are unanimous in asserting that we doctors not only hide our

light under a bushel but go to a lot of trouble to blow the thing right out.

Day-to-day medical life in practice and in hospital is crammed full of what Fleet Street calls human stories—stories which if published would raise the public estimation of our profession right up to the skies and get us anything we care to ask. As random examples, there are hospitals which get 80% of five-year cures of cancer. There are hospitals and clinics which take rheumatic workers who would otherwise be crippled and restore them to their jobs; there are doctors and hospitals researching into analgesia in childbirth; there are doctors in colliery districts who risk their lives after explosions going to attend accidents; and many, many other things which could and should be told.

Medicine is no longer a "mystery." It is part of the life of every citizen, and he wants to know about it. But what happens? First, such stories are carefully concealed. If they are told in the medical press they are disguised in scientific language, embellished with statistical tables, and made incomprehensible to the man in the Fleet Street office who is diligently yawning his way through the current medical periodicals in search of a story. Secondly, if he is a really bright boy and glimpses a story, woe betide him. He approaches the hospital or the doctor concerned and has the temerity to ask for an interview. Horror! We do not talk to the lay press. We slam the door in the nasty man's face, repress a shudder, and hope to heaven no one saw him about the place. And then we wonder why doctors don't get a good press!

We act like this for two reasons. First, we have been trained scientifically to loathe premature publication and to avoid any imaginative embellishment on the cold hard facts. Secondly, we are terrified of being accused of advertising and finding ourselves in Hallam Street. As long as we continue to run away from these two bogies we shall have a bad press, and public opinion will not be behind us as it should. If we want to win our fight we must alter all this, and we must do it now.

First, it must be realized that the general public are not very willing to read unembellished cold fact. They like jam on their bun, and the journalist's job is to provide the jam. It is no use being squeamish about this. If the story of what doctors do for the people of this country is to get across at all it will only get across with the jam on it. Secondly, this bogey about advertising. It is a hoodoo. Any doctor who really wants to advertise himself can and does get away with it. There is the tactful gossip paragraph, there is the righteous disclaimer. It can be done, but so few think it worth while that it is ridiculous to make every doctor afraid on that account of seeing his name appear in the press. If the G.M.C. wishes to further the interests of the profession as a whole it can here and now declare that it doesn't give a damn if every doctor in England has his name in the papers. It will need a great effort by the G.M.C., but it is an effort they should make.

Then, Sir, if you and the editors of other medical papers could give a half-column a week to the sort of stories the lay press is avid for in language the lay press can understand I vow it will not be many weeks before the man in the street will be saying: "These doctors are damn good fellows. Let's see they don't get a dirty deal. They know their own job superlatively well. Let them run it."—I am, etc.,

Ashted.

W. EDWARDS.

* * Part of the trouble is that the journalist's jam is taken by him and by the lay public as the bun.—ED., *B.M.J.*

Medicine and Economics

SIR,—Our noble profession seems to be in a rather ignoble condition at present. The portals of entry to the profession are choked with applicants while at the same time hundreds of energetic young doctors are unemployed. On the other hand the established general practitioner knows only too well that constant overwork is the only way to maintain an income sufficient for his modest needs. Thus we have the position that whereas there are too few doctors for the work awaiting them there are far too many doctors for the money available to pay them. It is of course the low rate of insurance capitation which is cramping general practice. A considerable increase (I do not mean two shillings) would secure employment for all these young doctors. General practitioners are

longing for assistants, whom they cannot afford to pay at present. We are in the midst of circumstances where the onlooker possibly sees most of the game. I take off my hat to our philanthropic colleagues who represent us on divisional, branch, and central committees, whose breakfast tables are snowed under by reports of Hansard, headquarters' circulars, and all the rest of it. Yet I fear they cannot see the wood for trees.

Success in general practice does not necessarily endow a man with the qualities required to tackle an experienced politician such as a Cabinet Minister. Sending a deputation from the Insurance Acts Committee to interview a Minister of Health is like sending lambs to the slaughter. The I.A.C. should take expert advice from an economist. He would give them the rights of it inside a day or two. The plan of action should then be entrusted to a skilled agitator for its execution. This advice will come hard to the I.A.C. Twenty years of practice, issuing dogmatic instructions to patients who do not know enough to criticize or assess the information given, does not imbue a doctor with humility. Most of us consider ourselves qualified to express an opinion on anything from motor-cars to Mozart. This form of conceit has cost us dearly in the past, and I say again that we should pay for expert advice.

In asking for a substantial increase in capitation our agitator will have the solidity of all panel doctors behind him. If we fail to secure a concession from the Minister on this point how are we to secure alterations or modifications in the Health Bill when 60% of doctors think one way and 40% the opposite? I consider that the present dispute on the capitation fee is a show-down. If the Minister does not concede the modest 15s. in the face of the findings of the Spens Committee and the unity of panel practitioners he will never concede anything in the future, and we shall know our power to be nil.—I am, etc.,

Preston.

ROBERT SLATER.

Disabled Persons Act, 1944

SIR,—While welcoming the further publicity given to the Disabled Persons Act by your article (Aug. 24, p. 268), I would like to comment on some continued misconceptions. This is important since the successful launching of the Act largely depends on all doctors concerned being first well informed and later co-operating. As in other forms of enlightenment, the medical journals have a primary function. It is therefore with some anxiety and regret that I note your mixed blessing on this scheme to guarantee employment for the disabled person.

The Act itself has really evolved as a compulsory application of the King's Roll, whose success was limited to ex-Servicemen of the first world war and to good employers who felt a moral obligation in employing handicapped soldiers. Other employers shirked their responsibility to the community by skimming the cream off the labour market and leaving the handicapped workers as "unemployables" and a permanent drain on the nation. They might have found some justification for this skimming process during periods of high unemployment. However, in wartime and its continued emergency of export drive, and, we hope, in the future cornucopia of promised full employment, these "unemployables" become at least of economic value, apart from a national responsibility. Thus the labour which the bad employer complains of having "dumped" on him and thus "interfering with his selection of workers" is merely his quota of obligations to the community. During wartime, remember similar complaints against fire-watching and Home Guard—and the same attempt at shirking? The good employer, i.e., the most efficient, has used good personnel management in placing the man in the job which suited him.

Regarding the managerial encouragement of eligible workers to register, your article has got the wrong end of the stick. In this factory the handicapped worker is advised by the industrial medical officer (who is also a member of the local disablement committee) to become registered. The shop stewards, who have trade union representatives on the same local committee, support the medical advice. The personnel manager further encourages the worker by presenting his registration as an assurance that in time of redundancy the enrolled worker will be more likely to retain his job, all other factors being equal. The scheme here is working to the satisfaction of the worker,

the employer, and the local doctors. Many consultants in hospitals are already advising enrolment as part of treatment in necessary cases.

It may be of interest that in this factory the largest diagnostic group on this modern "King's Roll" is peptic ulcer at 28%; second is cardiovascular at 18%; and then arm or leg injury or disease at 10% each. This dominance of peptic ulcers supports the first article in your *Journal* of the same date by Gainsborough and Slater, in which they state "more attention should be paid to the use of resettlement facilities under the Disabled Persons Act . . ." in preventing the expected relapse of peptic ulcers. These percentages, and those given by Sir Reginald Watson Jones, also show that the hard core of those who cannot compete with the able-bodied in open competition is probably under 5%. Thus the development of the special corporations for sheltered industry is not, as you state, "the real solution to the real problem," as the percentage is so small. This sheltered industry is only for the dregs at the bottom of the barrel.

There is however some reasonable criticism that can be offered. The first group of Disablement Rehabilitation Officers tends to be staid, middle-aged officials from the Ministry of Labour. Probably there is no other immediate source of recruits for the novel role of D.R.O. This first group appears keen and enthusiastic in reducing the birth pains of the new Act, but I feel that there should be some test of human aptitude for this new job, followed by training for at least two years. If possible the future D.R.O. seems to require a social conscience, a nursing or hospital background, and an inside knowledge of industry from apprenticeship. Thus instead of a mixed welcome for this new form of King's Roll we might more profitably conserve our emotion for sympathy, education, and encouragement for the present D.R.O., whose position is so vital a link in this scheme to guarantee suitable employment and placing for all disabled persons.—I am, etc.,

Little Lever, near Bolton.

R. F. L. LOGAN.

Tobacco and Ulcer Dyspepsia

SIR,—The statistical article on "Tobacco and Ulcer Dyspepsia" by Mr. R. A. Jamieson, Prof. C. F. W. Illingworth, and Dr. L. D. W. Scott (Aug. 31, p. 287), prompts me to make a few observations which I hope are not irrelevant. The writers of the article do not appear to have taken into consideration the fact that cigarette-smoking is the mark of the lean, tense, anxious; hyperchlorhydric individual who is liable to develop and suffer from a peptic ulcer; the heavier his cigarette consumption the more can this constitution be undermined and the greater the proneness to ulcer dyspepsia. The pipe smoker on the other hand is usually an older man who has reverted to the infantile suckling instinct. He is placid, comfortable, and probably hypochlorhydric. Considering he swallows his nicotine in mouthfuls it is surprising more damage is not done. Of course he does not inhale as does the cigarette smoker. The young man begins smoking a pipe as part of a character act. It may become a habit later and it is often an aid to thought. He has not the same constitutional flaws as the cigarette smoker and is usually thoughtful and tolerant. What of the cigarette smokers who have not and never will have dyspepsia? These people usually smoke for social reasons, especially in company, with drinks and after dinner. They are of the herd. Witness the groping for cigarettes and the flaring of lights all over a cinema when an actor lights a cigarette. The uninterested non-smoker (not the rigid obsessional individual who turns his back on earthly pleasures), too, is usually a placid easygoing fellow with no psychosomatic ailments.

Thus to my mind the smoking of cigarettes is a symptom and the nicotine-stained hands a sign of the ulcer diathesis, and the relationship between smoking and ulcer dyspepsia only apparent. It would be interesting to know how far the greatly increased smoking by women has affected the male/female ulcer ratio. It is well to remember that the last inch of the cigarette contains four or five times as much nicotine as the first inch—its own content plus the nicotine condensed from the other two burnt inches. The man with the nicotine-stained hands who tenaciously smokes his cigarette to the very end is the

ompromising nicotine addict and takes it in big doses. The
ly nervous smoker should be encouraged to find other out-
for his emotional tension. Chewing gum would be a better
native "tic."

In conclusion I have wondered that ulcer cases will readily
up beer but obstinately refuse to give up cigarettes.
ough both tend to produce hyperchlorhydria yet the
ner's ability to sedate as well as release emotional tension
interacts the harm it might do as a gastric irritant and
nulant.—I am, etc.,

Yale Naval Hospital, Yarmouth.

ANTHONY C. HAMER.

Treatment of Lupus Vulgaris by Calciferol

SIR,—As reviewer of the *B.M.J.* for the *British Journal of
Dermatology and Syphilis* I feel it my duty to point out an
error in your issue of Aug. 31, (p. 300). Writing on *The 1945
Year Book of Dermatology and Syphilology* your reviewer
states: "Perhaps, however, 1945 will stand out in the history
of dermatology as the year in which the treatment of lupus
vulgaris by calciferol was first instituted, and that method,
initially tried by Dowling at St. Thomas's, London, appears to
have been published too late for mention in the year book
before us." This treatment for lupus vulgaris was first used
in France by Charpy in 1941, though Dowling, who indepen-
dently began this method in 1943, was, owing to the war,
initially unaware of Charpy's work and has made generous
acknowledgment in his papers of the Frenchman's priority.—
I am, etc.,

Jimburah

G. A. GRANT PETERKIN.

Reiter's Disease

SIR,—Drs. R. N. Herson and Frank Marsh both remark
(Aug. 24, p. 275) that the trend of symptoms, polyarthritis,
conjunctivitis, and conjunctivitis noted in my article (Aug. 10, p. 197)
being characteristic of Reiter's disease may also be associated
with bacillary dysentery. Of this I was aware. The suggestion
that the identity of Reiter's disease with dysenteric complications
has previously been made by Dr. P. Manson-Bahr, *Bull. War
ed.*, 1944, 4, 653. That this may in fact be true I do not deny
because of such a possibility I called my article "The syndrome
known as Reiter's disease", but it seems to me very unlikely
cause (1) in only a few cases of Reiter's disease does diarrhoea
occur; (2) in no case in the very considerable literature on this
syndrome in Germany and America has the dysenteric bacillus
been identified (for full list of references see *Archives Inter-
ed.*, 1946, 77, 295); and (3) bacillary dysentery was unknown
in the Bahamas—neither had the three patients whose stories
accounted any history of a diarrhoeic attack of dysenteric type.
Naturally because a similar syndrome may occur as a
dysenteric sequela it does not follow that such a syndrome
always possesses such an aetiology. The characteristic signs
may in fact be part of a gonococcal infection, and it is in the
distinction from this that the importance of the recognition of
the Reiter's disease syndrome exists.—I am, etc.,

Penlow Camp.

W. P. U. JACKSON.
Fl.-Lieut., R.A.F.V.R.

Penicillin and Nasal Sinus Infections

SIR,—In the literature on penicillin therapy there is some-
what half-hearted commendation on its value in the treatment
of nasal sinus infections. The references are largely to its local
application in various ways including replacement therapy, and
have not seen references to its systemic administration. My
experience with penicillin in the treatment of chronic sinus
infections leads me to conclude that in the treatment of this
condition penicillin represents a very notable advance.

I have had a chronic sinus infection since 1915. This was
operated upon in 1922, but with only partial success, and I
have had the usual symptoms of a chronic infected antral sinus
with nasal discharge of muco-pus and general vasomotor hyper-
sensitivity. Treatment with sulphonamides brought about a
considerable degree of symptomatic relief, but I became sensi-
tized to the sulphonamide group. Discharge from the nose was
examined by a well-known bacteriologist, and it was reported
to contain a penicillin-sensitive strain of *Staphylococcus aureus*.

In communication with Glaxo Laboratories earlier this year,
it was pointed out to me that penicillin could be supplied to a
degree of purity such that very large single doses up to 500,000
units could be given intramuscularly. I was supplied with some
of this material, and four intramuscular injections of 500,000
units were given at 24-hour intervals. Each injection was given
in 3 ml. of sterile water, and there was practically no discomfort
from the injections. The relief from the nasal symptoms was
remarkably rapid. The discharge of muco-pus diminished
markedly within four days, and the symptoms of hyper-
sensitivity also cleared up. Ten days after the treatment a
bacteriological examination was again made, and the *Staph.
aureus* was reported as absent. Whether or not this result will
be permanent remains to be seen, but if reinfection did occur
at a later date then I would unhesitatingly repeat the same
treatment.

I have heard of several other cases which have received
benefit in acute and chronic sinus infections from a few massive
injections of penicillin. My experience from this treatment
makes me urge a further trial. Chronic sinus infection is a
common and distressing complaint, and treatment has never
been wholly satisfactory. The substantial improvement that
may be obtained from a few injections of penicillin would I
think place sinus infections as one of the more important
indications for penicillin therapy.—I am, etc.,

Bournemouth.

J. ROSS MACMAHON.

"Cord Round the Neck"

SIR,—The question as to possible strangling by the cord of
the baby as it is born must I think be answered in the positive.
I and a district nurse delivered a child two days ago whose
cord was tightly wrapped three times round the neck; the cord
was thick and healthy, but luckily forty inches long (measured).
The nurse was quick to put on two pairs of forceps and help
me to divide the second loop of the cord after I had slipped
down the first loop. The reason why I consider death of the
foetus possible if no help had been at hand is that when the
next expulsion pain came on the cord became so tightly con-
stricted round the neck that division was absolutely necessary
owing to the force of the contraction, and unless the placenta
had separated very quickly choking was bound to occur. This
delivery was preceded by apparently inexplicable delay in the
rupture of membranes during strong pains, and doubtless the
reason for this was the artificial shortening of even this long
cord by means of the previous winding round and round the
foetus.

As a matter of medical jurisprudence here we have yet
another reason for considering concealment of pregnancy a
serious crime: not to obtain help at the time of birth may
be serious to the life of the infant.—I am, etc.,

Coldingham.

F. O. TAYLOR.

The Apparently Acute Abdomen in Pulmonary Tuberculosis

SIR,—Twice in the last three months I have been called to
see patients who have been known to have pulmonary tubercu-
losis and who have complained of abdominal pain of sudden
onset and great severity. On examination they both had board-
like rigidity of the abdomen with diffuse agonizing pain, and
obviously thought their last hour had come. In one case the
duty medical officer happened to be of surgical bent and had
already called in an anaesthetist to ascertain the patient's fitness
for operation, having made a diagnosis of perforated tubercu-
lous ulcer of the bowel. Now in both cases some common
features presented themselves. It had been a hot day. Both
patients were drenched in sweat as they both had advanced
phthisis with high fever, and there is little doubt in my mind
that their pain was of a similar aetiology to miners' cramp. I
have seen similar abdominal pain in the sweating stage follow-
ing a malarial rigor, and before I became familiar with the
condition these cases caused me a good deal of worry.

The treatment is table salt given in orangeade, about 2 dr.
to a pint (8 g. to 568 ml.)

I should like to thank Dr. G. E. Beaumont for his helpful
criticism and advice.—I am, etc.,

Chelms.

F. E. DE W. CAYLEY.

Obituary

H. L. H. SCHÜTZE, M.D.

The death is announced from Switzerland on Aug. 9 of HARRIE LESLIE HUGO SCHÜTZE, assistant bacteriologist to the Lister Institute of Preventive Medicine. Schütze, who was the son of John and Caroline Schütze, was born in Melbourne, Australia, in 1882 and was educated at Brackley, Cumlodon, and at Melbourne University, where he obtained the degrees of M.B., B.S. He was assistant bacteriologist to Melbourne University in 1905 and later completed his medical education in Germany, where he obtained the M.D. degree of Würzburg in 1907. He was assistant at the Institute of Hygiene there up to 1912, when he obtained a Beit Fellowship and took up research work at the Lister Institute, London. He joined the staff of the Institute as assistant bacteriologist in 1913.

Schütze's scientific work was chiefly devoted to the serological analysis of bacteria in relation to taxonomy. His paper which appeared in the *Lancet* in 1920 on the typing of what was afterwards known as the *Salmonella* group was of fundamental importance, and the types that he then described were used later by Bruce White and others as the primary basis of their studies. He was chairman of the *Salmonella* Sub-committee of the Nomenclature Committee of the International Association of Microbiologists from its inception. In 1928 he unravelled the complicated antigenic structure of the flagellated *Pasteurella*, *Pasteurella pseudotuberculosis* (*Bact. pseudotuberculosis rodentium*) and showed that the flagellar H antigen, which is formed only in cultures grown at 6°C. or lower, is common to all strains within the species, but that the somatic antigens are more complex and may be used as taxonomic criteria. He also carried out important studies on other members of the *Pasteurella* group. In the case of *P. pestis*, for example, he demonstrated that there are only two antigens—one corresponding to the envelope and the other to the somatic substance. He contributed noteworthy articles on *Pasteurella séptica* and on *Pasteurella pseudotuberculosis* to the Medical Research Council's *System of Bacteriology* and collaborated with the late Sir John Ledingham in the paper on the production of active immunity to bacterial and virus infections of man and animals which appeared in the same publication. For a number of years Schütze was in charge of the Vaccine Department of the Lister Institute, both at Chelsea and later at Elstree, where he worked during the second World War. After the war he returned to Chelsea and devoted his whole time to research.

He had a many-sided character and, apart from science, was deeply interested in literature, music, and the drama. He was an accomplished linguist and greatly loved to wander about Europe on vacation with his devoted wife, helping her to collect material for her numerous and successful novels. He made many friends in the varied aspects of life that he touched and his untimely death will leave a very definite gap in their affections. He married in 1913 Gladys Henrieta ("Henrietta Leslie"), the only child of Arthur and Mary Raphael. There were no children of this happy marriage, which was terminated by the death of Mrs. Schütze, also in Switzerland, only a few weeks ago.

R. ST. J. B.

A friend writes: Your epitome of OTTO MAY's career (Aug. 31, p. 314) was marvellously accurate and true, and must have awakened a chord of affection among his many friends. These loved him for what he was. With perhaps pardonable intrusion may one of those not-so-"brilliant young men" who came down from Cambridge in the early years of this century join in the chorus of gratitude and tribute to his memory. Especially would he recall those happy carefree days when F. J. Cleminson and Otto May did so much for those of us who through lack of aptitude or application found the toils of anatomy and physiology so difficult to combat. This illustrious pair by their wisdom, ability, and human understanding brought many of us safely over the ordeal of the 2nd M.B.—an achievement for which we are for ever grateful. Those early associations in Cambridge were the beginning of closer ties of friendship in London and will always be reckoned as the happiest and most valued part of our student days.

Universities and Colleges

UNIVERSITY OF LONDON

THE LONDON HOSPITAL

It was announced on Sept. 4 at the quarterly Court of the Governors of London Hospital that Miss Dorothy Russell, M.D., Sc.D., had been appointed to succeed Prof. Hubert Turnbull, who retires as Director of the Bernhard Baron Institute of Pathology at the end of this month after 40 years' service with the hospital. Dr. Russell has also been appointed Professor of Morbid Anatomy by London University at the London Hospital.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN PUBLIC HEALTH.—*S. G. Abelson, O. Adeniyi-Jones, *A. Anderson, A. E. Brown, J. M. Brown, E. J. Bury, *A. L. Cochrane, W. C. Cockburn, E. R. Dansie, R. D. Dewar, W. Y. Fettes, C. W. Gordon, C. G. Hunter, M. T. I. Jones, Sung-Jui Liao, M. J. Lowther, J. P. P. Mackey, A. H. M. Richards, E. M. Rowland, Alice C. N. Swanson, G. H. Taylor, J. Watkins-Pitchford.

* With distinction.

UNIVERSITY OF GLASGOW

David Fyfe Anderson, M.D., F.R.F.P.S., F.R.C.O.G., has been appointed to the Muirhead Chair of Obstetrics and Gynaecology in the University.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Faculty, with Dr. Geoffrey B. Fleming, Visitor, in the chair, A. Allison, M.B., Ch.B., C. D. Anderson, M.B., B.Chir., J. D. O. Kerr, M.B., Ch.B., and R. A. Shanks, M.B., Ch.B., were admitted Fellows *qua* physician, and E. A. Chisholm, M.B., Ch.B., J. Hutchinson, M.B., Ch.B., A. McDougall, M.B., Ch.B., J. M. McInroy, M.B., Ch.B., W. Magauran, M.B., Ch.B., F.R.C.S.Ed., and J. C. Walker, M.B., Ch.B., were admitted as Fellows *qua* surgeon.

Medical News

From Nov. 1, 1946, Dr. N. Hamilton Fairley, C.B.E., F.R.S., who takes up his appointment as Wellcome Professor of Tropical Medicine in the University of London, will cease to be Director of the Wellcome Laboratories of Tropical Medicine, but will become consultant in tropical medicine to the Wellcome Foundation. Brig. John S. K. Boyd, O.B.E., at present Director of Pathology, War Office, will become Director of the Wellcome Laboratories of Tropical Medicine.

A meeting of the Tuberculosis Association will be held at 26, Portland Place, W., on Friday, Sept. 20, at 3.15 p.m., when Dr. Honor Smith will read a paper on "Some Clinical and Pathological Aspects of Tuberculosis of the C.N.S." At 5 p.m., papers will be read by Dr. G. B. Dowling on "Treatment of Lupus Vulgaris" and by Dr. D. E. Macrae on "Use of Calciferol in Tuberculous Conditions."

The Paddington Division of the B.M.A. is arranging a special meeting in Room 140 at the County Hall, Westminster Bridge, S.E., on Tuesday, Sept. 24, at 3 p.m., when papers will be read on the causes and prevention of prematurity by Dr. R. Lovell, Prof. F. J. Browne, and Prof. L. S. Bemrose, followed by a discussion. In view of the importance of the subject it is hoped that non-members as well as members from other Divisions will be present.

A course of lectures in skin diseases will be held at the London School of Dermatology, St. John's Hospital for Diseases of the Skin, 5, Lisle Street, Leicester Square, W.C., on Tuesdays and Thursdays, at 5 p.m., from Oct. 1 to Dec. 12.

The ninth annual Louis Gross Memorial Lecture will be delivered under the auspices of the Montreal Clinical Society at the Jewish General Hospital, Montreal, on Wednesday, Oct. 16, at 8.30 p.m., by Dr. Roy R. Grinker, director of the Institute for Psychosomatic and Psychiatric Research and Training of the Michael Reese Hospital, Chicago. His subject is "Psychiatric Objectives of our Time."

The prize-giving ceremony at the London (Royal Free Hospital) School of Medicine for Women will be held in the Great Hall of B.M.A. House, Tavistock Square, on Tuesday, Oct. 1, at 3 o'clock. Prof. Winifred Cullis will deliver the inaugural address for the session 1946-7.

the following have been added to the list of persons entitled to type "K" coupon-equivalent certificates for the provision of active clothing: A person authorized by the Ministry of Health, Clerk to the Council of the Chartered Society of Physiotherapy, Registrar of the Board of Registration of Medical Auxiliaries, Secretary of the B.M.A., and the Hon. Secretary of the N. and District Dental War Committee.

Cardinal Griffin, Archbishop of Westminster, at the opening of London centre of the Catholic Marriage Advisory Council on 1. 3, said that at this centre, and at others to be established, Catholic husbands and wives could obtain advice and guidance in their marital difficulties. It would also try to keep the need for successful marriages and parenthood in the minds of all concerned by every available method of publicity.

Medical men from Norway, Brazil, and Chile have arrived in London to study subjects in which they are specialists, and programmes have been arranged for them by the British Council. Dr. K. Thomassen, a Norwegian physician who has specialized in tuberculosis, is spending September here. Dr. Odair Pacheco Rosa, of the University of Sao Paulo Medical School, arrived from Sao Paulo on Aug. 30 for a two-month visit to study hospital planning and administration. Prof. Alexandre Lipschutz, who is here to work in the field of cancer and to lecture on his own experimental work on tumours, is a director of the centre for experimental medicine in the National Health Service of Chile.

Vienna, with a population of 1,500,000, is one of the few towns in Europe to-day with a surplus of doctors. It is estimated that there are as many as 3,000—of whom approximately half have private clinics and the other half function in various hospitals. Of 1,500 hospital doctors, probably only two-thirds will remain in Vienna to settle down. There are about 1,500 doctors, however, who are still prisoners of war, hoping to return soon, and of these at least a third will stay in Vienna, which will bring the number up to 3,000 again. The same number of doctors have left the country for political reasons. Medical students in Vienna number as many as 3,800.

Dr. F. T. H. Wood, O.B.E., Medical Officer of Health, Bootle, Merseyside, has been elected chairman of the Council of the Royal Sanitary Institute, to take office on Oct. 1.

Mr. W. Rowley Bristow, F.R.C.S., has been awarded the Rank of Chevalier in the Légion d'Honneur and a "Citation à l'Ordre de la Santé."

EPIDEMIOLOGICAL NOTES

Discussion of Table

England and Wales 285 notifications of diphtheria were recorded during the week—an increase of 34 on the preceding week, which was chiefly due to increases of 12 in Liverpool B. and of 8 in Berkshire. Measles, whooping-cough, and scarlet fever declined with decreases of 572, 39, and 25 respectively. Decreases were also observed in the notifications of dysentery and typhoid—18 and 17 respectively.

Notwithstanding the fall in the total whooping-cough notifications there was considerable variation throughout the country; the most marked differences were increases of 38 in Warwickshire, 24 in Essex, and 18 each in Staffordshire and Durham.

An increase in the notification of measles was observed in Berkshire and was due mainly to 21 cases being reported from Islampstead R.D. compared with 5 in the previous week. Similarly in Hertfordshire and Durham fairly large increases were recorded—36 and 34 respectively. In the former county Albans M.B. was responsible for an increase of 7 and Watford R.D. for 15 cases. In Durham increases of 11, 11, and 21 were reported from South Shields C.B., Billingham D., and Hartlepool M.B. respectively.

In Scotland a rise of 9 was reported in the notification of scarlet fever. Forty-five cases of erysipelas were notified—an increase of 18 and the highest notification for twelve weeks. The majority of cases were reported from Lanarkshire and Inverclyde.

No fresh cases of typhoid were reported. There were 13 new cases of dysentery.

In Eire there were 20 fewer cases of diarrhoea and enteritis, largely due to the decline in Dublin C.B., from which 19 cases are reported as compared with 37 in the preceding week.

Week Ending August 31

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 744, whooping-cough 976, diphtheria 262, measles 1,565, acute pneumonia 279, cerebrospinal fever 41, dysentery 74, acute poliomyelitis 21, paratyphoid 44, typhoid 27.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 24.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	39	4	18	2	—	47	2	23	—	2
Deaths	—	—	1	—	—	—	—	1	—	—
Diphtheria	285	16	77	29	7	409	23	134	55	13
Deaths	3	—	1	—	—	2	—	—	1	—
Dysentery	52	12	19	—	1	232	31	73	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	1	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	45	8	1	—	—	40	10	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	24	—	—	—	—	98	—
Deaths	29	2	9	13	3	46	7	12	20	12
Measles*	2,140	161	60	14	4	1,151	61	36	40	4
Deaths	2	—	—	—	—	—	—	—	1	—
Ophthalmia neonatorum	82	5	20	1	—	74	2	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	66	27(B)	—	2(B)	—	17	6(B)	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza,	299	22	2	—	—	318	12	1	5	2
Deaths (from influenza)†	7	2	—	—	—	7	1	—	—	—
Pneumonia, primary	—	—	108	6	4	—	—	123	5	4
Deaths	15	—	4	—	—	16	—	7	—	—
Polio-encephalitis, acute	1	1	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	30	4	1	—	2	31	3	1	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	2	16	—	—	—	—	15	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	138	11	14	1	—	124	9	18	1	2
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	665	53	128	18	7	1,001	75	194	15	16
Deaths	—	—	—	—	—	2	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	36	2	—	5	1	12	1	2	10	5
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,058	170	41	28	2	1,152	75	26	35	5
Deaths (0-1 years)	302	42	42	41	15	297	40	42	47	33
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,753	579	502	188	102	3,634	454	504	193	116
Annual death rate (per 1,000 persons living)	—	—	11.0	12.0	—	—	—	11.4	12.5	—
Live births	8,374	1353	1010	394	26	6,319	625	825	357	247
Annual rate per 1,000 persons living	—	—	20.5	25.2	—	—	—	16.5	25.0	—
Stillbirths	242	30	27	—	—	221	35	20	—	—
Rate per 1,000 total births (including stillbirths)	—	—	28	—	—	—	—	24	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitology Westcent*, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Unsuccessful Vaccination

Q.—A child aged three months was unsuccessfully vaccinated against smallpox thrice at intervals of about two weeks. The lymph was fresh and obtained from reliable sources. Does this mean that the child possesses permanent immunity against smallpox? Or is this immunity only of a temporary nature derived from the mother? If so, does the child require re-vaccination?

A.—An unsuccessful vaccination is not proof of insusceptibility to smallpox. A case has been reported recently of a soldier who had been vaccinated no fewer than ten times, always unsuccessfully, during the twelve months before he died of haemorrhagic smallpox.

True inherited absolute immunity against smallpox, which is but temporary, occurs only among infants born of variolous mothers or of women who have themselves lately undergone successful vaccination. It is not uncommon for primary vaccination to fail to take in a susceptible infant. If a successful result has not been obtained after three attempts at intervals of ten to fourteen days, and if the degree of risk of exposure to smallpox infection warrants some delay, further series of attempts should be made at about three-monthly intervals. In the event of prolonged apparent insusceptibility to vaccinia a change of technique, the use of multiple insertions, and the choice of a different site for the inoculations should be considered; but the operator should not be satisfied until success has crowned his efforts. It goes without saying that the quality of the lymph should be above suspicion.

Purpura in the Elderly

Q.—For some time I have had erratic subcutaneous haemorrhages on the back of my hands, varying in size from a florin to a crown. There is no pain and they usually disappear within a week, leaving a brown stain. Though I am an old man my health is good. Can you explain these happenings?

A.—The description of these lesions corresponds exactly to what is called "senile purpura"—if the questioner will forgive this term. It is a well-recognized condition and was first described by Thomas Bateman in his *Practical Synopsis of Cutaneous Disease* (London, 1818). The histology was studied by Unna (*Arch. Dermatol. Syph.*, 1895, 33, 200), who found that the haemorrhages occurred either by rhexis or diapedesis into the degenerate senile skin from the smaller and often sclerotic vessels. Senile purpura is benign, associated with no other haemorrhagic phenomena, and carries no sinister implication. It commonly occurs on the back of the hands and forearms where the skin in the elderly is often atrophic and lax. There is no satisfactory treatment, and it must be regarded as one of the tiresome but harmless accompaniments of increasing years.

Castor Oil for Summer Diarrhoea

Q.—Is the practice of swallowing a dose of castor oil for the treatment of any and every form of summer diarrhoea justified by present-day knowledge of the physiological and pathological flora of the alimentary tract?

A.—The present-day knowledge of the aetiology of summer diarrhoea is not sufficiently complete to make any very didactic

statements, but the routine use of castor oil in every case in infancy does not appear to be justified. It was based on the assumption that (a) there was an irritant in the gut which should be expelled, (b) the subsequent action of castor oil was a constipating one. When parenteral infection is the primary cause of summer diarrhoea castor oil is useless, and when an enteric infection is present (e.g., Sonne dysentery) there are more specific means of treatment available. The use of castor oil might well be reserved for older infants and children who are known to have eaten a specific gastro-intestinal irritant.

Sore Tongue in Pernicious Anaemia

Q.—What is the treatment of a persistently severe sore tongue in a case of pernicious anaemia? The patient has had adequate treatment with liver parenterally, and large doses of all the vitamins.

A.—It is most unusual for soreness of the tongue to persist in adequately treated pernicious anaemia. Minot and Murphy in their original paper found that this symptom disappeared early and that its recurrence almost always indicated inadequate treatment. The same observation was made by Oatway and Middleton (*Arch. intern. Med.*, 1932, 49, 860) who stressed the importance of this sign as showing inadequate dosage or advancing neurological disease. It would therefore be worth while doubling the dose of liver extract and perhaps changing to one of the cruder products unless the patient is already receiving such a preparation.

The other possibility is that the glossitis is unrelated to the anaemia in this case. Sore tongue has been relieved both by nicotinic acid 150 mg. daily, and riboflavin 10 mg. daily; but this patient has apparently had all the vitamins. Leukoplakia in an early stage is another possibility.

Finally, cases of glossitis do occur which cannot be explained and which do not respond to treatment. The pain can be relieved by mouth washes of 1% pantocaine before meals.

Trilene Administration

Q.—In the *Journal* of July 6 a method of using trilene with Hewitt's modification of Claver's inhaler is described. As I cannot obtain this can you recommend any other simple apparatus?

A.—Trilene and air can be used either for self-administered analgesia or for light anaesthesia. Freedman's inhaler is a simple and efficient method of providing analgesia by the patient's inspirations being drawn over the surface of the liquid. The inhaler was designed for midwifery but can be used for almost any purpose except dentistry, where the mouth must be free. For these cases Hill's nasal inhaler is useful. The patient blows air from a rubber hand-bulb through the trilene bottle to a nose-piece.

If anaesthesia is necessary Marrett's vaporizer can be employed. This is a "draw-over" apparatus with an adjustment for varying the concentration of trilene vapour. If a gas and oxygen apparatus is available trilene can be placed in the chloroform bottle and added in minimal amounts to the mixed gases. Care must be taken not to give an overdose or tachypnoea will ensue.

The Colour-blind Driver

Q.—If one discovers red-green colour blindness in an otherwise healthy person should one certify that he is unfit to drive a public service vehicle? Is there any statement on this subject in the *Road Traffic Act*?

A.—Colour blindness is not specifically mentioned in the questionnaire which the doctor is required to answer, but among other things he has to declare generally whether he considers the candidate's vision a likely source of danger. In answering this question he would undertake serious responsibility if he made no mention of the colour blindness, but he is presumably entitled, having mentioned it, to say that he does not consider it a source of danger—though the question appears to involve important non-medical factors. Such cases are in practice very rare. The licensing authority would probably give the candidate a special test. The matter is not dealt with in the Act, which merely empowers the Minister to make appropriate regulations. These are published in S.R.O., 1934, No. 1321.

Painless Labour

*Have any of the leading obstetricians personally confirmed Dr. Granly Dick Read's methods of ensuring painless childbirth in normal labours as described in his book *Childbirth*?*

Most obstetricians agree with the principles underlying Dr. Read's methods and believe that the management of labour as he suggests is conducive to easier and more painless labour. However, there are few if any who would go as far as to agree that the application of such methods, except in the very occasional susceptible patient, results in the labour being entirely painless.

Gouty Deposits

A female patient aged 69 suffers from attacks of gout affecting the great toe and thumb. This is a clinical diagnosis confirmed biochemically. From time to time small, hard, white nodules appear on the palmar surfaces of the fingers. These nodules soften and when incised yield a substance the colour and consistency of "off-white" paint, which contains polyphosphate cells but no organisms. What is this condition?

The description suggests that the fluid contains sodium urate crystals, and if these are found the diagnosis of gout is confirmed. In long-standing cases of gout the sodium urate is deposited in the cartilages of the joints, along the tendons, and in the subcutaneous tissues. In the latter situation deposits are liable to cause local inflammation, which may ulcerate through the skin and discharge the "white matter". A skiagraph of the hand would also settle the diagnosis.

Sterilization with Penicillin

Would one or two penicillin lozenges dissolved in a pint of milk help towards its sterilization? Or would the acidity or alkalinity of the milk render it inert?

Unless the milk were already almost unfit for consumption its reaction would not be a serious obstacle. There are others of more importance. The lesser of these is the dependence of the bactericidal action of penicillin on temperature: the lower this is the less would the effect be. The greater difficulty is the varied flora with which the penicillin would have to contend. We know of no information about the susceptibility to penicillin of the various bacteria concerned in souring of milk, but it is very likely that some of them would be much more resistant than pathogenic Gram-positive bacteria. If coliform bacilli were present, as they commonly are in unsatisfactory milk, they would not only grow in spite of the presence of penicillin but would destroy it. Penicillin is only in certain circumstances sterilize milk: it could only reduce numbers of bacteria or prevent their further growth. In certain circumstances it surely remains a duty only to use penicillin for the treatment of disease, and in cases where there is no reasonable expectation of benefit. To degrade such a substance by trying to make it compensate for unhygienic methods of producing milk would be a waste of the worst kind.

Congenital Pyloric Stenosis

Please enlighten me on the aetiology (particularly the predisposing factors) of congenital pyloric stenosis.

Congenital pyloric stenosis is undoubtedly inherited, but uncertain whether the disorder is recessive or dominant. Cases of large numbers indicate a higher degree of cousin marriages among the parents than would be expected on a random sample of the population, which favours a recessive inheritance. On the other hand recorded instances of a child and parent both having the disorder are not uncommon, and there have been published which give the appearance of dominant inheritance. The condition has been found at birth and in a foetus, so that the cause must be prenatal and not due to feeding or any postnatal factor. Some disorder of the autonomic system is usually postulated, but it is also said that a so-called hypertrophied muscle is abnormally packed with collagen, as is found in Von Gierke's disease.

INCOME TAX

Car Transaction

D. N. bought car A while acting as an assistant and in receipt of an (untaxed) car allowance. On being called up to the R.A.M.C. he sold the car, and in November, 1945, bought car B. He resumed the assistantship in January, 1946, and became a partner in the practice in April, 1946.

* No deduction can be claimed for the purchase of the car at a time when he was not professionally engaged. In the circumstances D. N. will have to confine his claim to the depreciation allowance for 1946-47.

Income Arising in a Dominion

"ANTIPODEAN" states: "I am at present living and earning income in this country but my domicile is in New Zealand." He has investments in a Dominion on which he pays income tax there; so far no remittances have been made to the United Kingdom. What is his position as regards British income tax?

* In the case of any person who satisfies the Commissioners of Inland Revenue (as presumably "Antipodean" can do if required) that he is not domiciled in the United Kingdom, tax is payable not, as in other cases, on the amount arising abroad, but on the sums which have been or will be received in the United Kingdom. In the circumstances "Antipodean" need not include the income in his British income tax return unless and until some amount is received in this country. As the law now stands he will then be liable to British tax, less the appropriate Dominion income tax relief, and the amount of the remittance in so far as it is covered by income arising abroad while he is in the United Kingdom.

LETTERS, NOTES, ETC.

Mites in Sputum

Dr. REGINALD FISHER (King's Langley) writes: Perhaps it may be of interest to record that in 1913 I found mites in the sputum of a case of lung abscess following empyema in a man who had never been out of England. In one specimen I found the detached leg of a mite, in another a complete insect somewhat resembling a cheese mite. Up to now I have thought of these as contaminants.

Medical Service in Australia

Dr. IAN GILLILAND (Hessle) writes: Sir Ernest Graham-Little builds up a strong case in his letter (Aug. 24, p. 272) on information which he received from a colleague in Canberra. This states "that an Act embodying the socialist aspirations for a State Medical Service was passed some years ago by the Socialist Government" of Australia. This statement came as a considerable surprise to many. Sharing this surprise, the editor of the *Medical World* wrote to the High Commissioner of the Commonwealth of Australia and received the following information: "I have to advise you that no Bill to establish a State Medical Service has been introduced into the Commonwealth Parliament of Australia." In view of this contradiction and of the importance attached to the whole episode by Sir Ernest Graham-Little, I feel that a further explanation is called for.

Children in Nurseries

"E. D. F." writes: With reference to Mrs. G. M. Woolf's letter (Aug. 31, p. 318), fifteen years ago I worked in a voluntary day-nursery. There it was customary to use small squares of old linen for nasal hygiene, burning the soiled ones immediately. Recently on return to nursery work I was again confronted with the never-ending problem of nasal catarrh. By regular morning cleaning of each child's nostrils, and by the use of hard-baked rusks, there was great improvement. Possibly the exercising of the nasal and oral passages kept the "huns on the run."

The Late Dr. E. H. van Someren

An obituary notice and appreciation of Dr. E. H. van Someren, who died at Syracuse, appeared in the *Journal* of March 15, 1943. Distress has been caused to his family by the wholly erroneous statement in a recent book of memoirs that Dr. van Someren suffered from melancholia and committed suicide.

Correction

Mr. HARRY FREEMAN writes: My letter in the *B.M.J.*, 1945, 2, 510, states that "the oesophagus is deficient behind in the upper 1½ in., there being a dehiscence of the inner longitudinal fibres." This should read the "outer longitudinal fibres," and Dr. C. Allan Birch very kindly drew my attention to this clerical error on my part.

H.M. Forces Appointments

ARMY

Col. R. R. G. Atkins, O.B.E., M.C., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brig.
Lieut.-Col. H. T. Findlay, from R.A.M.C., to be Col.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. J. C. Denvir has retired on retired pay and has been granted the honorary rank of Col.

Lieut.-Col. G. G. Drummond, having attained the age of retirement, is retained on the Active List supernumerary.

Majors (War Subs. Lieut.-Cols.) S. W. K. Arundell and A. N. T. Meneces, C.B.E., D.S.O., to be Lieut.-Cols.

Short Service Commissions.—War Subs. Major G. G. Smith has retired and has been granted the honorary rank of Lieut.-Col. Capt. S. P. Bellmaine has retired and has been granted the honorary rank of Major.

War Subs. Major W. Thomson has retired and has been granted the honorary rank of Major. (Substituted for the notification in a *Supplement* to the *London Gazette* dated June 25).

Capt. T. G. A. L. Warrington has been appointed to a permanent commission.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

War Subs. Major W. C. Barber, T.D., to be Major.

Lieut. A. D. M. Greenfield, supernumerary for service with University of London Senior Training Corps (Med. Unit) has resigned his commission.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Col. J. P. Fehily has relinquished his commission and has been granted the honorary rank of Col.

War Subs. Capt. P. Esmonde and B. G. Hill have relinquished their commissions and have been granted the honorary rank of Major.

The notification regarding Lieut. D. L. Cran in a *Supplement* to the *London Gazette* dated June 28, has been cancelled.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) I. W. Simpson has relinquished her commission on account of disability and has been granted the honorary rank of Capt.

ROYAL AIR FORCE

ROYAL AIR FORCE VOLUNTEER RESERVE

E. J. Radley-Smith to be Squad.-Ldr. (Emergency).

Fl.-Lieut. (Temp. Squad.-Ldr.) J. H. McElney has resigned his commission retaining the rank of Squad.-Ldr.

Fl.-Lieut. K. P. G. Mears has resigned his commission retaining the rank of Squad.-Ldr.

To be Fl.-Lieuts. (Emergency): P. Dawson-Edwards, W. T. W. Paxton, and R. M. MacKenzie.

To be Flying Officers (Emergency): D. N. Baron, B. Dover, Clark, G. Clayton, E. J. L. Davies, J. H. Edworthy, A. S. Hughes, J. G. Jackson, M. C. Joseph, A. C. Parry, M.C.; E. R. Smith, T. Taylor, R. R. Trussell, and T. R. E. Pilkington.

The notification regarding D. C. Bodenham in a *Supplement* to the *London Gazette* dated July 9, has been cancelled.

INDIAN MEDICAL DEPARTMENT

Capt. A. R. Bell, A. R. D'Abreu, W. A. Browne, E. R. Hill, A. C. S. Mann, and P. W. Emmett to be Majors.

Lieuts. P. W. Emmett, P. F. Fanaken, G. S. Rozario, A. St. C. Bartley, A. N. De Monte, M.B.E., M.C., C. H. W. Windsor, M.B.E., R. T. M. Hayter, M.B.E., J. C. Mendis, M. J. Godfrey, M. J. Nicholas, and H. G. M. Campbell to be Capt. S.

First Class Assistant Surgeons J. R. Cartner, W. E. Rodgers, W. J. Rowe, J. S. E. Barnard, C. A. Martin, A. E. A. Phaire, C. F. Vieyra, R. O. A. Smith, B. St. C. F. Lynsdale, A. L. G. Allen, A. A. Feegrade, and S. A. De Souza to be Lieuts.

Dr. George F. Lull, former Deputy Surgeon-General of the United States Army, on April 1 of this year succeeded Dr. Olin West as General Secretary and Manager of the American Medical Association. Dr. West became General Secretary of the A.M.A. on the retirement of Dr. George H. Simmons in 1924. He had been previously an executive officer of the Tennessee State Board of Health and Director for the Rockefeller Sanitary Commission and International Health Board in Tennessee.

Association Notices

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and illuminated certificate, and was founded in 1880 by the Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize the year 1947 to the author of the best essay on: "Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

Meetings of Branches and Divisions

EASTBOURNE DIVISION

At a recent meeting concern was expressed by various members about the general and local shortage of midwives.

A resolution, "That in the opinion of this Division in view of the grave shortage of midwives the period of their training should be reduced to six months," was carried unanimously.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m., Dr. McK X-ray Treatment in Diseases of the Skin.

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Th Edinburgh Royal Infirmary, Thurs., 4.30 p.m., Dr. H. L. W Care of the Small Premature Infant.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—8 p.m., Dr. W. O. G. Taylor, Aetiology and Treatment of Paralytic Squint.

LIVERPOOL HEART HOSPITAL.—Mon., 3.30 p.m., Dr. Harris, Blood Pressure; 4.30 p.m., Dr. Doyle, Congenital Heart Disease. Tues., 3.30 p.m., Dr. Hibbert, Fundus Appearances in Se and use of the Ophthalmoscope; 4.30 p.m., Prof. R. A. M Modes of Action of Vitamins. Wed., 3.30 p.m., Dr. I (i) Cardiac Arrhythmias; 4.30 p.m., Dr. Datnow, (i) Constitutional Complications of Pregnancy. Thurs., 3.30 p.m. and 4.30 Dr. Harris, Ward Round. Fri., 3.30 p.m., Dr. Doyle, Col Thrombosis; 4.30 p.m., Dr. Arundel, Tonsil Affections in Relation to Rheumatic and Cardiac Conditions.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the advertiser, and should reach the Advertisement Manager not later than first post on the morning.

BIRTHS

CHILD.—On September 5, 1946, at the Radcliffe Infirmary, Oxford, to (née Bond), wife of Dr. J. P. Child, a son—David Laurie.

FRANKLIN.—On September 1, 1946, at Edgware, to Margaret (née N) wife of Dr. C. B. Franklin, a son.

JOHNSON.—On August 30, 1946, at University College Hospital, to Gwen (née Galpin), wife of Dr. S. J. Johnson, a son.

MACGARRY.—On August 26, 1946, at Isall Nursing Home, Llandudno, to (née Hiltermann), wife of Dr. P. V. MacGarry, Ipoh, Malayan Union, a daughter—Gelda Margaret.

MACGREGOR.—On September 5, 1946, at Kilmarnock Burgh Maternity to Rosa F. MacGregor, M.B., Ch.B. (née McLaren), wife of Dr. I MacGregor, a daughter—Gelda Margaret.

McGUFFIE.—On September 5, 1946, at Westbay Nursing Home, Dur Gwendoline Mary (née Sturrock, M.B., Ch.B.), wife of S. M. N M.B., Ch.B., a son.

PICKARD.—On August 31, 1946, to Daphne, wife of H. M. Pickard, Endsleigh Court, W.C.1, a daughter.

ROGERSON.—On August 30, 1946, at Bark Hill House, Whitechurch, Sh to Drs. Gerard and Evelyn Rogerson, a daughter.

THE.—On August 25, 1946, at Nuffield House, Guy's Hospital, to wife of Dr. I. T. Thé, a son—Robert.

WYANT.—On July 27, 1946, at Leicester, to Anne (née Dunnett) and Colonel G. M. Wyant, R.A.M.C., a son.

MARRIAGES

DILLON-BAILEY-THOMSON.—On July 25, 1946, in Nottingham, John Dillon, M.B., B.Ch., to Joyce Doreen Bailey-Thomson, M.B., Ch.B.

DEATHS

MITCHELL.—On August 26, 1946, at Rothay Garth, Ambleside, West Thomas Houghton Mitchell, M.D., in his 84th year.

LONDON SATURDAY SEPTEMBER 21 1946

THE INCIDENCE, INCUBATION PERIOD, AND SYMPTOMATOLOGY OF HOMOLOGOUS SERUM JAUNDICE*

BY

NANCY SPURLING

JOHN SHONE

JANET VAUGHAN

Jaundice has been recognized with increasing frequency as a sequela of transfusion with whole blood, plasma, or serum (Memorandum, Ministry of Health, 1943; *B.M.J.*, leading article, 1944, 1945). It is generally agreed that such jaundice is indistinguishable from, and of the same aetiology as, the jaundice following the use of convalescent serum, vaccines containing human serum, and syringes contaminated with human blood (Memorandum, Ministry of Health, 1945). This jaundice is commonly called homologous serum jaundice.

Since certain of the cases reported after transfusion have proved fatal it appeared important to determine, if possible, the incidence of this complication, since it might well be that the risk of hepatic necrosis was greater than the risk incurred by withholding transfusion. Records of blood products issued from the N.W. London area since 1940 being available, a follow-up of patients who had received transfusions in this area was therefore instituted in 1944 with a view to determining the incidence of homologous serum jaundice following transfusion, its incubation period, and the symptomatology.

Method of Investigation

Follow-up

In connexion with an earlier investigation, blood, serum, or plasma issued from the depot carried a label. The hospital receiving and using the bottle was asked to fill in answers to certain questions on the label before returning it to the depot. The returned labels were filed ready for reference. The greater part of the information so collected was not relevant to the present inquiry, but the batch number of the material used was entered on the label before issue, and subsequently the name of the hospital and patient, so affording means of following up all those transfused.

In view of the latent period that may occur before the development of jaundice no personal follow-up of a patient was attempted until five months after the date of the transfusion. The hospital was then visited and the patient was interrogated if still in hospital. If discharged, his address was obtained and he was sent a follow-up letter (Appendix I) asking, among other things, whether he had had an attack of jaundice. If an affirmative answer was received the patient was visited and a more elaborate form (Appendix II) was filled in. In two cases, when the patient lived at a great distance, the general practitioner was asked to complete this form. For obvious reasons it was impossible to include cases of sub-clinical jaundice in a follow-up of the character described. The notes of all patients who died between forty days and seven months of transfusion were checked to determine if death was due to hepatic necrosis, and to ascertain that no attack of jaundice had occurred in the intervening period. At the time the investigation was started the possible significance of a syringe in the transmission of an icterogenic agent was not appreciated, and no note was made as to whether casualties had, for instance, received penicillin (Darmady and Hardwick, 1945) or penicillin (Turner, 1946). The data were not available

to allow a follow-up of the donors of batches which proved to be icterogenic, in order to determine if they had recently had jaundice.

Products Transfused

In the first instance, patients who had received serum and plasma were followed up. In many cases such patients had received blood in addition. The serum and plasma came from 400 different pools, varying in size from 30 to 200 litres. Subsequently a series of patients who had received only blood was studied. It is unfortunate that all patients cannot be placed in clear-cut groups as having received only one product, but the majority of serum and plasma transfusions were given to air-raid casualties treated under emergency conditions. Such transfusions were an essential life-saving procedure, and were not given as part of a planned experiment.

Geographical Distribution of Patients

An attempt was made to follow up all patients known to have been transfused with serum or plasma in 78 hospitals in the N.W. London area between 1940 and July, 1945. Patients receiving only blood in 1944 and the first half of 1945 were traced from 23 hospitals. A few earlier patients were included in this group.

Control Series

Simultaneously with the follow-up of patients receiving whole blood a survey of a control group was made to assess the incidence of jaundice in the non-transfused hospital patient. This group was composed of patients in the same hospital at the same time as the patients given blood. For every transfused patient a control was selected of the same age group, sex, and, if possible, in the same ward, but regardless of diagnosis. The age groups taken were 0-19 years, 20-39 years, 40-59 years, and 60 years and over. No control cases were followed up until five months after discharge from hospital. They were then either visited or written to, asking them to complete a questionnaire not unlike that sent to patients who had received transfusions.

Character of Patients

The majority of patients given serum or plasma were civilian air-raid casualties; this accounts for the large proportion of deaths within two months. Death in many cases occurred within a few hours, or at most days, of receiving a transfusion. Most of the patients given whole blood were maternity and gynaecological cases; a large group of patients with haematemesis, and other miscellaneous medical and surgical cases, were, however, included.

Results of Follow-up of Patients Given Serum and/or Plasma

In this group a total of 2,040 patients were followed up. Since jaundice occurred after both serum and plasma no distinction is made between the two in tabulating the results, nor is any distinction made between patients who also received blood and those who did not. It may be stated, however, that a more detailed analysis of the figures showed that jaundice occurred with any combination. The numbers involved were

* A report to the Medical Research Council from the North-West London Blood Supply Depot.

too small to allow conclusions to be drawn as to whether any combination was more likely than another to cause jaundice. The results are shown in Table I. Of the 2,040 patients 9%

TABLE I.—Particulars of Patients given Serum and/or Plasma

Total no. of patients followed up	2,040
No. of patients not traced	186
Proportion not traced	9%
No. of patients traced	1,854
No. of patients who died within five months of transfusion	800
Proportion of traced patients who died within five months of transfusion	43%
No. of surviving patients upon whom the incidence of jaundice is based	1,054 (100%)
No. of patients with no history of jaundice within five months of transfusion	963 (91.4%)
No. of patients who developed jaundice within five months of transfusion	77 (7.3%)
No. of patients who developed jaundice, but doubtful if due to transfusion	14 (1.3%)
(See Appendix III)	

could not be traced. A much larger proportion—43% of those traced—had died before it could be determined whether or not they would develop jaundice after their transfusion. The time at which death occurred after transfusion in the 800 patients who died before the five-months period was complete is shown in Table II. The observed incidence of post-transfusion jaun-

TABLE II.—Analysis of Time of Deaths

Time	Deaths
Under 2 months after transfusion	769 (96.2%)
2-3	16 (2.0%)
3-4	5 (0.6%)
4-5	10 (1.2%)
	800 (100%)

dice following serum and plasma has therefore to be based upon approximately half those originally exposed to risk. The great majority of deaths—769—however, took place shortly after transfusion, and there is no reason to suppose that the inevitable absence of evidence relating to them would affect the relative incidence, or that if they had lived they would have been either more or less likely to develop jaundice than the survivors. Of the surviving 1,054 patients 91.4% gave no history of jaundice within 5 months; 77 (7.3%) gave a history suggestive of homologous serum jaundice; and 14 (1.3%) developed jaundice which could be attributed to other causes, such as malignant disease or exposure to a case of infective hepatitis (see Appendix III).

The 31 patients who died between two and five months after transfusion had time in which to develop jaundice, but were not exposed for the full five months. If, however, these 31 patients be debited with a full exposure, the observed incidence of 7.3% would only be reduced to 7.1%, so that they can but little difference to the upshot.

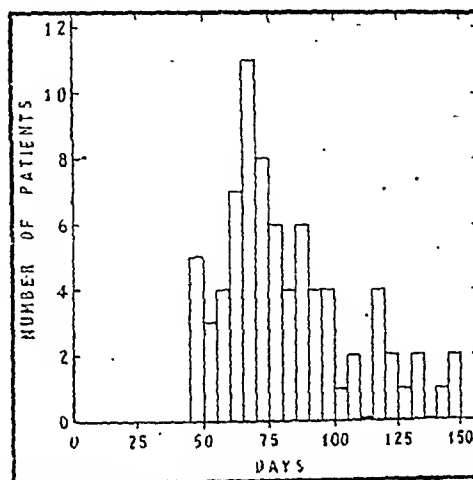
Untraced cases raise the more difficult point whether a patient is more or less likely to have had jaundice. For example, it might be more difficult to trace a patient who had died, and such a patient might have died of jaundice. With these provisos the figures show an incidence rate of jaundice of 7.3% within five months of transfusion with serum and/or plasma.

Certain pools of both serum and plasma were found to be more icterogenic than others, although in no case was it possible to trace every bottle of one particular pool. For example, of 29 traced patients transfused from one pool of serum (LS6), 9 (31%) gave no history of jaundice, 9 (31%) subsequently developed jaundice within five months of transfusion, and 1 (3.4%) had a doubtful attack. The remaining 10 patients died within five months of transfusion. In all, 38 bottles were involved, 13 (30%) being given to patients who did not develop jaundice, 11 (28%) to the patients who did, and 1 (2%) to the patient who had the doubtful attack. The remaining 13 bottles were given to the patients who died. In contrast, only 1 or 2% of the patients transfused from other pools subsequently developed jaundice. To some slight extent, but not entirely, this may be attributed to the fact that as soon as the risk of jaundice was appreciated, when two or more patients were found to have developed jaundice following transfusion

from any one pool, the remaining bottles were withdrawn from circulation, thus curtailing the further risk of jaundice.

Character of Jaundice

Of the 77 cases of jaundice investigated, only one was serious, the patient being in a comatose condition for several days. No deaths occurred among the proved cases of post-transfusion jaundice, and two occurred in the doubtful group, one of these being a patient with carcinoma of the bronchus and the second an old man of 86, said to have died of senile decay, with jaundice and bronchitis as secondary causes. The ages of the 77 patients developing jaundice varied from 4 to 80 years, 30 patients being males and 47 females. The incubation period varied from 45 to 150 days, the majority of cases occurring 60 to 90 days after transfusion (see Graph).



The incubation period in homologous serum jaundice

Symptoms

The incidence of symptoms other than jaundice in 77 cases of jaundice is shown in Table III.

TABLE III.—Incidence of Symptoms

Vomiting	41	Urticaria	5
Depression	20	Joint pains	19
Skin rashes	16		

Seventeen patients complained only of slight nausea or lassitude accompanied by pale stools, dark urine, and a yellow tinge of skin and sclerotics.

Results of Follow-up of Patients Given Whole Blood

In this group 1,284 patients were followed up. They received between them 3,468 bottles of blood. The results are shown in Tables IV and V. The number of patients surviving upon

TABLE IV.—Particulars of Patients given Whole Blood

Total no. of patients followed up	1,284
(No. of bottles, 3,468)	
No. of patients not traced	170
(No. of bottles, 404)	
Proportion not traced	13%
No. of patients traced	1,114
(No. of bottles, 3,064)	
No. of patients who died within five months of transfusion	223
(No. of bottles, 786)	
Proportion of traced patients who died within five months of transfusion	20%
No. of surviving patients upon whom the incidence of jaundice is based	891 (100%)
(No. of bottles, 2,278)	
No. of patients with no history of jaundice within five months of transfusion	885 (99.4%)
(No. of bottles, 2,248)	
No. of patients who developed jaundice within five months of transfusion	Nil
(No. of bottles, nil)	
No. of patients who developed jaundice, but doubtful if due to transfusion	6 (0.6%)
(No. of bottles, 30)	
(See Appendix IV)	

whom the incidence rate is based was 891, receiving between them 2,278 bottles of blood. No patient receiving whole blood developed frank homologous serum jaundice. Notes on 6 doubtful cases are shown in Appendix IV.

TABLE V.—Analysis of Time of Death

Time	Deaths
Under 2 months after transfusion (No. of bottles, 679)	192 (85%)
2-3 months after transfusion (No. of bottles, 36)	13 (5.8%)
3-4 months after transfusion (No. of bottles, 54)	13 (5.8%)
4-5 months after transfusion (No. of bottles, 17)	5 (2.2%)
Total	223 (100%)

Among patients receiving blood a larger proportion have been untraceable than among the patients receiving serum and/or plasma. The death rate in this group, however, is lower, and the observed incidence of post-transfusion jaundice is therefore based upon a larger proportion of patients exposed to risk than in the previous group.

Controls

In this group no case of jaundice within five months of discharge from hospital was noted, although two patients developed jaundice ten months and five and a half months respectively after discharge. Neither of these could give any history of contact with a case of jaundice. Both complained of vomiting, depression, and dark urine accompanied by icterus; and in each case the attack was mild. Results are shown in Table VI. Although the death rate in this group

TABLE VI.—Particulars of Control Patients

Total no. of patients followed up	1,234
No. of patients not traced	403
Proportion not traced	32%
No. of patients traced	876
No. of patients who died	65
Proportion of traced patients who died	7%
No. of surviving patients upon whom the incidence of jaundice is based	811 (100%)
No. of patients with no history of jaundice within five months of discharge from hospital	809 (99.6%)
No. of patients who developed jaundice within five months	Nil
No. of patients who developed jaundice six months or more after discharge	2 (0.4%)

is low, the evidence on which the figures are based is poor owing to the high lapse rate—i.e., persons who could not be traced.

Discussion

The results recorded above show an incidence rate of 7.3% of cases developing jaundice after transfusion with serum and/or plasma. No proved case of jaundice following transfusion with whole blood was found. The number of patients given whole blood was smaller than that given serum, but the figures suggest that the risk of homologous serum jaundice is less with whole blood than with pooled serum and/or plasma.

Though no comparable series has been reported, the present findings are in accord with those of other workers, who have almost all been concerned to describe actual cases which developed jaundice after transfusion rather than to assess the incidence of this complication. Jaundice following whole blood appears to be less frequent than jaundice following pooled serum and/or plasma.

Beeson (1943) reported four cases in which jaundice resulted from small transfusions of whole blood within four months, and three cases after the use of plasma. Steiner (1944) records three cases following whole blood alone and two following plasma also. Rappaport (1945), in a series of 33 cases of jaundice after transfusion, mentions two who were given blood only. Loutit and Maunsell (1945) found no case of frank homologous serum jaundice in a follow-up of a selected series of 213 blood transfusions. They record two doubtful cases only. Apart from the cases mentioned above, many which followed the use of pooled serum and/or plasma, either for transfusion or other purposes, have been reviewed at intervals (Memorandum, Ministry of Health, 1943; Bradley *et al.*, 1944; *B.M.J.*, leading article, 1944; *B.M.J.*, leading article, 1945).

The evidence available therefore supports the conclusion to be drawn from the present observations—namely, that jaundice occurs more commonly after serum and/or plasma than after blood. It is obvious, however, that it is easier to

incriminate a batch of serum or plasma as the cause than it is to incriminate a bottle of blood, since multiple cases may occur after the use of a batch of the former material, while in the case of blood it is extremely rare for one donor to give blood to more than one recipient within an appreciable time. Unless a single donor's blood results in jaundice of the recipient on repeated occasions it is unsafe to assume that the blood is icterogenic.

It appears probable, on the other hand, that the difference in incidence is not due to any inherent differences between blood and serum or plasma, but rather to the fact that serum and plasma are prepared from big pools and therefore many more patients are likely to receive the icterogenic agent from one donor than when all the affected material is given to one patient, as in the case of a blood transfusion.

Loutit and Maunsell (1945) have shown that no case of homologous serum jaundice was detected when 99 individual sera were each injected into an average of six normal recipients. Transmission experiments have shown, however, that a single serum may be an effective transmitter of jaundice (MacCallum and Bauer, 1944; Neeffe *et al.*, 1944; Paul *et al.*, 1945).

The findings of the present inquiry, therefore, emphasize the recommendation of Loutit and Maunsell (1945) that sera for prophylactic use should preferably be individual sera, and that for transfusion purposes pools should be as small as possible. The present observations also stress the importance of labelling with the batch number all material issued, of keeping accurate records of its destination and use, and of creating some machinery for notifying to the regional transfusion officer cases of jaundice following transfusion, so that if necessary the suspected serum or plasma may be withdrawn from circulation. Since certain batches are known to have infected 57% of the cases exposed (Bradley *et al.*, 1944), withdrawal of an infected batch at an early stage should do much to reduce the incidence of jaundice. At present this somewhat cumbersome procedure appears essential, since icterogenic batches cannot be detected by any laboratory or animal test.

The incubation period accorded with that previously noted, varying from 45 to 150 days, the majority of cases occurring between 60 and 90 days after transfusion—so demonstrating yet again the remarkable difference between the incubation period of infective hepatitis and homologous serum jaundice.

The character of the jaundice in the 77 cases here recorded has already been discussed in detail. It was, with one exception, mild. This is in accord with the majority of other observers (Bradley *et al.*, 1944; *B.M.J.*, leading article, 1944; Loutit and Maunsell, 1945), but it must not be forgotten that a definite mortality after both transfusion jaundice and "syringe jaundice" has been noted (Droller, 1945). Few, if any, of the cases were bad enough to go to hospital or to be attended closely by their own doctor; the account of their symptoms is therefore neither detailed nor extremely reliable. It does not differ in any striking way from that described by previous observers (Steiner, 1944; Rappaport, 1945).

Summary

The results are given of a follow-up of 2,040 patients transfused with pooled serum and/or plasma, of 1,234 patients transfused with whole blood only, and of 1,234 control patients, not transfused, who were in hospital at the same time as those receiving whole blood.

The incidence of jaundice in the patients receiving pooled plasma or serum was 7.3%. No patient receiving whole blood developed frank homologous serum jaundice. There was no case of jaundice among the controls within five months of transfusion.

The character of the jaundice was with one exception mild. The symptomatology and incubation period noted were in accord with previous accounts.

It is suggested that to minimize the risk of homologous serum jaundice after transfusion the following procedure should be adopted: (i) human serum for prophylactic purposes should not be pooled; (ii) for transfusion purposes only small pools should be used; (iii) all blood products issued should carry an identification number; (iv) records should be kept of the number of any bottle given to a particular patient; (v) machinery should be maintained and strengthened for the notification to the regional transfusion officer of jaundice following transfusion, thus enabling icterogenic material to be withdrawn from circulation.

*We understand that only small pools are now used by the Ministry of Health for the preparation of blood products.

POST-OPERATIVE ACTIVITY AND RESUMPTION OF NORMAL MOVEMENT

THEIR INFLUENCE ON EMBOLISM AND THROMBOSIS

BY

GIBBON FITZGIBBON, M.D., F.R.C.P.I., F.R.C.O.G.

In recent medical literature there is a definite tendency to advocate an increase in activity after operations, especially laparotomies, as a prophylactic against complications such as embolus. Various systems of exercises to be carried out daily are suggested; most of them need the personal supervision of the nursing staff and include massage, being thus inevitably restricted in application and time-wasting for the attendants.

When I started obstetrics in the Rotunda Hospital in 1902 I very soon recognized that many of the women cared for in the extern maternity department were up and about their rooms from the second day, and puerperal complications were probably less frequent in that department than in the intern. Jellitt (1912) in his first Rotunda Hospital report (1910-11) says: "All patients who have had a normal confinement without perineal laceration and suture may be allowed and encouraged to sit up in bed after the first twelve hours. Further, they may get out of bed to pass water if they wish to do so. After 48 hours they must get out of bed to pass water at least twice in 24 hours, unless their general health contraindicates their doing so. . . . After 72 hours they may take a few steps . . . or sit for a few minutes . . . the time they remain up being gradually increased each time they leave bed." In his second report he says, "I have made no change in this plan, and I have found it most satisfactory. I cannot find the smallest evidence that it has been anything but beneficial to the patients."

In my first report (1919-20) I stated (FitzGibbon, 1921): "All cases showing a rise of temperature are got to sit up in bed frequently during the day, to go on to their hands and knees to micturate, or even to get out of bed for this and for defaecation. I think this method of promoting uterine drainage is of the greatest importance, and far more to be depended upon than the mere elevation of the top of the bed." I repeat this in my second report (FitzGibbon, 1922), adding, "although all cases are encouraged to do this from the first day of the puerperium"; and in my third report (FitzGibbon, 1923a) I say, "Sitting up does not mean Fowler's position, which I think is very little use for uterine drainage. The position should be complete sitting, with the body a little forward of the vertical; it should never be maintained for long or after the patient feels . . . tired. She should then lie down and rest completely. Ten or fifteen minutes at a time are quite sufficient, and the patient should move herself." During my seven years as Master one death was certified as due to pulmonary embolus. The patient died seven hours after delivery, which was complicated by manual removal and post-partum haemorrhage; the uterus was plugged but the bleeding was not controlled.

Appreciating the fact that mobility was beneficial in the morbid puerperium, and prophylactic against complications after normal confinements, it was a short step to the adoption of the same principles in the after-treatment of obstetric operations, such as pubiotomy, Caesarean section, and suture of the perineum. In my first report, dealing with pubiotomy I say, ". . . the belt was discarded on the fourth day and the patient allowed out of bed on the sixth day"; while in my third report I say, ". . . the patients are not bound up in any kind of belt, but are encouraged to move and are able to walk perfectly in 10 to 12 days." Patients who had undergone Caesarean section sat up freely, and laceration of the perineum was treated as though non-existent. Extension of the principles to the post-operative treatment of all gynaecological cases naturally followed rapidly.

Essentials to Success

In the institution of bodily activity after operation there are no specified or routine exercises to be carried out; these only impress the patients with the fallacy that movement must be carefully controlled and possibly entails risk. The aim is to restore, from the time patients return to consciousness, the natural movement of their bodies as well as of their limbs to

obtain restful positions just as they did before operation, or as they would do if merely confined to bed for some minor ailment, and thus to restore the activity of the trunk muscles. To obtain this there are several essentials, the most important being to gain the confidence of the patient so as to counteract the ingrained fear of doing harm or breaking down the stitches. This will be effected only by the display of absolute confidence on the part of the medical attendant, combined with the assurance that the method is based on practical experience and has been proved to be beneficial; also that the advice may be followed despite what others say or think, or the patient's own knowledge or personal experience of wounds that failed to heal owing to reputedly injudicious actions.

I would like here to state my conviction that no wound that has been efficiently sutured in the first instance can be broken down by any muscular activity. A continuous suture may have been cut while being placed, and a low sepsis or haematoma in the wound may prevent healing from the start; but even meteorism, vomiting, or coughing will not break down a healthy sutured wound, and I think this is borne out by the state of wounds that have to be reopened during the first few days after operation. Advanced age and debility, rather than being contraindications, are reasons for earlier and more insistent adoption of the principles.

Next it is essential that control of the patients should be started from the time they are returned to bed, and that while they are in a semiconscious state they be directed to get into and be retained in positions of complete relaxation and the normal positions of rest. This depends entirely on the nursing staff; it does not call for constant personal attention, but can be carried out in conjunction with the ordinary routine work in the ward. For the first 24 hours it is not enough to be able to say the patient is not complaining; if distorted and twisted positions are adopted the patient must at once be replaced in a position of restful relaxation.

The Method in Practice

To define the whole procedure I shall describe a case after laparotomy. As I am engaged in gynaecology and obstetrics, what I say applies primarily to that branch of surgery; but much of it is applicable to general surgery, and is adopted by my colleagues in hospital, where we work in a common female surgical ward with the same sister and nursing staff, and thus the influence of one patient on another takes effect. I apply exactly the same principles to all cases—abdominal operations, with or without drainage, and vaginal plastic operations. Patients are not kept in bed during the days before operation, the aim being to admit them at most two nights before.

Closing the Abdomen.—The abdominal wound is closed with three continuous sutures of plain catgut. No tension sutures are inserted, and neither do my colleagues use them. The skin is closed with a continuous No. 0 plain catgut suture. Two 4-inch (10-cm.) strips of 1-inch (2.5-cm.) strapping are laid across the incision, and then three or four layers of gauze covering the line of suture. This is covered by a sheet of plaster 5 by 7 in. (12.5 by 17.5 cm.) laid over the abdomen. A band of 3-inch (7.5-cm.) strapping is placed smoothly along the top of the sheet of plaster and running a short way round the flank. The dressing is not moved until the fifth to seventh morning. When the abdomen is drained through the lower angle of the wound a few extra layers of gauze are placed over the tube and the lower edge of the plaster and kept in place with strapping and a split "T" bandage. After vaginal operations no form of tampon or even drain is inserted; the vulva is covered by a pad held with a "T" bandage. I mention these details to emphasize the fact that I take no precautions against rupture of the scar; in fact the suture material used is the least durable type. My objection to tension sutures and clips is that they cause pain in the skin if they receive the least traction or displacement, and this inhibits movement. An abdominal binder is used for only twelve hours while the patient is unconscious and has to be moved; it is merely to prevent the strapping being displaced before adhering firmly.

Position After Operation.—When the patient leaves the table she is put on the trolley in exactly the same position as she will be placed in bed—that is, in complete flexion on her side.

She is lifted into bed lying on one or other side; her hips are pulled well out to the side of the bed, her shoulders are in about the middle line of the bed, her thighs and knees are flexed, the upper knee higher than the lower. Her lower shoulder is slightly posterior to the spine, so that the whole body has a tendency to fall over into a prone position. The arms are flexed in front of the body, and they and the flexed knees prevent pronation. The head is well flexed forward; it rests on a full pillow which is not under the shoulders, and the side of the face lies on the pillow so that the mouth is slightly dependent. The patient is left in this position, and need be only casually watched until the deep anaesthesia begins to pass off.

When it is noticed that she is beginning to move a nurse should stand by, and if the patient vomits she has only to place a hand on the upper shoulder so as to direct any movement forward. All vomitus will be ejected and flow out of the mouth

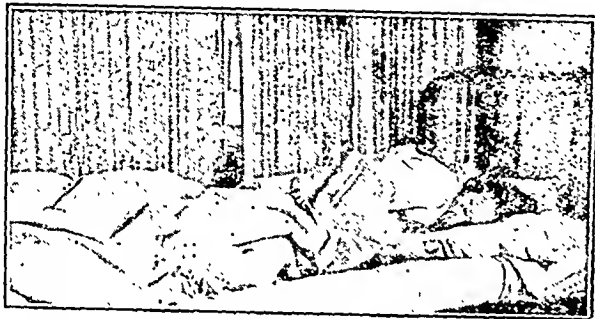


FIG. 1.—Position of patient when returned to bed. Lateral decubitus; limbs flexed; upper knee flexed and forward.

owing to its dependent position, and thus keep the airways clear; and as the patient returns more to consciousness she instinctively raises her head and shoulders and turns more laterally to aid the act. In due time she will begin to roll over towards her back, and if left alone will end by turning her shoulders but not her hips. She must not be allowed to remain in this twisted position, as it results in painful groups of stiff muscles which are a most productive factor in the subsequent disinclination to move. The nurse should go behind her and tell her distinctly and repeatedly, "Turn over; right over on the other side"; at the same time pushing the hips. When the patient responds the nurse goes round the bed and, telling her to lift her hips out to that side of the bed, assists her in doing so, settles her shoulders and head, draws the pillow in front of the face, thus placing her in the lateral flexed position opposite to that in which she was returned to bed. The patient settles down again to peaceful sleep. This may have to be repeated two or three times in the course of the next few hours, after which she is sufficiently awake not to adopt distorted positions. If she tends to lie flat on her back, she should not be allowed to remain so for long but be told to turn on her side and get comfortable, and she will generally respond and herself assist in being moved. Urination and sedatives will be referred to later.

Day-to-day Progress

First Day.—During the first day little need be done with a patient who is co-operative; she has probably already been out of bed. In the morning she is asked to sit up in bed, and is assisted and shown how to do so properly. She gets into comfortable relaxed positions, moves up on her pillows, or props herself laterally on her elbows to take drinks from her bedside table. She frequently through the day partly sits up, with extra pillows, for short periods, but spends most of the time lying down. She is allowed to move and twist about in bed as much as she likes, and requires nothing further than not to be told, "Don't: you must not do that."

In the case of the apprehensive patient, the fear of doing harm is far more the inhibiting cause than pain. Constant reassurance must be given on this point. When she adopts distorted postures she must be moved out of them and to some extent coerced to assist herself. The primary debility of the patient is not a governing factor but only a limiting factor in the duration of voluntary effort, and many of the most debili-

tated patients are the most co-operative. I recently had a case of profound and continuing uterine haemorrhage needing immediate anaesthesia and control at 9 p.m. Next morning I got the patient to sit up in bed of herself—just up and down again; she felt giddy and her head swam; but she continued to sit up and go down again through the day, and next day got out of



FIG. 2.—First morning after operation for repair of complete laceration of perineum. Patient had been out of bed on the first night.

bed to urinate. A week after operation a blood count showed R.B.C. 1,250,000, Hb 20%; but during that time she was out of bed and even sat up a few times for 15 or 20 minutes in a chair.

Second Day.—With the co-operative patient the regimen is usually well established during the second day; in the majority of instances she has already been out of bed, even if only to stand for half a minute. She is asked to sit up in bed, and if she has not done so or does not do so properly she is shown how. The sister is on duty in hospital and in private homes I visit in the morning; but even in hospital this has often to await my arrival. It is surprising how often it is necessary to teach even the most willing patient. This is usually and is better done on the first day, and should not be deferred beyond the second day. Sitting up should be done in the following way.

All impedimenta are removed; nothing should be left except the head pillows. The bedclothes are turned down to the hips. An arm is put behind and round the patient's shoulders, taking their weight, and she is asked to assist herself to sit up. She invariably has to be told that she must ease the weight of her shoulders on her arms and draw her body upwards in the bed. When partly up she is firmly supported, and told to get her hands on the bed behind her and while straightening her arms to draw her bottom up to her hands. She probably attains a vertical position of the body with the spine extended and rigid and the arms acting as props. She is now told to put her arms out in front of her and to lean forward. She will ultimately do so, and thus allow her whole spine to flex, her shoulders to drop, and will sit easily balanced. She immediately experiences a sense of relief and readily admits it, whether she has had a laparotomy or a vaginal or perineal operation, even though in the case of the last she has just before been saying that the site of operation is too sore to sit upon. The explanation of this is that until a position of body balance with relaxed muscles is attained the recti, and the levator muscles to counterbalance them, are in a state of tension which causes constant painful traction on the wounded tissues even when the patient is lying down. She should remain sitting for a few minutes with her knees partly flexed and

etting her thighs fall into abduction. This position is entirely harmless in either abdominal or perineal operations. She then lies down again, and often needs to be told that in doing this she should put both arms to one or other side and take the weight of her shoulders on them while sliding her buttocks backwards to the opposite side of the bed. Once complete flexion of the spine has been obtained the semiconscious *en-garde* tension of the muscles will pass off and they will remain relaxed and the patient become voluntarily mobile, subsequently sitting up for longer if not interdicted.

Subsequent Days.—From the third day the patient moves about in bed as freely as she wishes, leans out to her side locker, turns on her elbows and side or sits up for meals, and gets out



FIG. 3

FIG. 4

FIG. 3.—Third morning after salpingo-oophorectomy and the breaking-down of chronic abdomino-pelvic adhesions. The patient had been sitting up and took the cup and saucer at arm's length, but leant back as the photograph required a time exposure.

FIG. 4.—Same patient as in Fig. 3. Seventh day: dinner at the common table, with other patients.

of bed to urinate and defaecate. Incidentally, she has been doing the last all along. On the fourth or fifth day she is allowed to sit up for half an hour several times through the day, and does her own toilet sitting up in bed.

During the second week patients are in and out of bed constantly through the day, sit up for an hour or so, and walk about the ward, and towards the end of the week are up most of the day. They go to the lavatory to do their toilet and have baths from the ninth or tenth day. Small failures of skin union do not prevent this.

Patients do not dress fully until the day before leaving hospital—about the fourteenth day. They are carefully instructed, more particularly if they are going to stay with friends, that they are to get up at the ordinary time, wash and partially dress, have their breakfasts preferably out of bed, and attend to their bowels immediately after; then lie down and rest for an hour or so before coming downstairs. They are to remain up for meals, lie down on their beds at least once for a long rest in the afternoon, and go to bed shortly after their last meal. They are advised to move about actively and quickly for short spells, not



FIG. 5.—Eighth day. Sitting: case of radical cure of prolapse. Standing: case of radical cure of prolapse with vaginal hysterectomy. High colpoperineorrhaphy had been done in both.

to crawl. Those who are in the habit of riding bicycles may resume this activity after a month. The essence of management in early convalescence is to obtain active muscle exercise of the whole body all through the day but never to continue beyond the least feeling of fatigue.

Other Aspects of Nursing Care

Post-operative Sedatives.—Sedatives should not be given until the patient is completely round from the anaesthetic and premedication. Complaints of general discomfort are not an indication for sedatives but for the adoption of restful positions or the elimination of distressful ones. When the patient begins to complain of definite pain in the actual site of operation is soon enough for sedatives, and this is usually not earlier than five to eight hours after operation. They may be repeated once or even twice through the first night and for the next couple of nights, but are better omitted during the daytime. After that hypnotics are preferable at night, but should be dropped as soon as possible and the patient persuaded to try to sleep without them.

Urination.—In seven to nine hours—that is, shortly before settling for the night—the patient is asked to pass urine, and is assisted to sit up fully balanced on the bed-pan but preferably to get out of bed to the night-chair, which the majority do. If urination fails, a catheter is passed without further delay. There is always enough urine to void if spasmodic inhibition is not present, and it is much better to use the catheter than allow any degree of over-distension to develop, as this only adds an additional and potent cause of prolonged inability to pass urine. In the early morning, and then four times at regular intervals in the 24 hours, the same procedure is followed until the act is spontaneous, after which there is never any relapse. The catheter is not often needed more than three or four times, and very rarely after the bowels act. I asked the sister specifically about this in connexion with my colleagues' cases, and she replied, "Oh, yes, they nearly all get out to the night-chair the first evening; it saves so much trouble, and the catheter is such a worry when it has to be continued."

Bowel Action.—One ounce (28.4 ml.) of liquid paraffin is given on the second and third days, and the patient tries to have a bowel action on the night-chair immediately after breakfast each day. Five or ten minutes after finishing breakfast is the fixed time for the effort every day. If on the third day there has been no result, but there is evidence of intestinal activity, a small enema is given and evacuated on the night-chair; when there is no sign of intestinal movement a mild laxative, such as one or two pill. alophen, is taken on the third night, and repeated any night after the morning effort has failed. The majority respond to the paraffin with or without the enema, and only occasionally require a laxative. The essential factor is the strict observance of the "immediately after breakfast" time table.

Bed-rests.—No patient is ever returned to bed and placed on a bed-rest, as such a position for an unconscious flaccid patient, or during the first few days for one who is feeling poorly and is debilitated, results in sagging with an excessive and painful lumbar hump which increases immobility. If after the first few days a patient who is active likes to sit up for some time a bed-rest does no harm, but pillows are better as they can be avoided or pushed out of bed when she wishes to lie down.

Pulmonary Embolus

I have never had a death from, nor even symptoms suggestive of, pulmonary embolus after operation. It is difficult to believe that this is merely luck. Admittedly my operative work has been relatively small, but in the past 25 years it includes over 700 hysterectomies and should have given scope for the occurrence of a few cases. In the only three post-mortem specimens I remember seeing, the clot had formed in the pulmonary artery and extended into a branch; its proximal end had become free and been carried into the other branch, thus blocking the bifurcation and affecting a very large area of lung. On the other hand, considerable areas of lung are found infarcted at necropsies on cases that did not at any time show symptoms of embolism and where no clotting is found in the pulmonary vessels; therefore it must be accepted that the embolus travelled from veins distal to the heart. I believe the former is what occurs in practically all fatal cases, and the probability of an embolus large enough to be fatal being transmitted through the heart is negligible. I may be wrong, but it is upon this belief that I have based my treatment.

In 1923 I wrote: "There is no apparent means of anticipating the accident, nor need any measures be taken to prevent it in a normal case. In a septic case it is rather in the nature of pyaemia" (FitzGibbon, 1923b). In 1937 I added: "Embolus occurs most often in cases that exhibit marked debility and maintain a persistent immobile decubitus." There is no condition that entails this, not even severe haemorrhage after the first 24 hours. The immobility promotes coagulation of blood in the vena cava, right heart, and pulmonary arteries, and the clot is dislodged by some simple action. Treatment is essentially by prevention, and this is effected by promoting circulation and speeding up the rate of the blood-flow by active movement; but movement has often to be insisted upon" (FitzGibbon, 1937). I have nothing further to add to what I have already written, nor grounds for modifying my beliefs or the methods I have long practised.

Thrombophlebitis and Thrombosed Veins in Leg

The treatment of venous thrombosis is based on the same views as those regarding the cause of embolus. In 1923 I wrote: "Thrombophlebitis is always due to infection, and treatment is directed towards the causative condition. When the acute stage of the infection is passed massage does good, but movement should be encouraged" (FitzGibbon, 1923b); and in 1937 I said: "Earlier recovery is promoted by allowing the patient to get up and encouraging active use of the limb as soon as the primary pain has passed" (FitzGibbon, 1937). As for thrombosed veins in the limbs I said, "The condition is unimportant; there is no tendency to embolus." The treatment of thrombosis I have adopted all my life I began in 1901 for two cases of post-typhoid thrombosis with fluctuating temperatures that did not improve with rest. I got the men out of bed to sit in chairs, and after a few days they were moved out of doors. Their temperatures settled, and they were then encouraged to stand and walk about; in a few weeks they were able to follow the routine of the convalescent camp.

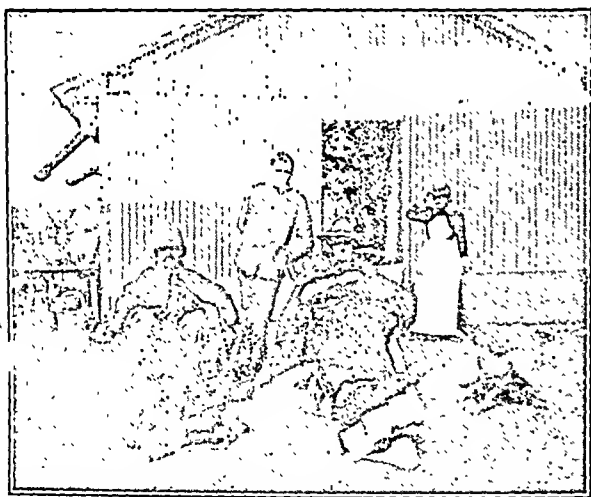


FIG. 6.—Two cases (in 1901) of post-typhoid thrombosis, with high temperature persisting into the fifth and sixth weeks.

I completely ignore the limb beyond placing a cage over it if the bedclothes inhibit movement, or putting a pad over a painful surface vein; and in 24 hours, when the primary pain, if there has been any, has eased, the patients are got to sit in chairs several times each day, to work the limb and walk about. I have never adopted massage, as the benefit obtained cannot compare with that from active muscular action. I can find records of only two cases delayed in hospital by thrombosis in the legs or thighs, and neither was for longer than ten days.

Conclusion

When I am asked if there are any contraindications to active movement I answer that there are absolutely none. The one essential I demand in all operations is complete haemostasis, obtained by direct ligation of the bleeding-point. If an area is moist, the bleeding-point must be found and ligated before that area is covered; or if it has been closed and oozes it must be

opened up and the bleeding-point found and tied. Bleeding must not be controlled by tampon. I am not a believer in post-operative or secondary deferred shock. There often is a profound post-anaesthetic depression, especially if there is nausea, but this always passes off and does not recur, although it may cause anxiety and call for mild restorative measures; and I like to be able to say with certainty that the depression is not due to continued bleeding or renewed loss of blood consequent upon the recovery of the blood pressure as the effects of anaesthesia pass off.

Figs. 1-5 are taken from photographs of the first four patients operated upon after starting to write the paper.

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INABILITY TO WORK IN A TROPICAL CLIMATE

BY

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This paper is a report on Royal Air Force personnel who were medically boarded during the twelve months October, 1944, to September, 1945, at a station in India and found to require transfer home.

The sources from which patients came to the medical board were (1) the R.A.F. station itself, and (2) a group of Army hospitals in the vicinity in which R.A.F. as well as Army patients were treated. The R.A.F. station had an average strength of approximately 3,000 to 4,000 British airmen, although the numbers varied considerably from week to week, and occasionally reached 5,000. The Army hospitals contained approximately 6,000 beds and were equipped to deal with all types of cases. R.A.F. patients were admitted from the R.A.F. station and from other parts of South-East Asia, particularly the "forward areas"—i.e., Burma and Bengal. The total number of R.A.F. admissions was 2,626, of which 1,359 were from the local units composing the R.A.F. station and 1,267 from other units, mainly in the "forward areas."

Ground staffs were dealt with principally; air-crew personnel usually attended other centres. In the series reported only 22 of the 373 men medically boarded were air-crew personnel. Cases of pulmonary tuberculosis were not boarded at the centre in question; only 4 such cases passed through the hospitals during the period under review.

It must be remembered that invaliding home from South-East Asia did not necessarily mean invaliding from the Service. A considerable number of those found unfit for duty in South-East Asia were regarded as fit for home service. Generally speaking the standard set was that those likely to require over three months' in-patient treatment were recommended for repatriation. Of the 373 men returned to the United Kingdom only 60, of whom 18 had had injuries, were considered to require transfer by hospital ship. The remainder were deemed fit to proceed by normal trooping arrangements, even though some medical treatment might be required *en route*.

The ages of the men varied from 18 to 47, the majority being between 20 and 30 (see Table I). Most of them had been in the

TABLE I.—Age Distribution of Cases Recommended for Transfer to United Kingdom

Age:	18-19	20-24	25-29	30-34	35-39	40-44	45 and Over	Total
Number	2	167	68	60	48	25	3	373

R.A.F. for between 2 and 5 years, although one had only 9 months' service and one had 25 years', their length of service overseas varied from 2 months to 51 months at the time of appearing before the medical board. Table II gives the numbers in each six-monthly period of overseas service for all cases and

length of service in South-East Asia was between 3 and 47 months—average 18 months. It will be seen that many had been able to carry on for some time, but those who required boarding within a year of arrival in India were very poor specimens indeed.

An attempt has been made to discover the precipitating factor in each case, and the results are given in Table IV. It is not

TABLE IV.—Principal Precipitating Factors in 86 Cases of Anxiety Neurosis

"Domestic" stresses	43
Separation from family	8
Family worries, near relations ill, in danger from air raids, in financial difficulties, etc.	13
Quarrel with family	3
Wife unfaithful and pregnant by another man	8
Wife unfaithful	8
Patient responsible for an illegitimate pregnancy	3
"Service" stresses	23
Discomforts of overseas service	19
Active service (stress in action)	2
Flying	2
"Personal" stresses	5
Following injury in an accident	3
Repeated organic illness	1
Worry through being accidental cause of another's death	1
No principal precipitating factor discovered	15

suggested that the individual's constitutional predisposition is not primarily responsible for the condition. (In 44 cases a history of neurotic traits in childhood or adolescence was admitted.) When, however, the history showed the presence of a stress connected with the onset of symptoms, this was regarded as the precipitating factor. The most important precipitating factors appear to be family worries and overseas service. The importance of harmonious relations with and reassuring news from home in its effect on the morale of the Serviceman overseas can thus be seen. In addition, tropical service can be particularly difficult, especially for other ranks, with anxiety concerning tropical diseases, the effects of heat, and the dislike of the inhabitants and their customs and habits. The symptoms complained of by those with anxiety neurosis were nervousness, headache, inability to concentrate, and feeling depressed. In 6 suicide was threatened, and a few had symptoms of insomnia, dyspepsia, and palpitation.

Other Psychological Disorders

There were 33 cases diagnosed as hysteria. The maximum length of service was 8 years 6 months and the minimum 1 year and 5 months. The length of service in South-East Asia varied between 4 and 40 months. The predisposing cause in all cases appeared to be a subconscious desire to return home. In the majority the symptoms were of a sensory type. Details are given in Table V.

TABLE V.—Principal Symptoms in 33 Cases of Hysteria

aches, depression, and	14	Somnambulism	1
izziness	6	Fugues	2
digestion or abdominal pain	4	Stammer	2
ains or tingling in limbs	1	Hysterical gait, with stammer	1
Skin rash	1	Weakness of shoulder	1
"Blackouts"	1		

The 2 men with obsessional neurosis had been nervous and worrying, though conscientious, individuals all their life. They were overcome by the responsibilities of their duties. One was an officer, the other an armourer worrying lest he let down his pilot.

The psychotics consisted of 2 cases of melancholia, 5 of simple schizophrenia, 5 of hebephrenic schizophrenia, 1 of the katatonic type, and 2 of the paranoid variety. They are chiefly remarkable for the length of service—over 2 years 9 months in all cases, and 5 years in most. They are divided into two groups on overseas service; 8 required invaliding within 12 months, while 7 carried on for over 2 years.

Among the 11 cases of psychopathic personality were 2 practising passive homosexuals. The remainder consisted of 5 men whose Service careers showed that they had been slovenly and inefficient no matter what duties, however simple, they were given to do; 2 who showed depression and lack of control of their bad tempers; and 2, diagnosed as psychopathic personality (emotional abnormality type), whose presenting symptoms were

nervousness and a stammer. On the whole these cases are chiefly remarkable for the length of time that the patients continued to serve before admission to hospital and invaliding became necessary.

Summary

The causes during the year October, 1944, to September, 1945, of invaliding from South-East Asia of 373 members of the Royal Air Force are reviewed.

The principal causes were found to be psychiatric, anxiety neurosis being the most frequent.

Domestic worries were of special importance as precipitating factors in the cases of anxiety neurosis. The stress of Service life in a tropical climate was the next most important.

A large number of the "psychiatric" patients had continued to serve for quite long periods before repatriation became necessary.

Injuries were an important cause of invaliding, but enemy action accounted for very few of them.

The 5 patients with chronic suppurative otitis media had all served overseas for more than a year before being boarded.

Skin diseases were an important cause of invaliding, especially soon after arrival in South-East Asia.

Malaria was responsible for very few cases, probably due to the use of mepacrine suppressive-therapy.

Chronic diarrhoea, amoebiasis, and sprue were important causes of invaliding. The majority of cases originated in the "forward areas," where the living conditions were poorer.

THE FAECES IN SPRUE

BY

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AND

P. TRINDER

During an investigation on tropical sprue carried out in Poona by the fat-balance technique we have had the opportunity of observing more than 500 four-day specimens of sprue stools. The quantitative fat-balance results have been discussed elsewhere, but routine examination of this large number of specimens has brought to our notice certain characteristics of the sprue stool which have received comparatively little attention but which have an important bearing on diagnosis. The purpose of this paper is to describe these findings, and to discuss their significance in relation to the detection of steatorrhoea.

Material and Methods

All the stool specimens came from patients who were shown by fat-balance experiment to have an impaired absorption of fat. The patients had all lost weight significantly, and many of them showed tongue signs and complained of flatulence, and of "diarrhoea" in a general sense. Their illness had in all cases appeared while they were on tropical service. They were all on a diet of known fat content—either 66 g. or 96 g. of fat per day—and stools were collected quantitatively over four-day periods in large tins. Formalin was necessary as a preservative to prevent growth of moulds; 100 ml. of 5% formalin was used for each period. The stools were weighed in bulk, and aliquots dried for estimation of total fat, fatty acids, and soaps. The water content and non-fat dry residue were calculated from weighings as described below. Indicator strips were used for the approximate determination of pH.

General Appearance of Sprue Stools

The stools in sprue are usually described as pale, bulky, and fatty; when patients are on a controlled diet of moderate fat content most of their stools conform well to this description. They are well formed, and the cut surface has a distinct sheen from the presence of fatty acid crystals. Such stools are easy to recognize, and at once raise the suspicion of sprue. Two important deviations from the "typical sprue stool" need special mention, as they are common, and may be misleading if undue reliance is placed on the general appearance of the stool.

(1) Many stools of high fat content, as shown by analysis, are well pigmented and not unduly bulky; in an earlier series no less than half the stools with a fat content of more than 25% of the

dry weight were found to be well coloured (Black and Fourman, 1945). Pallor in the sprue stool is generally attributed to the reduction of stercobilin to stercobilinogen, which is colourless. The ultimate cause of this reduction is not known, but it seems not to be closely related to the fat content of the stools; those containing similar amounts of fat may be very differently coloured, and even in a single unmixed stool part may be pale and part pigmented. On exposure to light and air pale stools darken in colour. A contributory cause of pallor in the sprue stool may be simple dilution of pigment by the increased bulk of fat.

(2) Many patients with sprue give a history of one or more attacks of watery diarrhoea, which may occasion considerable loss of water and salt (Black, 1946); in such a phase the diagnosis of "clinical dysentery" is often made. In the tropics some of these diarrhoeic episodes may represent an actual intercurrent dysenteric infection; but the characteristic exudate of bacillary dysentery is found only seldom. In spite of this, sulphaguanidine has a therapeutic effect in this type of diarrhoea; it is possible that sulphonamide-sensitive organisms which are normally harmless commensals may become pathogenic in an abnormal alimentary tract. Not only sulphaguanidine, but also parenteral liver extract in adequate dosage, have been found to abort diarrhoea, suggesting that the resistance of the bowel wall to infection may be concerned in this type of diarrhoea, as well as the character of the intestinal flora.

Fats in the Sprue Stool

All the patients in the series were excreting in the stools an amount of fat corresponding to more than 10% of the dietary fat. It occasionally happened that the fat content of the dry stool was less than 25%—i.e., within the generally accepted normal limit; but the total daily fat excretion was more than 10 g. The fat content of any given stool obviously depends not only on the amount of fat in the diet but also on the "high residue" or "low residue" character of the diet, which may be quite independent of its fat content. The effect of the fat content of the diet was well illustrated by two patients with severe sprue, whose stools became normal when they were put on a diet containing less than 10 g. of fat per day.

Considerable attention has been paid in the past to the degree of "splitting" of the fat in the sprue stool; it has been found that the ratio of split to unsplit fat usually exceeds the normal ratio of 3 or 4 to 1, although occasional stools have been found to contain a larger amount of unsplit fat. The fact that the split fat in the sprue stool forms a higher proportion of the total fat than in normal stools has sometimes been taken to imply a defect in the absorption of split as opposed to unsplit fat; but this neglects the possibility of lipase action in the colon, or in the interval between passage of the stool and analysis. Bloor (1943) states that normal stools are capable of partially splitting neutral fat which is added to them; we have found that this property is shared by the sprue stool, and is in fact present in higher degree than in the normal stool, probably because of the emulsifying action of the large amount of soap in the sprue stool. The addition of sulphathiazole and penicillin did not inhibit the splitting of margarine by a number of sprue stools, so the lipolysis is probably not bacterial; saturated copper sulphate added in a proportion of 5% partly inhibited splitting. In view of the strong lipolytic activity of sprue stools *in vitro*, it does not seem justifiable to draw conclusions as to the relative absorption of split and unsplit fat from the composition of the stools. The high proportion of split fat in the sprue stool is best explained on the basis that unsaponifiable fat is the same in normals and in sprue patients, but the amount of saponifiable fat is much increased in sprue.

We have found that a high proportion of the fat in the sprue stool is present in the form of soaps, in spite of the fact that nearly all the stools were acid in reaction. Table I shows the

TABLE I.—Relationship between Proportion of Split Fat in the Dry Stool and of Split Fat found in the Form of Soap

Split Fat (% of dry wt.)	No. of Stools with Soap Split Fat of:			Total No. of Stools
	<60%	60-80%	>80%	
20-40	5	11	10	26
40-60	1	14	5	20

percentage of the split fat occurring as soaps, grouped in relation to the total percentage of split fat in 45 stools from ten

patients with sprue. The proportion of split fat present as soaps was over 60% in all but six stools. It can be seen from the table that a high proportion of the fat present in stools is in the soap form, irrespective of whether their total fat content is high or low; it follows that fixation of electrolytes in the form of soaps will increase as the total fat content of the stools increases. A considerable part of the soap in the sprue stool is insoluble both in water and in ether, and on analysis is found to contain calcium. The rest of the soap is water-soluble, and we found that the stools which contained most soap were also the most alkaline in reaction (Table II).

TABLE II.—Stools Grouped according to pH and Split Fat Percentage (The figures represent the number of stools in each category)

Split Fat (% of dry stool)	pH 6.2	pH 6.2-	pH 6.6-	pH 7.0-	Total No. of Stools
<30	11	11	12	6	40
>30	5	6	17	23	51
Total	16	17	29	29	91

pH is higher in the more fatty stools; χ^2 13.36, $P < 0.01$

The reaction of 91 stools, not treated with formalin, ranged from pH 5.8 to pH 7.4, the average being 6.7. Table II shows the pH values grouped in relation to the percentage of split fat in the dried stool; the pH is significantly higher in the more fatty stools, which contain the greatest amount of soap. These data on soap content and pH suggest that the well-known irritant character of very fatty stools is due not to excessive acidity but to a high content of soluble soaps. The practice of giving calcium salts to check diarrhoea has some theoretical justification in that it increases the proportion of insoluble soaps at the expense of the irritant soluble soaps.

Non-fat Dry Residue

When the total fat in a stool is subtracted from the total dry weight the amount of dry stool other than the fat (N.F.D.R.) is obtained. This is largely composed of bacteria, but it also contains unabsorbed food residues from dietary constituents other than fat. On a controlled diet the N.F.D.R. should remain constant, provided there are no changes either in the bacterial flora or in the absorption of substances other than fat. It was found, however, that after treatment by liver and yeast extract many, but not all, sprue patients showed a fall in the N.F.D.R. as their stools became less fatty. Our data do not indicate whether this fall in N.F.D.R. was caused by improved absorption of non-fatty substances or by there being fewer bacteria in the stools. From a practical point of view this fall in N.F.D.R. is important, for if percentage fat estimations are used to follow progress a real improvement in fat absorption may be masked by a concomitant fall in the N.F.D.R., the percentage fat in the dried stool remaining the same although the total fat excretion has fallen.

Water Content of Stools

With gross variations in steatorrhoea such as occur with treatment in sprue, a fair measure of the water content of the stool cannot be obtained simply from the ratio of dry to wet stool weight, for the fatty part of the stool is not wetted. The "percentage water content" used is therefore derived from (wet wt. of stool-fat) and (dry wt. of stool-fat). Table III shows the average figures for 66 stools taken at different times

TABLE III.—Relationship between Fat and Water Content of Stools

Fat (% of dry wt.)	Mean Water Content (% of non-fat wet wt.)	Standard Deviation of Mean
<30	76.9	±6.45
30-40	79.95	±4.19
40-50	81.5	±6.44

The differences between the means are significant; $P < 0.02$

from eleven patients with sprue and grouped according to their percentage fat content. Although the series was limited to formed stools, the stools of higher fat content have also a higher percentage of water. As pointed out above, many patients with sprue have a higher non-fat dry residue when

steatorrhoea is gross, so that the figures just given minimize rather than exaggerate the total amount of water lost in the more fatty stools.

Discussion

The diagnosis of sprue very often depends largely on the demonstration of steatorrhoea, for sprue may closely resemble other conditions as diverse as pernicious anaemia, pellagra, and the dysenteric disorders, or may even present with no other symptom than loss of weight. In the majority of severe cases of sprue the percentage of fat in the dried stool is unequivocally raised—upwards of 30% ; but diagnostic difficulty seldom arises in the typical severe case. In patients with mild or atypical sprue, however, the percentage fat content of the dried stool may be within normal limits, especially if the patient is not taking much fat in his diet ; many patients with early sprue have learnt to avoid fatty foods. In order to demonstrate steatorrhoea in such patients it is necessary to put them on a diet of limited fat content (90–100 g. per day), and to collect the total stool for a period of at least 24 hours, and preferably four days, demarcated by carmine markers. The total amount of fat excreted should not exceed 10 g. per day in a normal person. In the absence of facilities for collecting and weighing stools, a percentage estimation of the fat in a mixed 24-hour stool has more value than percentage fat estimation on an isolated stool specimen, for we have repeatedly observed that individual stools from patients with steatorrhoea may be normal both in appearance and in fat content. If a percentage estimation of fat is to be used a "high residue" diet is inadmissible, for minor degrees of steatorrhoea will not be apparent if the non-fat dry residue is also high. For scientific work on fat excretion longer periods are necessary, as the variation between successive short periods is considerable ; twelve days probably represents a minimum for this type of work, but is obviously impracticable in routine diagnosis, for which a four-day period is a suitable compromise between the desirable and the attainable.

Summary

Although the majority of stools from patients with tropical sprue are pale, bulky, and formed, two other types of stool are found often enough to cause difficulty in diagnosis. These types are a well-pigmented formed stool, which is found to be fatty only on actual analysis ; and copious watery stools.

A high proportion of the fat in the sprue stool is in the form of soaps, both soluble and insoluble ; the irritant character of very fatty stools is due to the presence of soluble soaps, and not to excessive acidity.

For the detection of minor degrees of steatorrhoea it is necessary to give a diet containing about 100 g. of fat per day, and to collect the stools over a known period ; percentage fat estimation alone may be misleading, because of variation in fat content from stool to stool, and also because a high-residue diet will lead to low values for the fat percentage in the dried stool.

We are grateful to the Director of Medical Services in India for permission to publish this work, which formed part of a G.H.Q.(I.) investigation on tropical sprue.

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A new scheme for the training of nursery workers in Scotland is being devised, and details have been sent out to local authorities and education authorities in a circular issued jointly by the Department of Health and the Scottish Education Department. This says that the Secretary of State (Mr. Joseph Westwood) has considered the necessity of ensuring an adequate flow of properly trained nursery workers in nurseries, nursery schools, and children's homes of all kinds. There is likely to be an increasing need for such workers and there should be uniformity in their training. Mr. Westwood's view is that a training course for such workers would also form a useful preliminary to further training should the student, for example, wish to proceed to child welfare work or to hospital nursing. The training in Scotland has, up to now, consisted almost entirely of that sponsored by the National Society of Children's Nurseries, and great credit is due to that society for its pioneer work. The time has come, however, to institute, in place of existing arrangements, a Scottish nursery nurse's certificate to be awarded to girls in nurseries of all types who have followed a specially designed course of practical and theoretical training and have passed an examination conducted by a Nursery Nurses Examination Board. Such a Board has accordingly been set up.

Medical Memoranda

Unilateral Micromastia associated with Abnormalities of Musculature of Chest Wall on Same Side

Although this condition is referred to in most textbooks surgery, only a few cases have been recorded in the literature. It must be distinguished from amastia, in which there is complete absence of breast tissue, although "a rudimentary nipple is usually present."

CASE REPORT

A married woman aged 37 was admitted to the City Mental Hospital, Nottingham, as a voluntary patient in November, 1945, suffering from reactive depression. Physical examination revealed that her right breast, nipple, and areola were in an undeveloped condition (Fig. 1). A very small amount of breast tissue was palpable, and there were a few hairs arising from the periphery of the areola. The left breast, nipple, and areola were normal in appearance. The anterior fold of the right axilla ran slightly upwards in the direction of the right sterno-clavicular joint, instead of inclining downwards in the usual way (Fig. 1). This was partly due to the undeveloped condition of the right breast but chiefly to the complete absence of the sterno-costal part of the right pectoralis major. The anterior fold of the axilla thus followed the line of the lower border of the clavicular part of the muscle. The pectoralis minor was present but was very poorly developed. The lateral aspect of the right side of the chest there was a shallow depression, with its centre approximately at the level of the 5th



FIG. 1

FIG. 2

rib. Over this area the chest wall was very thin, the percussion note being hyper-resonant. This was due to the apparently complete absence of the serratus anterior, as a result of which there was pronounced winging of the scapula on raising the arms horizontally in front of the body (Fig. 2). In addition, the latissimus dorsi on the right side was poorly developed. Finally, there was a prominent muscle belly extending from the region of the transverse processes of the fifth and sixth thoracic vertebrae to the medial border of the scapula (midway between the root of the spine and the inferior angle), the direction of its fibres being upwards and outwards (Fig. 2). It was apparently an anomalous lower part of the right trapezius. Its action was to pull the scapula forwards, medially, and downwards. No other abnormalities of the muscles of the chest wall were discovered. With the arms hanging loosely by the sides, the right scapula was displaced upwards and medially and rotated clockwise (i.e., when viewed from behind), this being due to the compensatory action of the intact muscles.

There were two other points of interest. First, the right breast did not lactate after either of the patient's two pregnancies, although it enlarged a little. (The left breast did lactate, but not adequately.) The second point concerned the patient's handedness. She was left-handed in using scissors, in picking up heavy objects, in ironing, and in eating with a spoon ; right-handed in writing and in eating with a knife and fork ; and ambidextrous as regards sewing. In this connexion it may be mentioned that her father was left-handed in all things and her younger son writes with his left hand. The muscles of her right arm were slightly smaller and slightly weaker than the corresponding ones of her left arm.

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The Belgrave Hospital for Children, Clapham Road, London, admitted 1,351 children to its wards last year, and 8,000 attended the out-patient department—a large increase in numbers. Arrangements are going forward for the amalgamation of the Belgrave Hospital and the Victoria Hospital for Children.

Reviews

ESSAYS ON HUMAN EVOLUTION

Essays on Human Evolution. By Sir Arthur Keith. (Pp. 224. 15s.) London: Watts and Co.

Is science now in a position to formulate the principles of ethics as Dr. C. H. Waddington recently maintained? Sir Arthur Keith answers this definitely in the negative. It may be recalled that in an earlier essay Sir Arthur drew attention to two strong and opposing forces in evolution, one the insistent demand for the enlargement of the unit; the other, the group consciousness of a community which restricts and isolates. The first tendency makes for internationalism, the second, for nationalism. In this volume he has considerably accentuated this distinction and, indeed, to some extent has modified his own position. For him now the evolutionary process is entirely severed from any ethical considerations whatever, carrying on its development in utter ruthlessness. Any ethical principles that come into being are due to developments in the consciousness of the community group. The author points out, however, that in all human institutions we find both tendencies at work: the "cosmical" and the ethical. In general we apply the cosmical to our enemies, the ethical to our own community. Nevertheless, if the interests of the group are threatened there is an immediate reversion to the cosmical attitude. In other words, we are all "bicodal" and any attempt to be logically entirely "unicodal" ends in disaster.

Naturally he discusses this particularly in relation to war. To adopt the unicodal system in wartime is to be overthrown, and much of civilization would disappear in the process. Incidentally, he rather withdraws from his much-criticized metaphor of "the pruning-hook of war." He points out, however in an interesting way, that the invader who follows the inhuman evolutionary path suffers the fate of absorption by the defeated. Where are now the Goths? They have been completely assimilated by the races they tried to destroy. There is much food for thought and also for controversy in these pages. Thus, to regard the Athenians as evolutionary failures because they subsequently sacrificed themselves on the altar of civilization seems to us to be misleading, for throughout all the centuries fresh inspiration has been repeatedly drawn from them. Can this be accounted failure?

By this book Sir Arthur Keith, who has already done such great service in the fields of anthropology, archaeology, and evolution, has increased our debt to him. W. L-B

NEUROPATHY AND DEFICIENCIES OF B VITAMINS

Avitaminosis y Sistema Nervioso. By F. Grande and M. Peraita. (Pp. 244. No price given.) Madrid-Barcelona: Editorial "Miguel Servet."

The Spanish Civil War produced nutritional deficiencies characterized by dermatological, mental, and neurological disorders. An extensive study of these conditions has been undertaken by Grande and Peraita and reported in their monograph. Out of 300 patients, approximately 100 suffered from serious pellagrous psychosis, and 100 showed characteristic pellagrous skin lesions. Only the remaining 100 patients, having distinct neurological disorders without cutaneous lesions, were systematically investigated. The majority of these cases were women of 40 years or above. The most frequent symptoms were paraesthesia of various kinds such as acroparaesthesia, pain dysaesthesia, fulgurating and lancinating pain, and paraesthetic sensations of wetness. Neurasthenic symptoms were present in 84%, while glossitis, alterations in gait, causalgic symptoms, and a feeling of cold were less frequent (54%). Optical retrobulbar neuritis, visual pseudoperceptions, disorders of micturition, intestinal disturbances, achromotrichia, trophic disorders of the skin, erythema pernio, hypohidrosis were less frequent.

The symptoms mentioned above are described in great detail. The extreme persistence of these sensations is stressed. The description recalls identical reports of Spillane and Scott, and Spillane from the Middle and Far East (*Lancet*, 1945, 2, 261, 317). The majority of patients had either normal or increased

ankle-jerks and knee-jerks. Pathological pyramidal reflexes and diminished responses were rarely observed. The symptoms were due to disorders in the sensory and neuro-vasomotor system of central or peripheral type. "Cold" paraesthesia was connected with a drop in skin temperature, established by careful thermo-electric measurements. The neurasthenic syndrome seemed to be connected with changes in the mesodiencephalon. The various symptoms could be grouped into distinct categories according to their intensity and localization, as has already been mentioned in a previous review of Peraita's work in our issue of Feb. 26, 1944. A careful comparison has been made between the pellagrous neuropathies and neuropathies in vitamin B₁ deficiency. The total absence of pareses, paralyses, or typical trophic disorders of the beriberi type was remarkable, and the authors conclude that the symptoms observed are different from those found in vitamin B₁ deficiency. Limited therapeutic trials with the B vitamins available did not establish quite clearly whether either nicotinic acid or vitamin B₁ was beneficial. Yeast preparations in amounts of 90-100 g. daily relieved the majority of the symptoms to a remarkable degree.

The connexion between neuropathies and B vitamins deserves the attention of nutritionists and biochemists. As Prof. Peters pointed out at a recent meeting of the Nutrition Society, the role of B vitamins in the metabolism of nervous tissue may prove a fruitful line of future research.

CAUSATION OF APPENDICITIS

The Causation of Appendicitis. By A. Rendle Short, M.D., B.S., F.R.C.S. (Pp. 79. 10s.) Bristol: John Wright and Sons. 1946.

One of the commonest questions put to the surgeon dealing with a case of appendicitis by both patients and relatives is, "What is it due to?" Many attempts have been made to provide a satisfactory scientific answer; for instance, over a quarter of a century ago Mr. Rendle Short published his observations on the subject; he has now elaborated his thesis and brought his statistics up to date in a small book. In brief he believes that there was a real and great increase in the incidence of appendicitis between 1895 and 1905 and that of all the numerous changes in the life of the community which occurred at this time, the most significant was the diminution, either relative or absolute, in the consumption of cellulose. It is the roughage value of the cellulose and not any particular chemical virtue with which he is concerned.

Whether one agrees or disagrees with the conclusions reached by the author, it must be allowed that he does not let any fanaticism warp his arguments, and he readily acknowledges that some of the statistics he produces do not support his contention or are capable of other interpretations. We were interested to find him quoting that inimitable master of scornful travesty, the late Dr. Charles Mercier, who put forward the theory that appendicitis was due to the abandonment of wig-wearing because there were no cases recorded from the days when wigs came in to the date when, except for judges, barristers, and Victorian bishops, they went out—and "who ever heard of appendicitis in a wigged bishop?" A clever skit on a type of specious deduction too frequently heard. But the fact that Mr. Rendle Short puts in this quotation shows that he appreciates, and steers clear of, such pitfalls. It would be idle to pretend that the reader will not be roused to criticism of many of the author's deductions—we found ourselves unconvinced by his conclusions—but therein lies the attraction of the book, which we can recommend unhesitatingly to all interested in the aetiology of this common disease—and who in medicine is not?

HYPNOANALYSIS

Hypnoanalysis. By Lewis R. Wolberg, M.D., lecturer in psychiatry, New York Medical College. Foreword by A. Kardiner, M.D. (Pp. 342; 21s.) London: William Heinemann Medical Books. 1946.

Since the efflorescence of the Nancy School hypnotism has gradually receded in popularity among psychotherapists. Some of the more credulous of the public who enjoy the idea of magic still hanker after it, but it has come to be regarded as less scientific and therefore less worthy than the various analytic procedures. Recently, in the efforts to discover short cuts in analysis which will allow psychotherapy to be used in a greater number of patients, several workers have been again turning

their attention to hypnosis. The present work is a careful and honest effort to assess the advantages and limitations of the use of this method in conjunction with analysis. Its chief value lies in the uncovering of buried memories, but some of these which are very deeply repressed do not emerge even in the deepest hypnosis. The integration of these memories in the conscious personality is not always easy, but the author thinks that they can be reintegrated by such methods as crystal gazing in the more conscious state. The transference state is intensified by this method and (according to the author) can be more clearly understood than in the process of waking analysis. Hypnoanalytic procedures are well described and the whole theoretic considerations of the book are illustrated and built round the detailed description of the successful treatment of a schizophrenic personality.

This is a relatively new method of therapy, though founded on old theories and practices, and it certainly merits the study of those who wish to extend their therapeutic armamentarium and find new short cuts in their analytic technique.

ANATOMY OF THE EXTREMITIES

The Extremities. By Daniel P. Quiring, Ph.D., Beatrice A. Boyle, Erna L. Boroush, M.A., and Bernardine Lufkin, A.B. (Pp. 117; 106 engravings; 14s.) London: Henry Kimpton. 1946.

This book marks a new departure in manuals of topographical applied anatomy. Its main purpose is to show diagrammatically the "motor points" of the muscles of the upper and lower limbs. The location of these points has been determined by observations on the response of muscles to electrical stimulation in a series of normal subjects. The work has been carried out by Prof. D. P. Quiring, Beatrice A. Boyle, Erna L. Boroush, and Bernardine Lufkin, in the Anatomy Division of the Cleveland Clinic, Ohio. The diagrams, based on original dissections, have legends giving the principal attachments, functions, nerve and arterial supply of each muscle. The muscles and skeletal parts are shown in outline, while the nerves and arteries supplying each muscle are shown at their point of entry into the muscle, and for a short distance inside and outside the muscle. This is of importance, because the position of the motor point usually corresponds fairly closely to the point of entry of the nerve into the muscle. Difficulties have naturally arisen in representing muscles in simple outline upon the flat surface of the paper, owing to certain muscles following a curved surface, such as the thoracic wall or shoulder—e.g., the serratus anterior and deltoid muscle. Attempts have been made to overcome these difficulties, with a certain measure of success, but it is obvious in the diagram representing the deltoid muscle that the outline of the shoulder viewed from behind has been utilized to indicate the outline of the muscle in front in place of the true anterior border, which otherwise could only have been represented in its proper position by an interrupted line.

The book as a whole clearly fulfils its purpose of indicating the position of the motor points of each muscle for use in the diagnosis and electrical treatment of muscular defects of the upper and lower limbs, and can be recommended as a reliable and handy work of reference.

Notes on Books

Diseases of the Breast, by C. F. GESCHICKTER (J. B. Lippincott Company; 72s.), covers the whole of the pathology and surgery of the breast from the point of view of the pathologist, and as such we believe it to be unique. The detailed description of the development of the breast itself and of the many pathological conditions which may arise is superb and could only be achieved by a life-time devoted to the subject. The surgical descriptions are adequate but have not quite the same character. A considerable part of the book is devoted to experimental work on the rat, and though the work is no doubt of great value its application to human disease must remain doubtful. To the surgeon who would make himself familiar with the whole complex subject of the pathology of breast tumours the volume would be invaluable.

Your Child—Your Future! by CHARLOTTE and EMIL LEITNER is published by Victor Gollancz, Ltd., at 1s. 6d. The authors have been working in the Cheltenham child guidance clinic and their little book may very well be recommended to parents ignorant of psychology and modern child guidance methods. It has the great merits of brevity, clarity, and cheapness. It is reasonably safe to say that there is nothing in it which should not

have been written, and the authors deserve credit for treating their subject entirely from the preventive point of view. Thus parents may learn from this book how to treat the child while it is normal, and it will not encourage them to think they know what to do when the child becomes abnormal. Many of them will need much more detail than is given here, and there are plenty of books to give them that; but this publication is so simple and short that the parent who says that he or she has not the time, inclination, or ability to read anything in the least abstruse can hardly complain if asked to study these 58 pages of good-sized type.

Public Health in the U.S.S.R., by Prof. NIKOLAI SEMASHKO, is one of the Soviet News Booklets published from 630, Grand Buildings, Trafalgar Square, London, W.C.2., price 1s. The author was Peoples Commissar of Health from 1918 to 1930 and is a member of the Medical Council of the Health Ministry. The constitution of the U.S.S.R. gives every citizen the right to maintenance in old age and in sickness or loss of capacity for work, and the right to free medical attention. Effect is given to this by the widespread development of health resorts, holiday homes, sanatoria, factory clinics, polyclinics, hospitals, mother and child clinics, etc. Prof. Semashko says that the Soviet health service is now rapidly repairing the damage done by the war and planning its further development.

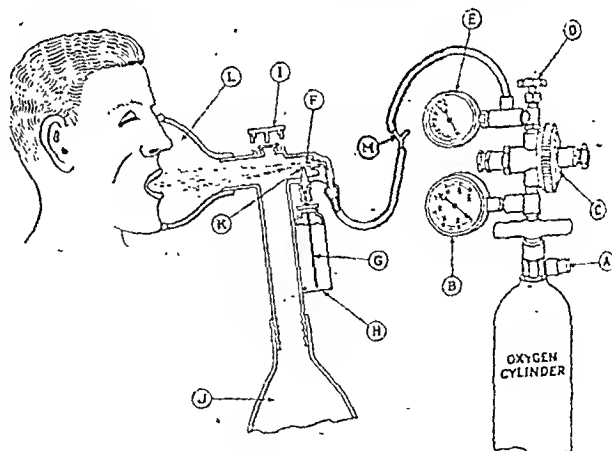
The new edition for 1946 of the *Directory of Guy's Men* is the first to appear since 1941. It is published at 5s. from the Gazette Office, Guy's Hospital, London Bridge, S.E.1. The first part contains the names, qualifications, and addresses of medical men, and the second gives particulars of those who are graduates and licentiates in dental surgery. There is also a bibliography of published writings by members of the staff of Guy's Hospital between July, 1940, and September, 1945.

Preparations and Appliances

A NEW PENICILLIN INHALER

Dr. L. CAPPER, late Resident Medical Officer, London Chest Hospital, writes:

The penicillin inhaler shown below has been in use at the London Chest Hospital for some months past. The results obtained with it have been satisfactory both clinically and bacteriologically, and it would appear that an effective concentration of penicillin can be maintained in the sputum by its use for far longer periods than has been the case with other inhalers which have been subjected to similar clinical tests. A clinical report of the cases which have been treated is to be published. The inhaler was made for us by the British Oxygen Co.



Oxygen at the rate of 6 litres per minute enters the inhaler at (F) from a cylinder fitted with the usual pressure gauge (B) and flowmeter (E). At (M) is inserted a Y-shaped glass connector which has one of its limbs open to the air. Thus the patient, by occluding the open limb with his finger during inspiration only, ensures that penicillin is not atomized during expiration. (H) is a standard penicillin bottle in which the requisite dose of penicillin dissolved in normal saline is placed and through its cap a 3-in. needle (G) is inserted. The needle fits on to a record-fitting jet (K). The inner aperture of this is of controlled size and through it the aerosol escapes into the face-mask (L). (I) is an expiratory valve and (J) a rebreathing bag so that the patient can keep the mask on his face throughout the whole duration of the inhalation.

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TRANSFUSION JAUNDICE

The possibility that certain apparently normal individuals might be carrying a hepatitis-producing agent in their blood was first reported in England in 1937 from two separate sources. In one instance the suspected blood product was measles convalescent serum,¹ and in the other yellow fever vaccine containing normal human serum.² These incidents unfortunately attracted little serious attention from the majority of medical men because so many had used human blood or blood products with apparently no resulting hepatitis, and the hepatitis from yellow fever vaccine was confused with the fact that the yellow fever virus itself affects the liver. The usually long interval of 60 to 150 days between inoculation and the onset of hepatitis also served to mask the possible relation between the two events, especially if the patient had moved to another locality in the interval.

The significance of these earlier observations was revealed when two large "epidemics" of jaundice followed the inoculation into Brazilians³ in 1940 and American troops⁴ in 1942 of certain batches of yellow fever vaccine containing human serum. These were followed in 1942 by "outbreaks" of jaundice in England among individuals who had received mumps convalescent plasma from apparently healthy donors,⁵ recipients of yellow fever vaccine containing pooled normal human serum from blood transfusion centres,⁶ and surgical patients transfused with pooled normal human serum.⁷ All these incidents had been related to pooled serum or plasma, but in 1943 Beeson⁸ in the U.S.A. reported 4 possible cases of the disease in individuals who had been transfused with whole blood. Further suspicious cases of this nature were recorded in England. In spite of this convincing evidence those attacking this problem found it difficult to impress the majority of the profession with its potential seriousness. This was partly due to the failure under air-raid and battle conditions to record on the case history the identifying number of the blood or blood products used. Thus, though suspicious individual cases were identified, it was impossible to relate them to a single source, especially when (epidemic) infective hepatitis was present in the same region. However, experimental work by MacCallum and Bauer,⁹ supported by observations of Bradley and his co-

workers,⁹ proved beyond doubt that certain batches of pooled human serum collected at blood transfusion depots may carry a hepatitis-producing agent of unknown origin. The part which healthy "carriers" play in the dissemination of this disease is not known, but the agent of homologous serum hepatitis has been found circulating in the blood 34 days after subcutaneous inoculation and 60 days before jaundice,¹⁰ and the agent of infective hepatitis has been found 3 days before the onset of symptoms.¹¹ Signs of liver damage have been found in symptomless contacts in an epidemic of infective hepatitis in an institution. Thus there would be ample opportunity for either of these agents to be introduced unknowingly from an apparently healthy donor into a supposedly normal pool of serum.

The position with regard to serum is clearer than it is with regard to hepatitis after transfusion with whole blood, but the conditions accompanying the latter tend to minimize greatly the possibility of such an occurrence. In a pool of serum the icterogenic agent present in one serum may survive pooling with 499 others to provide an icterogenic pool which may be injected into 500 recipients. By contrast a single bottle of whole blood will be used for only one recipient, who may not be susceptible to attack by the agent. In an attempt to find out the effect of the use of single donors of serum Loutit and Maunsell¹² recently injected each of 99 individual sera into an average of six normal recipients. No cases of homologous serum hepatitis were detected.

Though there had been sufficient reports to prove the existence of transfusion jaundice its general incidence was unknown. In 1944 Dr. Janet Vaughan and her colleagues at the North-West London Blood Supply Depot began an investigation, described elsewhere in this issue, to determine the incidence of homologous serum jaundice among the recipients of the 400 different pools of serum and plasma and 3,468 bottles of whole blood provided by their depot. Questionnaires were sent to recipients 5 months after their transfusion. There were 77 cases of jaundice among the 1,054 recipients of serum or plasma surviving and traceable 5 months after transfusion—an incidence of 7.3%. There were no deaths from acute necrosis of the liver among the 77 cases, nor were there any records of those traceable but not surviving the 5 months, having died from this disease. The icterogenicity of different batches varied considerably. The majority of icterogenic pools produced jaundice in only 1 or 2% of those transfused, but one small pool of 38 bottles gave rise to jaundice in 30% of the recipients. No cases of jaundice occurred among the 891 recipients of 2,273 bottles of blood who were surviving at the end of 5 months. There were also no cases among 876 non-transfused controls who had been in the same hospital wards at the same time as the transfused. Examination of hospital records of 1940-5 Service in-patients at an E.M.S. hospital reveals somewhat similar figures.¹³ There were 140 cases of jaundice among 1,396 injured or sick patients who were transfused and under observation 3 months or more after transfusion or injury or developed

¹ MacNalty, A. S., *Ann. Rep. Chief Med. Officer Min. Hlth. for year 1937*, London, 1938, H.M.S.O. Price 3s. 6d.

² Lindley, G. M., and MacCallum, F. O., *Trans. roy. Soc. trop. Med. Hyg.*, 1937, 31, 297.

³ Fox, J. P., Manso, C., Penna, H. A., and Madereira Paré, *Amer. J. Hyg.*, 1942, 36, 68.

⁴ Office of the Surgeon-General, Circular Letter No. 95, *J. Amer. med. Ass.*, 1942, 129, 51.

⁵ Beeson, P. H., Chesney, G., and McFarlan, A. M., *Lancet*, 1944, 1, 814.

⁶ MacCallum, F. O., and Bauer, D. J., *ibid.*, 1944, 1, 622.

⁷ Memorandum prepared by Medical Officers of the Ministry of Health, *ibid.*, 1943, 1, 83.

⁸ *J. Amer. med. Ass.*, 1943, 121, 1332.

⁹ *British Medical Journal*, 1944, 2, 230.

¹⁰ Paul, J. R., Haver, W. P., Sabra, A. B., and Philip, C. B., *J. Amer. med. Ass.*, 1945, 128, 911.

¹¹ Francis, T., Frisch, A. W., and Quilligan, J. J., *Proc. Soc. exp. Biol.*, N.Y., 1946, 61, 276.

¹² *British Medical Journal*, 1945, 2, 759.

¹³ *Min. Hlth. Rep. (from Statistical Branch)*.

jaundice within that period. There were 6 cases of jaundice among 6,250 injured patients who were not transfused.

The value of blood or blood products, properly used, in the treatment of certain surgical and medical conditions is unquestionable. During the war, at military hospitals and civilian hospitals dealing with air-raid casualties, there appears to have been a tendency to "give him a bottle of blood anyway," and in many cases it may have helped to turn the balance to recovery. In Dr. Vaughan's series 800 of the 2,040 transfused patients who were followed up died within 5 months of transfusion, and, of these, 769 died less than 2 months after transfusion. Thus 39% of the transfused cases were so ill that the possible value of the transfusion outweighed the possibility of ill effects such as jaundice. Though most reports of cases have involved only small groups and show a very low mortality rate from necrosis of the liver, there were 24 deaths in the group of 140 cases from an E.M.S. hospital.¹³ The higher mortality rate may be related to the combined effect of the hepatitis and the illness or injury for which the transfusion was given to military personnel.

The data available indicate that there are probably two different agents—that of infective (epidemic) hepatitis and that of homologous serum hepatitis—either of which may cause transfusion jaundice. As already mentioned, the causative agent of either disease may be circulating in the blood stream several days before the onset of symptoms and before there is detectable evidence of liver damage; but in those donating blood early in the onset of symptoms, when one might not be suspicious, there is probably evidence of liver dysfunction. Makari¹⁴ has suggested the routine use of the cephalin-cholesterol flocculation-test of Hanger for all donors' blood at the same time as the Wassermann reaction. Until a simple test for the presence of either agent is available the next best solution is a routine method of treatment of all pooled sera in order to inactivate any icterogenic agent present. None of the usual methods of heat or chemicals has proved effective so far, but experiments by Oliphant and his colleagues¹⁵ suggest that irradiation with ultra-violet light may prove satisfactory. Work done in England has shown that there

probably only a narrow margin between the dose which inactivate the icterogenic agent and leave the essential properties of the serum unchanged and that dose which will destroy the essential proteins. It is also possible that the albumin fraction may be able to withstand heating to the required inactivating temperature which would destroy the usefulness of whole serum or gamma globulin fraction. Following the satisfactory prevention of (epidemic) infective hepatitis by injections of immune gamma globulin, Grossman and his colleagues¹⁶ used this method in cases of transfusion jaundice with variable results. In one group of military patients given one dose on admission to hospital and one dose one month later the incidence of jaundice appeared to be less than in the uninoculated controls, but the gamma globulin apparently had no effect in another group given only one prophylactic injection and in a group of experimental human volunteers who were injected with a known icterogenic agent beforehand.

The danger of transfusion jaundice appears to lie chiefly in the use of pooled serums rather than in individual samples of whole blood. The present rate at which dried plasma is being consumed indicates that it is still being used indiscriminately and that its dangers are not appreciated. To reduce the risk of transmission of a hepatitis-producing agent, dried plasma is now being made from the smallest "workable" pools, but until improved methods of preparation can provide a guaranteed non-icterogenic product the golden rules for those giving transfusions should be: "Don't transfuse just for the sake of 'doing something.' Use whole blood where possible, but if pooled serum is necessary limit it to the least possible."

ON THE CREDIT SIDE

The authors of the medical history of the Second World War will find a rich quarry of information about the home front in the Ministry of Health's publication *On the State of the Public Health during Six Years of War*.¹ The volume resembles in form the Annual Reports which the Chief Medical Officers have made to the Ministry, and to the Local Government Board before it, and to the Privy Council and the General Board of Health before that, right back to 1856, but each of those reports was concerned with a single pedestrian year. They recorded small gains and losses, the declining incidence of one disease, the obstinate prevalence of another. On the whole they registered progress, especially since the beginning of this century, a period which has seen infant mortality decline by two-thirds and the tuberculosis death-rate halved. In the present publication, however, we have a record from the public health aspect of the fortunes and sufferings, the exertions and stresses, of the people of this country during the six hardest and grimmest years of their history. Even during the Civil War and other times of commotion and calamity the vast majority of the citizens must have slept peacefully in their beds. The national disturbance did not thrust itself into every dwelling and interrupt the ordinary commerce of social life. But during the first half of this fifth decade of the twentieth century families were disrupted as never before and human life reached an unheard-of level of devaluation. "Who dies if England live?" It may not be realized that the number of people killed in our country as a result of total war was equal to one-quarter, and the number injured to more than three-quarters, of those killed and wounded respectively in the British Armed Forces in all the theatres the world over. The civilian death-roll was 60,000, and the number of injured something like 218,000.

The strange paradox is that at a time when human life counted for so little, the men and women engaged in the conservation and improvement of public health achieved some of their greatest triumphs. Infant and child mortality is not a bad test of public health, and this reached new low levels. No disease showed a heavy epidemic prevalence with the exception of cerebrospinal fever, and even there, thanks to the use of sulphonamide derivatives, the lowest case-mortality was attained. In the ten years before the war the case-mortality of cerebrospinal fever was never below 50%; in 1930 the number of notifications was 674 and the

¹² *Trans. roy. Soc. trop. Med. Hyg.*, 1946, 39, 539.

¹³ *Publ. Hlth. Rep., Wash.*, 1946, 61, 598.

¹⁴ *J. Amer. med. Ass.*, 1945, 129, 991.

¹ H. M. Stationery Office. 5s.

number of deaths 635. But in 1940 and 1941, when the notifications soared into five figures, the death-rate was only 20%. Again, in spite of shortages of many kinds, the nutrition of the people was not worse at the end of the war than it had been at the beginning, and among children was somewhat better. Great advances were made in therapeutics, especially in chemotherapy, while "the discovery of the new insecticides," says Sir Wilson Jameson, meaning D.D.T. and gammexane, "may well have greater and more lasting effects on the health of the human race than any other discovery in the last six years." It was also during this destructive war, and as a consequence of it, that a new pattern of hospital service, co-operative and co-ordinated, was put into action, that a public health laboratory service was instituted which has become an integral part of the public health organization, that the civil nursing reserve was set up and enrolled 29,000 whole-time and as many part-time members, and that a blood transfusion service was established, enlisting a million donors.

The organization of hospital services and of medical personnel and supplies was on such a scale as to make it possible for this report to say that "less than 50,000 admissions [meaning admissions of air-raid casualties during the heavy night raiding period of 1940 and early 1941] spread over nine months obviously threw no great strain on the hospital accommodation, except for a few hours at a time in a small number of hospitals"; and again in the last months of the war, when a thousand long-range rocket bombs reached this country, killing 2,724 people and seriously injuring 6,691, we come once again upon the "obvious"—"obviously no strain was imposed upon the E.M.S. in dealing with hospitalized casualties which, spread over the 29 weeks of the attacks, averaged only 230 per week."

In this report the treatment is inevitably statistical, but figures can be impressive, such as the 163,500 beds waiting for casualties at the beginning of September, 1939, the 34 ambulance trains which during the war carried something like 220,000 patients, the thousand bus ambulances, of which the 220 in London alone took half-a-million stretcher and sitting cases. From D-day onwards the Emergency Medical Service received a stream of casualties from the Front in Western Europe, numbering before the year was out 80,500 by sea and 51,500 by air. The movement of casualties was only one of the forms of evacuation. The story of the transport of a million children from eighty evacuation areas to over a thousand reception areas has been often told, and the first wave of evacuation was followed by others, rising and falling with the tide of war. Then there was the despatch of 150,000 expectant mothers to emergency maternity homes, the evacuation from London of 7,600 chronic sick and 5,000 crippled and blind, and of 18,000 from the hospitals in the large towns of the provinces. Refugees to the number of 11,000 from Gibraltar, 30,000 from the Channel Islands, and others from Norway and Holland added to the problem. The transport was relatively a minor consideration, but all this movement entailed the provision of clinics, sick bays, maternity accommodation, nurseries, hostels, rest centres, canteens, and all of it meant certain health risks. Yet among the 150,000 women confined in emergency maternity homes the maternal death-

rate was only 0.8 per thousand, and even among the 30,000 admitted to the homes which had been upgraded for abnormal cases it was only 1.9.

The organization of the civil defence casualty services—the 2,000 first-aid posts ready at the outbreak of war, the 6,000 aid-points, the 800 mobile units, and so on—makes a thrilling chapter if the figures are read imaginatively and allowance is made for official under-statement. One of the strangest aspects of wartime England was presented by the shelters. To our descendants the accounts of the nightly scenes in underground London may well appear fantastic and incredible. Sometimes a million people were in the shelters. On one night there were 20,000 in Piccadilly Circus tube station. The conditions in some of the shelters at first were appalling, and at no time were they better than the worst pre-war living conditions in London. Yet no serious outbreak of epidemic disease occurred among these huddled multitudes. There was not even any serious increase in lousiness, thanks to health propaganda and the presence of the shelter warden. So far as can be ascertained from sample surveys, there was no increase in neurosis. The fact is that, hazardous as they were from the health point of view, the shelters housed a population which for various reasons was tough and resistant. The people were living on a planned diet of adequate rations of protective foods. If the shelters were full, the places of amusement were empty, and from the point of view of mass infection the picture theatre may be more perilous than a tube subway. Moreover, though the shelterers had to endure great discomfort, many of them enjoyed a new social experience. Morale was high, and unexpected patience, good temper, and even heroism were plentiful.

Amid all these tasks and emergencies many figures stand out, representative of their class or vocation, as exemplifying that "all-in-the-day's-work" courage which we like to think is a British characteristic. One of them is the civilian doctor, generally middle-aged or elderly, doing two or three men's work, with no young assistant at his elbow, with his partner away on service, with some portion of his neighbour's practice to look after, continually called upon to undertake new duties, to look after patients in E.M.S. and other hospitals, to act as part-time works doctor at the local factory, to serve as medical officer to the Home Guard, to staff the recruiting boards, to examine refugees and others, to attend—sometimes to have charge of—first-aid posts and train nursing and auxiliary staff, to visit the shelters, and, no matter how "dirty" the night or tiring the day, to turn out for "incidents": all this in addition to the ordinary round of the doctor. To show how great the burden must have been it is necessary only to quote one figure. By the end of 1942 more than half the total population of England and Wales resided in areas where there were more than 3,000 people to each general practitioner: the highest ratio was about one doctor to 4,300, and later on it rose in some cases to 4,500. The tribute paid by Sir Wilson Jameson to the civilian doctor is truly well deserved. No small share of the credit for maintaining the public health and morale during the six years of war should be accorded to those of our profession who, though they did not put on Service uniform, were inspired by the same sense of duty and self-forgetfulness as those who did.

BIOLOGICAL STANDARDIZATION

It would be useful if more people could know of the work of the Health Organization of the League of Nations in the field of biological standardization. Our civilization is believed to have been brought to the verge of destruction by the discoveries of scientists, and the non-scientific world asks its leaders to give their views in important broadcast talks on how this situation can be met. Their efforts to tell us are notably free from constructive suggestions. Yet the medical scientists have made a contribution to international co-operation which stands as a model for co-operation in wider and more important fields. The scientists themselves answer the question which perplexes the non-scientific world. Few, however, know of this work; even medical men themselves show little interest or pride in it; yet it is scarcely possible to exaggerate its significance.

The latest Bulletin of the Health Organization¹ gives a summary of the steps which have been taken to ensure the use of international standards for serums, hormones, and vitamins, and of the continuous research which has been organized in different countries in relation to these standards. Described in such terms the purpose of the work and the magnitude of the project alike seem small, but this description gives no conception of the number of problems which have been the subject of co-ordinated study and of the influence this work has had in bringing workers of many nationalities into close co-operation. There is no longer any purpose in concealing the fact that the main impulse to the progress of this work has been supplied by those in the National Institute for Medical Research at Hampstead. Other countries, however eminent in medical science, have not yet taken the constructive interest in this work which its importance demands. Our greater sense that the welfare of those outside our own land affects our own welfare is shown here as well as in other fields. It is surprising to state that the work has gone on during the war without any formal interruption, though the volume of co-ordinated research in different countries has been very small. In the very middle of the war—in 1942—a provisional international standard for heparin was set up. The need for international agreement on penicillin was compelling enough for an international conference to be held in London in October, 1944, so that the earliest opportunity afforded by the decline of the war was taken for a major advance.

Among other problems of a more unusual kind which have been studied are the standardization of anti-snake-venom sera, of poliomyelitis convalescent serum, and of typhoid serum. Much attention has been given to the hormones of the pituitary anterior lobe, and the knowledge accumulated will undoubtedly be useful when these hormones have been sufficiently separated from one another to make possible their clinical use. The work on the gonadotrophic hormone obtained from the urine of pregnant women was carried out in no fewer than 32 laboratories, which were South African, American, Brazilian, British, Canadian, Danish, French, German, Hungarian, and Dutch. This was directed to the selection of an international standard and the definition of a unit as the activity present in an agreed weight of this standard. It forms a very good example of the width of the scope of international endeavour in this field.

The organization dealing with biological standards has been so great a success that every effort should be made to continue it and perhaps to enable its terms of reference to be extended so as to increase its great usefulness further.

¹ Bulletin of the Health Organization of the League of Nations. Vol. XII, No. 1, 1945-6. London: Allen and Unwin. (5s. net.)

This highly important part of the Health Organization's work will be continued under the World Health Organization, and in the meanwhile under the Interim Health Commission.

HERPES ZOSTER AND VARICELLA

The relationship between herpes zoster and varicella is very much more puzzling than the mere fact of their common clinical association would lead one to believe. That children in contact with cases of herpes zoster may develop varicella is now generally recognized, although the reverse transmission is rare; nevertheless cross-immunity, studied either clinically or by serological methods, does not appear to be complete.

There is perhaps something still to be learned from the purely clinical study of the respective features and the association of the two conditions, and this aspect of the subject is reviewed by S. Dahl,¹ of Viborg. Varicella has been a notifiable disease in Denmark since 1938, and it is therefore possible to state its seasonal incidence exactly: this has a maximum in mid-winter. The maximum incidence of herpes zoster on the other hand is in the warmer months of the year. According to the findings of seventeen authorities quoted it is variable, but the majority observe a high incidence in April and May; and in Dahl's own figures, derived from hospitals in Copenhagen, there was a steady rise to a peak in August. The difference in age incidence is of course well known, that of varicella falling steadily from a maximum in infancy, whereas that of herpes zoster rises to a peak in the third decade with a secondary smaller rise in the fifth. There is also a sex difference: varicella attacks both sexes equally, while herpes zoster much more frequent in males than in females. A fourth point of distinction is the association of herpes zoster with other infective conditions: among several of these noted in the Copenhagen series syphilis was the most frequent. All these facts require to be explained in any hypothesis accounting for the association of the two conditions. I Dahl's view they are inconsistent with the idea of common aetiology.

VASCULAR CHANGES IN RHEUMATOID ARTHRITIS

Not long after the important work by Lewis² on the capillary circulation in health and disease, Pemberton³ called attention to deficient circulation in the capillaries in rheumatoid arthritis, and Simpson⁴ demonstrated by oscillography a spastic condition of the blood vessels of the fingers in cases of arthritis. Later, Bisset and Woodmansey⁵ by means of photomicrographs showed a deficiency in the number of capillary loops and attenuation in their calibre, and they also found that the effect of histamine in producing dilatation of the superficial vessels was less marked in rheumatic subjects. Kovacs and others⁶ noted a great reduction in the number of capillaries in the peripheral tissues in patients with rheumatoid arthritis, and a greatly increased blood supply in the articular tissues. On the other hand, Hench⁷ was unable to find any consistent alteration in the size of the capillaries or the capillary flow in a large number of cases of rheumatoid arthritis and degenerative diseases.

Naide, Sayen, and Comroe, whose early death is a serious loss to rheumatology, have determined the basal

¹ Schweiz. med. Wschr., 1946, 76, 343.

² The Blood Vessels of the Human Skin and Their Responses. Lewis, T., London 1927.

³ Arthritis and Rheumatoid Conditions. Pemberton, R., Philadelphia. 1929, p. 47.

⁴ Amer. Heart J., 1931, 6, 309.

⁵ Lancet, 1932, 2, 620.

⁶ J. Amer. med. Ass., 1933, 100, 1018.

⁷ Ibid., 1934, 103, 1804.

vascular tone in a large number of normal controls, and died fifteen patients with rheumatoid arthritis, whose ages varied from 14 to 65 years. They took the temperature of fingers and toes under cool conditions, and again during the application of moderate heat to the trunk. Digits affected by arthritis remained warm, while in cool conditions, longer than those not so affected. This difference, however, may be due simply to the inflammatory process in the joints. They also found a high basal vascular tone in patients with rheumatoid arthritis, though not abnormally high; some 30 to 40% of normal individuals showed the same tone. These authors claim that the dissociated response in affected digits enables a diagnosis of rheumatoid arthritis to be reached earlier than by other methods, but the proofs they advance are not convincing.

It is also suggested that this response may be a guide to treatment, which they propose might take the form of repeated lumbar paravertebral block, or periods of continuous caudal anaesthesia. Both methods seem somewhat drastic. Local heat would appear to be simpler and equally efficacious. More observations on a larger number of patients with a more rigid selection of controls will be required before their conclusions can be accepted, or their value proved.

CAROTID SINUS SYNCOPE

The role of a hypersensitive carotid sinus in the production of syncope and other vague cerebral symptoms is well known and has been ably recorded by S. O. Weiss and others.^{1,2} Indeed, the attempt to reproduce an attack at the bedside by manual or other forms of stimulation in the region of the bifurcation of the common carotid artery is a clinical commonplace. Besides pallor and faintness, lypsaesthesiae and twitching may be experienced in the contralateral limbs. Consciousness may be lost and the convulsive movements may become generalized. That this diagnostic measure may not be entirely innocuous was shown in 1941 by a patient described by J. Marmor and M. R. Sapirstein,³ who developed a thrombosis in the anterior cerebral arteries after stimulation of the carotid sinus. In 1945 S. A. Levine⁴ recorded another case of hemiplegia following this procedure. The most impressive body of evidence has been marshalled by J. M. Askey⁵ in a recent paper giving notes of ten cases in which carotid stimulation was followed by hemiplegia, either transient or permanent. Of these, seven were unquestionably cases of immediate and direct ill effect; in two others the hemiplegia was a "possible" result; and in one case a unilateral paralysis did not develop until twenty-four hours after the carotid stimulation.

How does this catastrophe arise? In all cases the hemiplegia developed on the side opposite the carotid stimulated. In at least one case the mechanical pressure in question was quite light. Unilateral cerebral ischaemia from reflex vasoconstriction is therefore more probably the cause than a general systemic fall of blood pressure due to vasodepression (perhaps with bradycardia), or cardiac inhibition. G. L. Engel and his collaborators⁶ support this opinion with their electroencephalographic studies of carotid sinus syncope. Many of Askey's patients had diseased arteries. Perhaps the lesson to be learned from these disasters is that mechanical stimulation of the carotid sinus should be applied with caution in arteriosclerotic or elderly subjects.

TUBERCULOSIS AND JUVENILE MALNUTRITION IN AUSTRIA

Concern expressed in British medical circles at the steadily rising figures for tuberculosis in Europe is echoed in Austria in view of the prolonged food crisis and lack of adequate facilities for treating the disease. Medical experts are of opinion that the younger generation of the country is in considerable danger. It is stated that there are at present 28,000 registered cases of tuberculosis for which treatment is needed but that there are probably many more not yet registered. The death rate from tuberculosis in Austria shows an increase of 13 per 10,000 of population during the last 16 years. The causes are malnutrition, overwork, and often the direct pressure of the Nazi regime. Many ex-soldiers also contracted the disease. It is feared that the incidence will continue to rise because sanatorium facilities and medical supplies are insufficient and many of the cases are contagious. The threat is greatest to children, and it is estimated that 300,000 children are potential patients. The most urgent need, states the Vienna Advisory Council, is for adequate treatment to be made available immediately in order to reduce the danger of infection, and also to ensure a better-balanced diet.

Juvenile health in Vienna is deteriorating at a rate that is causing anxiety to the Austrian Government. In an inquiry into the health and living conditions of school-children, young apprentices, and auxiliary workers between the ages of 14 and 18, the Vienna Labour Chamber found only 28% of the girls and 11% of the boys to be really healthy and of normal weight; 34% of the girls and 64% of the boys were more than 20 lb. underweight, showing a sharp progressive decline each month since February. Housing and living conditions were found to be extremely bad, with thousands of apprentices and juvenile workers living with from two to eight other people in kitchens and small rooms.

A COLLECTION OF TUMOURS

The report of the curator of the laboratory of the Royal College of Physicians of Edinburgh (Dr. R. Cranston Low) states that the collection of tumours in the research department of the laboratory has now passed the 20,000 mark and may be described as a highly special research collection. Every tumour specimen has been filed and indexed, reported and commented on, preserved in block form, and made immediately accessible under the two main headings of type of locality, as well as lesser headings. The collection is largely intended to supply the research worker with material for reference concerning normal and abnormal structure and embryological material, with special insistence on its human, not animal, character. Much of the material in this collection comes under the head of the science of "gerontology," especially structural changes with age, the changes in organs and tissues which occur at all age periods from the cradle, or before it, to the grave. The collection has been instituted and maintained during the past seventeen years by Lieut.-Col. W. F. Harvey, who has recently resigned the superintendence of the laboratory, though he is continuing his work as histologist. The new superintendent is Dr. Cranston Low.

Sir Maurice Cassidy will deliver the Harveian Oration before the Royal College of Physicians of London on St. Luke's Day, Friday, Oct. 18, at 3 p.m., at the College, Pall Mall East. Subject: Coronary Disease.

¹ *Medicine*, 1933, 12, 297.

² *Arch. Intern. Med.*, 1936, 58, 497.

³ *J. Amer. med. Ass.*, 1941, 117, 1089.

⁴ *Clinical Heart Disease*, 1945, 3rd edition, p. 317. Philadelphia, W. B. Saunders and Co.

⁵ *Amer. Heart J.*, 1946, 31, 131.

⁶ *Arch. Intern. Med.*, 1944, 74, 100.

THE WORLD HEALTH ORGANIZATION

BY

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An international health conference for the establishment of an international health organization was convened by the Economic and Social Council of the United Nations in the City of New York from June 19 to July 22, 1946.* The Conference used as the basis of discussion proposals adopted by a technical preparatory committee of experts set up by the Economic and Social Council of the United Nations. This committee met in Paris in March, 1946.

As a result of the deliberations of the Conference the following instruments were drawn up:

(a) Constitution of the World Health Organization.

(b) Arrangement for the establishment of an Interim Commission of the World Health Organization.

(c) Protocol concerning the Office Internationale d'Hygiène Publique.

The texts of each of these documents in Chinese, English, French, Russian, and Spanish, all of which were equally authentic, were signed by the following 61 nations:

Albania	Ethiopia	Philippine Common-
Argentina	Finland	wealth
Austria	France	Poland
Australia	Greece	Portugal
Belgium	Guatemala	Saudi Arabia
Bolivia	Haiti	Siam
Brazil	Honduras	Switzerland
Bulgaria	India	Syria
Byelorussian Soviet	Iran	Transjordan
Socialist Republic	Iraq	Turkey
Canada	Italy	Ukrainian Soviet
Chile	Lebanon	Socialist Republic
China	Liberia	Union of Soviet
Columbia	Luxembourg	Socialist Republics
Costa Rica	Mexico	Union of South
Cuba	Netherlands	Africa
Czechoslovakia	New Zealand	United Kingdom
Denmark	Nicaragua	United States of
Dominican Republic	Norway	America
Ecuador	Panama	Uruguay
Egypt	Paraguay	Venezuela
Eire	Peru	Yugoslavia
El Salvador		

The United Kingdom signed all three instruments without reservation as to ratification.

In view of the extensive functions agreed to in the Constitution of the World Health Organization, which cover most branches of medicine, a somewhat detailed summary of the work and machinery of the new organization cannot fail to be of interest to very many of the medical profession who are anxious to know the lines along which they, or technical organizations in which they are interested, may be able to contribute to ensure the success of this new body.

* The Governments of the following States were represented at the Conference by delegates: Argentina, Australia, Belgium, Bolivia, Brazil, Byelorussian Soviet Socialist Republic, Canada, Chile, China, Columbia, Costa Rica, Cuba, Czechoslovakia, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, India, Iran, Iraq, Lebanon, Liberia, Luxembourg, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippine Commonwealth, Poland, Saudi Arabia, Syria, Turkey, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, Union of South Africa, United Kingdom, United States of America, Uruguay, Venezuela, Yugoslavia.

In addition, the Governments of the following States were represented by observers: Albania, Austria, Bulgaria, Eire, Finland, Hungary, Iceland, Italy, Portugal, Siam, Sweden, Switzerland, Transjordan.

The Allied Control Authorities in Germany, Japan, and Korea were represented by observers. The following international organizations were also represented by observers: Food and Agriculture Organization of the United Nations, International Labour Organization, League of Red Cross Societies, Office Internationale d'Hygiène Publique, Pan-American Sanitary Bureau, Provisional International Civil Aviation Organization, The Rockefeller Foundation, United Nations Educational Scientific and Cultural Organization, United Nations Relief and Rehabilitation Administration, and World Federation of Trade Unions.

Principles and Functions

The work of the World Health Organization is based on the following principles:

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, or economic or social condition.

The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States.

The achievement of any State in the promotion and protection of health is of value to all.

Unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger.

Healthy development of the child is of basic importance; the ability to live harmoniously in a changing total environment is essential to such development.

The extension to all peoples of the benefits of medical, psychological, and related knowledge is essential to the fullest attainment of health.

Informed opinion and active co-operation on the part of the public are of the utmost importance in the improvement of the health of the people.

Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures.

In conformity with these principles, the functions of the World Health Organization will be:

(a) To act as the directing and co-ordinating authority on international health work.

(b) To establish and maintain effective collaboration with the United Nations, specialized agencies, governmental health administrations, professional groups, and such other organizations as may be deemed appropriate.

(c) To assist Governments, upon request, in strengthening health services.

(d) To furnish appropriate technical assistance and, in emergencies, necessary aid upon the request or acceptance of Governments.

(e) To provide or assist in providing, upon the request of the United Nations, health services and facilities to special groups, such as the peoples of trust territories.

(f) To establish and maintain such administrative and technical services as may be required, including epidemiological and statistical services.

(g) To stimulate and advance work to eradicate epidemic, endemic, and other diseases.

(h) To promote, in co-operation with other specialized agencies where necessary, the prevention of accidental injuries.

(i) To promote, in co-operation with other specialized agencies where necessary, the improvement of nutrition, housing, sanitation, recreation, economic and working conditions, and other aspects of environmental hygiene.

(j) To promote co-operation among scientific and professional groups which contribute to the advancement of health.

(k) To propose conventions, agreements, and regulations, and to make recommendations with respect to international health matters, and to perform such duties as may be assigned thereby to the Organization and are consistent with its objective.

(l) To promote maternal and child health and welfare and to foster the ability to live harmoniously in a changing total environment.

(m) To foster activities in the field of mental health, especially those affecting the harmony of human relations.

(n) To promote and conduct research in the field of health.

(o) To promote improved standards of teaching and training of health workers and the medical and related professions.

(p) To study and report on, in co-operation with other specialized agencies where necessary, administrative and social techniques affecting public health and medical care from preventive and curative points of view, including hospital services and social security.

(q) To provide information, counsel, and assistance in the field of health.

(r) To assist in developing an informed public opinion among all peoples on matters of health.

(s) To establish and revise as necessary international nomenclatures of diseases, of causes of death, and of public health practices.

- (i) To standardize diagnostic procedures as necessary.
- (ii) To develop, establish, and promote international standards with respect to food, biological, pharmaceutical, and similar products.
- (v) Generally to take all necessary action to attain the objective of the Organization.

Membership and Associate Membership

Membership in the World Health Organization is open to States, subject to certain conditions set out in the Constitution. In addition, provision is made for associate membership under certain conditions in the case of territories not responsible for the conduct of their international relations.

Organs

The work of the World Health Organization will be carried out by:

- (a) The World Health Assembly.
- (b) The Executive Board.
- (c) The Secretariat.

The World Health Assembly

The World Health Assembly will be composed of delegates representing Member States, each Member being represented by not more than three delegates, one of whom should be designated as chief delegate. These delegates should be chosen from among persons most qualified by their technical competence in the field of health, preferably representing the national health administration of the Member. The Health Assembly will meet in regular annual session and any such special sessions may be necessary. Among the functions of the Health Assembly will be those of:

- (1) determining policies of the Organization;
- (2) naming the Member States entitled to designate a person to serve on the Executive Board;
- (3) reviewing and approving reports and activities of the Executive Board and the Director-General, and instructing the Board in regard to matters upon which action, study, investigation, or report may be considered desirable;
- (4) supervising the financial policies of the Organization, and reviewing and approving the budget;
- (5) inviting any organization, international or national, governmental or non-governmental, which has responsibilities related to those of the Organization, to appoint representatives to participate in its meetings or in those of the committees and conferences convened under its authority;
- (6) considering the recommendations bearing on health made by the General Assembly, the Economic and Social Council, the Security Council, and Trusteeship Council of the United Nations;
- (7) promoting and conducting research in the field of health by the personnel of the Organization, by the establishment of its own institutions or by co-operating with official or non-official institutions of any Member; and
- (8) taking any other appropriate action to further the objective of the Organization.

The Health Assembly will also have authority to adopt conventions or agreements with respect to any matter within the competence of the Organization.

Furthermore, the Health Assembly will have authority to adopt regulations concerning:

- (a) sanitary and quarantine requirements and other procedures to prevent the international spread of disease;
- (b) nomenclatures with respect to diseases, causes of death, and public health practices;
- (c) standards with respect to diagnostic procedures for international use;
- (d) standards with respect to the safety, purity, and potency of biological, pharmaceutical, and similar products moving in international commerce; and
- (e) advertising and labelling of biological, pharmaceutical, and similar products moving in international commerce.

Such regulations will come into force for all Member States after due notice has been given of their adoption by the Health Assembly, except for such Members as may notify the Director-General of rejection or reservations within the period stated in the notice.

The Executive Board

The Executive Board will consist of 18 persons designated by as many Member States. The Health Assembly, taking into account an equitable geographical distribution, will nominate the Member States entitled to designate a person to serve on the Board. Each of these Member States should appoint to the Board a person technically qualified in the field of health. Among the functions of the Board will be those of:

- (a) giving effect to the decisions and policies of the Health Assembly and acting as its executive organ;
- (b) submitting to the Health Assembly a general programme of work covering a specific period;
- (c) studying all questions within its competence; and
- (d) taking emergency measures to deal with events requiring immediate action.

The Secretariat

The Secretariat will comprise the Director-General and such technical and administrative staff as the Organization may require. The Director-General will appoint the staff of the Secretariat. The paramount consideration in the employment of the staff shall be to ensure that the efficiency, integrity, and internationally representative character of the Secretariat shall be maintained at the highest level. Due regard should be paid to the importance of recruiting the staff on as wide a geographical basis as possible.

In the performance of their duties the Director-General and the staff shall not seek or receive instructions from any Government or from any authority external to the Organization. They shall refrain from any action which might reflect on their position as international officers. Each Member State of the Organization on its part undertakes to respect the exclusively international character of the Director-General and the staff and not seek to influence them.

Arrangements

Conferences.—The Health Assembly or the Executive Board may convene local, general, technical, or other special conferences to consider any matter within the competence of the Organization, and may provide for the representation at such conferences of international organizations and of national organizations, governmental or non-governmental.

Headquarters.—The location of the Headquarters of the Organization will be determined by the Health Assembly after consultation with the United Nations.

Regional Arrangements.—The Health Assembly will from time to time define the geographical areas in which it is desirable to establish a regional organization. Each regional organization will consist of a regional committee and a regional office. Regional committees will be composed of representatives of the Member States and associate Members in the regions concerned. Among the functions of the regional committees will be those of:

- (a) formulating policies governing matters of an exclusively regional character;
- (b) supervising the activities of the regional office;
- (c) suggesting to the regional office the calling of technical conferences and such other additional work or investigation in health matters as would promote the objective of the Organization within the regions;
- (d) recommending additional regional appropriations by the Governments of the respective regions, if the proportion of the central budget of the Organization allotted to that region is insufficient for the carrying out of the regional functions; and
- (e) carrying out such functions as may be delegated to the regional committee by the Health Assembly, the Board, or the Director-General.

It is further provided that the Pan-American Sanitary Organization and all other inter-governmental regional health organizations in existence prior to the date of signature of the Constitution shall in due course be integrated with the World Health Organization.

Reports submitted by Member States.—Each Member State will report annually to the Organization on the action taken and progress achieved in improving the health of its people, and also upon the action taken with respect to recommendations made to it by the Organization and with respect to

conventions, agreements, and regulations. In addition, each Member State will communicate promptly to the Organization important laws, regulations, official reports, and statistics pertaining to health which have been published in the State concerned. Finally, each Member State will transmit statistical and epidemiological reports to the Organization, and, upon the request of the Executive Board, such additional information pertaining to health as may be practicable.

Relations with other Organizations.—The World Health Organization will be brought into relation with the United Nations as one of its specialized agencies. The Organization will also establish effective relations and co-operate closely with such other inter-governmental organizations as may be desirable, and may, on matters within its competence, make suitable arrangements for consultation and co-operation with non-governmental international organizations and with national organizations, governmental or non-governmental.

The constitution of the World Health Organization will come into force when 26 Members of the United Nations have become parties to it by signature without reservation or by signature followed by ratification.

Interim Health Commission

In view of the very large number of Governments (61) who signed the Constitution in New York on July 22, 1946, it is expected that the necessary number of ratifications will be received in a relatively short time, and that the World Health Organization will hold its first Assembly in the spring or early summer of 1947. In the meantime the World Health Conference has set up an Interim Health Commission to do the preparatory work for the first meeting of the World Health Assembly and to carry out certain specific pieces of work.

The Interim Health Commission consists of 18 persons, technically qualified in the field of health, designated by the following States:

Australia	Liberia	United Kingdom
Brazil	Mexico	United States of America
Canada	Netherlands	
China	Norway	Union of Soviet Socialist Republics
Egypt	Peru	
France	Ukrainian Soviet Socialist Republic	Venezuela
India		Yugoslavia

The functions of the Interim Health Commission are:

(a) To convoke the first session of the World Health Assembly as soon as practicable and to prepare the agenda for the first meeting.

(b) To enter into negotiations with the United Nations with a view to the preparation of an agreement to provide for effective co-operation between the two organizations in the pursuit of their common purpose.

(c) To take all necessary steps to effect the transfer from the United Nations to the Interim Commission of the functions, activities, and assets of the League of Nations Health Organization.

(d) To take all necessary steps for the transfer to the Interim Commission of the duties and functions of the Office Internationale d'Hygiène Publique.

(e) To take all necessary steps for assumption by the Interim Commission of the duties and functions entrusted to U.N.R.R.A. by the International Sanitary Conventions of 1944.

(f) To enter into the necessary arrangements with the Pan-American Sanitary Organization and other existing inter-governmental regional organizations with a view to their integration within the World Health Organization.

(g) To study the question of relations between the World Health Organization and non-governmental international organizations and national organizations.

(h) To undertake initial preparations for revising, unifying, and strengthening existing international sanitary conventions.

(i) To review existing machinery, and to undertake such preparatory work as may be necessary in connexion with the next decennial revision of the *International List of Causes of Death* and the establishment of international lists of causes of morbidity.

(j) To consider any urgent health problem which may be brought to its notice by any Government, to give technical advice in regard thereto, to bring urgent health needs to the attention of Governments and organizations which may be in a position to assist, and to take such steps as may be desirable to co-ordinate any assistance such Governments and organizations may undertake to provide.

The Secretariat of the Interim Health Commission consists of a medical executive secretary and technical and administrative staff. The Interim Commission will cease to exist when the first meeting of the Health Assembly takes place.

The Commission has already held six meetings and appointed three committees: (a) Administration and Finance; (b) Epidemiological Intelligence and Quarantine; and (c) Relations with Existing Organizations. The next meeting of the Interim Commission will be held in Geneva in November, 1946.

To complete the picture, reference should be made to the protocol signed by 61 Governments by which "the Governments signatory to the protocol agree that, as between themselves, the duties and functions of the Office Internationale d'Hygiène publique shall be performed by the World Health Organization or its Interim Commission and that, subject to existing international obligations, they will take the necessary steps to accomplish this purpose."

Comments

A study of the summary set out above of the Constitution of the World Health Organization and other relevant documentation will show that the new Organization differs fundamentally in both its structure and the extent of its functions from those of the League of Nations Health Organization, and promises to have a definitely larger membership and a much greater budget. Thus, for instance, it will be recollected that the Health Committee of the latter consisted only of experts appointed in purely personal capacity who were not representative of their Governments. Consequently, the Health Committee of the League of Nations was a purely advisory body, and the fact that Governments were in no way bound by any of its decisions or recommendations resulted too frequently in little or no action being taken on any recommendations made. On the other hand, the delegates to the World Assembly will represent their Governments, and, moreover, Governments, by signing and accepting the Constitution, accept definite responsibilities and obligations. Again, the World Health Organization has authority to adopt conventions and agreements with respect to any matter within the competence of the Organization, as well as regulations in respect of certain specified matters. These regulations, once adopted by the World Health Assembly, become binding automatically on State Members, except such as may notify their objection or reservation within a period to be stated in the notice.

In conclusion, a most striking feature of the Conference was the wholehearted manner in which all the delegates participated in the work. Without exception they adopted throughout a constructive attitude and played a full part in all the activities of the Conference.

The Conference can be regarded as a real success, and the Constitution signed by the 61 nations was eminently satisfactory from the United Kingdom point of view. The British Government will spare no pains to make the work of the World Health Organization successful, and it is certain that all British organizations in the field of health, as well as individual medical men, whatever their expert knowledge happens to be, will desire to co-operate towards the same end.

EDUCATIONAL TREATMENT FOR HANDICAPPED CHILDREN

The problems of providing special educational treatment for children suffering from disability of mind or body are dealt with in a pamphlet published by the Ministry of Education. Local education authorities now have new responsibilities for the provision of suitable education for these children, and the pamphlet is intended mainly for their guidance and to help teachers in the discharge of this difficult and important duty.

At any time after a child is two years old the parent may ask to have him examined to see if he requires special educational treatment. The authority is bound to have this done and if it is found that the child requires such treatment this must be provided if the parent wishes. Children at school suspected

of a disability will be medically examined, by specialists if necessary, and the local education authority will consider in the light of medical and other advice what kind of special educational treatment they should be given. In serious cases this will be provided in a special day or boarding school and in other cases arrangements will be possible in the ordinary school. For instance, partially deaf children should have hearing aids and courses of lip reading at school when recommended by the school medical officer. These children would be carefully watched and if they failed to make progress they should be sent to special schools. For delicate children there is a need for more boarding schools, but some provision can be made for them in the newer hygienic primary and secondary schools, where meals and milk are available. When rest after dinner is recommended, stretcher beds and blankets should be provided.

Subnormal and Maladjusted Children

The educationally subnormal children, including those formerly known as "educable mental defectives" and the dull or backward child, form the largest category requiring special educational treatment. The number may be as high as 10%. In the larger urban areas, day and boarding schools will be needed, and arrangements will also be necessary in the ordinary schools. In almost all schools of moderate size facilities will be required for at least a small group of children. These should not be segregated from other children or from the corporate life of the school. They will need special help in certain parts of their work. This problem must be faced by the modern school, and the staff should experiment with enterprising methods and organization for dealing with it.

In all types of area there will be a small number of educationally subnormal children who require for their own good to be taken away from their homes and educated in a boarding special school. These will include unstable children, children from unsuitable homes, those who are truants or unmanageable in a day special school, and those committed to the care of the authority by the Courts. In no case should a child who is recognized as ineducable be allowed to attend school. In the past this has sometimes been allowed on sentimental grounds. One detrimental or low-grade child can create havoc in a class, distract the children, occupy the full attention of the teacher, and bring the school into disrepute among parents and the public. It is too great a price to pay for kind-hearted acquiescence in his continued attendance. For the maladjusted child the Ministry suggests the establishment of child guidance clinics, the appointment of more education psychologists, boarding-out arrangements for certain children with carefully chosen foster-parents, boarding homes for children who may attend ordinary schools, and special boarding schools.

The pamphlet also includes suggestions for the education of physically handicapped children, for blind and partially sighted children, and for children with speech defects.

LECTURES ON CHILD DEVELOPMENT

The staff of the Provisional National Council for Mental Health, in their contacts with school medical officers, have frequently heard expressed the opinion that the enlargement of the duties of the medical officer working in a local authority makes it increasingly important for him to know something of the normal mental and emotional development of children. The provisions of the new Education Act concerning difficult young children are a case in point and the Council hopes at a later date to incorporate a section on the subject in the courses it runs for medical officers. Meanwhile it is thought that there might be a group of medical officers in and near London who would be interested in a short series of lectures on the emotional development of the normal child from infancy to adolescence and who would find information on normal child development of service to them in their work in other fields beyond that of certification. The Council has therefore planned a course of ten weekly lectures to meet the needs of such officers. It will be simple in its content, and the bearing of the material on the practical problems of medical and administrative work will be made evident. The lectures will be given at 39, Queen Anne Street, W.1, at 6 p.m. on Wednesdays beginning Oct. 9, and the fee is £2 2s. Applications should be sent to the Education Secretary, P.N.C.M.H., at that address by Oct. 6.

STREPTOMYCIN

The Government, as represented by the Ministry of Health, the Medical Research Council, and the Ministry of Supply, are co-operating with various firms in connexion with the pilot scale production of streptomycin. The firms at present concerned are Boots Pure Drug Co., Distillers Co., and Glaxo Laboratories, who are all established penicillin producers, and the Heyden Chemical Co., who propose to install a factory to produce streptomycin (and penicillin) at Ardrossan in Scotland.

For many months streptomycin will be available only for clinical trial under the auspices of the Medical Research Council, and it is hoped that these trials will begin before the end of this year. Trials must necessarily be prolonged since the conditions for which it is hoped streptomycin treatment will prove advantageous require treatment over a period of some months. In any event release to the general medical profession could not occur until substantial production is in operation, by which time the trials should have provided the information on which advice to the medical profession as to the mode of use of streptomycin can be based.

A SELECTION BUREAU FOR INDIA

An office known as the Employment Selection Bureau has been established by the Government of India at New Delhi with the purpose of stimulating, planning, and giving technical direction to various projects of psychological-psychiatric significance in which the Government is interested.

Since December, 1945, the Bureau* has been concerned chiefly with the assessment and preliminary selection of Indian candidates for administrative appointments in the Central and Provincial Government services, and has set up for this work three civil selection boards similar in character to those employed since 1942 in a number of the Allied Armed Forces. Candidates appear before these boards for a period of three days, during which the technical staff composed of a psychiatrist, a psychological officer with assistants, and group testing officers undertake by means of tests, interviews, and observation in a variety of social situations an appraisal of each candidate's qualities relative to his prospective Government employment.

While at the moment the Bureau's principal commitment is to the civil selection boards' programme, it is expected that in the future, with increase in trained staff, an extension of its work can be made into other personnel activities in the Government services, the selection and guidance of secondary school pupils, industrial relations problems, and perhaps additional but at present less definitely indicated fields of child delinquency, mental hygiene, the study of cultural conditions as a basis for social and economic development, and the like. It is generally construed as a function of the Bureau to assist in the stimulation and development of sound practice in these fields in such a way as to make this growth an integral part of India's own post-war pattern of progress. As a consequence, close relations with the Indian universities and other institutions in the procurement and training of staff and in the actual field work undertaken are considered to be of the highest importance.

The Director of the Employment Selection Bureau is Brigadier H. Vinden, until recently Director of Selection of Personnel, Indian Army, and its secretary is Mr. C. K. Phillips. Dr. D. J. Watterston, who was formerly consultant psychiatrist for 21 Army Group, is the Bureau's adviser in psychiatry, and Dr. N. W. Morton, on temporary leave of absence from McGill University and from 1941 a member of the personnel selection staff of the Canadian Army, is its adviser in psychology.

A report on the work of the St. Thomas's Hospital Samaritan Fund and Lady Almoner's Department has recently been issued. The nucleus of the fund was established in 1852 by the Hospital Governors investing £2,000 "to comfort the forlorn, to assist the struggling, to raise up the fallen." Needs to say, though, that social legislation has altered the form of charity, money is now urgently needed to maintain the Fund. The Almoner's Department, which administers the Fund, was founded in 1915, Miss Cummins being appointed Principal. It was largely due to her energy and imagination that welfare of the sick attained its present importance. A well-deserved tribute is paid to the courage, tact, and efficiency displayed by members of the Department during the hardships on London.

PUBLIC HEALTH IN THE WAR YEARS

MINISTRY OF HEALTH RETROSPECT

The twenty-first report of the Chief Medical Officer of the Ministry of Health¹ takes the form—not of an annual statement covering a single year of peace, but of a narrative of the state of the public health and the medical work of the Ministry “during the trials, the mercies, the efforts, and the final triumphs of six years of the grimmest struggle Britain has endured since the Conquest.” The facts and figures, as Sir Wilson Jameson says, need no interpreter—they speak for themselves. He pays many tributes—to the Medical Research Council, the Medical Directors of the Services, the Ministries of Education, Labour and National Service, Food, and Supply, the London County Council, the Central Medical War Committee, the general practitioners who remained in civil life, public health medical officers, his colleagues in his own department, and his predecessor, Sir Arthur MacNalty, whose wise policy during the period of pre-war preparation and the first fourteen months of the war, during which he held office, greatly facilitated his own task.

During the war years the birth-rate for England and Wales rose steadily, reaching 17.7 in 1944 (the last complete year to which this report relates), its highest point since 1926. The death-rate has remained steady, and in 1944 was 12.7. The principal certified causes of death were in the same order each year—diseases of the heart a long way first, followed by cancer, intracranial lesions of vascular origin, bronchitis, tuberculosis, and diseases of the digestive system. Infant mortality, though it went as high as 60 per 1,000 births in 1941, came down to 45 in 1944. There were marked reductions in the large towns—in Liverpool, for example, infant mortality fell from 74 in 1938 to 58 in 1944. Not only in infancy but at every year of age from one to fourteen the mean annual death-rates for 1940–44 were below the rates for any pre-war year, and this in spite of the deaths of some 7,000 children due to enemy action and an increase in accidental deaths brought about by war conditions.

Absence of Serious Epidemics

The war period was marked by the absence of serious epidemics, except for the unprecedented epidemicity of cerebro-spinal fever, the notifications of which in 1940 and 1941 were some ten times those of 1938; but the disease was attended by the lowest fatality rate on record, thanks to the use of sulphonamide derivatives in treatment. Two short epidemics of mild influenza occurred during the six war winters. Typhoid fever was less prevalent during every war year (except 1941) than in the pre-war year 1938, but in the earlier part of the war there were three considerable outbreaks of paratyphoid fever of a mild type. Notifications of dysentery showed a large increase in 1944. The commonest type of dysentery by far is that due to the *Sonne bacillus*. The increased prevalence the more disquieting because it had been hoped that the revisions of the Food and Drugs Act, 1938, would have notably lessened the incidence of intestinal infections. The number of outbreaks of food poisoning during the war years was 1,319, with 2,544 cases and 35 deaths. It is mentioned that the importation of dried egg from America appears to have been responsible for the introduction of an entirely new series of *Salmonella* types. In 1943 seven outbreaks, involving 95 persons, were traced to this source, and it is considered likely that earlier outbreaks in which alien types of *Salmonella* were found had the same origin.

The incidence of scarlet fever seems to have been unaffected by war conditions, but case mortality reached an unprecedented low level. Measles was severely epidemic in 1940 and 1941, but the deaths even in the epidemic years were only 75% of the average number for the quinquennium 1935–9. Low records for diphtheria have been established, though the comment is made that far more children were killed by this preventable disease during the war than were destroyed by enemy action. Compared with 1938 both notifications and deaths

were down by considerably more than half. The figures the war years were as follows:

		Cases	Deaths
1940	..	46,821	2,480
1941	..	50,791	2,641
1942	..	41,404	1,827
1943	..	34,662	1,371
1944	..	29,949	934

Thus, despite the adverse circumstances of war, something occurred to interfere with the incidence of deaths from diphtheria. What could it be but artificial immunization with the offer of free prophylaxis? The scheme started late in 1941 but did not get properly under way until 1942, and by the end of 1944 children to the number of 5,366,000 had been immunized under local authorities' schemes.

Tuberculosis and Venereal Diseases

The wartime increase in tuberculosis followed the pattern of the earlier years of the last war, but whereas in 1914–18 the tuberculosis death-rate continued to rise until the war ended, in the recent war, from 1942 onwards, there was a small return to pre-war level. Another difference is that in the first world war the greatest proportionate increase occurred among young women; in the second world war it was the older male age groups which suffered most. Although the prima notification figures went up from 35,965 in 1939 to 44,664 in 1944, it is pointed out that these figures are a guide rather than an ascertainment of actual incidence. The use of mass radiography alone makes it likely that there will be increasing notifications of pulmonary tuberculosis during the next few years. The encouraging thing is the favourable trend of infant mortality.

The standardized death-rate for forms of tuberculosis other than respiratory was 129 per million living in 1944—improvement on the earlier war years, but higher than before the war. Sir Wilson Jameson adds:

“Until pasteurization of milk becomes universal throughout the country the most readily preventable forms of tuberculosis, namely those caused by infection with the bovine strain of tubercle bacilli, will continue to cause suffering and death among large numbers of children.”

Social conditions during the war favoured the spread of venereal diseases to a far greater extent than in 1914–18. Families were disrupted as never before, and the country became the training ground for the Forces of other nations as well as our own, so that sexual promiscuity must have been practised on a scale never previously obtaining. In 1939 the incidence of early syphilis, as judged by the cases dealt with at the treatment centres, had reached the lowest point on record, but by the end of 1943 there was an increase in early syphilis (counting the cases dealt with in treatment centres as infections of British Service men said to have been contracted in this country) of about 140% above 1939 figures, followed by a slight decline in 1944. The incidence trends of gonorrhoea are more difficult to calculate owing to the greater tendency of persons with this disease to seek private treatment, but generally it appears that the increase was not so great, that it reached a peak in 1942, when it was about 86% higher than in 1939, and that in 1944 the percentage declined to about 50%. Fortunately there have been potent medicaments available for the treatment of gonorrhoea and now penicillin for both gonorrhoea and syphilis.

Cancer again shows a progressive increase. The postponement of submission of schemes under the Cancer Act has been in one sense fortunate, for a large experience has been accumulated from the approved interim arrangements and a clear conception obtained of an adequate cancer service, which can only be forthcoming where several local authorities pool their resources and secure the co-operation of the large voluntary hospitals.

Emergency Laboratory Service

A section of the report is devoted to the Emergency Public Health Laboratory Service which was set up by the Medical Research Council on behalf of the Ministry. The service now consists of 17 constituent public health laboratories, associated laboratories, and a further 7 in the London sector.

¹ *On the State of the Public Health During Six Years of War. Report of the Chief Medical Officer of the Ministry of Health, 1939–45.* (H. M. Stationery Office; 5s. or 5s. 4d. post free).

has "developed into a valuable instrument in the armamentarium of preventive medicine." It has provided greatly improved diagnostic facilities, has organized field investigations, and has afforded much needed help to overworked medical officers of health. In fact it has become an integral part of the public health service of the country. An important base of its work has been the establishment of reference laboratories, mostly for Vi-agglutination tests and Vi-bacteriophage typing of typhoid bacilli, the serological identification of members of the Salmonella group, the serological typing of aemolytic streptococci, and special chemical investigations in relation to water, milk, food, and sewage.

A hospital pathological service was set up by the E.M.S. and as a result in the extension of diagnostic facilities in the wider field of pathology to hospitals throughout the country. There are now 29 area laboratories as well as a number of subsidiaries.

"The place of the laboratory in the medical services of the future is assured, and it is most desirable that there should be close co-ordination of its three main branches—teaching and research, clinical pathology, and public health bacteriology and epidemiology. Only thus will the laboratory be able to play its full part in the further development of curative and preventive medicine."

As an example of prevention may be mentioned the watch kept on the danger of importation of typhus. So far there have been no cases other than a small number among laboratory workers who contracted the infection in this country. Cases of malaria infected here have also been extremely few—only seven in 1945 and a smaller number in the earlier years—yet there is now a greater risk of indigenous cases occurring.

One of the best organized of all wartime services was the civilian blood transfusion service. Donors on the panels of his service at the end of 1944 numbered over a million. Three main lessons have been learned:

(1) Until a safe and equally effective substitute can be discovered, blood transfusion has come to stay, and the practice of it will increase;

(2) The demand can be met, provided the appropriate organization is available.

(3) Blood and blood products are highly dangerous materials. The dangers can for the most part be avoided, but only by constant supervision by highly skilled personnel.

The advances in this field stimulated by the war will have profound repercussions in civilian practice.

Maternity Care

The maternal death-rate fell almost consistently during the war. It was 3.10 in 1939, and fell gradually to 1.92 by 1944—a rate still too high for complacency, says this report. The decline in the sepsis rate has been even more remarkable. In 1941 deaths from infection during childbirth and the puerperium reached the low level of 0.48 per thousand births, and the decline continued until in 1944 it was 0.28. In 881 maternal deaths in 1944 on which confidential reports were received by the Ministry, sepsis was given as the cause of death in 112, a distinct decline, but deaths from toxæmia numbered 197, an increase on the figures for the preceding years. The other causes to which deaths were assigned were:

Haemorrhage	120	Ectopic gestation ..	13
Embolism	43	Abortion	137
Obstetric shock ..	122	Associated conditions ..	137

The comment is made that with the improved facilities for blood transfusion it is disappointing that the percentage of deaths from haemorrhage and simple abortions remains stationary.

During the war 152,000 mothers were confined in emergency maternity homes in reception areas. In these the maternal death-rate was 0.8 per thousand and the neonatal death-rate 9.6. These figures relate only to normal cases, but among 30,000 confinements in homes upgraded to admit abnormal cases the maternal death-rate was only 1.9 and the neonatal mortality 13.9.

The Emergency Hospital Scheme

Much of what appears in the report about the emergency hospital scheme and the civil defence casualty service was already common knowledge, but it is useful to have it brought

together within a few pages. The story of the organization of beds and medical supplies, the disposal of civilian and Service sick, the arrangements for treating those injured in air raids and the casualties received from the Second Front after D-day is related, and the conclusions to be drawn from this experience are set out. Whatever form the hospital services of the future may take it is believed that the emergency scheme points to the need for the co-operation of hospitals of all types to provide a co-ordinated service for both in-patients and out-patients for an area or region, the provision of specialist centres or units staffed by expert medical practitioners, nurses, orderlies, and others working as teams, and the constant visiting of hospitals by consultants in the different branches of medicine and surgery in order to facilitate interchange of ideas, to stimulate research, and to disseminate knowledge of new methods.

"In peacetime the sudden stresses thrown on certain hospitals are unlikely to occur to anything like the same extent as in war, but even in peacetime occasions may arise when close liaison and pooling of resources would be of great advantage; for instance, in severe local or even widespread epidemics, explosions in factories, fires, mine disasters, or railway accidents."

The emergency scheme grafted on to the existing organization a system of payment for medical staffs for services rendered to the State: first, by creating a cadre of whole-time salaried medical officers of various grades; secondly, by appointing a number of part-time salaried practitioners of consultant rank; and, thirdly, by using the services of other practitioners, both general and specialist, who received fees for rendering such service. It is added that an advantage specially appreciated by the profession was the organization created by the second and third of these classes, under which doctors were able to serve the State to the fullest extent when required, and at the same time carry on their private practices.

The work of the civil defence casualty service is briefly recounted, and the experience gained is held to point to certain conclusions as to the need for rapid and easy transport of accident cases to a hospital competent to provide resuscitation and efficient plenary treatment, for the simplest kind of first-aid treatment on the spot, for an efficient ambulance service operating over wider districts than those of a local authority, for the maintenance in peacetime for use in accident cases of the efficient hospital departments set up to deal with war injuries, and also for the continuance of the revision of instruction in first aid which was found necessary during the war. The experience of the shelters is also the subject of some interesting observations. A section of the shelter population, comprising 4,000 persons, was closely studied from the epidemiological point of view. Nothing which could be described as an epidemic occurred in any of the thirteen shelters concerned, and apart from minor respiratory troubles no outbreak seemed to be related to shelters. The bacteriologists detected many types of pathogenic organisms and watched for the appearance of multiple cases due to any one type, for they were anxious to try out sprays, masks, and other methods designed to control the spread of infection, but no opportunities occurred.

One chapter, too detailed for summary, is given up to a description of a system of random sampling of patients admitted to E.M.S. hospitals with a view to ascertaining the reasons for admission and the average periods of disablement caused by certain illnesses. Thus for appendicitis the median period was 56 days, scarcely affected by the age of the patient; for lobar pneumonia it was 60 days at ages 15-34 and 54 days at ages 35-54; for infective hepatitis 34 and 45 days respectively. The results are set out in a series of tables which are well worth studying.

Finally, the problems of medical manpower as they presented themselves with a varying degree of urgency during the war are set out, including the recruitment of public health medical officers and of general practitioners. A glimpse is given of the working of the civilian medical recruiting boards. These boards altogether carried out over seven million examinations. The time occupied in each examination was on the average just under half an hour, so that the total time spent by the chairman and members of the boards was 3½ million hours, or something like 400 years. Sir Wilson Jamieson pays a tribute to the devotion and endurance of these senior practi-

oners who, without proper rest or holiday, carried on with multitude of tasks, often to breaking point.

The dental and nursing services, the organization of international medical intelligence, and the "push" in health publicity are the subject of separate chapters; and in the last chapter, "Planning for the Future," the various proposals for

National Health Service, from those of the British Medical Association, originally put forward in 1930, are recounted, but the introduction of the Bill now before Parliament is mentioned only in a footnote.

Reports of Societies

PLACING THE TUBERCULOUS IN INDUSTRY

DISCUSSION BY TUBERCULOSIS ASSOCIATION

Dr. NORMAN TATTERSALL presided at the Provincial Meeting at Oxford in July. The discussion on the "Tuberculous in industry" was opened by Dr. F. R. G. HEAF (London). He said that the employer had to measure efficiency in terms of costings and production and at the same time be responsible for the welfare of his staff, infectivity and reduced working capacity making him look upon the employment of the tuberculous with considerable doubt, though feeling a natural desire to help such persons to get suitable work. The age when primary infection occurred was rising, and since 1938 there had been an increase in the proportion of notifications of tuberculosis in higher age groups. The incidence of phthisis was higher in dusty occupations, and even the so-called harmless dusts might indirectly be the cause of spreading tuberculosis by maintaining chronic catarrh in an individual with an undiscovered active lesion. Light work under bad conditions could be more harmful than heavy work under good conditions. Mortality was generally higher in the dusty trades, the peak occurring in the 50-55 age-group, and in the 40-45 age-group in the non-dusty and heavy occupations. As regards disposal, at present it was by trial and error that they determined capacity for work. The allocation to modified work of a person with a stationary minimal lesion, change of occupation, or the continuance of his present job were largely matters of guesswork. An infectious person, diagnosed by mass radiography, might refuse advice, and the authorities could not inform the employers.

The Industrial Medical Officer

The position of the industrial medical officer was anomalous. He might be informed of the number of employees with abnormalities but must not be given the names of persons with tuberculous lesions. A closer link was required between the dispensary, the local labour office, and the welfare unit of each

The Ministry of Labour circular letter 52/46 stated that T.O. must inform the labour office of every tuberculous person under his care who was fit for a measure of employment and required help to find it, and also any case in which the patient might not be fit for work but nevertheless desired advice. The T.O. must also, at the request of the D.R.O., give medical reports on form D.P.1 (X) and advise about work suitable for a particular case.

Mass radiography was best applied to serial examination of those sections of the community in which the risk of contracting tuberculosis was highest. If the Minister were to schedule tuberculosis as an industrial disease, our incomplete knowledge of the pathogenesis would emphasize the need for a national research body. The best plan would be to enhance privileges under Ministry of Health circular 266/T and eliminate the need for proving that the disease was due to the nature of the employment. The relation between management and labour must not be disturbed by special privileges and conditions for a few selected employees. The tuberculous person might be given light work, but he must fulfil his duties. It was best that the patient who had completed treatment but was still sputum-positive should not be re-employed in normal industry; special workshops and close medical supervision were needed.

We were still searching for an easy means of determining the limit of safety of energy output for tuberculous persons; the work of Leitch and Orr on the calories expended per hour in carrying out certain tasks was of value.

Dr. DONALD STEWART (Birmingham) mentioned that there were over 2,000 doctors employed in industry in this country, but that two-thirds of the workers had no industrial medical officer. The situation of the tuberculous could be improved by the collaboration of industrial health and tuberculosis workers, and by the implementation of newer legislation. Mass radiography was valuable, but the difficulty of defining "incapacity" still remained—e.g., dust reticulation. There was need for liaison between tuberculosis officers and local industries, and doctors must know more about their patients' occupations. The T.O. should have access to a placement bureau through the D.R.O.

Occupations for the Tuberculous

There must be special shops for short-period and long-period cases, and they must be centres for retraining, guidance, and the earning of a livelihood. The man who managed the shop was the key to the situation. Pay must be at a weekly rate and not for piece-work. The medical officer who supervised the workers must have that knowledge of machines that would enable him to order "progression through work," and admission and discharge must be his responsibility. Research was needed into the types of occupations suitable for the tuberculous, into the response of such patients to work, their degrees of reserve, and into the economic value of the work which they would do.

Mr. P. GOLDBERG (Ministry of Labour) said that the work of the doctor must be completed by rehabilitation, and that the Disabled Persons (Employment) Act provided for the registration of the disabled, their training and re-employment (many through a quota scheme), and for sheltered employment for the severely disabled. Sheltered workshops were still in the experimental stage, and there were only three at present. There would be perhaps 24,000 employable tuberculous patients out of the registered list, of which about 4,000 would be candidates for sheltered workshops. The quota was inadequate. He envisaged 50 sheltered factories for disabled persons by spring 1947. Where workshops had been opened, applications for registration had come in more quickly. Tuberculous workers were admitted into sheltered factories—some were devoted to them entirely. Hostels and night sanatoria might be provided later. There would be no "driving" of workers; all would be paid an hourly rate based on the best standard regardless of output. Hours would be fixed for each worker on medical advice. There would be a variety of trades and suitable machinery.

In the general discussion, Dr. NORMAN ENGLAND (Oxford) pleaded for proper choice of jobs for the tuberculous, who feared that they might be discriminated against in filling the quota. Dr. J. CRAWFORD (British Legion) hoped that sanatoria might in certain cases get grants to assist their rehabilitation work. There was no place for the tuberculous in heavy industry. Dr. GLYN HUGHES (Wales) emphasized retraining the younger patients (starting in sanatoria with supplementary educational courses) and encouraging them to enter clerical employment.

Dr. W. H. TATTERSALL (Reading) mentioned the difficulty of getting consumptives to register, and of getting the D.R.O. to go to institutions and register them there. He thought that the quota might be invidious. Was it possible under Section 1 of the Act to reserve certain occupations for patients suffering from specific diseases? Dr. A. CAPES (Hants.) demanded a scheme of job-analysis. There should be craft-work and not complete mechanization in workshops. Dr. H. RAMSAY (Walthamstow) said that the T.O. had little time to learn about industrial processes. Dr. R. L. MIDGELEY (Devon) feared that D.R.O.s thought that rehabilitation began only after discharge from the sanatorium. Dr. A. L. JACOBS (London) felt that it was unlikely that all tuberculous patients were registering, and Dr. MOORE (Northumberland) said that many did not wish to register. Dr. J. V. HURFORD (London) asked how part-time workers would get a really adequate wage, even when supplemented by treatment allowances (266/T) or N.H.I. benefits.

● Sanction comes from medical research and official recommendation for the extra-dietetic prescription of vitamins A and D at important physiological epochs and during phases of growth. In practice, many

doctors simply give 'Adexolin' the Glaxo concentrate of vitamins A and D. Guiding considerations are that

Epochal demands of VITAMINS A and D

the vitamin A requirement rises steadily from birth till the age of twenty, that for vitamin D the demand is high in infancy and that the need increases again for both vitamins A and D during pregnancy and lactation. To meet the widest range of demands doctors need only to choose between drop doses of 'Adexolin' liquid or the 3 minim 'Adexolin' capsules.

Capsules: Each capsule contains vitamin A, 4,500 i.u. and vitamin D (calciferol) 900 i.u.
Liquid: Each cc. contains vitamin A, 12,000 i.u. and vitamin D, 2,000 i.u.

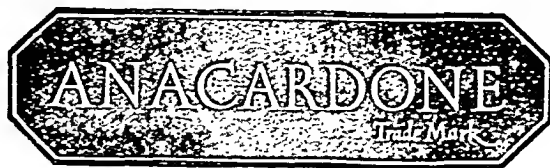


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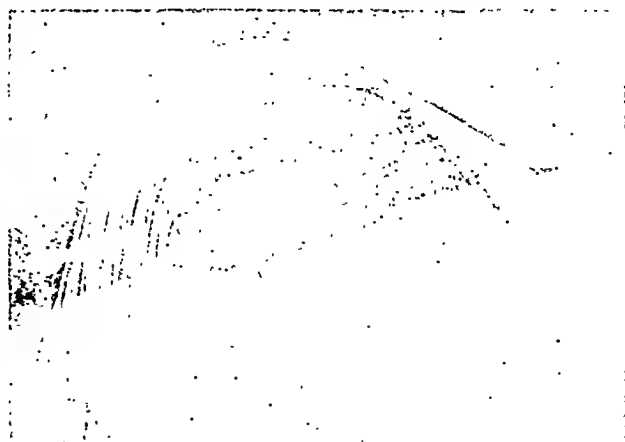
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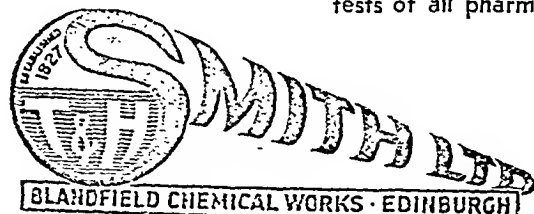


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Danger of Discontinuous Treatment

Dr. F. R. G. HEAF feared that the patient might be split between two authorities, the Ministry of Health for treatment and the Ministry of Labour for employment. Rehabilitation must be merely continued treatment and the case sheet start in the sanatorium. There was a risk of the disabled worker sheltering behind the shadow of his chest. Dr. STEWART said that with good management the less healthy person might be carried along in the team. He advocated a chain of workshops for the tuberculous, and courses in industrial medicine in the universities.

Mr. GOLDBERG said that no Ministry could be responsible for the diversional therapy in sanatoria. A sheltered workshop run in conjunction with a sanatorium would be grant-aided. There was no intention to abolish craft-work. If the patient worked for a full week in the special shop, even if he gave only 20% of a normal output, he earned a full weekly wage, but for 20 hours in the shop he would get hour-rates. Supplementation must come from elsewhere.

Mr. GOMME (Ministry of Labour) said that in engaging workers for employment, whether under the quota or otherwise, the last word rested with employers. Registration at sanatoria was inadvisable, especially as many in-patients would be away from their home areas. However, the D.R.O. might advise patients. An employment could not be "designated" for a specific disease. Job-analysis research was being sponsored by the British Council of Rehabilitation. Local authorities were subject to quota obligation. Registration must be voluntary.

ASSOCIATION OF CLINICAL PATHOLOGISTS

The summer meeting of the Association of Clinical Pathologists was held at Oxford on July 26 and 27, and lectures and demonstrations were given to a large audience. Dr. WINSTONE EVANS opened the proceedings with a paper on "Observations on Sickle Cell Anaemia" based on his West African experiences. Sternal marrow from twenty cases showed that no specific changes were present in the early cells and only occasionally in reticulocytes and normoblasts—i.e., sickle-ing only took place with ease after the loss of the nucleus. Sealed moist preparations showed a typical expansion, tenseness, and filamentous extensions six to eight hours before sickle-ing, and then an explosive onset. Of six hundred males subjected to routine testing there was an over-all incidence in fit soldiers of 19.9%, with the highest in the Gambians of 30%. Almost anything could occur in the clinical picture of sickle cell anaemia, including leg ulceration, and the sickle-ing was really not the primary lesion but merely a side-show superadded on other diseases. Several pathologists who had served in Africa agreed that the oxidation-reduction was the important factor producing sickle-ing in ten to fifteen minutes, whereas alteration in pH alone showed no changes.

Dr. E. JACOBSEN from Copenhagen showed that if reticulocytes were kept in saline at 40° C. there was no drop in their number in six hours, whereas when liver was added ripening of the reticulocytes took place very quickly. He divided the liver principle into two parts: a thermolabile fraction absorbed by florodin, and a thermostable part not absorbed. The thermolabile portion was a xanthine of which folic acid was probably a part. Stomach tissue also contained a good deal of the thermolabile fraction. Organs of different animals had different amounts of ripening substance; those with low normal reticulocytes having the highest ripening value and those with normally high reticulocytes having low value. Increased reticulocytosis might therefore not necessarily mean an increased output from the bone marrow but might mean a decrease in the ripening factor. Dr. B. MALAMOS from Greece then surveyed Cooley's anaemia as it occurred in Greece.

Dr. S. WRAY read a paper on "Acid Phosphatase" based on 25 cases of prostatic carcinoma. After describing the technique for estimation of acid phosphatase and its increase in prostatic carcinoma, he showed tables suggesting that maintenance doses of oestrogens would probably be necessary for the rest of the patient's life, and showed histological sections of degeneration in secondary deposits.

Errors in Haemoglobinometry

A discussion then started on the reliability of clinical haemoglobinometry, and Dr. MACFARLANE showed how in a series of investigations on the significant error in haemoglobin estimations a 20% difference between two examiners had occurred. The investigation allowed for the usual errors; heparinized blood was employed, and sixteen methods were used on sixteen samples of blood by sixteen observers. The observations showed no real agreement between the different methods as compared with the base line of the National Physical Laboratory, in which iron estimations on the method of King were used. The final conclusions on the significant error were that reported differences of 4% were significant with any one observer and 5% with any two observers. Dr. WOOTTON showed that colorimetric methods were nearer the results obtained with iron estimations than were those by gas analysis, and suggested that grey wedges should be used, calibrated directly in grammes of haemoglobin. Dr. MacFarlane then suggested that the original N.P.L. standard of 13.8 was too low and that we should now accept 14.7 grammes % as the standard 100% haemoglobin. In the demonstrations these workers put up twenty-seven methods of estimating haemoglobin, starting with the Talquist paper and ending with the photo-electric haemoglobinometer, and many members of the audience read the different samples in the different machines, demonstrating a very wide scatter in their readings.

Homologous Serum Jaundice

Dr. JANET VAUGHAN followed with a paper on "The Incidence of Homologous Serum Jaundice after Transfusion," based on cases from the N.W. London Transfusion Depot. The follow-up was done five months after transfusion. A report to the Medical Research Council, by Dr. Vaughan and two of her colleagues, on the incidence, incubation period, and symptomatology of homologous serum jaundice appears in the opening pages of this issue of the *Journal*.

There were many excellent demonstrations, and the meeting ended with a paper by Dr. A. MEKLEJOHN on "Silicosis."

At the last meeting of the Council of the Liverpool Medical Institution, the President, Dr. G. F. Rawdon Smith, intimated that the following had accepted Honorary Membership of the Institution: Alfred Ernest Barclay, M.D., F.R.C.P., Sir W. Allen Dalry, M.D., F.R.C.P., Dame Louise McIlroy, M.D., F.R.C.P., F.R.C.O.G., Charles McNeil, M.D., F.R.C.P., Ivan Whiteside Magill, M.B., B.Ch., D.A., Sir Alfred Webb-Johnson, Bt., P.R.C.S. The Honorary Memberships will be conferred at a special general meeting of the members of the Institution on Saturday, Oct. 19.

TRAVELLING FELLOWSHIPS IN MEDICINE

The Medical Research Council announces that it has awarded Rockefeller Medical Fellowships to the following, for the academic year 1946-7:

Sheila Theodora Elsie Callender, M.D., B.Sc., M.R.C.P., graduate assistant, Nuffield Department of Clinical Medicine, Oxford.

Charles Enrique Dent, Ph.D., M.B., B.Sc., M.R.C.P., research assistant, Medical Unit, University College Hospital, London.

Arthur Morgan Jones, M.Sc., M.B., M.R.C.P., Leverhulme Research Scholar (Royal College of Physicians), University and Royal Infirmary, Manchester.

Alistair Mitchell MacDonald, M.D., F.R.C.P.E., Department of Pathology, Edinburgh University.

John Edgar Morison, M.D., B.Sc., lecturer in morbid anatomy, Queen's University, Belfast.

Francis Thomas Carnet Prunty, M.D., M.R.C.P., lecturer in chemical pathology, St. Thomas's Hospital Medical School, London.

Francis Felix Rundle, M.D., B.Sc., F.R.C.S., surgical specialist, R.A.M.C., lately chief assistant and registrar, Westminster Hospital, London.

John Swanney, M.C., M.D., M.S., assistant surgeon, Department of Urological Surgery, Newcastle-on-Tyne General Hospital.

The Council has also awarded a Dorothy Temple Cross Research Fellowship in Tuberculosis to Thomas Francis Jarman, M.D., assistant tuberculosis physician, Welsh National Memorial Association.

Correspondence

Classification of Psychological Disorders

SIR,—There is so much variety in the classification and nomenclature of psychological disorders that argument and discussion about psychiatric problems easily become confused unless the participants take care to be precise in defining their terminology. The interesting paper by Dr. Sands in your issue of Aug. 31 would, I think, have gained much if he had done so. Under the heading Anxiety Neurosis, for example, he writes: "There is every likelihood of doing more harm than good in attempting to treat anxiety states with E.C.T." What is Dr. Sands's definition of an anxiety state? In descriptive terminology this should mean a state of anxiety, and this is what it does mean to many psychiatrists, but from the heading which governs the sentence I have quoted it appears that anxiety state is for Dr. Sands synonymous with anxiety neurosis. If so the reader should know what is his definition of neurosis. From some of his statements one might conclude that his distinction between neurosis and psychosis is that in the former the affective disorder is reactive and in the latter endogenous. This would be a conventional and intelligible distinction in terms of aetiology (instead of symptoms) and applied to the paragraph under discussion would mean that E.C.T. is of no value for reactive anxiety states, leaving open the question of its value for endogenous anxiety states. But Table V includes reactive depressions among "mild or moderately severe psychotic cases." Does Dr. Sands mean that depression whether endogenous or reactive is a psychotic symptom and anxiety a neurotic symptom?

In Table III he produces figures to show that E.C.T. gives better results in depression with anxiety than in anxiety neurosis, but I find it difficult to discover from his paper what precisely is his distinction between the two. It is presumably not symptomatic because he states that anxiety and depression are to be found in both. If aetiological, the distinction is not made clear. A third possibility is suggested by a sentence in his discussion of differential diagnosis in relation to E.C.T. which reads as follows: "The truth is that in this direction treatment has outstripped diagnosis and is likely to be more accurate than the clinician." This statement I find obscure, but it looks as if it might mean that the best criterion for diagnosis is the response to E.C.T. and that if a case previously diagnosed anxiety neurosis responded to this treatment the diagnosis might be altered to depression with anxiety.

I see no objection to the classification of psychological disorders in terms either of symptoms, aetiology, or response to specific treatment so long as each method of classification is clearly and separately defined, but it seems to me that in this paper, as in many other contributions to psychiatric literature, these different kinds of classification are confused, with the result that the data and conclusions are deprived of much of their value.—I am, etc.,

London, W 1

C. P. SYMONDS.

Painful-feet Syndrome

SIR,—I have read with considerable interest the article (Aug. 24, p. 260) entitled "Painful-feet Syndrome among Prisoners of War in the Far East," by J. A. Page. As a medical specialist in the main P.O.W. hospital, Singapore, my time and thoughts were exercised to the full by the outbreak of this syndrome among many hundreds of our fellow-prisoners five to six months after our capture. The syndrome was preceded by manifestations of vitamin B deficiency—lesions of the mouth, tongue, lips, and scrotum attributable to deficiencies of B₂ factors, and later the dermal lesions which have given the pellagra syndrome its name. At about the time of its onset retrobulbar neuritis began to occur frequently, and in much smaller numbers a form of keratitis which we termed granular cornea. I observed no constant vascular or neurological changes except tenderness of the soles on pressure. Redness of the feet could usually be explained by the constant massage to which they were subjected. Increase of the knee- and ankle-jerks was found in a number, but this was probably

evidence of the beginning of our next deficiency syndrome, which manifested itself by signs of pyramidal system disorder.

The author's description of the early clinical picture coincides with that seen in Singapore with the exception of the change in the tendon reflexes. I submit that the later signs were dependent upon climatic conditions. Our chronic cases continued in the same state for many weeks or months, perhaps developing other of the deficiency syndromes such as retrobulbar neuritis or a spastic paraplegia, but never cyanosis of the limbs, gangrene, etc. Under the heading of discussion the author mentions that in the later months of 1942 many of the cases were complicated by the nerve lesions of pellagra. I assume that these lesions would include evidence of pyramidal system involvement resulting in spastic paraplegia.

As regards the nature of the painful-feet syndrome, the only references I could find in 1942 were Kingsbury's report in Manson's *Tropical Diseases* and an account by Pallister in the *Journal of the Malaya Branch of the B.M.A.*, September, 1940. The most significant reference to my mind was the following from the description of pellagra in Manson's textbook: "Another characteristic symptom is a feeling of burning in the palms of the hands and soles of the feet." The syndrome under discussion is that of painful feet, but burning feet was frequently used as an alternative description in our camp, and a small proportion of the severe cases suffered the pains in their hands as well. This led me to believe that the syndrome was probably part of the pellagra symptom complex, and I started using nicotinic acid in the form of "coramine," "nicamide," and nikethamide for its alleviation. The results were most satisfactory and dramatic in the majority of cases. The dosage finally decided upon was 1.7 ml. intravenously twice daily for five days. In successful cases improvement started within three days.

Many cases were treated as out-patients, but unfortunately I have no records of them. Of one hundred and seven hospital case records which I extracted eighty-eight received "nicotinic acid" with the following results: Cured, 33 (37.3%). Very much improved, 26 (29.5%). Better, 25 (29%). No improvement, 2. No record of result, 2. Relapses occurred some weeks later in some cases, as there was no improvement in the diet.

As only indifferent results were obtained in Page's cases from nicotinic acid therapy it would be of interest to know the dose and method of administration tried.

One other point of interest: a battle casualty who had lost one leg by amputation through the thigh had pains in both feet.—I am, etc.,

Chester.

PHILIP R. GRAVES.

Problems of Pneumoconiosis

SIR,—In the *Journal* of Aug. 31 (p. 301) there appeared a leader on the very important subject of "Assessment of Disability in Dust Diseases of the Lung." In the final paragraph of this an ill-advised personal boost was given to the distinguished director of the Medical Research Council's unit in South Wales. This has been accompanied in the national daily press by further journalistic fantasy. No doubt the distinguished director is fully aware of all the difficulties, but my former colleagues of the Medical Board for Silicosis and Asbestosis who have been most intimately associated with this problem have been perhaps even more keenly aware of these difficulties—and for a considerably longer period of years. The designation "benign pneumoconiosis" is not new and was current before 1945.

Under the present system of workmen's compensation the workman, when injured by a compensatable accident or disease, is not entitled to compensation for the injury as such or for disability arising therefrom but only for loss of earning capacity, and even then not for the whole loss. So far as the pneumoconioses are concerned, compensation in respect of death, total disablement, or suspension is restricted to workmen engaged in certain defined industries and processes (and these workmen only) as provided for in special schemes. On what evidence of authority can your writer assert that "the assessment of disability . . . at present is decided largely by radiographic appearances," or again that "many men with reticulation who are not disabled are obtaining disablement certificates"? One can only assume that this refers to official certificates under the schemes. If so, this involves a serious criticism of the Chief

lical Officer and other members of the statutory Medical Board for Silicosis and Asbestosis. Hart and Aslett may have pressed the opinion that only a "small proportion of these emulsion cases were significantly disabled," but they were not necessarily right and the Medical Board wrong. In any case the Medical Board are not required to certify whether the workman is significantly disabled. If they grant a certificate it must be completed in the prescribed form and in accordance with the marginal directions without ifs and buts and such qualifying adverbs as "significantly" or "substantially." In any case, they may and do certify in certain cases that the workman's general physical capacity for work by reason of the disease is not impaired.

There are many other serious inconsistencies and anomalies in the subjective commentaries, reflecting a lack of intimate personal experience of the compensation problems and the rationale of the schemes. The assessment of disability is a difficult problem, but even more urgent is the natural history of dust reticulosis in coal miners. Is it merely a dust tattooing of the lungs? Is it progressive? Is it a disease, benign or otherwise?

In conclusion I venture to wonder how long we must wait before those responsible for directing researches will recognize that in clinical investigations the field workers have a substantial contribution to make in the course of their routine work. Is their experience for naught, simply to be passed to the care of others, while they, the field workers, are reduced to the idleness of compiling official records and certificates and to suffering in silence derogatory comparison and anonymous criticism?—I am, etc.,

Glasgow, N.W.

A. MEIKLEJOHN.

Pathogenesis of Cancer

SIR,—The "Hypothesis on the Pathogeny of Cancer" written in 1927 by your correspondent (Aug. 31, p. 311) A. Curies and Agua was anticipated at least twenty years earlier by Blair H. who, investigating the effect of lead in cases of chorion epithelioma, attributed the disease to the death of the foetus *in utero* and consequent removal of the "endogenous stimulus." I am, etc.,

Quincy Heath, S.W.15.

SARAH WINSTEDT.

Oestrogens and Prostatic Carcinoma. Transurethral Prostatectomy

SIR,—I should like to clarify and add to my remarks with reference to the relative potency of stilboestrol and dienoestrol in the treatment of carcinoma of the prostate (Aug. 10, p. 191). The statement that dienoestrol is three times as active oestrogenically as stilboestrol was made in a personal letter from the manufacturers or central distributors. I am now informed from the highest authority that this statement is not clinically correct. The side-effects, however, with dienoestrol have, in my experience, been much less in evidence than with stilboestrol. Mr. Terence Millin refers in his letter (Aug. 31, p. 309) to the "inaccurate figures and erroneous conclusions" contained in my letter (Aug. 17, p. 241) and gives his total for transurethral prostatectomy operations on the prostate as over 1,600. I had attributed to him a total of 219 cases. The figure of 219 was taken from a table in his paper (*Proc. roy. Soc. Med.*) which is described as "showing my own results where a selection of methods was employed." In the absence of any reference in his paper to any series where a selection of cases was not employed, I concluded that it had been his routine practice to employ such a selection of methods. It is now evident that Mr. Millin intended to convey the idea that this table referred to a particular group, distinct from a much larger group comprising approximately 1,400 transurethral resections. In searching his paper for any reference to the existence of this larger group I have only been able to find the statement "in my last 30 cases I lost 8. I have had better series, etc." Noting his use of the word "better" (rather than larger) it appeared to me that this 30 was included in his figure of 219. It is on these points that the misunderstanding has arisen. After re-reading his paper, I can only admit that the facts and conclusions contained in my letter were understandable interpretations of elliptical statements.

My support is for transurethral prostatectomy with the cold punch. It was only after my change over from the diathermy

loop to the cold punch that transurethral prostatectomy successfully challenged abdominal prostatectomy. Mr. Millin's transurethral resections have mainly been carried out with the diathermy loop.—I am, etc.,

Manchester.

H. T. COX.

Tobacco and Ulcer Dyspepsia

SIR,—The article by Mr. R. A. Jamieson, Prof. C. F. W. Illingworth, and Dr. L. D. W. Scott under this heading (Aug. 31, p. 287) is of great interest to many, like myself, who have given up the use of tobacco because of indigestion. In my personal experience cigarette smoking invariably brings flatulence, heartburn, and eventually actual pain in its wake; pipe smoking is followed by none of these symptoms.

Is it not possible that the difference lies not in the actual absorption of the drug in the two types of smoking, but that in cigarette smoking the smoke itself irritates nerve endings in the upper respiratory passages, thereby causing reflex pylorospasm? This interferes with the normal reflex of chyme from the duodenum, with the result that acid accumulates in the stomach, producing acidity and heartburn. When the pylorus does relax an accumulation of acid is expelled into the duodenum, thereby aggravating a pre-existing ulcer or possibly even producing one.

It is not necessary to be a heavy smoker for these symptoms to arise; a few cigarettes daily will produce irritability of the pylorus, hence the fact that heavy smoking does not make a great difference. I think this theory would also explain the great benefit derived by this type of dyspeptic from a mixture containing belladonna and soluble phenobarbitone.—I am, etc.,

Tavistock.

T. M. DAVIE.

Effects of Tobacco

SIR,—Before the war I vaguely subscribed to the belief that the use and especially the abuse of tobacco were harmful in varying degrees at least to the digestive and cardiovascular systems. Five years of work in British general hospitals overseas have given me ample opportunity to observe a large population smoking to excess, and in many cases to gross excess. Sixty cigarettes a day was a common consumption, and not a few confessed to eighty or more. Yet even with this bias of preconceived opinion I was unable to ascribe with confidence, a persistent cough, a bout of dyspepsia, or even an extra systole to the harmful effects of tobacco. This still seems to me remarkable, and no less so when one recollects the various foul brands of unfamiliar name which at times were smoked *faute de mieux*.

The recent paper by Prof. Illingworth and his colleagues (Aug. 31, p. 288) indicates that no case can be made out against tobacco even in the presence of ulcer dyspepsia. But although it has not been shown to be a cause of organic change, there is no doubt that it affects, functionally at least, the respiratory system. While smoking shallow breathing is the rule, and "chain smokers" have a constant functional reduction of vital capacity. This "poor wind" is very noticeable in those who smoke while engaging in physical work, a habit which has become widespread during the war.—I am, etc.,

Glasgow.

JOHN FLEMING.

Smallpox in the Vaccinated

SIR,—I feel I cannot let paragraph two of Dr. C. Killick Millard's letter (Aug. 24, p. 274) pass without comment. Dr. Millard states: "The failure of successful revaccination to protect completely for even eighteen months is certainly surprising and rather disquieting... and affords a warning against over-confidence in its efficacy." To me it means only one conclusion, that the man in question was inadequately revaccinated in 1942.

The Army Forces were vaccinated by one scarification only until 1944, after which the Army Order came into force whereby three scarifications were made, one a control. Why this change? I can only surmise because the Army authorities experienced much modified smallpox in the Middle East and India, causing them to realize that personnel were not adequately protected by one scarification only. This being the case the originator of the outbreak of smallpox in Middlesex during 1944 would have been revaccinated with one scarification in 1942, and to me it

is by no means surprising that in contact with smallpox in 1944 he developed a modified attack. Why then should the efficiency of vaccination be in doubt? Surely the fault lies with us in inadequate vaccination; we expect too much from one scarification. If I may use a simile—should one cease the treatment of gonorrhoea with sulphathiazole because we have found that with a dose of one tablet t.d.s. we cannot cure this disease? Or should one lose faith in the efficacy of T.A.B. vaccine for the prevention of typhoid when we find that 0.5 ml. fails to protect the patient?

In my letter (June 8, p. 889) it will be noted that of the four cases of smallpox reported three were modified, and subsequently a fifth case developed, also modified in type; surely a very high percentage, and the only conclusion we can come to is that these men were inadequately vaccinated. In October, 1944, I vaccinated a member of the crew who bore good marks from vaccination in infancy, and who had been unsuccessfully vaccinated in 1939, 1940, 1941, and 1942. I used one scarification only, and the result was a very severe take. The person in question ran a temperature of 104° F. (40° C.) for three days, and the arm took five or six weeks to heal, leaving a scar the size of half a crown. This man, along with the rest of the crew, was revaccinated on Mar. 1, 1946, some eighteen months later, and I used three scarifications, and rather to my surprise all three took well. This proved to me that I had inadequately vaccinated the man in 1944, and had he been exposed to smallpox I should not have been surprised had he developed a modified attack.

I am quite sure it is time that we realized that vaccination will not protect for seven years; I doubt if it protects for much more than two years. Once more, Sir, may I stress what I consider in these days a most important point, namely, that when we vaccinate we should vaccinate adequately, particularly those whose journeys take them to or bring them from countries where smallpox is endemic.—I am, etc.,

London, S.W. 1.

F. K. BEAUMONT.

Food-poisoning in Boston

SIR,—In the note about the recent outbreak of food-poisoning in Boston, Lincolnshire (Epidemiological Notes, Aug. 31, p. 316), it is stated that "*Salmonella typhi-murium* has been isolated from the stools of notified cases but not from the ingredients of the ice-cream." Although this statement is true, it might prove misleading by implying that the organism was not isolated from the ice-cream. *Salmonella typhi-murium* of the same phage type was in fact first isolated from the ice-cream before being isolated from the stools.—I am, etc.,

Lincoln.

J. M. CROLL.

Artificial Leg for Women

SIR,—I wish to raise the question of designing an artificial leg really suitable for a woman. I do not know what the proportion of one-legged women to one-legged men is to-day, but I should imagine it is not far off 1 to 2, and that it is increasing; not only did the war leave us a legacy of many women who had lost a leg in air raids or in one or other of the Services, but also there are road accidents which are no respecters of sex, and, with more women in industry, more may be crippled at work. In spite of this, however, there is still no artificial leg made which is specially designed for use by women.

I have thought this for a long time, but I am moved to write to you on the matter because I have just had a letter from a young woman, an art student, who lost a leg in an accident some two years ago and has now at last been fitted with an artificial leg. Although she is quite pleased with the limb and is very glad to be walking on two legs again after so long on crutches, so that she can now go out without, as she puts it, "being the object of that embarrassing attention that the passer-by accords to every one-legged woman on crutches," she is nevertheless disappointed in some respects. She makes certain criticisms—some mechanical, some cosmetic. Her first complaint is the range of movement possible at the hip; she has a perfect hip-joint and her thigh stump is ten inches long, yet the limb is so attached and slung that without feeling insecure she cannot abduct her limb at all, and movement is virtually limited to pendular to-and-fro action only. She was

told before she had her artificial leg that it would let her dance, but with this limitation dancing is practically impossible; men, on the other hand, she finds out, are fitted with a different type of suspension, which allows full abduction; so enables even above-knee amputees to dance. This suspension apparently is never given to women as it is somewhat bulky and shows under their clothes. Surely, she asks, at some time some limb-maker designed a suspension allowing a movement which could be worn under a woman's clothes.

The next criticism is that the standard shape of the socket is triangular; this is well suited to the more angular stumps of men, but women amputees, particularly a little fat, like my friend, have rounded stumps. In consequence, as she points out, her limb tends to slip round on her stump, which upsets her walking altogether. This seems a small point to correct, but it is probably a question of going against preconceived ideas.

Her next point is the way the foot is attached to the shin piece; this is done at a definite angle depending on the height of heel it is wished to wear, but the ankle movement is limited that there is very little latitude possible in height of heel. If a woman wishes to wear a one-inch heel during the day and say a 2½- or 3-inch heel in the evening, she must have two different artificial legs, one for each height of heel. Is not possible to design a limb which incorporates some simple adjustment for heel height? My friend tried wearing a high heel than her limb was designed for, and found it nearly threw her on her face; so this is not, as she says, "just a bit sales-talk."

On the cosmetic side her criticism is chiefly that the standard shin is made to the conformation of a man's leg irrespective of whether the leg is for a man or a woman, so even at the knee and stockinged a woman's artificial leg is always obvious. The measurements are the same for the artificial shin as for the natural one, but the shaping is all wrong; thus the calyx of a woman's calf is quite missed. She makes the interesting suggestion that the shin-piece of an artificial leg for a woman should be made not of shaped metal, but that support should be given by a simple metal tube round which is built in section a properly shaped leg carved out of some very light wood such as balsa. The finish of the leg also leaves much to be desired; she has to wear two stockings to prevent the hard metal glitter showing through, and even then in strong sun there some shine visible.

Her last point is the knee; it is not the right shape for a man or a woman, being too rounded and symmetrical. These days, she insists, no woman keeps her knees always hidden without being conspicuous. For women's limbs, at least, better modelling of the knees is required. The lines of the joint itself she supposes cannot be made less marked than they are.

It seems to me, though I have no first-hand knowledge of artificial legs, that most of my friend's criticisms are probably justified; in any case I pass them on to you for ventilation in the *Journal*.—With your permission I sign myself

"L.S.S.W."

Hypersomnia with Abnormal Hunger

SIR,—I was most interested to read Dr. James Ronald's excellent article on hypersomnia associated with abnormal hunger (Sept. 7, p. 326). Now that attention has again been drawn to this rare syndrome it is to be hoped that further accounts will be forthcoming from other sources. The cases which Dr. Ronald mentions resemble in almost every respect those described by Dr. Critchley and myself in the *Journal* of Jan. 31, 1942. Dr. Ronald states, however, that in his case "An electroencephalogram revealed no abnormality, and that it is in accordance with the findings of Critchley and Hoffman." In actual fact our first case did show an abnormal E.E.G. Although the resting rhythm was normal, overbreathing evoked a large intermittent delta discharge in both frontal lobes, but this was more regular on the left. No conclusions were drawn regarding the significance of this finding. I am not aware of other cases of the syndrome which showed similar tracings, but in my own experience abnormal E.E.G.s are occasionally found in narcolepsy.—I am, etc.,

Bath.

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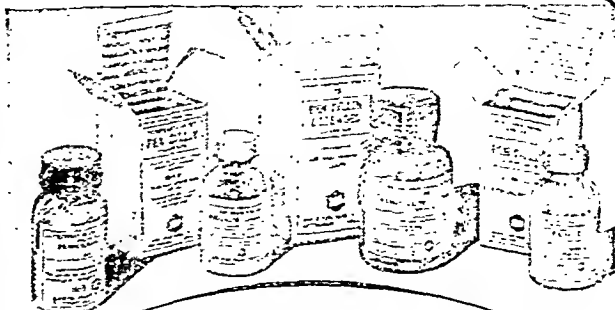
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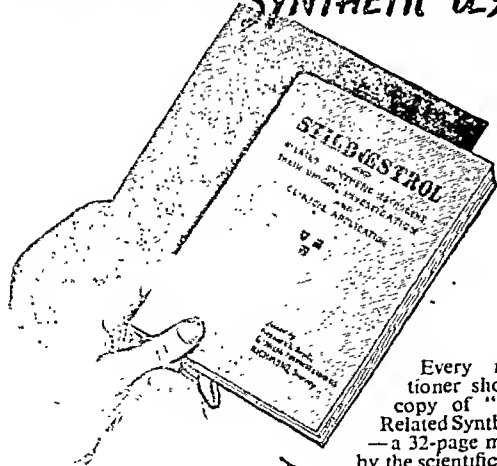
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Recurrent Inguinal Hernia

SIR,—With reference to the particular point of dealing with the radical removal of the hernial sac, forming part of Sir Ernest Cowell's memorandum (Sept. 7, p. 330), I find most satisfactory control to be achieved by passing a hernia-needle, guided by a forefinger, in through the opening where the sac was; sliding the point along the inside of the peritoneum upwards and out through the abdominal muscles to present back into the upper part of the wound. I use it to withdraw inwards and then out through the sac mouth fifteen inches of chromic gut, the lower end of which is used to suture the peritoneal opening, which after suture is inverted upwards and anchored well away from the hernial site by pulling on the other end of the catgut. This is then itself used to close the gap between the muscles and Poupart's ligament, this union being, during healing time, automatically drawn tighter by the very cough which would otherwise tend to thrust sutured peritoneum into newly repaired internal ring. I have used the method for fourteen years.—I am, etc.,

Ferth.

ROBERT NAPIER.

Serous Pleural Effusion

SIR,—In your leader on serous pleural effusion (Sept. 7, p. 333) I was sorry to see no reference to perhaps the most important contribution on the subject. I refer to Dr. Brian Thompson's paper to the Tuberculosis Association in May of this year. This paper is summarized in the Association's abstracts. Thompson's cases numbered 190, and of these only one patient was lost sight of, and he had emigrated to Canada; of the remaining 189, no less than 25% developed phthisis within five years, while 3.5% died.—I am, etc.,

Edware.

STEPHEN HALL.

Health Service Bill

SIR,—The five major points of disagreement between Government and the profession are: (1) *Direction*, i.e., requirement of seeking sanction of the Service. (2) Rendering doctors in the Service liable to dismissal with *no right of appeal*. This putting of persons absolutely in the hands of a Government department is the essence of the loss of civil freedom. In these matters doctors are only a chance group of the nation on whom the proposed restrictions are first to be placed. These features concern our rights as citizens, not as doctors; we must resist these. (3) The question of *ownership of practices by Government*, and (4) *basic salary*, are in a different category. There is less unanimity in the profession about these, and I believe accommodation may be possible here. As to (5) *the State owning all the hospitals*, it seems that matters have moved too far to be reversed. Willing support has already been diminished: damage has been done irretrievably. Further, there is among specialists and consultants a view rather favourable than opposed to these Government plans.

The following proposals are submitted as a possible means of avoiding tragic conflict which, even if it does some good, will surely bring harm in its train through bitter words and misjudgments. (a) Government to give way on the right of appeal and direction of doctors. (b) The profession to give up its opposition to the hospitals plan. (c) Government to undertake to suspend for eight years the ideas of purchasing all practices, of prohibition of sale of practices, and of basic salary. During this period the profession shall work the new Service and arrange matters so that all parts of the country are fairly supplied with general practitioners without having recourse to direction. The profession, on its part, to undertake that, if at the end of the time there is any question as to the satisfactory distribution of doctors, it will refrain from opposing the putting into operation of the present Bill's proposals; subject of course to necessary financial alterations consequent on changed conditions. Government to undertake that if distribution of doctors be satisfactorily accomplished it will repeat the present objectionable features.

During this period a scheme, other than basic salary for all, would be tried out with the official help of the profession: the profession would also implement its frequently expressed ability to arrange for young doctors to buy practices without intolerable financial burdens. These two aspects would

necessarily mean official financial backing by the profession. Government would naturally retain the right (similar to that in the N.H.I. Acts, and that proposed in Section 43 of the present Bill) to take any necessary action in bad spots.

Should some such compromise be adopted two immense gains would accrue: An open road for negotiations to take place on the numerous less fundamental points of disagreement which are probably capable of arrangement; and a changed prospect before the new National Health Service from one of grudging acquiescence by a discontented profession into cordial co-operation.—I am, etc.,

Luton.

B. RANDALL VICKERS.

SIR,—As a profession we stand in a unique and peculiarly responsible position towards our fellow men and women. We have an inescapable duty towards them, and it is high time to stop timid appeasement and act unitedly with courage and determination. The issue is plain. Dr. Waddell has gone into details in his admirable letter (Sept. 7).

This Health Service Bill is fundamentally dishonest: towards the voluntary hospitals, towards the medical profession, and towards the people of England. It is really a political measure to ensure control by a bureaucratic tyranny, i.e., by a totalitarian State. Recently a Socialist M.P. told a friend of mine that this Government intends to take control of the medical profession first, because it is by far the most important one, and has the most power over the people. After that, he said, it will be easy to take control of the other professions, one after the other. Our duty is plain: We must oppose this with all our might. Whether we like it or not we are now the guardians of English freedom and individual responsibility. We must say no quite categorically and with no reservations whatever to the whole Health Bill. But if it passes, as with the Government's large majority it very probably will, our duty is still clear. We must make it a dead letter. We must of course treat our patients as usual but must refuse to sign any certificates whatever. This will involve hardship, probably to many thousands, but only for a short time. The Act will be dead in less than a month.—I am, etc.,

Winchester.

SYBIL TREMELLEN.

SIR,—Like most doctors we are in favour of a State Medical Service, and endeavoured to assess the new Bill in the light of its merits as a medical measure. Seen as such, it has much to commend it. Unfortunately the question is not so simple, and it was only when we realized that larger and more important issues are involved that we modified our first impressions, and ultimately came to a definite decision that the Bill must be opposed at all costs.

Individual freedom is rapidly disappearing in this country. The new Health Bill is a severe blow to what remains of the liberty of the individual for the following reasons: (1) It is compulsory. All must contribute to it. No doctor will be able to exist outside it. (2) The preventing of an Englishman from working where he chooses in England is an entirely new restriction and a very serious matter. (3) Not since mediæval times has anyone had power in this country to dismiss an Englishman from his job and prevent him from obtaining another job in his profession. (4) Never since Magna Carta has anyone been able to refuse an Englishman the fundamental civil right of appeal to the High Court.

Why did Mr. Bevan so strenuously oppose the very reasonable request that we should keep the right of appeal? Because he knows that English judges are still fair and unbiased, and if appeal to them were allowed he would not have the absolute control over the profession which is obviously his aim. These are only a few of the fetters which, if we agree to work the Bill, will be fastened on us and from which we shall never escape. Even at this late moment we still have the choice between submitting to the dictates of Mr. Bevan or striking a united blow for our own freedom and that of the country generally. Once the majority agree to work Mr. Bevan's Bill the choice for the individual doctor will lie between submission or starvation, for no one seriously believes that a doctor outside the scheme will be able to make a living. Few patients will wish to pay private doctors' bills when they are already forced to pay for the State doctor. We have recently acquired a share in a practice after six years of separation

while one of us was in the Army, and we looked forward to taking our part in the State Medical Service. Economic security lies within the scheme. By refusing to join and finding ourselves in a minority we stand to lose a great deal; but so clear cut is the larger issue that we shall have to refuse to join the scheme as it now stands.—We are, etc.,

ZOE HARRIS.
PAUL HARRIS.

Langport.

The Epileptic at Risk

SIR,—On Jan. 18, 1946, I examined at the request of Dr. Sheppard, of Bridgwater, a woman aged 35 with a history of major epileptic attacks 15 years. I considered the diagnosis was unquestioned, and that there was considerable hysterical overlay. Electroencephalography showed an extremely wide spread of energy with activity in low, medium, and high bands, while frequency analysis showed that the general distribution of energy resembled that of the "spike and wave" spectrum of petit mal. It was considered that this electroencephalogram was strongly suggestive of epilepsy, with a liability for the patient to have both major and minor seizures. On my recommendation the patient received "epanutin" (sodium diphenylhydantoinate) 0.1 gm. t.d.s. with "luminal" (phenobarbitone) gr. 1/2 in the morning and gr. 1 at night. This therapy was instituted from the beginning of February. Three months later the patient's condition was reported considerably improved, with very marked reduction of fits and a general improvement in emotional attitude. On July '28 the patient and her mother went down to Devonshire on holiday. There they made contact with a Christian Science practitioner who apparently undertook treatment of this case. While in the house of the practitioner on Aug. 5 a local medical practitioner saw the patient and ordered her immediate removal to the North Devon Infirmary. She was admitted forthwith, and died the same day. At the inquest, as reported in a North Devon paper, the jury found "that death was due to exhaustion following epilepsy accelerated by the deceased being removed from constant qualified medical treatment." The coroner: "That means a verdict without culpability in the legal sense."

When it is considered advisable to put a patient on such a régime as I have detailed above every care is taken that patient, responsible relative, and general practitioner in charge are informed of the hazards involved in a discontinuance of "epanutin" without adequate premedication with phenobarbitone. I feel, Sir, that this admittedly unusual risk should be considered by our profession, though the application of a proper safeguard would seem to be difficult.—I am, etc.,

Taunton.

R. SESSIONS HODGE.

India's Problem

SIR,—I entirely agree with the opinion expressed by Sir John Megaw (June 29, p. 994) regarding the population of India. In my article on toxæmia of pregnancy read before the Scientific Section of the XVIII All India Medical Conference held Hyderabad (Deccan) in December, 1941, which was also published in the *Indian Medical Journal* dated May, 1942, I included as follows:

I fully realize that in our unfortunate and poverty-stricken country, where superstition and ignorance are rampant, and where children are born like rabbits, it is difficult to make our womenfolk go to the too few antenatal clinics in our country. If I had the power I would sterilize all men who have had more than three or four children, and have a clinic to teach contraceptive methods in all hospitals and dispensaries, and even induce abortion whenever anybody wants it.

As one who has practised midwifery for the last twenty-seven years I have come across hundreds of poor women of different communities who requested me to do something to stop their becoming pregnant any more. While the man only wants to satisfy his carnal pleasure it is the woman who feels miserable at her inability to feed, clothe, and educate her ever-increasing family—let alone the ruin of her health.

Is it any wonder that the average life of an Indian is only 27 years—the lowest in the world—that the average income per head is only Rs. 64. As. 6 per annum, and that a great majority are always submerged in debts?—I am, etc.,

Seppendurabai

T. D. RAO.

SIR,—I was glad to read the very courteous letter from Dr. Annie Megaw Brown (Aug. 24, p. 280). In particular I would like to congratulate her on the clarity with which she presents the two essential features of the situation in India: first the shortage of food in relation to the size of the population, and second the fact that what is needed in India at present is food rather than medicine in the majority of cases. The point of difference between Dr. Megaw Brown and myself is one of practical politics. There are many people in this country who have a slightly uneasy conscience in regard to India, but who are readily comforted by the dogmatic assertion that "Indians breed like rabbits," and that, therefore, there is no point in doing much about famine relief since it could merely encourage further rabbit-like behaviour. To focus attention on problems of population and birth control at a time when India is in the grip of famine is to encourage this inhuman attitude and so reduce support for the efforts of the India Relief Committee to place India's case for an increased allocation of food exports fairly before the food exporting countries. Surely it is obvious that of the two variables, food supply and population, the former can be altered more readily than the latter. The cases which Dr. Megaw Brown quotes are additional evidence, if any were needed, that India, though an ally, is faring much less well than our ex-enemies Germany and Japan. It is obvious that distribution of imported grain in a country such as India presents special economic and administrative problems. (If the average income is inadequate to purchase 10 oz. (300 g.) rice a day this would suggest that possibly the price level is fixed too high.) This is however no excuse for abandoning the effort to obtain supplies for India's starving millions until such time as that country is able to set her economy in order and utilize her vast natural resources, which when mobilized are more than adequate comfortably to support her present population.—I am, etc.,

Dumfries.

BRIAN H. KIRMAN.
Major, R.A.M.C.

Colonial Medical Service

SIR,—The letters appearing in your columns from various parts of the Empire portray the existence of some degree of general discontent at present conditions in the Colonial Medical Service. From my own experience and from discussion with members from different sections of the service I feel the discontent is justified. There is an acute shortage of staff, but this is not entirely due to the war. Many good men, some of them under fifty, have retired within the last twelve months, and it would not be far wrong to say that most of them did so for financial reasons and a sense of frustration due to stagnation in the senior ranks. It may be reasonable to assume that unless something is done to improve the terms of service it will become increasingly difficult to maintain the Service at strength. For very few men will commit themselves to almost lifelong existence in the tropics, with all that that means, including possible separation from wives and families, for a financial reward which, considering everything, compares unfavourably with that obtainable at home. A man with a D.P.H., for instance, may reasonably expect to be promoted to a senior post at home, such as that of county M.O.H., and receive a salary which may be considerably more than that of the director of medical services of a colony with 4,000,000 or more inhabitants. There are of course "superscale" posts in the Colonial Service, but these are not the prizes one might gather from advertisements. Most of them are worth only £1,200 or £1,300 per annum if one excludes directorships, which are few, which may take a quarter of a century to obtain, and are worth only £1,500 per annum in many of the larger colonies. A comparison with the recommendations in the Spens Report shows the total inadequacy of salaries in the Colonial Medical Service and the necessity for early improvement.

The Service is a good one from a professional point of view and provides wonderful opportunities for original work. Such work is not frowned upon, nor is an unduly large proportion of one's time devoted to paper work. One normally gets a fair deal locally and always from the Colonial Office. No service is perfect, and the Colonial Medical Service is no exception, but in spite of hard work, often in most unhealthy localities, I must frankly state that I have enjoyed my time as a member of it. But when I retire after more than twenty-five years

service I shall have to "look for a job," because a low salary and a low pension factor will give me a pension which will be insufficient for the proper maintenance of my family. That, surely, is wrong.

I would like to see the Colonial Medical Service, which has played such an outstanding part in the development of our Empire, improved and strengthened so as to make it attractive to the best in our profession. It would be a sad day if failure of recruitment were to make it necessary to staff this Service by "directed" (or "pressed") doctors from the U.K.—I am, etc.,

"AFRICA"

Population Statistics in Palestine

SIR,—I am grateful to Dr. I. S. Fox for his rather vitriolic reply (Aug. 17, p. 245) to my letter on Palestine—if only as an example (though sorry it should be afforded by a member of my profession) of the way in which prejudice can blind people to facts. Dr. Fox mentions many things which were present in the minds of most of us who were in the Palestine administration as factors which would eventually increase the power of that country to absorb a much greater population, but all these are long-term policies. The population pressure in Palestine after the 1914–18 war was immediate and urgent, but its needs could not be met until world conditions had improved. The unlearned Arab could not know this, nor could he realize that his own natural increase was a main factor in his increasing misery. What he did see was a lot of new people threatening to dislodge him, and he naturally jumped to the conclusion that they were the cause of his own food difficulties. It was this situation which we foresaw, which I tried to describe, and against which we tried to guard.

If Dr. Fox could get hold of the White Paper which gives Sir Herbert Samuel's report on the first Jaffa riots he would see that in it he confirms that it was the impossibility of the country to absorb so many new people—immigrant and home-born—that was the immediate cause of the riots; in other words, that the medical reading of the population statistics was correct. This fact makes hay of all Dr. Fox's arguments, which are unsound on the face of them, as they quite overlook the time factor which my letter emphasized. I hope that this time I have made myself clear. If Dr. Fox had been in Palestine at the time and seen, as I had, grain prices redouble themselves in a month I do not think that even he would have wished to admit more people; and he would have recognized that the advice given was, as I said, "in the interests of Jewish immigration," and not with any idea of obstructing the aims of the Government we were engaged to serve.

A common Arab proverb runs: "Haste is of the Devil." If the Zionists had given due heed to the customs of the East, as the pre-Zionist Palestinian Jews did, they might now be enjoying friendly relations with their neighbours.—I am, etc.,

Winsford,

W. N. LEAF

* This correspondence is now closed.—ED., B.M.J.

Prevention of Venereal Disease

SIR,—Let it be granted that it is a heresy "that to refrain from promiscuity is unnatural, abnormal, or even detrimental to health," yet Mr. W. Wagland (Aug. 31, p. 313), who asserts this proposition, has apparently failed to appreciate the point that Dr. G. G. Thyne was trying to make. Unfortunately the latter overstated his case by making the exaggerated statement, "It would be a very strange man, whether he was a venerable dean or a bus conductor, who has not at some time or other run the risk of venereal infection." If he had contented himself with saying "many a man, whether venerable dean or bus conductor, has at some time or other run the risk of venereal infection" few would have cavilled. To say, however, that it is "strange" not to run such a risk argues a very limited experience of men and women and opens the way for such replies as that of Mr. Wagland, who regards such an assertion as being an insult to a large body of men and women who deliberately choose continence until they are married.

The purpose of Dr. Thyne's letter was to advocate compulsory treatment for venereal disease. (It is to be noted that both

letters are headed "Notification of Venereal Disease," but in neither case is there any mention of notification.) Obviously the large body of men and women to which Mr. Wagland refers is of no importance in connexion with control and prevention of venereal disease, for by definition they do not run any risks. Obviously if the large body made 100% of the community the venereologist would no doubt be enjoying premature superannuation. Any large population group, however, consists of all sorts and conditions of men and women, some of whom do in fact run risks of acquiring venereal disease and many of whom may rationalize their promiscuity as being necessary for health. The fact that it is a heresy will not stop them, for they are driven by far more powerful urges than an enlightened appreciation of what is good for health.

When to promiscuity there is attached a very considerable degree of social irresponsibility it becomes arguable that compulsory treatment of venereal disease should be a matter of legislation. The experience of the health authorities in the Scandinavian countries is a strong point in favour of such legislation. It would be found as a matter of practice that in only a small proportion of cases of venereal disease would it be necessary to use compulsion, but it is in just that proportion that compulsion is the only remedy, since persuasion is of no avail. Liberty of the individual is a fine ideal, but that liberty should not imply the freedom to spread venereal disease and thus injure other members of the community.

Mr. Wagland's letter is a valuable contribution to the long-term policy of prevention of venereal disease, but absorption in such a policy must not be an argument for ignoring the fact that all men and women are not yet as Mr. Wagland would have them. We must not confuse what is with what ought to be. While the human animal in spite of all his achievements in some spheres remains on the whole a poor creature, it is but wisdom to say, "There, but for the grace of God, go all of us."—I am, etc.,

London, E.1.

F. R. CURTIS.

Protection Against Sexual Offences

SIR,—I am a little at loss how to answer Dr. Liebster's letter since it is difficult to believe that he is serious in his suggestion that every person convicted of a sexual offence against a woman or child should be castrated. He says that treatment should not be given because few patients appear to benefit from psychotherapy. He must be singularly unfortunate in his patients. Psychiatric clinics such as the Tavistock Clinic have published results which show that psychotherapy compares well with any other branch of medicine. Does Dr. Liebster suggest we should exterminate the tuberculous, for instance, because they are likely to infect others and are difficult to cure? With regard to castration I wonder if Dr. Liebster is familiar with studies of the Skoptzys and the eunuchs of the Chinese imperial palace. They often retained their sexual desires and capacities. Burton in his *Pilgrimage to Al Madinah and Meccah* mentions eunuchs who kept a number of wives. Castration was tried in Germany and America as a cure for sexual offences but seems to have been abandoned because it was ineffective. In any case to use it in such a wholesale way is using a steam hammer to crush a nut, besides being abominably cruel. Surely as physicians our aim is to try to cure and not to mutilate or punish.—I am, etc.,

London, W.1.

CLIFFORD ALLEN.

SIR,—Not so much as a prospective doctor (though I do happen to be a medical student) but as an ordinary citizen am I impelled to protest against Dr. L. B. Liebster's suggested penalty of obligatory castration for those convicted of sexual offences (Aug. 31, p. 313). How can a mutilating operation of this kind possibly be justified on social or ethical grounds? It carries to a monstrous extreme what is often called, far too euphemistically, "protective legislation." Underlying all such proposals one finds an over-simplified conviction that any means, however barbarous, justifies the dubious end of fool-proof social security. I submit that, while agreeing with those who regard the deterrent aspect of punishment as a legal and sociological necessity, we must draw a line—a pretty sharp, definite line, too—between what is ethically permissible and

socially convenient. This matter was well stated by an eminent jurist when discussing the problem of abolishing corporal punishment. Would it not, he remarked, be an admirable deterrent if we punished shoplifting by cutting off the offender's hands? On the same principle clearly Dr. Liebster would eliminate the organ which enables the offence to be committed. Does he not see the ultimate cruelty and absurdity of this philosophy?

My suggestion is that doctors should tread with care in matters concerning the reform of criminal law. They seem more often than not to display a crude ignorance of the juristic principles involved. If Dr. Liebster and others consider the penalties for sexual offences inadequate, are they possibly unaware that the convicted person can be sent to penal servitude for life? Furthermore, in respect of these people being found insane they can be safely lodged in Broadmoor. Anyway let us hope the law will think several times before it resorts to operative surgery in punishing criminals.—I am, etc.,

London, S.W.10.

J. A. FLETCHER.

SIR,—Dr. L. B. Liebster is pessimistic regarding the use of psychotherapy in the treatment of ungovernable erotomania leading to sexual assaults on women. And how should such pessimism be other than justified in a civilization which does not officially distinguish between self-control and control *ab extra*—indeed, which is constantly increasing the latter, and at great expense, in all walks of life? Assuming, then, further steady extension of the bureaucratic principle—i.e., the principle of forcing other people to be good—and assuming that young women are to continue going freely about the streets, not a few serious thinkers will be considering a possible need for the compulsory *veiling of women*, such as happened at the time of the rise of Islam. Indeed, so long as the leaders of civilization remain unaware of how to promote self-control in the individual the Moslem solution may prove the only alternative to wholesale compulsory sterilization of the male.—I am, etc.,

North Queensferry.

A. J. BROCK.

. This correspondence is now closed.—ED., B.M.J.

Pronunciation of Medical Words

SIR,—The derivation of our English words is always an interesting and instructive subject, especially to those who have had the advantage of having learnt something of Greek and Latin in their school days. I do not remember, though, that any of my schoolmasters ever troubled to give my classmates any instruction on this subject, which it seems to me now would have interested and afforded a pleasant quarter of an hour to his listeners. That no such instruction is given in our schools in these modern times would appear to be evident from one little incident which has given small jolts to my educational self-esteem during the past two or three years.

When doing assistantships in various parts of south-west England a case of gall-bladder trouble in my family caused me from time to time to visit chemists' shops to obtain cholelith pills. I have always pronounced the word "cholelith" with a hard ch, as in "choir" (Greek *χορός*) or "chronic" (Greek *χρονικός*) or even, to come more closely to the medical profession, as in the word "chemist," which is derived from the Greek word *χημία*, and which came to us through the French *chimiste*. Almost invariably my request for a bottle of cholelith pills has been met by the bright young person (generally female) behind the counter with the either pitying or contemptuous reply. "Oh! You mean chollylith pills," pronouncing the ch soft as in "chocolate," "choice," and "chuck." These rebukes or corrections from the chemists' assistants I always received with humility. It was wartime, so why be quarrelsome?

However, my latest experience has changed all that. The proprietor himself joined in and publicly rebuked me. This was too much! My pride was aroused. Had I not won a county council scholarship in my school days and graduated from a famous university in my adolescence? Am I not a member of a learned profession? Forthwith that evening I wrote to the firm which manufactures the pills and asked for a ruling on the matter.

The firm's reply was delicious and was balm to my soul. Whoever the gentleman is who was responsible for the reply he has a sense of humour as well as a considerable measure of fellow-feeling for me. He wrote:

"We would like to offer you our sympathy, in your verbal encounter with the 'bright young thing.' There is nothing more likely to arouse murderous thoughts in any man than to be corrected in his pronunciation. Moreover, in your own example, the exasperation will have been intensified by the fact that the rebuke was unjustified. Cholelith is pronounced ko-le-lith, and its derivation from the two Greek words *χολή*, meaning bile, and *λίθος*, a stone indicates that it should not logically be pronounced in any other way. We trust that this information will give you the pleasure of tactfully confounding the disdainful lady and thereafter extending to her the toleration of the wise for the ill-informed."

Just so! I'm waiting now for the member of my family to finish her present bottleful of 100 pills.

I thanked the company very warmly and requested permission to send the correspondence to the *British Medical Journal*. The company's reply caused me still more amusement and gratification.

"We think it is our place to thank you for a very pleasant interlude in the humdrum of general business. The touch of humour in your first note prompted us to reply in a similar spirit, feeling sure that we would not be held to be too frivolous. As for achieving immortality in the august columns of the *British Medical Journal*, this is quite beyond our reach. The Editor of that dignified periodical would shudder at the suggestion that he should sacrifice his space on so unprofessional a matter. For us it is enough to know that humanity and humour can still enter into business relations. Please accept our sincere thanks for that."

While I would regret any ill effects resulting from the shuddering, I do think that the above correspondence can be considered sufficiently professional to allow it to see the light of day. Certainly I think some of our friends in the chemical world may learn something from it.—I am, etc.,

Sussex.

CHARLES E. S. HARRIS.

. Another problem is the pronunciation of the Greek kappa. Most medical men, we believe, give it a hard sound in words like encephelitis and encephalopathy. Yet the Shorter Oxford Dictionary would have the sound soft.—ED. B.M.J.

On Reverence for Authority

SIR,—Your editorial note to the letter of W. G. Kierans (Sept. 7, p. 343) on Reverence for Authority prompts me to relate what Prof. Schäfer (this was long before he became known as Sir E. Sharpey-Schafer) said at a meeting, the first I think, of the Physiological Society at Edinburgh University. He had been speaking about the teachings of Galen and how because of Galen's authority his teachings had been accepted almost without question for some thirteen or fourteen centuries. He then went on to say that the erroneous statements of great men had often hindered the progress of knowledge more than the other parts of their work had favoured it. These are almost the exact words used by the professor, for with them in my mind I have often during the last thirty years wished I had had the literary ability to write a book on the ill-effects of the "erroneous statements of great men" in the various branches of science. A "Short History of Error" would be a fine companion volume to *A Short History of Biology* (Singer).—I am, etc.,

London, S.W.10.

G. POLLOCK.

Demobilized Service Medical Officers

SIR,—I would like to endorse most heartily Wing-Commander Stanley Turner's suggestion for a B.M.A. ex-Servicemen's Committee (Aug. 31, p. 312). Such a committee should have been in existence a long time ago and would have gone a long way towards making the ex-Service doctor feel that his case was well represented and put forward by people who understood his problem. I agree with the proposed constitution of the committee and would suggest that there should be six ex-Service members, two from each Service, and of these one to represent the specialists and the other the general practitioners.—I am, etc.,

ANDREW ZINOVIEFF,
Squad.-Ldr., R.A.F.V.R.

Obituary

On Aug. 26 Dr. THOMAS HOUGHTON MITCHELL died at his home in Ambleside, where he had practised for over half a century. Dr. Mitchell exemplified the best type of old-fashioned family doctor, beloved and trusted by very many as a faithful friend in the wide district in which he practised. He was born in Limerick in 1863, one of three brothers who all became doctors. He qualified as L.R.C.P. & S. Ed. in 1883 after completing his studies at Trinity College, Dublin, and took the M.D. degree at Durham in 1904. Entering Freemasonry in 1905 he gained many Masonic distinctions. Dr. G. Ainslie Johnston writes: After qualifying Dr. Mitchell spent two or three years holding hospital resident appointments at Inverness and Ayr and first came to Ambleside as locum tenent to the late Dr. H. Redmayne in 1887, when I had the pleasure of making his acquaintance, which led to a lifelong and very close friendship. Dr. Redmayne took him into partnership, and on Dr. Redmayne's retirement his brother-in-law, the late C. H. Hough, F.R.C.S., retiring from the senior surgeonship of the Derbyshire Royal Infirmary, became Dr. Mitchell's partner. Dr. Mitchell had a great sense of humour and was very widely read; he wrote a little and published "*Ars mendendi of Shakespeare*," and engaged in his younger days in lawn tennis, golf, and bridge (especially the two latter) in his, often scanty, leisure time. He had a very wide circle of friends among the residents and the visitors who come to our Lake District, who will long remember him. He married in 1893 Miss Gertrude Pease of Darlington, who died in 1935, and lost his only son on active duty with the R.A.F. at the end of the first world war. He is survived by three daughters, one of whom, Mairin Mitchell, F.R.G.S., is a well-known writer on maritime subjects.

Dr. JOHN BARBOUR STEWART, consulting surgeon to the Glasgow Eye Infirmary, who died last month, was a member of the B.M.A. for nearly forty years until his retirement on grounds of ill-health at the end of 1944. He was born in Glasgow, son of John Stewart, and from Garnethill School entered the University of Glasgow, graduating M.B., Ch.B. in 1902. His early appointments were those of senior resident surgeon at the Glasgow Royal Infirmary and at the Eye Infirmary. During the war of 1914-18 he paid regular visits to the Gartshore Red Cross Auxiliary Hospital to attend eye cases. He had also been visiting ophthalmic surgeon to Belford Hospital, Fort William. Dr. Stewart was a member of the Ophthalmological Society of the United Kingdom and of the Glasgow Royal Philosophical Society.

Miss HELENA GERTRUDE JONES, M.B.Lond., D.P.H.Camb., died on Sept. 4 at Gilnockie, Treorchy. She was born in 1870 at Llanrwst, N. Wales, and studied at the Royal Free Hospital. She was one of the original Fabians in the days of Shaw and Wells and became one of the leading suffragettes. Mrs. Pankhurst regarded her as her best orator, and when any trouble was expected she was always sent to quell the disturbance. After four years as resident in Woolwich Infirmary she went to Yorkshire as school medical officer. She worked in Corsica during the first world war for the Serbian Relief Fund. In 1916 she came to the Rhondda, where she was assistant to the M.O.H. and was in charge of the maternity and child welfare clinic. She did excellent work and was regarded as one of the best authorities on child welfare. Always of a forceful nature, thoroughly honest and forthright, she did invaluable work in the disturbed Valley until her retirement in 1935. At the outbreak of war in 1939 she immediately offered her service to Dr. Fergus Armstrong at Treorchy, and worked with him until her death. In the "blitz" of 1941 she was the first doctor on the scene and worked incessantly for twenty-four hours. A nurse who accompanied her was killed with twenty-three people in one street, but although over 70 years of age she carried on her work nobly. Her memory will be cherished for all time in the Rhondda Valley.

With the death of Dr. A. C. TURNER on Sept. 5 the City of Leicester, and more particularly its school medical service, has sustained an exceedingly great loss. Though he had no children of his own, Dr. Turner devoted his life in the truest sense to the care of children. Innumerable children and their parents both in Leicester and in Rotherham, where he served for many years, owe him the deepest gratitude for his kindly and efficient ministrations. His connexion with the Leicester School Medical Service goes back as far as 1911, when he was appointed the first assistant school medical officer. There are many references

in the annual reports of those far-off pioneer days to the value of his services. On the outbreak of war in 1914, Dr. Turner immediately joined the North Midland Field Ambulance and served throughout in France with great distinction, was wounded in action, was twice mentioned in dispatches, and was awarded the D.S.O. in recognition of his gallant service. It is characteristic of the man's humility that he kept the news of this distinction very much in the background. In 1922 he went to Rotherham as school medical officer, and remained there until 1935, when he returned to Leicester in charge of the school medical service there under the general direction of the medical officer of health. During the second world war he was the planner of the city casualty service, and his thoroughness, precision, and meticulous attention to detail made a most valuable contribution to the efficiency of the service. His selfless devotion to duty was most remarkable. During the last few months at his desk, in spite of increasing ill-health, he undertook the writing of a review of the service with which he was connected for so many years. His record of the Leicester School Medical Service from 1905-45 will long remain a classic example of what such reports should be. Such is a very inadequate review of his official life, but he was much more than an official. He gave an outstanding example of unselfish public service in war as in peace. He was a most reticent man, particularly with regard to his achievements, many and great though these were. He had a most lovable disposition, and his unexcelled stoicism during his long and final illness, so full of severe discomfort, was typical of his dogged determination to see all things through without a flinch. He met death as he met life, with a smile on his lips and calm confidence in his heart.

E. K. M.

Dr. EVELYN MARY HOWIE died at Newcastle-on-Tyne on Sept. 7. She was the first woman to receive her medical training at Newcastle-on-Tyne, and she qualified with the M.B.B.S. Durham, in 1902. The first ten years of her post-graduate life were happily and busily filled as a general practitioner's wife in Glasgow. Not only was she occupied with her three children, and all the duties that fall to a G.P.'s wife, but she greatly assisted her husband in his medical work, and there developed her lifelong interest in the care of young children. She was widowed in 1912, and then began the hard part of her life. Hers was only a frail constitution, and she was left no better provided for than is the average doctor's widow. Yet she succeeded conspicuously in both her private and medical life. She was able to maintain a home for her children and to give them a first-class school and professional education, so that now one is a doctor, another a solicitor, and the third a chartered accountant. In her professional life she was engaged in maternity and child welfare, and in 1920 was appointed maternity and child welfare medical officer to Durham County, a post which she held for 17 years until her retirement in 1937. These were the formative years of child welfare, and much that is now standard practice all over the country was influenced by her work. In 1928 she was elected to the Council of the Medical Women's Federation. No doubt the hardships of her own life gave her an added insight into the problems of a working-class mother's life, which earned for her so much affection from the people for whom she worked.

By the death of HAMILTON G. LANGWILL, Leith and the surrounding district has lost a much respected and highly efficient general practitioner, who had been in practice for the last 45 years. He graduated M.B., C.M. in 1889, M.D. in 1893, and received the diploma of F.R.C.P. Ed. in 1896. After graduation, he served as house-physician in the Simpson Memorial Hospital, and in the Sick Children's Hospital, Edinburgh. After that experience he started work in Leith and was appointed physician to Leith Hospital. During the 1914-18 war he served as captain, R.A.M.C., in the 2nd Scottish General Hospital. He was also lecturer at Leith Nautical College. J. J. W. writes: He and I graduated in the same year, and kept up our friendship and association to the end of his life. He was a most energetic and likable man, kind and thoughtful, and never spared himself in assisting his friends and patients in their troubles. In addition to his professional work he had many interests, as he was well informed in general literature, and was a deep admirer of the works of Robert Louis Stevenson. His musical knowledge was very wide, and he was a regular attendant at all the most important concerts in Edinburgh and enabled many of his friends to share his pleasure by giving them tickets of admission. Perhaps his most outstanding interest was his knowledge of the beauties of churches and cathedrals of Scotland and England which he visited during his holidays, and from which he came home with numerous photographs and apt

descriptions of all that he had seen. I know he will be much missed by all his patients and personal friends in Leith and Edinburgh, but especially by his married daughter. Fortunately he had a very short illness, and worked practically to the last, which I know he would have wished.

We regret to announce the death on Sept. 8 at Crowborough of Lieut.-Col. ASHTON STREET, I.M.S. (ret.), who was for a succession of years a popular member of the Dominions Committee of the B.M.A. and of the Central Council. Born in 1864, he began the study of medicine at Downing College, Cambridge, and afterwards took his clinical course at Leeds. He qualified as M.R.C.S. in 1885 and four years later obtained the M.B. degree at Cambridge and the F.R.C.S. diploma. His first appointment before joining the I.M.S. was that of house surgeon at the Leeds General Infirmary. During his service in India he was surgeon to and professor of anatomy at the J.J. Hospital, Bombay, and later principal and professor of surgery at the Grant Medical College. Col. Street was elected to the Council of the B.M.A. in 1927 and on three occasions acted as a representative at Annual Meetings. He married the daughter of Herbert Davies, M.D., senior physician to the London Hospital, and leaves two daughters.

A. TUDOR EDWARDS, F.R.C.S.

At a memorial service held in London on Sept. 12, Lord HORDER gave the following address:

With spirits still benumbed by sorrow it is not easy to speak about one who, until two weeks ago, was so much with us as was Arthur Tudor Edwards. Certainly to speak perfunctorily of anyone so vital as he was is not possible. It is only when we broaden the theme and deepen its perspective that we can say anything that begins to express what is in all our minds. And so, in speaking of Tudor Edwards to-day, if I speak for Medicine my task becomes simpler, and at the same time my approach to it becomes more fitting.

In addresses like this of mine a distinction is often made between the man and his work. In the case of our friend and colleague the distinction is even less justified than with many other men. For to a very notable degree the man was his work and the work was the man. As we watched his whole personality infuse itself into his pioneering labours the single heart held us all to ransom. This terrific concentration of the spirit was the impelling force which enabled Tudor Edwards to break down the barriers that tradition had set against the entry of the surgeon into the as yet unexplored field of chest diseases. He made the entry; he followed it by a series of triumphant achievements; and he proved convincingly that others could do as he had done. But they must show the same courage, the same care and—as many of his pupils must have thought it—the same painful thoroughness. Such care, such thoroughness left in the case of Tudor Edwards no time nor place—as there was indeed no inclination—for showmanship. And yet the whole world was watching, was repeating, was testing his results, to find them valid and of tremendous service to humanity.

Recognition of Tudor Edwards' work was to be in terms of quality, not quantity. International leaders in his field of action realized that they had a peer, and this was the kind of distinction he liked best. Invitations to go here and to go there were honourable but they were embarrassing. The claims of Brompton, The London, Midhurst, Millbank, and Roehampton, doubled as they were by the war casualties, remained paramount. These were the places to which Tudor Edwards was adding fresh lustre. And to these many obligations he added those entailed by being adviser to the Ministry of Health, consultant to the R.A.F., and a member of the Council of the Royal College of Surgeons.

Seven years ago came the first warning that the physical and mental strain, if pursued, might exact the fullest payment. So great was the impelling force of the man's technical genius that, were it not for the agonizing fear of separation from his beloved helpmate, I do not think a choice really existed for him. There was certainly no drama: posturing had no attraction for Tudor Edwards. The situation was dominated by the lure of scientific and beneficent achievement. Let us not ignore the lesson. This man was absorbed in the single-hearted, single-minded mastery of his craft. All else was secondary. Let us never forget and never lightly sacrifice this essential ingredient in the character of the true healer. Society, in its best interest, must harness all that it can summon of this force to the plough of medicine. To bring Nature under control in respect of her hidden secrets is the way the pioneer serves his fellows. To-day it is the conquest of the microbe; to-morrow it is the successful pitting of the surgeon's craft against the cunning concealment of vital organs. It was to this battle that Tudor Edwards gave his life. He will remain for all who knew him a profoundly satisfactory personality and a surgeon of flawless tech-

nique. Commentators say that Tudor Edwards was handsome. Ho true, but the word is inadequate if we apply it only to his bodily features. He was beautiful in the work of his hands and he was handsome in his mind. In his being there was no meagre expression of compensation. It was as though Nature said at his birth: "what I can do when I have no inhibitions and hold back no reserve." Tudor Edwards died in his prime, without a grey hair on his head or in his mind. He has left two precious legacies: to those who knew him a joyous memory; to the world a new chapter in the liberation of mankind from pain and suffering.

Universities and Colleges

UNIVERSITY OF GLASGOW

Dr. Thomas Anderson, F.R.C.P.Ed., physician-superintendent of the Knightswood Hospital, has been appointed full-time lecturer in infectious diseases in the University of Glasgow from Oct. 1. During the past year a joint committee formed by the University and the Corporation of Glasgow has been discussing such a project. It was felt that as the Public Health Department of the Corporation was responsible for the care of patients with infectious disease and the University was anxious to ensure the adequate teaching of this subject, joint responsibility was desirable. The new appointment is a University one, however, and the lectureship is independent of the Corporation. The belief behind the conception is that there is an increasing need for continued study of the management and prevention of infectious diseases. The preoccupation of those in charge of fever hospitals with the day-to-day administration thereof tends to make a serious demand upon their time as clinicians. The new position will free Dr. Anderson from this side of the work and allow him to devote his full time to the clinical aspects of the subject. In order that he may have adequate clinical material for teaching and for investigation the appointment carries with it the title of visiting physician to Knightswood Hospital, and he will have full clinical responsibility for the treatment of the patients there; he will in addition be consultant in infectious diseases Glasgow Corporation. Dr. Anderson's successor as superintendent of the hospital is to be appointed.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a special meeting of the Council on Sept. 27 the Honorary Fellowship of the College will be conferred on Mr. Victor Bonn in recognition of his eminent services to British gynaecology.

The Services

Surg. Rear-Admiral C. E. Græson, C.B., has been appointed an Honorary Physician to the King in succession to Surg. Rear-Admiral F. J. D. Twigg, C.B.E., who has been placed on the Retired List.

The following appointments and mentions in dispatches have been announced in recognition of gallant and distinguished services while prisoners of war:

M.B.E. (Military Division).—Major (acting) T. M. Pemberton and Capt. W. H. McDonald, R.A.M.C.

Mentioned in Dispatches.—Lieut.-Col. St. C. E. J. Barrett, Lieut.-Col. (Temp.) H. C. Benson, W. G. Harvey, E. M. Hennessy, O.B.E., J. Huston, J. W. Malhol, O.B.E., M.C., and J. H. Strahan; Major E. A. Smyth; Majors (Temp.) F. E. Anderson, V. Bennett, and W. J. E. Phillips; Majors (Acting) R. C. Burgess and F. L. Webster; Capt. F. E. Butterfield, P. T. Chopping, D. Christison, M. H. Churchill, T. R. S. Cormack, E. K. Cruickshank, F. L. K. Daniels, J. D. Gibb, J. R. Gibbs, C. Hecht, J. K. Hewat, B. Lennox, C. V. Lewis, P. McArthur, J. McQuillan, E. R. S. Phillips, and C. S. Pitt, R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Killed in accident to air-ambulance.—Surg.-Cmdr. William Tudor Gwynne-Jones, R.N.

The *Annals of Tropical Medicine and Parasitology*, 1945, 39, Nos. 3 and 4, a special number issued as a memorial to Prof. Warrington Yorke, F.R.S., is now available in the B.M.A. Library. It contains a series of papers describing the investigations into certain new antimalarial drugs culminating in the discovery of paludrine. (An article entitled "Paludrine in the Treatment of Malaria," by B. G. Macgrath and colleagues in the Liverpool School of Tropical Medicine, appeared in the *Journal* of June 15, 1946, p. 903.)

No. 35

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 31.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	41	5	23	1	1	33	3	21	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	262	26	92	31	15	377	18	144	97	15
Deaths	5	—	1	1	—	2	1	—	—	—
Dysentery	74	14	45	—	—	236	41	114	3	—
Deaths	—	—	—	—	—	—	—	—	1	—
Encephalitis lethargica, acute	—	—	—	—	—	3	1	—	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	36	10	—	—	—	40	13	1
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	31	5	8	14	2	76	10	13	137	15
Deaths	—	—	—	—	—	—	—	—	—	—
Measles*	1,565	125	73	28	4	851	48	56	25	2
Deaths	2	—	—	—	—	2	—	—	—	—
Ophthalmia neonatorum	98	7	8	—	—	59	4	11	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	44	2	31(B)	—	4(B)	13	—	5(B)	—	—
Deaths	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	279	11	5	1	1	265	9	5	4	—
Deaths (from influenza) ..	6	—	—	—	—	8	1	—	1	—
Pneumonia, primary ..	—	—	104	19	3	—	—	121	9	3
Deaths	—	18	—	9	—	—	17	—	5	—
Polio-encephalitis, acute ..	4	1	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	21	—	—	4	3	28	2	—	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	3	15	—	—	—	3	20	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia ‡ ..	131	9	10	1	1	142	12	12	3	—
Deaths	—	—	—	—	—	1	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	744	62	136	30	22	1,020	63	237	21	30
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	27	4	3	—	2	9	1	2	1	5
Deaths	—	—	—	—	—	1	—	—	—	1
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	1,976	124	91	38	27	1,244	73	52	42	10
Deaths	9	—	—	—	—	4	—	—	—	1
Deaths (0-1 year) ..	318	34	48	28	12	341	44	44	29	26
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births) ..	3,712	567	520	172	94	3,869	543	477	153	63
Annual death rate (per 1,000 persons living) ..	—	—	11.4	11.5	—	—	—	10.8	9.5	—
Live Births	8,692	1,311	978	386	264	6,479	766	824	486	240
Annual rate per 1,000 persons living ..	—	—	19.7	24.7	—	—	—	16.6	31.5	—
Stillbirths	277	40	34	—	—	218	25	23	—	—
Rate per 1,000 total births (including still-births) ..	—	—	34	—	—	—	—	27	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary cases for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In England and Wales 79 more cases of scarlet fever were notified. Apart from the administrative areas of Southampton and Durham (each with 10 fewer cases) the increased incidence was fairly evenly distributed throughout the country.

Measles, whooping-cough, and diphtheria were responsible for 575, 82, and 23 fewer cases respectively. The decline in typhoid cases was maintained for the third week in succession, 27 cases (9 less than last week) being reported. A decrease of 22 cases of paratyphoid also occurred, the total falling to 44.

The decline in measles was consistent in the northern counties, but small increases were noted in a few midland and southern areas. The greatest decrease, of 87 cases, occurred in Essex. Whooping-cough notifications varied considerably from the regional aspect, for, although decreases of 46, 30, and 26 were reported from London, Sussex, and Kent respectively, increases of 70 occurred in Lancashire and 33 in Derbyshire.

In Scotland 81 cases of paratyphoid B were reported. This represented an increase of 74, of which as many as 65 were due to increased notifications from Coatbridge in Lanarkshire. Four new cases also occurred in Renfrewshire and 3 in Airdrie. In addition to 3 cases of paratyphoid at Glasgow (one more than last week) 2 of the 3 new typhoid cases notified for Scotland occurred in that borough. Whooping-cough, diphtheria, measles, and scarlet fever were responsible for 50, 15, 13, and 8 more notifications.

In Eire diarrhoea and enteritis again showed an increased incidence, 65 cases being reported—an increase of 41—of which 55 cases were notified for Dublin, compared with the previous week's figure of 19. Increases were also evident in the notifications of whooping-cough, scarlet fever, and measles, but there were no fresh cases of typhoid.

Quarterly Returns for Scotland

During the quarter ending June, 1946, the births were equivalent to a rate of 20.2 per 1,000, being 1.3 greater than the average rate for the corresponding quarter in the preceding five years. (The average, so calculated, is used as a standard of comparison throughout this note.) Infant mortality, with a rate of 47 per 1,000 live births, was 17 below the average. The deaths from all causes were equivalent to a rate of 12.2 per 1,000 population—1.4 less than the average.

Respiratory tuberculosis caused a death rate of 64 per 100,000, and all forms of this disease resulted in a rate of 82 per 100,000 (the average figures were 63 and 87 respectively). Actual deaths from the main epidemic diseases were: cerebrospinal fever 26, whooping-cough 19, diphtheria 16, and measles 39.

Week Ending September 7

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 663, whooping-cough 1,824, diphtheria 284, measles 1,321, acute pneumonia 292, cerebrospinal fever 33, dysentery 86, acute poliomyelitis 19, paratyphoid 42, and typhoid 21.

Medical News

The annual dinner of the Middlesex Hospital Medical School will be held at the Savoy Hotel (Embankment entrance) on Friday, Oct. 4, at 7 for 7.30 p.m.

The St. Thomas' Hospital old students' dinner will take place at Claridge's Hotel, Brook Street, W., on Nov. 1, at 6.45 p.m. for 7.30 p.m., with Sir Maurice Cassidy, K.C.V.O., M.D., in the chair. Rationing restrictions limit the number of places to 250. Applications from old St. Thomas' students should be made to the honorary secretaries, Old Students' Dinner, St. Thomas' Hospital, London, S.E.1.

The next meeting of the Whips Cross Hospital Medical Society will be held on Thursday, Oct. 3, when Dr. John Shone of the North London Blood Supply Depot will lecture on blood transfusion and the general practitioner. The honorary secretary of the society is Dr. W. W. Walker, Whips Cross Hospital, London, E.11.

The 22nd meeting of the Biochemical Society will be held in the Department of Biochemistry, the University, Liverpool, on Friday, Sept. 27, at 11 a.m., when papers will be read.

At the Welsh National School of Medicine, Cardiff, the opening address for the new session will be given by Sir Willem Jameson, Chief Medical Officer to the Ministry of Health, in the Institute of Physiology, Newport Road, Cardiff, on Friday, Oct. 4.

The International Society of Medical Hydrology will hold its first post-war meeting at Buxton on Friday, Saturday, and Sunday, Oct. 4, 5, and 6. The train leaves St. Pancras at 11 a.m. on Friday, and there is a general meeting of members at 5 p.m. On Saturday at 9 a.m. Dr. Van Breemen will read a paper on the four causal factors of rheumatic disease in connexion with medical hydrology, followed by a demonstration of cases at the Royal Devonshire Hospital, and a visit to the spa; at 5.30 p.m. Mr. R. Whittington will read a paper on plasma viscosity. The programme for Sunday, beginning at 9.30 a.m., includes papers by Dr. Victor Ott on present Swiss concepts of rheumatism and physical medicine, by Dr. Abraham Cohen on the use of physostigmine in rheumatoid arthritis, and by Dr. Louis T. Swaim on American concepts on arthritis. Applications for attendance and for accommodation should be made to Dr. Donald Wilson, 28, The Circus, Bath. The fee for non-members at the meeting is 10s., exclusive of accommodation.

A conference of the Nutrition Society is being held to-day (Saturday, Sept. 21); beginning at 10.30 a.m., at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C. This precedes a general business meeting at 2.30 p.m. The provisional programme and time-table are as follows: "The work and aims of the Food and Agriculture Organization." Papers by Sir John Orr, Director-General of F.A.O.; Mr. D. Lubbock "Nutritional Aspects of the World Food Picture"; Dr. P. Lamartine Yates "The Development of Food Supplies"; Dr. W. R. Aykroyd "The Nutritional Programme of F.A.O."; Miss E. Fauz "World Needs for Processed Milk." Non-members are only admitted to meetings by the introduction of a member. Further details of the Nutrition Society can be had from the hon. secretary, Dr. Leslie J. Harris, Nutritional Laboratory, Milton Road, Cambridge.

The Royal Photographic Society's 91st annual exhibition of photography was opened by Sir Henry Dale on Sept. 14, and will be on view from 3 to 6 p.m. until Saturday, Oct. 26, at the Science Museum, Exhibition Road, London, S.W. It contains nearly 900 photographs, and entries were received from 21 countries. There are prints showing the photographic method in nuclear research. Other prints illustrate such diverse subjects as sound recording on glass disks, the effect of electron bombardment, the formation of shell on an egg inside the hen shown by radiography, the making of a denture, diseases of plants, photographs of molecules (taken by the x-ray diffraction method of Sir Lawrence Bragg), a paraffin spray taken at 1/10,000 second, antenatal skiagram of Siamese twins, colour photographs and transparencies of medical and surgical subjects, and many beautiful natural history prints. The cinematographic section contains 46 films on scientific, technical, commercial, and instructional subjects.

The Board of Directors of the famous Scottish institution known as Crichton Royal have established three Fellowships for the training of specialists in psychiatry, each carrying a salary of £400 a year, plus the usual residential emoluments. The Fellowships are in addition to the ordinary staff of the hospital; they will be tenable for one year, starting from Feb. 1 next, but may be prolonged for another year. Previous general hospital experience is essential. The Fellows will receive training in all branches of clinical psychiatry (including work in out-patients and child guidance clinics) by the senior members of the medical staff. These Fellowships will help the introduction of a higher and fuller training in psychiatry as encouraged in the recommendation of the Royal College of Physicians. Application forms and syllabus can be had from the Physician-Superintendent, Crichton Royal, Dumfries, and should be returned by Dec. 16.

Thirty members of the medical delegation from Belgian universities now visiting this country were welcomed in London on Sept. 9 by Sir Ronald Adam, chairman of the British Council. The reception was held at 74, Brook Street, and among those who met the medical representatives from Brussels, Ghent, Liège, and Louvain were the Belgian Ambassador, Lord Moran, P.R.C.P., Sir Gordon Gordon-Taylor, and Lord Amulree, representing the Ministry of Health. The delegation was led by Prof. J. J. P. Bouckaert of Ghent, deputizing for Prof. J. P. Hoet of Louvain.

The National Ophthalmic Treatment Board announces that Dr. Alfred Cox is resigning his position as Acting Secretary of the Board as from Sept. 30, and that Miss M. H. Atkins has been appointed Secretary to the Board. Dr. Charles Hill will continue as Medical Secretary, the post formerly held by the late Dr. G. C. Anderson.

Dr. G. Candler-Hope, who has been medical officer of health for the Scarborough Rural District for 51 years, is retiring at the end of this month. Dr. Candler-Hope graduated in medicine at Edinburgh in 1891 and joined the B.M.A. in 1900. He served as a member of the Representative Body for 20 years in all between 1920 and 1943; he was also a member of the Distribution Committee and of the Rural Practitioners Subcommittee for a long period.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to the EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: WESTCENT, LONDON. ORIGINAL ARTICLES AND LETTERS for publication are understood to be offered to the *British Medical Journal* unless the contrary be stated.

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ANY QUESTIONS?

Blood Sedimentation Rate

Q.—Can an active tuberculous or rheumatic infection in a patient whose sedimentation rate is normal for age and does the amount of sodium salicylate in the blood affect sedimentation rate? Is there any value in taking reading both one and two hours (Westergren)?

A.—It is impossible to deal with this question completely in a brief answer. A useful symposium of several authoritative articles on various aspects of the blood sedimentation rate will be found in *The Practitioner* (July, 1946). These articles include useful bibliographies.

While in the active phases of tuberculosis and acute rheumatism the sedimentation rate is usually increased and the degree of this increase is roughly parallel to the activity of the disease. Cases are occasionally met in both these infections in which the sedimentation rate is within normal limits. This is especially true of tuberculous lesions of minimal extent, where it has been shown that the sedimentation rate when patients first come under observation is quite unreliable as a guide to the probable course of the disease. In tuberculosis and rheumatism the sedimentation test finds its greatest value in serial observations, when variations in rate in the same subject are of undoubted significance and form a useful addition to other data in assessing progress. Definite information is available about the effect of sodium salicylate on the sedimentation rate, but it seems likely that if there were any such effect it would have come to light, since the test has been used extensively in cases of acute rheumatism in which salicylates are often given over long periods.

With regard to the value of observations after one and two hours by the Westergren method, for clinical purposes a reading at one hour is adequate, and little further information of value is likely to be obtained from reading after two hours. Sedimentation of red cells occurs in three phases: an initial phase in which the red cells are agglutinating and in which the rate of sedimentation is gradually increasing; then a phase of sedimentation at a fairly constant rate after the process of agglutination is completed; and finally a phase of gradual slower sedimentation as the red cells pack at the bottom of the tube. In the Westergren method, with its 200-mm. tube-length, the reading at one hour will include the first phase, but in the case of the most rapidly sedimenting bloods the whole of the first hour will fall into the phase of constant sedimentation. The second hour will include a variable proportion of the phase during which sedimentation is slowing because of packing of red cells. Methods using a 100-mm. tube and a reading at one hour will lead to the inclusion within the time covered by the reading not only of the whole of the first phase but also of part of the third phase with rapidly sedimenting bloods. Various methods have been devised to measure the steady sedimentation rate during the second phase which on theoretical grounds would present several advantages, but for clinical purposes the test cannot be interpreted with sufficient accuracy to justify the added complication introduced by these methods.

The test is not specific; the rate of sedimentation depends not only upon the balance of the protein and certain other

constituents of the blood but also upon the concentration and shape of the red cells, and the first of these can be disturbed by a great variety of factors. In view of the non-specificity of the test it seems preferable for the clinician to allow for any anaemia that may be present in his interpretation of its result in relation to the total clinical picture, rather than to attempt to remove the effect of one among many variables by a correction for anaemia. Hence a simple reading after one hour with the Westergren technique conveys sufficient information for all except special investigational purposes.

Treatment of Chronic Sinusitis

Q.—A woman aged 48 had her antrum of Highmore drained for double sinusitis fifteen years ago. The right antrum frequently becomes inflamed, causing intense pain which is only relieved after a profuse muco-purulent discharge from the right nostril. These acute attacks have recurred every few weeks for several years. *Staph. aureus* is the chief organism present. Surgical measures are declined. Is penicillin indicated?

A.—It is unlikely that penicillin would cure this patient even if the organism were sensitive to penicillin, as the infection is chronic, with formation of fibrous tissue and osteitis, where the penicillin would not penetrate. Proper drainage and removal of infected bone in the capsule of the sinus is indicated.

Intestinal Worms Stained with Iron

Q.—An infant under treatment with iron ammonium citrate passed black thread-worms. It was presumed that the worms were made black by feeding on the iron. Was this observation true?

A.—The cuticle of living helminths, in contrast to that of dead helminths, usually resists staining by substances other than vital stains. The blackening of the faeces in persons taking iron ammonium citrate is presumably due to the formation of ferrous sulphide, which, if taken into the gut of the living worm, would be visible through the transparent cuticle.

D.D.T. for Head Lice

Q.—Is D.D.T. efficacious and safe to use on a verminous head? How should it be applied?

A.—D.D.T. can be used in the form of a 2% emulsion against head lice. (See the article by E. B. S. Scobbie in *British Medical Journal*, 1945, 1, 409.) It is fairly certain that one or two such treatments would be harmless, but the effects of repeated applications are not known. We understand that experiments are now in progress to ascertain the effectiveness of D.D.T. aqueous suspensions for this purpose. Such preparations would clearly be safer than emulsions owing to the absence of any solvent for the D.D.T.

Effects of Penicillin Lozenges

Q.—Penicillin lozenges are in common use, yet the American "Digest of Treatment" states that 18% of cases using them develop glossitis and stomatitis. Their use for infections of the oral cavity is considered inadvisable. What is your opinion?

A.—It is impossible to trace the American *Digest of Treatment* anywhere here. It cannot therefore be discovered on what kind of information the statement is based that 18% of cases using penicillin lozenges for the treatment of infections of the oral cavity develop glossitis and stomatitis.

It is impossible to obtain exact figures for the use of penicillin lozenges in oral infections in this country, but many cases have been treated in this manner, and only four cases of glossitis have so far been reported—two by P. D. Bedford, *British Medical Journal*, 1946, 2, 63, and one by P. Ellinger and F. M. Shattock, *British Medical Journal*, 1946, 2, 208. This demonstrates that the incidence of glossitis following oral penicillin treatment is very rare. There is no permanent damage to the tongue, and the glossitis disappears after discontinuing the treatment. In the one case investigated more thoroughly a nicotinamide deficiency was observed which was probably due to an effect of penicillin on the production of nicotinamide by the intestinal flora. It was the main cause of the glossitis, which could be relieved by

parenteral administration of nicotinamide. Considering the great therapeutic value of local penicillin treatment of oral infections, and the very rare incidence and the complete and speedy reversibility of the glossitis, unpleasant as it might be for the few people who acquire it, there is no indication against the use of penicillin for the treatment of oral infections. One should, however, watch the condition of the tongue and look for other signs of nicotinamide deficiency during treatment, which should be discontinued and nicotinamide given parenterally if such signs develop.

Erythematous Patches on Legs

Q.—A woman aged 39 complained in 1941 of pain in the right groin; temperature 103° F. (39.4° C.). Nothing could be found on examination. Her temperature fell on the second day, and there appeared on the right leg a large erythematous patch which took 1-2 weeks to disappear, leaving a large area of scaling. This type of attack has occurred five times—four on right leg, one on left. Between the attacks she is well. I should have diagnosed erythema nodosum but for the recurrences. What is your opinion?

A.—Erythema nodosum is often recurrent, but the history does not suggest that diagnosis. The condition is almost invariably bilateral, and is not preceded by glandular symptoms or temperature (though temperature often accompanies the onset). The colours characteristic of erythema nodosum are not described and the scaling does not seem compatible with that diagnosis.

The probable diagnosis is a recurrent phlebitis or recurrent lymphangitis, organisms possibly gaining entrance through some minute abrasion about or between the toes. It is important to exclude ringworm infection between the toes. Treatment should be according to the findings.

Intestinal Enzymes for Arthritis

Q.—It is suggested that enteric-coated capsules of crepsin-type enzymes may have a beneficial effect on rheumatoid and other types of arthritis. Has this treatment any rationale?

A.—Claims made by the originator of the treatment of rheumatic diseases by a preparation of intestinal enzymes have not been confirmed by others. The writer believes that the remedy has some influence upon digestion and assimilation; and he has noted an improvement in general health and therefore improved powers of resistance in some of the patients, while in others no effect could be observed. That the remedy is by no means inactive is shown by the marked fall in the blood sugar which sometimes occurs under the treatment as well as other less obvious effects, and this would indicate the desirability of further observations. It may throw some light on many little-understood features in the pathology of rheumatoid arthritis in particular.

Stammering in a Young Child

Q.—A child aged 2 years 9 months is beginning to talk and shows signs of a stammer. Can you tell me what treatment is indicated, if any?

A.—At this stage it is not uncommon for an intelligent child to develop a temporary stammer because his flow of ideas is outrunning his verbal facility. In such a case one can safely ignore the symptom so far as direct treatment is concerned, but it is useful to adopt certain measures to decrease its duration and to prevent habit formation. These include speaking to the child slowly and distinctly, with economy of words and simplicity of phrasing, since the stammer may well be an unsuccessful attempt to imitate the rapid and complicated speech of adults too early. It is also advisable to provide plenty of other means of expression, especially in play, with simple construction material and the large toys that give a satisfying sense of power to small children. Songs are sometimes a help in combining words with rhythm.

A developmental stammer is usually of the repetitive kind, without any marked hold-up in breathing. The type that involves spasmodic working of the throat muscles followed by explosive speech should, if at all persistent, be referred to a speech therapist, as should cases with a family history of marked stammering.

INCOME TAX

Child Allowance

W. O.'s son, aged 21 years, is taking a degree course at a university. He receives a Government grant conditional on W. O. contributing £10 a month towards his maintenance. Can W. O. claim the child allowance?

** Yes.

New Partnership

"ALPHA" has acquired a share in a partnership as from April 1, 1946, but the outgoing partner retains certain appointments to the value of £300 per annum. A new bank account has been opened as from April 1. Alpha did not buy a share in the previous book debts. How should his liability for the year to April 5, 1947, be calculated? He also asks whether purchase tax is deductible for income tax purposes.

** It is assumed that the new firm will be regarded as a continuation of the old one, and that the firm's yearly accounts will be made up as at the usual date—i.e., Dec. 31. The new firm will be assessed under Schedule D in the ordinary course for 1946-47 (presumably on the basis of the profits for the year to Dec. 31, 1945), excluding the £300 which is assessable under Schedule E, and Alpha will be liable to account to the firm for his share, for twelve months, of that charge. In so far as an expense is allowable for income tax as being incurred in carrying on the professional work, the full amount as increased by the purchase tax is allowable. The question does not, of course, arise in respect of non-professional expenditure.

LETTERS, NOTES, ETC.

Civilian Employment for R.N. Sick Berth Staff

Surgeon Captain MONTAGUE H. KNAPP, R.N. (Retd.), writes: The Central Council, Royal Naval Sick Berth Staff Association, composed of Naval medical officers, was founded in 1933, the principal object being to advertise, by various means, the little-known fact that men of the Royal Naval sick berth staff are fully trained and experienced male nurses, who on return to civil life, after 12 or 22 years' service in hospitals and ships in the Royal Navy, are available for and desire civil employment. During the passing of the Nurses' Act, 1943, at the instigation of the Council, the position of these men was constantly brought forward by our Patron, the late Admiral Lord Keyes, and other Naval and medical members of both Houses, with the result that the original suggestions of the Council made to the Ministry of Health were conceded, viz: (a) Reopening of the List for registration, as "State Registered Nurses" for those qualified to register up to 1925, which, owing to the matter not being adequately promulgated to those abroad, many had failed to do. (b) That sick berth ratings with certain qualifications as to service, etc., were to be recognized as "Service Trained Male Nurses," and registered as such. Unfortunately, owing to death, ill-health, and age, none of the original founders, or officers of the Council, are now available to carry on the work, and medical officers, R.N. and R.N.V.R., active or retired, are urgently required to fill the vacant offices, and I wish to appeal to all who are interested and willing to help to communicate with me, c/o Medical Department, Admiralty, 64, St. James's Street, London, S.W.1.

Facial Palsy Accompanying Acute Mastoiditis

T. K. R. OGILVIE writes: Please allow me to make a small correction in my article published on Aug. 24 (p. 263). The first line of the description of Case 4 should read "Mr. A., aged 36, attended his practitioner," instead of "attended hospital." I would also like to add that one of my objects in publishing the report was to warn practitioners of this pitfall and to point out one of its presenting symptoms, persistent slight deafness.

Pethidine as a Drug of Addiction

Dr. A. HARBOUR (London, S.W.1) writes: It may not be generally known that pethidine may cause addiction in as serious a degree as the more common drugs associated with this condition. A case seen by me lately brings this out clearly. The patient, a man of colour, was under my care for some 36 hours while being held by the police on a charge unconnected with his addiction. He had been a heroin addict but had been cured by the substitution of pethidine and no longer took the former drug except on rare occasions. On the other hand he needed three injections a day of 400 mg. of pethidine to keep under control. Deprived even for a very short time of his drug he behaved in the normal way of an addict deprived of his "shot." Two points arise from this case. First, that physicians who relieve an addiction to one of the common drugs by substituting pethidine run the risk of a mere alteration of the addiction and a continuance of the misery and vice that goes with such a condition; and secondly, that the present position relating to the

supply of pethidine whereby an addict can have a prescription repeated *ad lib.* or can obtain the drug without a prescription or signing the poison book at a chemist is unsatisfactory.

** We understand that pethidine has been recommended for insertion in Schedule I but is not yet legally included, although pharmacists by common consent now act as if it were on Schedule I.

Experimental Helminthic Infection

Mr. E. L. TAYLOR writes from the Veterinary Laboratory, Ministry of Agriculture, Weybridge: May I call attention to inaccuracies in a reply to a question on experimental helminthic infection which appeared in the *Journal* of Aug. 31. The writer of the answer appears to be unaware of the highly specific nature of the host requirements of most helminths. Although some members of the genus *Taenia* occur in rabbits, in their larval stages only, *Taenia solium* cannot infect that host at any stage in its life history. If your correspondent wishes to infect rabbits with adult tapeworms he must interest himself in members of the genus *Cyttospora*, the larval stage of which is spent in the body cavity of certain species of free-living mites. Nor can an infection with *Enterobius vermicularis* be maintained in rabbits. These animals do, however, become infected with more or less closely allied species that may have some value for the purpose of testing substances thought to possess anthelmintic activity against *Enterobius*. The demonstration of the anthelmintic activity of a substance against these allied species of worms would not of necessity indicate any action against *T. solium* and *E. vermicularis* but would be indicative of the need for specific trials on those two parasites themselves.

** We are informed that the experimental infection of rabbits with *Taenia solium* and with *Enterobius vermicularis* for which a technique was asked by a correspondent is unlikely to prove successful because neither of the parasites occurs naturally in their hosts, nor have previous experimental efforts proved positive. *Taenia solium* has become exceedingly rare not only in this country but elsewhere in Europe. It is, however, fairly common in Cyprus and in South Africa, while the occurrence of cerebral cysticercosis in troops who have been stationed in India indicates that it is not uncommon there. Rats and mice harbour several species of oxyurids which could be used for experimental purposes more readily than *Enterobius vermicularis*, while there are several species of *Taenia*, closely related to *Taenia solium*, in dogs and cats available for experimental study.

Rash After Penicillin Lozenges

Dr. D. P. WHEATLEY (Watford) writes: Reactions to penicillin are rare; and a reaction to penicillin lozenges has not, so far as I know, been previously reported. The following case, therefore, may be of interest. A girl aged 22 came to me with a sore throat. On examination her tonsils were only slightly inflamed, and she was sent to bed with a box of penicillin lozenges with instructions to suck one two-hourly. I was called to see her again in a few days' time because she had been unable to continue with the lozenges, owing to a rash which appeared on her cheeks and upper part of her chest each time she sucked one. This appeared about 20 minutes after a lozenge, and was accompanied by a hot, tingling sensation of the affected skin. The rash was red and blotchy, somewhat resembling that of chicken pox. It was irritable and faded within 20 minutes. An interesting point was that the girl had on a previous occasion sucked gelatine penicillin pastilles with no ill-effect. The rash was presumed to be an allergic reaction, probably due to an impurity in the lozenges.

Journals and Textbooks Wanted

Dr. A. TUDOR HART writes from the Ministry of Pensions Hospital, Dunston Hill, Gateshead, 1: The International Brigade Association has received urgent requests from former medical officers of the I.B. Medical Service in the Spanish War, now at last working once more in their own countries, for current issues of medical journals. Would some of your subscribers be willing to forward their *British Medical Journal* regularly for a year? If so, will they please write to the secretary, International Brigade Association, 14, Red Lion Square, London, W.C.1, who will let them have a name and address. We have other former colleagues still working in China, to whom we should especially like to forward recent and expensive surgical textbooks. May we also appeal for some donations for this object? They should be sent to the same address, marked "Medical Textbook Fund."

Apology

Mr. GEORGE BANKOFF writes: I very much regret that owing to my book *Plastic Surgery* being written and published during the war years I could not obtain permission from Prof. Francis Burica of Prague to reproduce three of his cases published in his book *Chirurgia Plastica* (1935). They are: (1) A case of Italian method in nasal plastic, p. 190-191; (2) repair of a cheek defect, p. 266; and (3) reconstruction of thumb, p. 353, a, b, and c. These illustrations will be replaced by original photographs in future editions.

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LONDON SATURDAY SEPTEMBER 21 1946

THE B.M.A. AND TRADE UNION LAW A FACTUAL STATEMENT

During the period of reconstruction which followed the war of 1914-18 there arose among a section of the medical profession demand for the reorganization of the Association. The advocates of this policy contended that the Association was organized on the wrong lines and that to be really effective the body representative of the profession should modify its constitution to become a registered trade union. The decision which some local authorities have taken to introduce a "closed shop" principle following the repeal of the Trade Disputes and Trade Unions Act, 1927, may revive the controversy of twenty-five years ago.

With the repeal of the 1927 Act it ceases to be unlawful for local or other public authority to make it a condition of employment that members of its staff should belong to a trade union. A few local authorities are imposing some such conditions. In one case it has been resolved that members of the staff should be required to belong to a trade union or to an appropriate professional organization. In another the local authority's resolution referred quite simply to membership of a trade union. In the debate on the Second Reading of the Bill which proposed the repeal of the 1927 Act, the Minister of Labour (Mr. Isaacs) said: "If a local authority gets the power saying they desire their workers to belong to a trade union, it is only sense that they should be able to say which unions they should join."

Approximately 80% of the doctors of the country belong to the British Medical Association, the body recognized by the Government and the Associations of local authorities as the governing body for the medical profession. Further, the Association is recognized by the Trades Union Congress as representative of the medical profession, a recognition which has expression in the Joint Committee of the B.M.A. and U.C.

The British Medical Association is not a trade union. It is a limited company with the licence of the Board of Trade to omit the word "limited" from its title, being an association formed for scientific purposes and not for profit. Its primary object is "to promote the medical and allied sciences and to maintain the honour and interests of the medical profession." Its Memorandum of Association provides that "the Association shall not support with its funds any object, or endeavour to impose on or procure to be observed by its members or others any regulation restriction or condition, which if an object of the Association would make it a trade union."

A trade union, for the purposes of the Trade Union Acts, 1711-1913, is any combination, whether temporary or permanent, the principal objects of which under its constitution are "statutory" objects. "Statutory objects" means:

- (i) the regulation of the relations between workmen and masters, or between workmen and workmen, or between masters and masters, or
- (ii) the imposing of restrictive conditions on the conduct of any trade or business and also
- (iii) the provision of benefits to members.

Opinions of Counsel

In 1919 the opinion of Counsel was sought as to whether the Association could be registered as a trade union. Mr. F. Gore-Brown, K.C., an acknowledged authority on company law,

and Mr. H. H. Slessor (later Lord Justice Slessor), who was at that time the author of the latest book on the legal position of trade unions and standing counsel to the Labour Party and to many trade unions, expressed the opinion that the Association could not be registered as a trade union while it remained a company registered under the Companies' Acts. These eminent legal authorities stated that, to fulfil the wishes of the advocates of medical trade unionism, it would be necessary for the Association to be wound up and for its members to form themselves into a new association and to seek to register that body under the Trade Unions Acts. The alternative would be for the Association to continue to exist for certain purposes, but for such of its members as see fit to form a new association to take over such of its functions as deal with restrictions imposed upon the practice of the profession and for this new association to seek registration as a trade union.

In 1946 when the repeal of the Trade Disputes and Trade Unions Act, 1927, was proposed by the present Government, the Association again sought legal advice. Mr. Cecil Havers, K.C., and Mr. M. L. Gedge expressed views identical with those expressed by Counsel in 1919. They added, however, that if it were desired that the Association should be wound up and a new body formed as a trade union which all the members of the Association could join, it would be impossible to transfer the assets of the Association to the new body, those assets in a winding up of the Association belonging, in the opinion of Counsel, to its members.

To sum up, the Association, even if it so desired, could not become a trade union without completely reconstructing itself and the objects as expressed in its present Memorandum of Association, the reasons being:

- (i) its principal objects under its constitution are not the "statutory objects" specified in the Trade Union Acts;
- (ii) it is a company registered under the Companies' Acts and the registration of any trade union under the Companies' Acts is declared void by Section 5 of the Trade Union Act, 1927, and Section 382 (7) of the Companies Act, 1929.

Counsel expressed the view that members of the medical profession are neither masters nor workmen within the meaning of the Trade Unions Acts. The medical profession could not satisfy the first of the "statutory objects," namely, the regulation of the relations between workmen and masters, etc. The only effective "statutory objects" which could be adopted would be the imposing of restrictive conditions on the conduct of their business and the provision of benefits to members. These would have to be the *principal* objects under the constitution of a medical trade union. Thus, the main question is whether a body representative of doctors can properly adopt as one of its *principal* objects the imposition of restrictive conditions on the professional work of its members. For example, can it properly withdraw its services from the public? For the imposition of restrictive conditions to be one of the objects would not suffice; it would have to be a *principal* object to satisfy Trade Union Law. If not, then the trade union method of organization is inappropriate to it.

The decisions which some local authorities have taken requiring their employees to belong to a trade union raise interesting and important questions in relation to medical practitioners working in the Public Health Service. A number of these medical officers are members of the National Association of Local Government Officers (N.A.L.G.O.) and in some cases, at all events, membership of that body may satisfy the local authority's requirements. Under Section 2 (3) of the Trade

Union Act of 1913 an unregistered trade union may obtain a certificate from the Registrar of Friendly Societies that the union is a trade union within the meaning of the Act, provided that it can satisfy the Registrar that the principal objects of the union are "statutory objects" and that the union is actually carried on for those objects. N.A.L.G.O.'s position is that it is certified by the Registrar as satisfying the "statutory objects" but has not proceeded to register as a trade union and at its annual conference this year decided not to seek affiliation with the Trades Union Congress. It would appear that where a local authority officer is merely required to become a member of a trade union, membership of N.A.L.G.O. would satisfy the requirement; where, however, the local authority specifies a registered trade union or a trade union affiliated to the Trades Union Congress, membership of N.A.L.G.O. will not suffice. If the object of a local authority is to secure that the medical members of its staff belong to the body which is representative of the profession as a whole and which is recognized by the local authorities through their associations as the negotiating body for the medical profession, this would be satisfied by requiring membership of the British Medical Association. Whether this is in the interest of the public, the local authorities, or the medical profession is not dealt with in this factual statement of the position of the Association in relation to Trade Union Law.

HEARD AT HEADQUARTERS

Tribute to General Practitioners

In the bestowal of praises for work done in the war the civilian doctor has not been a conspicuous recipient, nor, probably, would he wish to be, when all served and endured so well. But in his statement on the work of the medical department of the Ministry of Health during the six years of war, published on Sept. 12, Sir Wilson Jameson, the Chief Medical Officer, does make generous recognition of general practitioners, especially those senior practitioners who, without proper rest or holiday, carried on even to breaking point. By the end of 1942 the majority of the doctors remaining in civil life were over fifty, and more than 8% were over seventy. These ageing men, their sleep, particularly in London and other targets of enemy attack, more than usually interrupted by attendance at "incidents," and in many cases by the bombing of their own houses and surgeries, carried on under a steadily increasing strain as more and more of their colleagues and neighbours were called up. Sir Wilson reminds his readers that the normal inflow of new practitioners was completely diverted; even those found unfit for the fighting Services were almost all absorbed by the hospitals, while death and retirement and breakdown continually depleted the remaining civil ranks. These men had also to undertake many additional duties. They gave part of their time to E.M.S. and other hospitals, they took charge of first-aid posts under civil defence schemes, and trained nursing and other staff. During air raids they attended at the posts and treated casualties. The recruiting boards and the "works doctor" service in the munition factories were almost entirely manned by civil practitioners, who also furnished thousands of medical officers for the Home Guard.

In the middle of the war there was one general practitioner to 3,000 people. "The general practitioner," says the Ministry of Health report, "forms the front line of medicine; upon his skill and devotion much depends, and no small share of any credit that the medical services deserve for this maintenance of the public health during six years of war should fall to those general practitioners who, in such difficulties, carried on, and to those—not a few—who died in harness."

The Medical Officer of Health Too

Sir Wilson Jameson includes in his tribute the medical officers of health for their work and their sufferings. Their sufferings especially because their cherished plans for the

development of peacetime services were everywhere interrupted. Their real work had to take second place to the organization of emergency services, but how well they did that! Planning the development of casualty services, including much local organization of the emergency hospital scheme, had become a heavy burden before war began, and under aerial bombardment these services were brought to a high pitch of efficiency. The evacuation scheme produced large medical problems for the medical officer, both in evacuation and reception areas, and these were met with resource and skill. One after another additional burdens were placed on the medical officer's shoulders—medical problems of the post-raid services, emergency maternity homes, sick-bays for evacuees, gas contamination schemes, provision of day nurseries, and many others, and all this extra load had to be carried with a steadily declining staff. "Despite this the health services have been maintained and in many ways have advanced, and the credit for this achievement should be given to those who have been so largely responsible for it—the medical officers of health." It is revealed that by the end of 1943 there were 376 whole-time public health medical officers serving with the Forces, representing 47% of the total fit recruitable male practitioners in the public health service, and just over 50% of the recruitable women practitioners.

A Fight is On

The Insurance Acts Committee met in fighting mood the other day, and there was general satisfaction that the opening of a conflict, which seems inevitable, with the Ministry of Health should take place on ground, not indeed of the Committee's choosing, but so favourable to their side and on an issue so simple that the public and those of the profession who are not politically-minded can readily appreciate what is at stake. The issue is the refusal of the Minister to apply in its completeness the Spens report to the remuneration of insurance practitioners. Of the relevance of that report to insurance practice there can be no doubt in the minds of those who know the history of the subject. The first proposal which led to the setting up of the Spens Committee emanated from the Ministry of Health, and representatives of the Ministry attended a meeting of the Insurance Acts Committee to put it forward. It linked up with the assurance of the Minister of that time that the whole subject of the payment of the general practitioner should be approached anew "from the ground up"—an assurance given to a deputation from the I.A.C. which waited upon the Minister. The present Minister refuses to discuss the application of the report to the current insurance capitation fee unless the whole matter of remuneration under the future National Health Service is discussed at the same time, and neither the Insurance Acts Committee nor any other body representing the profession has any mandate at present to discuss that. Meanwhile he offers something less than half the addition which the Spens Report, as the I.A.C. reads it, recommends.

The forty or fifty members of the I.A.C., drawn from insurance practice in all parts of the country, show a quick appreciation of the salient points on any issue presented to them which would be bewildering to a visitor who knew little about insurance practice. It will not be easy even for Mr. Bevan to get the better of them, and on this matter they are unanimous. Their chairman follows the plan of asking every member of the committee to give his own views and the views, as far as he can, of those he represents, and the result on this occasion was a unanimity in support of the resolute action proposed which was far more impressive than might have been secured by a mere show of hands. A report of the meeting held on Sept. 5 appeared in last week's *Journal* at p. 395, and was followed by a note on the capitation fee.

The restrictions on admission to the list of National Health Insurance panel practitioners, which were introduced in Northern Ireland in 1942 for the protection of the insurance practices of doctors absent by reason of service in His Majesty's Forces, were removed on Aug. 31. The effect of this step is that once again any practitioner resident in Northern Ireland will normally have the right to have his name included in the list of insurance practitioners.

Correspondence

N.H.I. Capitation Fee

SIR,—Despite the unanimous recommendation of the Insurance Acts Committee that a capitation fee of 12s. 6d. as from an. 1, 1946, is grossly inadequate, but that they would be repared to consider a fee of 15s. as from that date, Mr. Bevan has already issued instructions to Insurance Committees to carry out his original suggestion. He has, in fact, deliberately spat in our faces in a manner which Mr. George Bernard Shaw must surely envy. A "show-down" must come. Why not have it now, regardless of the proposed National Health Service? My only criticism of the letter of Dr. Pybus (*Supplement*, Sept. 7, p. 80) is the proposed delay until April 1 next. With intensive activity we could have our resignations in the hands of the Insurance Committees within the next month or six weeks.—I am, etc.,

Preston

L. F. UNSWORTH

Absent Practitioners' Scheme

SIR,—With reference to the letter by Dr. Thos. Savage (*Aug. 31, p. 72*), may I suggest that even more important than a list of those who subscribed to the absent practitioners' scheme would be a list of those who loyally carried out their engagement not to accept his patients until a year after his return. My experience suggests that this would be considerably shorter.—I am, etc.,

Blackpool

J. HESKETH-BEASLEY

A Register of Unemployed Doctors

SIR,—So much has been written recently concerning unemployment among medical men that I feel the time has come for some constructive proposals which may assist in dealing with this very real problem. May I suggest, as a temporary measure, that some simple form of register be formed by the B.M.A.—on the lines of the Ministry of Labour or Disabled Persons—on which any doctor unemployed for, say, four weeks or more could enter his name if he be willing and fit to take up work.

This register would be available to doctors who require assistance, to hospitals, and to medical agencies. By centralizing this work we should know at any time the number of medical men unemployed and the magnitude of the problem we have to face.—I am, etc.,

Southport

JOHN H. HANNAN.

Medical Unemployment

SIR,—I have been reading with great interest the letters concerning the plight of demobilized doctors, and am rather surprised at the lack of initiative they show. They balk at the price of house and practice, but should treat the two things as separate transactions. The practice is goodwill and has paper value only. The house is material property and remains so. The younger men must pay the prevailing market price for a house, like everyone else, and it is unlikely that the values will fall for ten years or so and not so very much then. Also they should remember that the outgoing practitioner must live somewhere and he will have to pay the market price too.

What amazes me most is their unwillingness to buy a practice. Unless they do so they face two years' semi-unemployment until the new Service begins, then say two years as assistant, and after that probably four or five years in building their practice up to a full income—a total of eight or nine years. Apart from that they will find that the majority of vacancies will be in the unattractive areas and even then they will still have house-hunting to do.

Now take the other point of view if they buy a practice. A pre-war practice of £2,000 gross would cost £4,000. Nowadays it can be got for £3,000, which in pre-war values equals £1,500 a year gross. Any averagely good man should be able to prevent a £2,000 wartime gross from falling to £1,500. Out of that he should be able to repay his practice within six years and be at his maximum at least two years before the man who wants everything handed him on a plate. Further advantages

are that he has chosen his own district and has had his house all the time. Also he would have a claim on the compensation fund morally and probably legally.

I was qualified for eight and a half years before I could borrow money to buy a practice; for ten and a half before I could marry; and for fourteen years before I got the practice paid off. The impression I get from the letters you publish is that the younger men expect me to like my savings being confiscated, and at the same time to provide them with employment during the interim period before the new Service, while they sit back and take their ease with their families, acquired at a much earlier stage than ever I could manage.

A final word of warning—don't accept inferior conditions in a Service in which the younger generation have to spend all their working lives.—I am, etc.,

Middlesex.

"RAIHER DISGUSTED."

SIR,—Could not members of the B.M.A. who are in employment contribute according to their means towards a special fund to give immediately financial aid to those out of work through no fault of their own? Much of the unemployment so far as I can see is a direct result of the Health Service Bill which may or may not become law in the comparatively distant Spring of 1948. Both ex-Service and other doctors are affected. Living on a diminishing capital is an unpleasant experience particularly for a married man, as "Ex-R.N.V.R." points out. He is a desperate able-bodied medical man who would apply for help to any of the existing medical benevolent societies.

I may say that I have followed this correspondence with peculiar interest having only recently received an appointment myself after more than six years' military service. My four months' release leave was spent in a fruitless and heart-breaking search for what I considered to be a suitable job, and almost two more months went by before I got one. It was, I can assure you, Sir, a most worrying time. In conclusion, to take away any possible savour of charity, I suggest that to those who wish it the money could be advanced as a loan without interest, to be repaid in better times to a recognized medical benevolent society.—I am, etc.,

"EX-LIEUT.-COL. R.A.M.C."

Dr. F. HARMAN VOLLAM writes from Alcechurch: May I, through the medium of your columns, thank all the doctors who have written to me and advise them that the post has been filled. The response has been overwhelming, but I will write to them all as soon as possible.

H.M. Forces Appointments

ROYAL NAVY

Surg. Capt. C. H. M. Gimlette has been placed on the Retired List.

Surg. Lieut.-Cmdr. G. S. Thoms to be Surg. Cmdr.

ROYAL NAVAL VOLUNTEER RESERVE

Temp. Acting Surg. Lieut.-Cmdrs. A. B. Burns, H. S. A. Corfield, R. C. R. Gethen, and C. L. G. Pratt, O.B.E., to be Temp. Surg. Lieut.-Cmdrs.

Temp. Surg. Lieuts. E. A. Bissen and D. J. MacMillan to be Temp. Surg. Lieut.-Cmdrs.

Prob. Temp. Surg. Lieuts. G. E. Dixon, A. A. Donaldson, W. D. MacKenzie, J. D. Medhurst, P. J. W. Menck, F. C. O'Duffy, G. E. Pögel, K. E. E. Read, J. Stafford, W. J. Steadman, D. D. Stern, R. V. Sturton, G. N. Tave, G. R. Widdell, D. E. Yates, A. D. C. Young, J. L. Fluker, E. W. R. Alderman, K. R. Keay, J. D. S. Knight, P. H. McGregor, C. G. Martin, and T. Smart to be Temp. Surg. Lieuts.

ARMY

Col. E. W. Wade, D.S.O., O.B.E., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brig.

Col. G. D.R. Carr, M.C., late R.A.M.C., having attained the age of retirement, is retiring on the Active List supplementary

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. A. G. ... O.B.E., to be a Comm. Surg. and has been awarded the Medal of Merit.

Association Notices

The Katherine Bishop Harman Prize

The Council of the B.M.A. is prepared to consider an award Katherine Bishop Harman Prize of the value of £75 in The purpose of the prize, which was founded in 1926, is courage study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best essay submitted in open competition, competitors being left free to select the prize. Any medical practitioner registered in the British Empire eligible to compete.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in but will be offered again in the year next following this decision and in this event the money value of the prize on the occasion question will be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be

Each essay must be typewritten or printed in the English language must be distinguished by a motto, and must be accompanied sealed envelope marked with the same motto and enclosing candidate's name and address. Essays must be forwarded so as to reach the Secretary, to whom all inquiries should be addressed: B.M.A. House, Tavistock Square, London, W.C.1, not later Dec. 31, 1946.

Diary of Central Meetings

OCTOBER

23. Wed. Special meeting of Council, 10 a.m.

Branch and Division Meetings to be Held

NORTH WALES BRANCH.—At Free Library, Dolgelley, Wed., Sept. 25, 2.30 p.m., 97th Annual Meeting. Dr. R. W. Edwards: Paediatrics.

PADDINGTON DIVISION.—At County Hall, Room 140, Westminster Bridge, S.E., Tues., Sept. 24, 3 p.m. Papers by Mr. R. Lov Ph.D., Prof. F. J. Browne and L. S. Penrose: Causes and Prevention of Prematurity. A discussion will follow. All medical men are invited.

POSTGRADUATE NEWS

The Fellowship of Medicine announces: (1) Week-end course Ear, Nose and Throat Diseases, at Metropolitan Ear, Nose and Throat Hospital, Saturday and Sunday, Sept. 28 and 29; (2) course in Gynaecology (for general practitioners) at Samaritan and St. John's Hospitals, daily from Oct. 7 to 12; (3) week-end course in Rheumatism at Rheumatic Unit, St. Stephens (L.C.C.) Hospital, Saturday and Sunday, Oct. 26 and 27.

A course of lectures in skin diseases will be held at the London School of Dermatology, St. John's Hospital for Diseases of the Skin, 5, Lisle Street, Leicester Square, W.C., on Tuesdays and Thursdays at 5 p.m. from Oct. 1 to Dec. 12.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Mr. Brown: The Modern Treatment of some Diseases of the Ear, Nose, and Throat.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—Wed. 8 p.m. Dr. J. B. Gaylor: Electroencephalography in Retinal Disease.

LIVERPOOL HEART HOSPITAL, Oxford Street.—Lectures, etc., Monday to Friday, inclusive, 3.30 p.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

ARDEN.—On September 11, 1946, at Lyncroft Nursing Home, Gerrards Cross, Bucks., to Kathleen (née McCaffrey), wife of G. P. Arden, F.R.C.S., a daughter—Susan Anne (sister for Mary).

COOPER.—On September 9, 1946, at Queen Victoria Hospital, Mortcote, W. Hazel (née Ratcliffe), wife of W. A. Bruce Cooper, M.B., B.S., a daughter.

ELLIS JONES.—On September 4, 1946, at Queen Charlotte's, to Rosemary (née Case Morris), wife of Dr. E. Ellis Jones, M.B., B.S., a daughter—Madeleine Carleton (premature, both well).

HARVEY.—On September 2, 1946, at Hitchin, to Mollie (née Lambert), wife of W. Cdr. E. Bruce Harvey, R.A.F.M.S., a daughter—Sally.

HUSTON.—On September 7, 1946, at Elsie Inglis Memorial Hospital, Edinburgh, to Winston, wife of Lt.-Colonel John Huston, R.A.M.C., a daughter.

NICOL.—On June 27, 1946, at Lowestoft, to Dorothy, wife of Dr. Thomas Steven Nicol, a son—Adrian.

MARRIAGE

WELLS—BEATON.—On August 17, 1946, at Streatham, Flying Officer P. W. Wells, of Tooting, S.W.17, to Mary Aldyth Beaton, of Streatham, S.W.16.

DEATH

DE PENNING.—On September 19, 1945, Lily Beatrice, beloved wife of Herbert Clement De Penning, M.R.C.S., 38, Milton Road, Portsmouth.

War Subs. Lieut.-Col. J. V. McNally has retired on retired pay and has been granted the honorary rank of Col. (Substituted for the notification in a Supplement to the London Gazette dated Aug. 13.) Lieut.-Col. C. G. G. Keane, O.B.E., having reached the age for retirement, is retained on the Active List supernumerary.

War Subs. Majors J. J. Sullivan, P. H. Ball, and P. Coleman to be Majors.

Capt. (War Subs. Major) R. H. Baird has retired and has been granted the honorary rank of Lieut.-Col.

Capt. (War Subs. Major) G. B. Heugh, J. C. Watts, M.C., J. McGhie, T. M. Fowler, O. W. W. Clarke, G. M. Robertshaw, G. M. Curtois, G. H. H. Dunkerton, D. Matheson, J. C. Babbage, and Capt. J. A. Manifold, R. A. Smart, E. W. O. Skinner, D. G. Lewis, J. E. C. Robinson, K. P. Brown, E. Gareh, G. F. Valentine, C. McNeil, R. L. Townsend, W. G. Macfie, M. M. Medine, M.B.E., S. Ward, A. J. N. Warrack, M.B.E., S. F. Cranston, W. Windsor, W. A. McD. Scott, J. Mackay-Dick, J. C. Lambkin, P. D. Stewart, T. A. Pace, O.B.E., S. O. Bramwell, R. A. Bond, W. M. Stewart, D. D. Maitland, G. F. Edwards, M.B.E., H. C. Jeffrey, H. J. A. Richards, J. B. Plews, T. G. S. James, J. F. D. Murphy, V. J. Keating, T. McEvel, R. M. Hector, A. Crook, A. W. Box, D. W. Bell, T. G. A. L. Warrington, P. R. Wheatley, D.S.O., R. L. Macpherson, M.B.E., D. A. Ireland, and J. S. F. Watson to be Majors.

Capt. O. Jordan has retired and has been granted the honorary rank of Major.

Capt. D. J. R. McConvell has been appointed to a permanent commission.

Short Service Commissions.—War Subs. Capt. J. L. Fison and D. J. R. McConvell, from R.A.M.C., Emergency Commissions, have been granted Short Service Commissions in the rank of Lieut., and to be Capt.

Lieut. R. Andrew to be Capt.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Major T. F. Strang has relinquished his commission and has been granted the honorary rank of Major.

War Subs. Capt. J. B. Tracy and S. E. Bolton have relinquished their commissions on account of disability and have been granted the honorary rank of Major.

War Subs. Capt. C. W. Stewart has relinquished his commission on account of disability and has been granted the honorary rank of Capt.

To be Lieuts: J. L. Carson, A. Guedatarian, A. M. Knox, C. C. Lewis, M. J. G. Lynch, J. M. Moore, W. M. McIntyre, D. R. Murley, A. B. Ostrovsky, T. Sanderson, P. G. Somerville, and R. W. C. Kelly.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) M. W. Hughes has relinquished her commission on account of disability and has been granted the honorary rank of Capt.

(Miss) Mary R. Anderson and (Miss) Letitia M. Camilleri have been granted commissions in the rank of Lieut.

ROYAL AIR FORCE

Group Capt. T. J. Thomas has reverted to the retired list.

Wing Cmdr. P. H. Perkins has retired at his own request.

RESERVE OF AIR FORCE OFFICERS

Squad.-Ldr. (Temp.) D. W. Browne to be War Subs. Squad.-Ldr.

ROYAL AIR FORCE VOLUNTEER RESERVE

Fl.-Lieut. (Temp. Squad.-Ldr.) S. Rogers has resigned his commission retaining the rank of Squad.-Ldr.

To be Squad.-Ldr. (Emergency): L. E. Jones.

To be Fl.-Lieut. (Emergency): A. F. McLean, N. F. Morris, and G. Wraith.

To be Flying Officers (Emergency): D. Anthony, W. H. R. Auld, S. I. Beswick, J. L. Braithwaite, T. D. Brick, J. H. Gibson, J. D. Glanville, T. Harvey, E. P. G. Houssemayne du Boulay, J. D. Jack, A. T. Johnson, J. R. G. MacKetsack, M. Mattinson, K. W. Oldham, D. Richardson-O'Keefe, W. Ritchie, E. Shenken, R. A. Sladden, G. P. Sutherland, and M. Thomas.

INDIAN MEDICAL SERVICE

EMERGENCY COMMISSIONS

Temp. Major C. H. Phillips has relinquished his commission and has been granted the honorary rank of Major.

Capt. L. J. Michael has relinquished his commission and has been granted the honorary rank of Capt.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. Kenneth O. Black, F.R.C.P., at 27, Weymouth Street, W.1 (Langham 3336); Mr. Bryan Murless, F.R.C.S., at 803, Acutus Arcade, Durban, S. Africa; Mr. R. W. Nevin, F.R.C.S., at 53, Harley Street, W.1 (Langham 1077).

LONDON SATURDAY SEPTEMBER 28 1946

SOME VULGAR ERRORS IN REGARD TO GOITRE

BY

J. W. LINNELL, M.D., F.R.C.P. GEOFFREY KEYNES, M.D., F.R.C.S.

AND

J. E. PIERCY, F.R.C.S.Ed.*

During the past generation the importance of goitre as a fount of many unsuspected ills has become more and more recognized. It is but natural that new advances in any field of medicine should only gradually become known to the profession at large, and goitre is no exception to the rule. It is with the object of discussing some of the commoner fallacies concerning its dangers, diagnosis, and treatment that we who have had the opportunity of studying the condition over a long period of years venture to write this article. We would say it was the intention of the late Cecil Joll, who worked at our clinic throughout the war, to collaborate with us in its production, and that, though death prevented his doing so, he had already expressed his complete approval of the plan and the opinions embodied in it.

1. That, though goitres which are patently toxic need treatment, the great majority of the rest are harmless or practically harmless, will probably remain so, and may safely be left untreated.

By a curious coincidence an article in the *Journal of the American Medical Association*, entitled "Potential Dangers of Nontoxic Goiter," by Cole, Slaughter, and Rossiter (1945), was published almost simultaneously with one written by Linnell (1945) in the *Practitioner*, entitled "The 'Harmless' Goitre," which ran on much the same lines. Both drew attention to the danger of such complications as (1) the development of thyrotoxicosis with its many and multifarious complications, (2) carcinomatous changes, and (3) pressure through increasing size. These complications are discussed in greater detail below. In the discussion which followed the reading of the American paper one speaker stressed the risk of sudden pressure by haemorrhage into the substance of the gland—a somewhat rare complication—though this point had not gone unnoticed by us.

1. *Thyrotoxicosis*.—The common belief that comparatively few goitres become toxic has no foundation in fact. The American workers we have mentioned believe that no less than 50% of all non-toxic goitres become toxic if left untreated, and add that, in view of the narrowness of gradation between non-toxic and toxic nodular goitres, this figure may well be too low. We, for our part, believe with Hertzler (1936), and many other workers in different parts of the world, that by the time early middle life is reached goitres without some evidence of associated toxicity are rare. It would seem that most medical practitioners recognize only the gross and more easily discernible symptoms and signs of thyrotoxicosis; those of less degree go unrecognized or are disregarded as being of little importance. These symptoms, it may be said, often can only be detected by careful observation, for they may amount to no more than some of the following: lassitude, minor or occasional palpitations, slight irritability or emotional instability, loss of weight, irregular sweatings or feelings of heat, a small rise of the resting or, better, sleeping pulse rate, a fine digital tremor, the suspicion of a stare due to retraction of the upper lids, and an almost imperceptible difference in the size of the

palpebral fissures. The fact that there may be phases of exacerbation and intermission of the symptoms does not make their discovery easier. As to their being of little consequence, it cannot be too strongly emphasized that they are of the greatest importance. Unfortunately, it is not yet generally appreciated that next to acute rheumatism toxic goitre is the most fruitful cause of auricular fibrillation, and goitres of apparently such mild toxicity as we have described are, without any doubt whatever, often responsible for it. In this connexion it may be well to add that occasionally auricular fibrillation has been, in our experience, apparently the very first sign of toxic change. Other signs were no doubt there, but were so slight as to escape observation. Toxic goitres, whatever the degree of toxicity, can also cause auricular flutter, both paroxysmal and established, and auricular paroxysmal tachycardia; but these are relatively rare complications.

To exemplify the frequency of auricular fibrillation as a complication of toxic goitre Papp (1945) says that 20% of all patients with toxic goitre develop this symptom, and that, though it is exceptional under the age of 30 and uncommon between 30 and 40, it becomes increasingly frequent thereafter, so that 80% of all cases of thyrotoxicosis fibrillate after the age of 60. These figures are sufficiently arresting, and our only comment is that, as the significance of the milder degrees of thyrotoxicosis is more widely recognized, it will almost certainly be found that the total percentage of patients who develop fibrillation is considerably higher. Generally the fibrillation is at first paroxysmal and only later established—a matter, as we shall see, of considerable importance; and the fact that established auricular fibrillation is a forerunner of congestive failure must never be forgotten.

2. *Carcinomatous Change*.—American workers are evidently very much more concerned about this danger than we on this side of the Atlantic. In the article already referred to it is stated that no less than 7.2% of 523 non-toxic goitres of all kinds operated on were found to be carcinomatous, and that among single non-toxic nodules as many as 24% were so affected. Lahey, the chief of the famous clinic of that name, in the discussion which followed the reading of the article, insisted that neither the size of the goitre nor the age of the patient mattered; that he had known a boy of 9 die of carcinoma of the thyroid, and that he had had several patients with the same condition at 12, 13, and 14 years of age. This would fit in with the belief held by many that most carcinomas of the thyroid derive from foetal adenomas: a belief, however, that is incapable of proof, as by the time middle life is reached the tumour has, as a rule, suffered so much change through growth and haemorrhages into its substance that it is impossible to be sure as to its original structure.

We must confess that we have so far seen no carcinomas in children, though several have occurred in quite young people. The majority have been in patients of middle life or later. Still, there are a considerable number of patients in this country whose goitres are allowed to become patently carcinomatous before they are deemed to be proper subjects for surgery; and we would insist that by the time the

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textbook picture of carcinoma of the thyroid is present the growth has penetrated the capsule and invaded the surrounding tissues, so that as a rule the hope of a surgical cure is past, even if by surgery and deep x-ray therapy life can often be prolonged for many years. It is lamentable to see, as we have seen, patients with widespread secondaries who have, over a long period of years, been urged not to worry about their goitres, and have continued to receive this advice even though they were steadily increasing in size and fixity and sometimes causing a sense of pressure or even pain. We would stress that tenderness on pressure is often an early sign of malignant change, and several of our cases have been diagnosed correctly on the basis of this observation. Unfortunately the innocent goitre, though usually painless, is occasionally painful; a haemorrhage, for instance, can very closely simulate malignancy; and as a rule it is only in the laboratory, after operation, that early malignant change can be definitely diagnosed.

3. *Pressure*.—Displacement, distortion, and narrowing of the trachea are some of the commonest findings in the examination of patients with large goitres, particularly of the nodular type, and more especially if there be retrosternal prolongations. Sometimes no symptoms result; in some patients, however, the goitre causes definite stridor and distress—possibly only on effort—or a mild dysphagia. A persistent irritating cough, again, may occasionally be the presenting symptom, while one of the earliest symptoms of all can be a choking sensation which awakes the patient. These symptoms are all due to chronic pressure, but a nodular goitre—even a foetal adenoma in a young subject—may occasionally be the seat of a sudden haemorrhage causing pain, swelling, and frightening sensations of suffocation. Death seldom follows, though this has happened once in our clinic.

II. That to diagnose toxic goitre it is necessary to find tachycardia

There is little doubt that the cardiovascular, nervous, and metabolic systems are all affected to some degree by toxic goitre, but sometimes, for an unknown reason, only one, or it may be two, of these systems are affected to any marked degree. Thus we have seen a number of patients with many of the classic symptoms of toxic goitre in whom the heart rate is little, if at all, increased over the period of observation. In this connexion it may be worth while to add that during the intervals between attacks of paroxysmal auricular fibrillation due to toxic goitre the heart rate may be normal or rarely slower than normal.

III. That loss of weight is a constant feature of toxic goitre

This again is not true. Maintenance, or even an increase, of weight is not very uncommon even in patients with primary toxic goitre, where loss of weight is a recognized cardinal symptom. As was pointed out in the previous section, the toxic process may miss, or almost miss, the metabolic system, and this may be the cause of the phenomenon. Sometimes a ravenous appetite, combined with a good digestion and efficient absorption, may in its effects counterbalance or even exceed—for a time at any rate—those produced by an increased metabolism. But doubtless there are other reasons, at present unknown to us. It has, by the way, been urged by Trotter and Eden (1941) that surgical treatment in plump patients with Graves's disease is attended with a greater risk to life and is less satisfactory than in the ordinary type of patient. This is not confirmed by our experience.

IV. That no goitre should be considered toxic unless the basal metabolic rate is found to be above normal

This would seem to be almost an article of faith among the profession as a whole, and perusal of the recent spate of papers on thiouracil has done nothing to weaken our impression.

Regarding the test, the late Cecil Joll was wont to say in his later years that, though it was the best laboratory test we had, it was "a poor best"; and with this opinion we fully agree. A test which accounts readings of 15 points above and below normal as "within normal limits" can hardly be regarded as satisfactory, and the fact that the same patient under apparently identical conditions can give very different readings on two

successive days shows how misleading single estimations may prove. We fully appreciate the far greater value of a "level" based on a large number of estimations made at short intervals; but, unfortunately, in this country the necessary finances and facilities are generally lacking. Again, even in definite thyrotoxicosis, exacerbations and remissions are, as we have already said, comparatively common, and during a period of remission—which may be long—the basal metabolic rate may be within normal limits. The point, however, which we especially wish to make is that in the very large and important group of goitres to which we have drawn attention, where the toxicosis is minimal and yet the danger of eventual auricular fibrillation is real, so little is the general metabolism affected as a rule that it is rare to find the basal metabolic rate significantly raised.

We have no desire to decry the occasional value of the test, but the longer our experience has become the greater emphasis we have tended to put on an appraisal based on a careful clinical examination. That a course of thiouracil in doubtful cases might provide valuable evidence for or against the presence of thyrotoxicosis occurred to us, as to others, soon after its introduction, and we have often used it for this purpose. It is as yet too early to speak definitely, but such a therapeutic test may possibly prove an adequate substitute for an estimation of the basal metabolic rate.

V. That iodine cures

We rarely see a new patient with toxic goitre who has not been taking iodine for weeks, months, or even years. There is no evidence whatever for the belief that this drug cures. Waller (1914), in the original paper on its use in Graves's disease published in the *Prescriber*, did not make this claim; nor has any authority done so since. Its beneficial results are, unfortunately, only temporary, and its use ought, in our opinion, to be restricted to the period immediately preceding, and possibly that immediately following, operation. It is doubtful indeed if, owing to its misuse, it has not been more of a curse than a blessing in the treatment of thyrotoxicosis. Through the widespread belief in its curative power operation has often been unduly delayed until heart complications, extreme emaciation, or even a psychosis have supervened.

VI. That treatment by deep x rays is a satisfactory alternative to surgery in toxic goitre

This belief is probably not so widespread as it once was, but it still persists. This little we would say on the subject: x-ray therapy is generally conceded to be of no value in nodular toxic goitre—and in this connexion it is well to realize that many goitres, which clinically do not appear, to be nodular, are found at operation to be of this type. Furthermore, as regards primary toxic goitre, Joll, who was extremely doubtful of the value of x-ray therapy, used to say that the radiologists who wrote so strongly in its favour seemed to forget that a large part of the gland was situated behind the trachea, so that irradiation powerful enough to destroy gland tissue in such a situation would almost certainly cause serious damage to the tracheal mucous membrane. In any event the results have, in our own experience, for the most part proved very disappointing. One of the most devastating criticisms of this mode of therapy was made by Dunhill (1935), an erstwhile member of our unit, when he stated that of 140 adults so "cured" no fewer than 118 were found to have established auricular fibrillation at a later date. In face of such a statement it would seem unnecessary to pursue the argument further.

VII. That the advent of thiouracil has removed the need for operation save to relieve pressure symptoms or for cosmetic reasons

This doctrine is being widely preached at the present time, and enthusiastic reports of the virtues of the new drug follow one another in the journals with an almost monotonous regularity. Even the writer of a leading article in the *Lancet* of April 14, 1945, declared, with regard to the question whether thiouracil should replace thyroidectomy as the standard treatment of toxic goitre, that there were strong indications that it might do so. From the first, voices have been raised protesting that the claims made for it are excessive and that various

langers attend its administration, but they have tended to be drowned in the chorus of approval. We soon felt it our duty to add our voices to those of the minority. To us it was deplorable that a drug, potent not only for good but also for evil, should be thrown on the market to be used indiscriminately and generally speaking without adequate supervision, until much more was known about the indications for its use, its limitations, and its dangers. That by preventing the final synthesis of thyroxine in the gland it can in most instances inhibit thyroid activity and so alleviate thyrotoxic symptoms, there is no doubt; that in patients in whom the toxicosis is temporary and self-limited it can maintain normal health till the attack is over appears likely; that already numbers of patients have been able to resume and maintain their normal activities as long as the treatment is continued, and that in a considerable proportion remissions can last for many months after a discontinuance of the treatment, is certain; but up to date there is no convincing evidence that it cures.

As matters stand it would seem that for its beneficial effects to be maintained it must usually be given for an indefinite period, since thyrotoxic manifestations almost always recur sooner or later after its discontinuance, and generally sooner. Furthermore, as Grainger, Gregson, and Pemberton (1945) point out, initial improvement is sometimes followed by relapse while the patient is still under treatment. Nor must it be forgotten that some patients prove recalcitrant, and that in 10 to 20% of those treated there are complications—some merely annoying, others frankly dangerous. This should soon damp the first enthusiasm, especially as the possible complications are many, and it would appear that their number grows with the growth of experience of the drug. Headache, nausea, and vomiting—usually transient, but occasionally so severe or prolonged as to cause discontinuance of the treatment—pyrexia, splenic enlargement, various rashes, adenitis, enlargement of the salivary glands, diarrhoea, jaundice, oedema, pains in the joints, leucopenia, thrombocytopenia, agranulocytosis, and myxoedema are some though not all of those which have been described. Of these a certain degree of leucopenia is usual, and in the large majority of patients has no serious import. Agranulocytosis is, however, in a different category, since it carries a high mortality. According to the latest American statistics it has occurred in over 2% of the patients treated whose records are available, and it is now known that it may develop with disconcerting suddenness, which is not necessarily dependent on the dosage and may not be presaged by a notable fall in white cells. As Cookson (1945) has pointed out, a long period of perfect tolerance to the drug may end in this or some other toxic reaction. It is argued that comparatively few deaths due to thiouracil have been reported to date, but with its wide use among practitioners, many of whom are unlikely to be able to make the difficult diagnosis of agranulocytosis, the number of deaths from this cause alone is almost certainly greater than that recorded, and, furthermore, we would suggest that a drug proved capable of causing severe damage not only to the haemopoietic system but also to the liver in certain patients treated for a short time is not unlikely to cause harm to all patients treated for a long time; and the warning given by Broders and Parkhill (1944) that "the thiouracil goitre is more of a cellular hyperplasia with mitosis very much in evidence and so, therefore, more comparable to a carcinoma," only adds to our apprehension. As to the effects of thiouracil on the size of the goitre, although many examples of primary toxic goitre have been described in which after long treatment there has been a marked decrease in size, occasionally the tendency is to an increase which, in our experience, may be amazingly rapid. Little, if any, decrease can be expected, of course, in nodular toxic goitres.

All this, however, is not to say that there is no place for thiouracil in treatment. From the first we have held with Lahey (1945) that it has a very valuable use in preparation for safer operation, if not as a method of cure; and now the conclusions reached by the American Council of Pharmacology and Chemistry (1946), based, as they are, on a survey of no fewer than 5,745 patients treated with it for various periods, would appear to prove us right. They are that available evidence shows that thiouracil can be recommended only in preoperative treatment and where operation is for any reason

contraindicated. Before the publication of this report, however, we had formed the opinion that surgery in good hands is greatly superior to thiouracil as a mode of treatment. It offers a prospect not only of rapid removal once and for all of the tumour and the manifest dangers connected with its presence, such as pressure, haemorrhage into its substance, carcinomatous change, and the not unimportant anxiety the mere presence of a tumour occasions, but also of a rapid disappearance of thyrotoxic symptoms. The risk of development of auricular fibrillation is practically removed, and where it is present there is good hope of a quick return to normal rhythm. Convalescence too is relatively brief. In addition we believe that in the end the mortality rate will be found to be lower.

VIII. That patients with auricular fibrillation and gross signs of congestive failure are too ill for operation

This, we find, is a fairly common belief in the profession. Yet we have seen scores of such patients not only come safely through the operation (sometimes done in stages) but even take on a new lease of active life and enjoy reasonable health for years afterwards. Admittedly the operative risk is greatest among these patients, but several who were apparently moribund have been saved. If, and only if, a marked degree of thyrotoxicosis is present is thiouracil indicated in the preparation of this class of patient, so far as our experience goes. Then it may prove to be of the greatest value.

IX. That the results of subtotal thyroidectomy in toxic goitre are usually unsatisfactory

Had we not heard this opinion of the value of the operation expressed on several occasions by postgraduate students we should not have deemed it worthy of inclusion in our list. We can only think that these observers have been unfortunate. The operation is regarded by thyroid surgeons everywhere as one of the most satisfactory. Dunhill (1934), for instance, found that 84% of 428 patients were able to live "approximately normal lives" after operation; Joll (1932) that 90% were able to return to a "full and active life" within three months of operation; and Keynes (1935) that nearly all patients operated on were enabled to live an approximately normal, instead of a semi-invalid, life, and the majority to assume full activity both physical and mental.

Nursing is generally recognized as one of the most arduous professions, and yet of some 50 nurses operated on for toxic goitre at our clinic all have resumed full work. As regards cardiac complications, one can almost promise subjects of paroxysmal auricular fibrillation that they will lose their attacks altogether after operation, while the majority of those with established auricular fibrillation regain normal rhythm either spontaneously or with quinidine, and in those who fail to do so the ventricular rate can nearly always be adequately controlled by digitalis. At the same time it must be emphasized that in patients with long-continued auricular fibrillation, and especially in those in whom congestive failure has resulted, the heart is irretrievably harmed to a greater or less degree, and expectation of life is consequently shortened. Generally speaking, auricular fibrillation, even paroxysmal, is an indication that surgery should have been brought to bear at an earlier stage.

X. That subtotal thyroidectomy in goitre, and especially in toxic goitre, is such a dangerous operation that it should be advised only as a last resort

That it carried a very high mortality up to twenty-five years ago is true. That to-day in unskilled and inexperienced hands the mortality rate is too high we agree. In the hands of the expert surgeon, and especially if he is a member of a trained team, it is a very different matter. In such circumstances the figures show a mortality rate for all goitres operated on of considerably less than 1%, and for toxic goitres of approximately 1%, whether they come from clinics in America, Australia, New Zealand, or this country. As this paper is written primarily for readers in this country it may interest them to know that our figures compare favourably with those of the best clinics abroad; for instance, one of us (G.K.) has operated on some 3,700 goitres—mostly toxic—with a mortality

rate of less than 1%, and another (J. E. P.) has had but one death in his last 360 cases. By the judicious use of thiouracil it is now possible, in patients with the most profound thyrotoxicosis, to achieve a degree of pre-operative improvement which was previously beyond the capacity of iodine treatment. Thus not only will stage operations, formerly sometimes necessary, usually be avoided, but the mortality rate will be almost certainly still further reduced, so that an operative death should be a very rare event. It is, however, to be remembered that the gland substance, after treatment with thiouracil, is intensely vascular and friable, with the result that operation becomes a most difficult and trying business. The vascularity can, however, be greatly reduced by discontinuing the thiouracil for two or three weeks before operation and substituting iodine—a procedure which we believe we owe to Bartels (1945) of the Lahey Clinic.

XI. That thyroid surgery requires no apprenticeship, and that the results of the occasional thyroid surgeon compare with those of the thyroid unit

Though few technical difficulties are likely to be encountered in many uncomplicated goitre operations, yet there is an important minority where such difficulties are very real, extending even the experienced thyroid surgeon to the utmost. Again, no two goitres are alike, and therefore, contrary to the usual belief, there can be no uniformity as regards the general surgical procedure. In addition the medical, in particular the cardiological, side is a matter of the greatest importance, and demands that the surgeon be associated with a physician with special qualifications. Also, in no other branch of surgery is there a greater need for an experienced anaesthetist, ether anaesthesia being, in our opinion, almost entirely contraindicated. Finally, the nursing staff not only should be experienced in dealing with the many difficulties and dangers that may arise before and after operation, but should be possessed of sympathy, consideration, and ability to inspire their charges with the greatest possible confidence. We realize that the ideal is often unattainable and that all goitres cannot be treated at goitre clinics; at the same time, it should be within the capacity of most surgeons interested in goitre surgery to organize teams on the lines we have indicated. We are convinced through our own experience that they will find it well worth their while.

Conclusion

There are, of course, many other fallacies we could discuss, but those we have dealt with are in our experience some of the most important.

In concluding we would ask a question, which is also being asked again and again by thyroid surgeons to-day in America. It is this: In face of the many dangers which beset it, ought not at any rate every nodular goitre to be removed surgically without undue delay? It was a favourite saying of Joll's that no doctor in his senses waits for a tumour of the breast to develop secondaries before he advises operation, and so why should one wait for auricular fibrillation, pressure symptoms, carcinomatous change, etc., to develop in a patient with a goitre before one advises operation?

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Lady Flacey, who has carried out much valuable research work at Central Middlesex County Hospital while holding an appointment with the Medical Research Council which is now due to terminate, has been appointed research consultant at the hospital, with an annual honorarium.

ASTHMA IN CHILDHOOD

BY

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The following remarks are based on the case-notes of children suffering from asthma who have attended my out-patient clinic at the Royal Manchester Children's Hospital during the last twelve years. The main object is to draw attention to an increasing lack of balance in the approach to the problem of asthma in childhood. Too much is expected from detailed investigation of the child in hospital or asthma clinic and from the use of specific and non-specific forms of protein therapy, and not enough attention is paid to the study of the child in his normal surroundings.

This paper is concerned with those general principles that have been found helpful in the long-term treatment and management of the child and his disability—principles that are mainly directed to ensuring that the child is placed under the best possible conditions, in his natural home surroundings, for combating the disease and evading the establishment of the asthma habit. It is this aspect of the disease that I have found to be most neglected, as a result either of failure to diagnose the allergic disease in its earliest stages, or of failure to recognize the leading role that the nervous system plays in the establishment and perpetuation of the disease.

Diagnosis

The importance of early correct diagnosis cannot be over-emphasized. Of 200 children, 48% developed symptoms during infancy, either spontaneously or as a result of the mild physiological strain of teething. Here we have asthma in its purest form, uncomplicated by organic tissue change or mechanical chest deformity. Another 39% had their first attack between the ages of 2 and 6 years, often ushered in by some respiratory infection, with measles and whooping-cough well to the fore. A proportion of the children with this type of onset exhibit that inextricable blending of allergic and inflammatory disease known as the "lung-damage type" of asthma. In 87% of these children, therefore, asthma was manifest before the seventh year of life.

Chest symptoms of unexplained origin in early life should immediately arouse suspicion of allergic disease. Unfortunately diagnosis is further confounded by the ambiguous clinical picture that asthma presents at this age. Of the two closely associated allergic phenomena that are responsible for the asthma attack, turgid swelling of the mucous membrane of the smaller branches of the bronchial tree, with increased permeability and exudation of fluid, plays the dominant role in early childhood, gradually to be superseded by smooth-muscle spasm, with its characteristically more abrupt manifestation, as the child grows older. As a result of this, early allergic disease closely simulates inflammatory disease of the bronchi. Unless allergic disease is borne in mind, and the evidence for or against it carefully weighed in the light of the family history and of other symptoms presented by the child, a hasty and much too casual diagnosis of bronchitis is made, with its implication of inflammatory disease. This is a cardinal error, responsible for much subsequent confusion, anxiety, and misdirection of treatment. If muscle spasm plays an unusually predominant part the onset of the attack is more abrupt and the child is more acutely ill, with obvious respiratory distress which, in these thermolabile subjects, readily induces pyrexia. The clinical picture then bears a superficial resemblance to bronchopneumonia. To the discerning eye, however, the patient's distress is obviously due almost entirely to respiratory embarrassment; toxic symptoms are absent, recovery is rapid, often dramatically so (to the no small credit of whatever form of drug therapy has been employed), and the whole sequence of events is apt to recur, for no ascertainable reason, at intervals of a few months.

It may be that only at the age of 5 or 6 an acute spasmodic attack of the more adult type of asthma throws a sudden

vealing light on the true nature of hitherto obscure and zzzling recurrent attacks of chest trouble. By this time much rm has already been done. Inaccurately diagnosed as suffering from chronic bronchitis by medical opinion, possibly with ark hints of an underlying tuberculous disposition as a reason or the inexplicable recurrence of the attacks, accepted, pampered, and fussed over as the gifted but weak-chested member f the family circle, his first scholastic steps gravely compromised if not already abandoned in despair, the child is well on ie way to chronic invalidism if drastic steps are not taken to lter the family pattern of behaviour.

Treatment

The child victim of allergic disease has inherited an ill-balanced autonomic nervous system, which is usually part of more general nervous irritability, and an abnormal sensitivity f certain local tissue cells. This hypersensitivity, which in sthma capriciously selects the cells of the respiratory system or its chief medium of expression, probably persists, in active r latent form, throughout life.

The object of treatment must be to pursue research into the nature of the baffling laws that govern this sensitivity and, until we know more about these laws and how to control or modify them, to bring such influences to bear on the child's developing nervous system as will ensure, so far as is possible, hat his will dominates, and is not dominated by, the recalcitrant tissue cells. This aspect of the disease, with which I am mainly concerned in this paper, can most conveniently be considered under the three headings of nervous, alimentary, and respiratory.

Nervous

It is a matter of clinical observation that in the early years of life emotional excitement, especially if accompanied by some degree of physical exhaustion, is one of the two main exciting causes of the asthma attack. The other—climatic variation—is largely beyond our control. Underlying specific sensitivities may be present and we must ever be on the watch for them, but the excessive emotional reaction is the most commonly blamed detonator.

As the child grows, and his character and habits are formed, this emotional instability comes gradually more under the control of the will. The influences brought to bear on him during this formative period will help to determine whether the asthma attacks steadily decrease in number and severity, or whether this diffuse, amorphous emotional stimulus continues to elicit a response until the asthma habit is firmly established and, has become crystallized round a series of conditioned reflexes, very often largely based on suggestion. The complex psychological situations that may become superimposed on this habituation have been elaborated by Gillespie (1936) and by Kerr Clarkson (1937).

The attitude of the parents is therefore all-important in these early years. Often inherently nervous and emotional themselves, and prone to worry excessively, it is of the greatest importance to explain to them the essentially nervous basis of the disease and to define in detail their correct attitude towards the child and his disability. Previous misconceptions, particularly the fear of tuberculosis which is often at the back of their minds, must be exorcised, and their confidence and co-operation in a radically new approach to the problem must be secured. They must be enjoined to cultivate and assume an air of quiet placid confidence that the chest trouble is a childhood complaint which is not going to persist. Any exhibition of their natural anxiety in the presence of an attack must be dissembled in front of the child. He must not be made to feel that his health is the subject of constant worry and solicitude. Such undisguised concern will reflect itself in the child in various ways according to his temperament. He may exhibit a corresponding state of chronic anxiety and apprehension, or a morbid and precocious interest in his own symptoms and importance, or a vigorous self-protective negativism—all states of mind that are highly conducive to perpetuation of the asthma attacks.

The beginning of school life is an important and potentially dangerous milestone in the life of the asthma child, and a searching test of the parental ability to appreciate and cope

with the situation. The well-instructed parent will anticipate the attack, induced by the novelty and excitement, that almost inevitably follows the first adventure to school, discount it in advance with the aid of a little collaboration with the school-teacher and possibly some suitable premedication, dismiss it as lightly as possible, and return the child to school even though he may be still wheezing slightly. The over-anxious parent, on the other hand, will greet the attack with consternation and confine the child to bed or indoors for a totally unnecessary period of two weeks or more. Then an apprehensive attempt is made to resume school, with the child worried, behind in his class work, and not yet accepted into the school community. There is a repetition of the attack, and all the conditions are to hand for the establishment of a vicious circle until the mere thought of school attendance may be enough to induce a recurrence.

The second duty of the parents and those in close attendance on the child must be to cultivate all the aptitudes of patient, untiring detectives, unobtrusively noting any circumstances that are observed to lead to an attack, with a view to avoiding, so far as is possible, a repetition of such circumstances in future. But all discussion of the suspected causes of the attacks must be forbidden in the presence of the child, and, in fact, the whole subject of asthma is better avoided as a topic of family conversation, except perhaps for occasional favourable comment when there is marked improvement in symptoms. At this suggestible age children can readily become persuaded that certain foods, circumstances, or environments are likely to bring on an attack. Unwise parental comment and undisguised apprehension will increase the probability of the attack occurring. In this way expectation, which Hurst (1929) regarded as the most common psychological factor, is established at a disastrously early age. By its aid the frequency and intensity of the asthma attacks may be powerfully influenced and reinforced by the attention of the conscious mind.

Apart from this all-important parental attitude, a more stable nervous system will be encouraged by a regular daily routine of life, free from over-exciting and physically exhausting experiences, but with any suggestion of valetudinarianism rigidly excluded. Adequate hours of rest and sleep must be insisted upon, and loss of sleep due to asthma attacks must receive full compensation during the day. The hard, dry, irritating, and exceedingly intractable cough of laryngeal allergy may be a still more serious cause of loss of sleep. There can be few more distressing sights than an asthma child exhausted by loss of sleep but kept awake by this racking cough. Sedatives in large doses, which must be determined for each child, are often the only means of overcoming the local irritation.

Alimentary

The protein skin tests are undoubtedly of great theoretical interest and present a vast field for scientific inquiry. They have, however, perhaps unduly focused attention on the search for specific allergens as exciting causes of the asthma attack. When they have been employed in these children the results cannot be said to have been very helpful, and careful observation by the parents I have found to be of much greater value. Any food clearly, and on more than one occasion, proved to be at fault must be modified in some way, as with milk, or eliminated. Care must be taken, however, to see that a too zealous parent does not carry out the process of elimination to excess. In practice, specific food sensitivities appear to be inconstant and variable at this early age, and it will be found that a previously suspected food may, after an interval of a few weeks, or in a different environment, be taken with impunity. Obstinate and most dramatic examples of sensitivity to specific foods do undoubtedly occur, but, though many foods came under suspicion, none was detected in these children as the sole cause of asthma. To what extent many of the reactions to ingested and inhaled substances in later childhood and adult life have been influenced by suggestion and incautious comment by the parents in early life must be a matter of individual speculation.

Subject to the considerations outlined above, excessive dietetic rules and restrictions are better avoided. A normal balanced diet and regular meal-times are of more importance for these often exuberantly over-active mercurial children.

Respiratory

The identification of specific air-borne allergens by means of the protein skin tests presents similar practical difficulties. Dust in any form, whether the result of high winds in dry weather, spring cleaning, or any domestic or industrial activity that results in a dust-laden atmosphere, is a frequent cause of asthma attacks, many of which can be prevented by a little forethought in the home. On the other hand, the child with the lung-damage type of asthma seems to be more sensitive to damp weather, and particularly to sudden changes in atmospheric conditions.

A healthy, unobstructed upper air passage and correct breathing habits are of primary importance. Without trespassing too deeply into the realm of the ear-nose-and-throat surgeon, one may venture to express the opinion that operation should seldom be undertaken except for the elimination of infection or the relief of obstruction secondary to chronic infection. A careful distinction has, of course, to be made between the latter and the intermittent obstruction due to oedema of the pallid mucous membranes of the nasopharynx and sinuses which is a feature of allergic disease.

It is certainly most unwise to make any optimistic promises of permanent relief from the asthma symptoms as a result of any operative procedure. Fifty-seven children under my care have had their tonsils and adenoids removed. The results, noted at least six months after operation, were: in 12 marked improvement was reported; in 36 no change in the incidence or severity of the attacks; in 6 the asthma was said to have been worse; and in 3 the operation was blamed for the onset of the disease.

Having ensured a free and unobstructed upper air passage, breathing exercises, based on the suggestions contained in the handbook published by the Asthma Research Council (1944), undoubtedly supply one of the most beneficial forms of therapy in this disease.

The child suffering from the lung-damage type of asthma presents a particularly difficult problem. Prevention, by treating those twin menaces to the organic structure of the lung; measles and whooping-cough, with even greater respect than usual in a potential asthma subject, and insisting upon protracted convalescence until the symptoms and physical signs of any respiratory infection in his early years have cleared completely, must be our first aim. When this type of asthma is already established it demands most careful investigation of the whole respiratory tract, with the co-operation of the bacteriologist, radiologist, and ear-nose-and-throat surgeon, in addition to the general measures of treatment.

Conclusion

A steady tendency to diminution in the severity of the attacks and cessation of symptoms for increasingly long periods as the child grows older was noted in the majority of these children. Those who develop symptoms in infancy and present the most uncomplicated form of the disease yield the most promising results, provided the diagnosis is prompt and the parents are intelligent and co-operative. Those suffering from the lung-damage type of the disease did not show the same promising progress. A follow-up has not been attempted. To be of any value a survey in ten or twenty years' time, noting the effects of adolescence and, in females, the events of the reproductive cycle, would be the only satisfactory way of pursuing the inquiry.

As has been emphasized, prognosis is vastly influenced by the character of the parents and the home circumstances. A temporary change of surroundings, various combinations of drugs, or specific or non-specific protein injection therapy may bring about an improvement of variable duration, often a most satisfactory and sustained remission. It may be added that the incidence of an acute illness, an operation, or indeed any abrupt change in the normal routine of life may bring about the same happy though often temporary alleviation. One or other of the former methods will often help to steer the child through a particularly severe phase of the disease, and a remission brought about by one of the latter events should be exploited to the full by insisting on prolonged convalescence. A subsequent relapse will, however, cause serious loss of confidence in

both child and parent if the importance of taking the long-term view is not constantly inculcated into all concerned.

No rapid results, but a steady improvement in the later years of childhood, can be promised, and must be tacitly assumed by all as an integral part in the treatment and management of the disease.

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PERFORATION OF THE ILEUM IN
ENTERIC FEVER

NOTES ON 22 CONSECUTIVE CASES

BY

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Few diagnostic problems are more urgent and yet more difficult to solve than those encountered in perforated typhoid ulcer. A recent analysis of the cases which have occurred during the last eleven years at the Kolar Gold Field Hospital, South India, has confirmed the belief, based on clinical experience, that the picture and subsequent course of perforated typhoid ulcer in this locality differ in certain respects from the accounts generally presented in textbooks. The information obtained from the records of 22 ileal perforations treated in this hospital between 1935 and 1945 is thought to be interesting enough to form the subject of a short paper.

Textbook Description

Perforation of the ileum occurs in a little under 5% of all cases and causes 30% of all deaths in enteric fever. It is said to be especially common in cases characterized by diarrhoea, meteorism, or haemorrhage from the bowel, and is most frequent towards the end of the third week, but may occur at any time after the second week. Diagnosis is difficult, for few of the classical signs and symptoms of perforation occur in the late stages of fever, when toxæmia is severe and the patient may be almost moribund. Authorities state that the first sign is often a rigor, sharp or sudden pain in the right iliac fossa or lower abdomen, with unusual tenderness and rigidity. One source of information suggests that collapse is unusual, but another gives sudden collapse as a common initial symptom. The temperature may fall temporarily or may be unaffected, while the pulse rises. After perforation a deceptive improvement may occur. The onset is so insidious in some cases that at necropsy unsuspected general peritonitis is found: If the affected loop lies in the pelvis, frequent and painful micturition or rectal tenesmus, and tenderness on digital examination, may be prominent symptoms. The pain in the abdomen is severe and persistent, increasing distension appears with early rigidity, and liver dullness may be obliterated. Opinions concur that an early polymorphonuclear leucocytosis generally accompanies the perforation but is an inconstant sign, while general leucocytosis does not appear early enough to be of value. The perforation generally lies within 12 in. (30 cm.) of the caecum, but may be elsewhere. Two or more perforations occur in 10% of cases. The mortality is admitted to vary from 75 to 95%, while perforation in ambulant cases is thought to be particularly high.

Incidence in Present Series

The series of cases to be described varies in some respects from the above clinical picture. During the eleven years 1935-45, 1,077 cases of enteric fever were treated in the Kolar Gold Field Hospital, and a total of 11 perforations occurred in patients under treatment—an incidence of 1%. Of these cases 10 were in hospital at the time of perforation and 1 was in bed at home. A further 11 perforations took place among patients with ambulant enteric fever, and these already had perforation with general peritonitis on admission. Twenty-two cases of perforated typhoid ulcer have thus been operated upon in this hospital in the period under review. Though the

incidence of perforation in ambulant cases cannot be estimated, the occurrence of the same number of perforations in ambulant as in non-ambulant cases is evidence of the prevalence of such mild enteric fever that the sufferers do not seek medical attention.

The hospital treats Indian mining employees (25,000), and Anglo-Indian and European employees and their families (3,000). The employees are almost all male, their ages varying from 15 to 65 years. All 22 cases were in males; the eldest was 50 and the youngest 6, the average age being 28, which is probably a little lower than the average age of employees. Seven were employed on surface work, and the remainder were underground workers. Two children aged 6 and 13 years are included. The younger was a schoolboy, a non-ambulant patient who spent eight days in bed at home before perforation; the elder was ambulant; both recovered.

Trauma.—One patient received a contusion of the abdominal wall while at work on the day of admission. It was conceded that the accident was a possible factor in causation of his perforation.

Preliminary Course

The length of history before perforation in non-ambulant cases, including illness before admission, was 9, 5, 8, 13, 11, 9, 12, 12, 8, and 18 days; average, 11 days. In two cases the length of history was not obtainable from the records. In ambulant cases symptoms of various kinds were experienced for 0, 3, 0, 15, 2, 3, 7 days before perforation. The average in these cases was 4 days, but in four cases no mention of this detail was recorded. Haemorrhage did not occur in any case prior to perforation. Diarrhoea was a preliminary feature in only one case of the series, and the occurrence of meteorism was not a prominent sign in any case before peritonitis.

Symptoms and Signs

Symptoms at Onset.—(a) Pain: In every case in which the symptoms at onset were recorded abdominal pain occurred. It was described as of sudden or shock-like onset in 4 cases, and in 6 it was severe when it began. In 4 the pain was chiefly in the lower abdomen; in the remainder it was general or referred to the vicinity of the umbilicus. (b) Irritation of Pelvic Viscera: Pain was the first symptom in all but one case, in which a desire to micturate preceded it. One other case had urinary symptoms or pain on micturition soon after the onset of abdominal pain. Two patients had symptoms of rectal irritation in the form of several loose motions after abdominal pain had started. In one of these a little blood was present in the faeces. (c) Vomiting: This was present at the onset in 5 cases, and had occurred a day or two before perforation in one other case (ambulant). Only two patients vomited more than once; one of whom vomited twice, another five times. (d) Rigor: Two patients had a rigor at or soon after perforation. (e) Temperature and Pulse: The average temperature and pulse rate on admission in ambulant cases were 100.2° F. (37.9° C.) and 110, with extremes of temperature of 97° and 102.6° F. (36.1° and 39.2° C.), and of pulse rate of 80 and 152. The patient whose temperature was 97° was the only one in the series who was afebrile on diagnosis. In the non-ambulant group the average temperature and pulse rate on diagnosis were 102° F. (38.9° C.) and 109, with extremes of 99.6° and 103.6° F. (37.55° and 39.8° C.) and of 88 and 130. (f) General Conditions: In 13 cases this was recorded or could be deduced from the records as follows:

General Condition	No. of Cases	Result	
		Recovered	Died
Good	1	1	0
Fair	7	3	4
Poor	4	0	4
Collapsed	1	1	0

Later Symptoms and Signs.—Careful notes of the degree of pain, tenderness, and rigidity at the time of examination were present in the records of 16 cases. (a) Pain: Severe in 8, and of moderate intensity in 8. It was general or around the umbilicus in all except one, in which it was worst in the iliac fossae. (b) Rigidity: This was severe in 4, moderate in 8,

mild in 2, and absent in 2. It was greater in the lower abdomen in 3. (c) Tenderness: This symptom was severe in 5, moderate in 8, and mild in 3. It was greater in the right iliac fossa in 2, in the left iliac fossa in 1, in the lower abdomen in 2, and in the epigastrium in only 1 case. (d) Liver dullness was mentioned in only 5 case notes; it was present in 2, diminished in 2, and absent in 1. In 1 case shifting dullness was detected.

Blood Examination

Early total white blood cell counts were recorded in 5 cases, with a maximum of 12,000 leucocytes per c.mm., a minimum of 2,400, and an average of 7,500. The differential count was recorded in 4 cases as follows:

	Maximum %	Minimum %	Average %
Polymorphs	80	65	76
Lymphocytes	30	15	21
Mononuclears	5	2	3
Eosinophils	0	0	0

Blood was taken for a Widal test on the day of operation or within the next two or three days in 13 cases, and proved negative in 5. Haemagglutinins were employed, as the native community among which these cases occurred is not protected by T.A.B. inoculation. The results are:

Dilution:	1/50	1/100	1/125	1/150	1/250
No. of cases ..	2	1	2	1	2

Agglutination was highest against *B. typhosus* antigen in all but one case, in which *B. paratyphosus A* was agglutinated 1/50.

Surgical Procedure

In non-ambulant cases the time interval between perforation and operation averaged 11 hours, with extremes of 2 and 20 hours. In ambulant cases the exact period could be ascertained only in 4, with extremes of 7 and 26 hours, and an average of 13 hours. Among those with accurate records of time intervals, of 6 cases repaired within 12 hours 4 recovered; of 3 repaired from 12 to 24 hours after onset 2 recovered; and of 2 operated on from 24 to 36 hours after operation 1 recovered.

In all cases anaesthesia was induced either by nitrous oxide and oxygen or by chloroform-ether mixture 1:12, and was followed by open ether. A right paramedian incision was used in every case. When the correct diagnosis was established before operation a small low incision was made—low for convenience of access, and small to minimize the risks or extent of subsequent ventral hernia. The latter complication was a distinct hazard in cases of typhoid perforation, as many wounds in those who recovered became infected. The perforation was repaired with interrupted sutures through all coats transversely and buried by a continuous seromuscular stitch. Omentum was sewn over the repaired site. Later cases had 10 g. of sterile sulphanilamide powder intraperitoneally without any apparent influence on mortality. All were drained by separate suprapubic stab wound and rubber tube to the pelvis. The site of perforation was recorded in the notes of 13 cases. In 8 the following estimated distances from the ileo-caecal junction were observed: 12, 6, 9, 18, 3, 12, 15, 10 in. (30, 15, 22.5, 45, 7.5, 30, 37.5, 25 cm.). The average distance between a perforation and the ileo-caecal valve was thus 11 in. (27.5 cm.). In the 5 remaining cases the perforations were described as being in the lower ileum.

Post-operative Course and Mortality

Wound infection was a troublesome sequel in 8 cases, and was classified as severe in 5, moderate in 1, and mild in 3. One case had no wound infection, and most of the remainder died before definite evidence on this point was obtainable. Among those who died the period of survival after operation varied from 2 hours to 6 weeks; average, 7 days. Excluding the individual who survived 6 weeks the average period of survival was 4 days. Including those who died the average duration of fever after operation was 12 days; excluding deaths it was 18 days.

There were 5 deaths in the 11 ambulant cases, and 7 deaths in non-ambulant cases. The total mortality was therefore 55%; that in ambulant cases was 45%, and in non-ambulant cases 64%. The 7 deaths in non-ambulant cases represent the mortality from ileal perforation among the 84 deaths in 1,077 cases of enteric fever—i.e., 8% of all deaths. Mortality from all causes in enteric fever was 8%, and from perforation 0.7%.

Necropsy was not performed on patients dying from enteric fever. As it is possible that some died with unsuspected ileal perforation and general peritonitis the figure of 1% for the incidence of perforation in 1,077 cases may be somewhat low.

Table showing Mortality from Enteric Fever during the Period 1935-45

Year	All Cases Treated in Hospital			Cases with Perforation (Ambulant and Non-ambulant)	
	No.	Deaths	Mortality %	No.	Deaths
1935	21	2	10	1	—
1936	20	2	10	1	1
1937	59	5	8	2	1
1938	144	10	7	4	2
1939	48	9	19	1	—
1940	119	12	10	6	5
1941	122	6	5	1	—
1942	175	13	7	1	—
1943	148	10	7	—	—
1944	142	9	6	5	3
1945	79	6	8	—	—
Total ..	1,077	84	9	22	12

Discussion

Haemorrhage from the bowel did not occur in any case before perforation; persistent diarrhoea occurred only once, and meteorism severe enough to find special mention in the notes not at all. Rigor was an initial sign in only two cases. Four of the series conformed to the recognized description of irritation of the pelvic viscera by proximity of the perforated loop; dysuria and rectal tenesmus were present. Pain was the predominant initial symptom, and it was usually general or situated around the umbilicus. In only a small proportion was the first pain described as low, and it was never referred to the right iliac fossa.

When a clearer clinical picture had had time to develop, the symptoms and signs remained chiefly general, and reference to the iliac fossae was not the rule. Rigidity was greater in the lower abdomen in only 3 cases; and tenderness was greater in the right iliac fossa in 2, in the left iliac fossa in 1, in the lower abdomen in 2, and in the epigastrium in 1. It is clear that localization of symptoms and signs to the right iliac fossa in these cases was unusual. This is not unexpected. If the perforation occurred at the ileo-caecal junction pain in the right iliac fossa might logically be expected, but as the perforation was an average of 11 in. (27.5 cm.) from the junction—that is, about as far away as the average width of the abdomen—it is obvious that localized signs, if any, may appear anywhere in the abdomen. Some patients had no rigidity, slight pain, and mild tenderness—symptoms associated with some cases of enteric fever without perforation.

Fall of temperature to below normal was present in only one case—an ambulant one. A relative fall doubtless occurred in some cases, but was certainly not great, as the average temperature when diagnosis was made was 101° F. (38.3° C.). Increase in pulse rate takes place at the onset, and, as in other forms of peritonitis, the rate increases progressively unless a response is obtained by specific treatment. It seems that the general condition at the time of diagnosis is a useful prognostic sign.

The average time interval between perforation and operation was 11 hours. This long period is evidence that the onset was dissimilar to the catastrophic nature of perforation of a gastric or duodenal ulcer. In several cases the onset was particularly insidious; the patient was examined either as the result of some mild deterioration in condition noticed by the nurse, or during the routine daily round, and found to have signs of general peritonitis. Questioning did not reveal any outstanding symptoms indicating beyond doubt the actual time

of perforation. Thus in four cases the interval between perforation and operation was doubtful.

The figures given of recovery rate in relation to time laps do not illustrate the advantage of early operation, and are to be disregarded as not representative of the whole series. Blood counts were performed shortly after clinical examination has suggested the presence of peritonitis: although the total leucocyte count was within normal limits, the polymorphonuclear leucocytosis is considered to be of diagnostic value.

The early occurrence of perforation is noteworthy. Excluding ambulant cases (date of onset unknown), the average interval between commencement of illness and perforation was 11 days. This is widely at variance with the usual belief that the commonest time for perforation is the end of the third week. The fact that perforations do occur at this early period is substantiated by the average duration of fever after operation. Excluding deaths it was 18 days; even including deaths (average survival period 7 days) it was 12 days.

In the whole series of 1,077 cases of enteric fever 1% developed perforation of the ileum, in contrast with the usual expectation of 5%. This complication accounted for 8% of the total deaths, against the usual total of 30%. Perforation is five times less frequent than is mentioned in textbooks, and peritonitis as a cause of death four times less frequent; subject to the proviso that this conclusion has not been verified post mortem.

The mortality from perforation in this series is low when compared with the usual figures published, being 55% for the whole series and even lower in ambulant cases—namely, 45%. This is at variance with the impression that perforation of a typhoid ulcer in an ambulant patient is of particularly grave prognosis, and is no doubt associated with the absence of severe toxæmia preceding perforation in the local type of case.

To sum up, the most striking features emerging are:

1. Low mortality rate in a long series of cases of enteric fever
2. Low incidence of perforation of the ileum.
3. Low mortality among those which did perforate.
4. The early period in the disease at which perforation took place.
5. Other variations from normal of subsidiary importance are the infrequency of diarrhoea, haemorrhage, or meteorism before perforation, and infrequency of rigors at onset.

The explanation of the first three factors must be either that enteric fever contracted in this part of Southern India is of a relatively benign variety, or that the type of treatment the patients received was attended with more success than usual. It is true that diarrhoea, haemorrhage, and meteorism—signs of a severe attack—were infrequent. Moreover, in my experience the recurrence rate is much less than the usually accepted 10%. On the other hand, it is to be expected that perforation would occur later in the course in milder cases, and an adequate explanation of its early appearance cannot be offered.

The treatment of enteric fever has been symptomatic, but a radical departure from common practice has been made in the abandonment of a liquid diet. Perforation of the intestine in enteric fever almost always takes place in the last 3 ft. (91.5 cm.) of the ileum, usually in the last foot (30.5 cm.), and ordinarily digestible food has been reduced to the physical characteristics of a liquid when it reaches this situation. It therefore appears to be not only unobjectionable but probably beneficial to permit patients with enteric fever to indulge their appetite for suitable solid food without restriction.

No attempt has been made to enforce any particular diet, but the usual dietary habits of the workmen have been followed according to their desires. In health the workman partakes of coffee, bread, or congee (cereal boiled to a paste in water) in the early morning, and large meals of curry (highly flavoured and coloured spiced meat) and rice at midday and in the early evening. When sick the patient resorts to milk, congee, coffee, and bread. On admission to hospital cases of enteric fever are at first given a diet of milk, coffee, congee, and bread-and-butter. When appetite improves or the patient can comfortably take extras, eggs, milk puddings, soup, fruit, fish, and mince are added, and if the patient desires it he is given curry and rice once or twice a day according to his requirements. Patients

are always eager to take a full diet as soon as they are able, and this attitude is encouraged. Constipation is the rule, and diarrhoea is uncommon. Purgatives are never given; enemas only infrequently.

It may be that enteric fever in Kolar is comparatively mild, but it is thought that the dietary treatment has perhaps influenced prognosis for the better. At any rate, the patients have only enteric fever to contend with—the additional factor of semi-starvation has been eliminated. There is room for argument as to whether this form of diet has had a beneficial influence; but mortality statistics suggest that it has not had a deleterious effect.

Summary.

A series of 22 consecutive cases of perforation of the ileum in enteric fever is described.

Perforation occurred unusually early—in the middle of the second week.

In 1,077 cases of enteric fever in hospital 11 perforations were detected. An equal number were met with in ambulant patients, indicating the existence of widespread ambulant enteric fever in this community.

The low mortality from enteric fever, the low incidence of perforation, and the comparatively low mortality from this complication are discussed with reference to the virulence of the infection met with and the possible effect of the treatment given.

I have much pleasure in expressing my thanks to Dr. W. B. Roantree, Chief Medical Officer, Kolar Gold Field, for his invaluable help in the preparation of this article, and I acknowledge my indebtedness to him and to Dr. J. M. Daly for allowing me to use the records of the cases which they treated.

AMOEBIASIS IN ITALY

BY

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Recent accounts of amoebiasis occurring in India and Burma (Leishman and Kelsall, 1944; Payne, 1945) have described the difficulties of treatment and the high relapse rate, while treatment in the United Kingdom of men invalided from these theatres has again given poor results (Lamb and Royston, 1945; Bomford, 1944). The clinical picture of amoebiasis in Italy is different. Here the more obvious dysenteric symptoms are usually absent, and the chief difficulty is in the diagnosis of the chronic or the latent case. Once diagnosed the response to treatment is good and the relapse rate low. The present paper gives an account of the disease as it has been encountered in a New Zealand General Hospital, C.M.F., during the past year.

During the period July, 1944, to June, 1945, 4,601 patients were admitted to the Medical Division, and the relative frequency of "tropical" diseases is shown in Table I. It will be seen that amoebiasis accounts for over half the admissions in the diarrhoea-dysentery group and was 2½ times as common as malaria. This article is based on the 258 cases of amoebiasis seen during this period.

TABLE I.—Total Admissions July, 1944, to June, 1945 (4,601)

Infective hepatitis ..	2,016	Dysentery, bacillary	104
Amoebiasis, intestinal ..	252	Malaria ..	103
Amoebiasis, acute hepatic ..	6	Other diseases ..	2,006
Diarrhoea ..	109		

The duration of symptoms before admission varied from a few days to 18 months, with an average of 3–4 months. Of the 252 cases of intestinal amoebiasis, 82 were admitted primarily for other diseases, such as infective hepatitis, peptic ulcer, ascariasis, or anxiety neurosis, and the disease was in a latent or a chronic stage.

Symptoms

Diarrhoea.—A history of diarrhoea was given by 204 cases (81%). Of these, 70 were admitted with an acute attack, and 134 gave a history of mild recurrent attacks lasting 1 to 3 days and subsiding readily with R.A.P. (Regional Aid Post)

treatment. True dysenteric symptoms of blood and mucus in the stools were seen in only 28 cases, and of these 16 had an associated bacillary infection. Forty-eight cases (19%) had had no attacks of diarrhoea since coming overseas.

Pain.—Complaints of abdominal pain were made by 106 (42%) patients. This was of three main types: (a) Recurrent attacks of aching, lower abdominal pain, particularly situated in the right iliac fossa and often associated with looseness of the bowels. (b) Epigastric pain or discomfort, related to food and resembling the pain of a peptic ulcer. Associated with this type of pain were often dyspeptic symptoms—anorexia, flatulence and nausea—and many patients were admitted with a tentative diagnosis of peptic ulcer or functional dyspepsia. Four cases had a radiologically proved duodenal ulcer in association with amoebiasis. (c) Aching pain in the right subcostal region, worse on lying on the right side, and often associated with a flatulent type of dyspepsia.

General Symptoms.—Vague general symptoms of lassitude, malaise, anorexia, and slight loss of weight were common, and in these cases a history of diarrhoea was usually obtained only by direct questioning. Weight loss was never severe, and no cases showed any marked evidence of toxæmia or debility.

Physical Examination

The most valuable physical sign in the diagnosis of intestinal amoebiasis is tenderness or thickening in the region of the caecum, and this was present in 63% of cases. There was often tenderness over both the ascending and the descending colon. Liver enlargement was found in 103 cases (41%), of which 37 had a coexisting infective hepatitis. This group will be discussed later. No help in the diagnosis of the uncomplicated case of amoebic dysentery was obtained from either the blood count or the sedimentation rate.

Sigmoidoscopy

This is a most valuable aid to diagnosis, and its routine use in all cases with a history of chronic diarrhoea or of vague dyspeptic symptoms occurring in a country where amoebiasis is prevalent would prevent many cases being missed. In the present series of 252 cases with positive stools, the majority of which were of the mild chronic type, 70% showed abnormal findings on sigmoidoscopy. This figure would have been higher had it been realized earlier that the type and extent of the ulceration seen in Syria and North Africa were uncommon in Italy and that the changes here were much less marked but none the less characteristic. The following changes have been observed:

(a) *Small superficial ulcers*, about 1–2 mm. in diameter, but seen on the valves and very easy to miss because of the frequent absence of a surrounding area of hyperæmia. In most cases, ulcers, if present, will be found on the lower four inches (10 cm.) of the bowel.

(b) *Pitting of the Mucosa*.—The treated case of amoebiasis may show pitting of the mucosa at the site of ulceration for several weeks afterwards. This appearance occurring in an untreated case, giving a history of intermittent diarrhoea (often admitted to hospital when the bowels have returned to normal), is highly suggestive of amoebiasis, and stool examination after purgation will show the *Entamoeba histolytica* in nearly all of these cases.

(c) *Granular proctitis* or patchy areas of granularity, often extending upwards into the colon, associated with excess of mucus on the bowel wall and often scattered submucosal haemorrhages. These changes are non-specific, but are often associated with an amoebic infection of the bowel. Amoebae may sometimes be found in mucosal scrapings from the ulcerated and pitted areas, but in the latent or chronic cases the percentage of positive findings obtained has not been high.

Stool Examination

The most certain method of diagnosing amoebiasis is the demonstration of the typical vegetative forms of *E. histolytica* in the stools. In the rare acute type of case passing blood and mucus in the stools, the finding of the entamoeba is a matter of no great difficulty if a fresh warm stool is examined. In the mild chronic type of case, which provided 72% of the total, considerable difficulty has been found in demonstrating amoebae, even when on clinical and sigmoidoscopic examination the diagnosis seemed certain. The usually advocated policy of examining six daily stools produced negative results in most

cases, and even the daily use of salts to provide a loose stool gave only a slightly higher proportion of positive findings. This difficulty has been overcome by producing frequent watery stools with the aid of calomel and magnesium sulphate, and sending up to the laboratory all stools passed on the day of the test. In this way a positive result can be obtained in one day in nearly all cases. Calomel, 5 gr. (0.32 g.), is given at night, and magnesium sulphate at 7 and 9 o'clock next morning. In the last 100 cases diagnosed in this way a positive result was obtained in the first stool in 24% of cases, the second stool in 15%, the third stool in 25%, and the fourth, fifth, and sixth stools in 8% each. Rarely, eight to ten stools would have to be examined before a positive result was obtained, but the average number was 3.5. The common sequence is for the first one or two stools to be negative; then, as they become watery and contain mucus, amoebae are found which at first may be atypical and only sluggishly motile. Subsequent stools in this case will almost invariably show actively motile amoebae containing red blood cells which are in every way typical of the *E. histolytica*. The exudate in the stool was occasionally "indefinite," but usually there was no exudate. An unusual finding in this series was the infrequency with which amoebic cysts were found in the stools—5% of the cases only. (Concentration methods were not used as a routine.)

The occurrence of amoebic ulceration of the colon with vegetative forms of *E. histolytica* in the stools in a patient entirely free from symptoms is not unknown. Several instances were encountered when undertaking a routine examination of stools from 23 cooks in a unit in which there was a continued mild incidence of amoebiasis. In six cases trophozoites of *E. histolytica* were found, and in one other cysts of *E. histolytica*. All seven men felt in good health and had not reported sick, although on close questioning three admitted to having had occasional mild attacks of diarrhoea during the previous three months. In four of the seven cases sigmoidoscopy revealed active amoebic ulceration.

X-ray Examination

The barium radiograph is in most cases of little value in diagnosing intestinal amoebiasis. In a few cases where the history has suggested a peptic ulcer, a barium follow-through has shown localized spasm of the caecum or colon, and subsequent stool examination has been positive for *E. histolytica*. The radiological changes in hepatic abscess and acute amoebic hepatitis are well known and need not be further discussed here. There is, however, a small group of cases which give a history of recurrent mild diarrhoea associated with malaise, lassitude, aching pain in the right subcostal region, and in which screening of the diaphragm shows a localized doming of the right half of the diaphragm in the postero-medial aspect, with restricted movement. These cases have been afebrile, with normal blood counts, and stool examination has usually been negative for amoebae. The marked subjective improvement following emetine treatment, coinciding with a diminution in size of the liver bulge, makes the clinical diagnosis of chronic amoebic hepatitis probably a correct one. These cases have not been included in the present series as some doubt exists about the correctness of the diagnosis.

Treatment

The depressing results from standard courses of treatment reported from India and Burma have not been experienced in Italy, and it is obvious that there the disease runs a much milder course and responds more readily to treatment. During the early part of this year the standard M.E.F. (Middle East Forces) treatment was used (emetine, 1 gr. (65 mg.) daily, with quinoxyl 2½% enemas for 10 days, carbarsone 0.25 g. twice daily for 8 days, followed by emetine bismuth iodide, 3 gr. (0.2 g.) for 12 days), and latterly the C.M.F. (Central Mediterranean Force) course (emetine, 1 gr. daily for 3 days, emetine bismuth iodide 3 gr., concurrently with quinoxyl 2½% retention enemas for 10 to 12 days, followed by carbarsone, 0.25 g. twice daily for 8 days), strict attention being paid to the technique of giving the quinoxyl (Manson-Bahr, 1944). All cases with liver enlargement or in which there was any suspicion of amoebic hepatitis were given 10 gr. (0.65 g.) of emetine during their initial course of treatment and a further course of 6–10 gr. (0.4–0.65 g.) after

three weeks at the convalescent depot. The immediate result have been good, and only two cases still had positive stool when examined three weeks after the conclusion of treatment. A complete follow-up of all cases has not been possible, but as nearly all the cases occurred in New Zealand troops and all long-term cases or cases for evacuation from this theatre are transferred to this hospital, it is possible to give some idea of the relapse rate. To date 9 cases are known to have relapsed. 226 men have returned to full duties, 7 have been down-graded for base duties, and 19 have been graded unfit for further service overseas, chiefly because of persistent hepatomegaly or the presence of some associated condition such as coronary artery disease or duodenal ulcer.

Three of the relapsed cases with persistent diarrhoea, extensive ulceration of the colon, and trophozoites of *E. histolytica* in the stools have been treated with a 5-day course of sulphasuxidine (80 g.) and penicillin (1,200,000 units) before being given a second course of emetine bismuth iodide and quinoxyl (Hargreaves, 1945). The immediate results have been good, ulceration of the bowel healing and amoebae disappearing from the stools; but a further follow-up over a longer period will be necessary before they can be said to be cured.

Discussion

The difference between this series of cases and those reported from other theatres of war is obvious. In Italy the disease is for long periods mild or latent, and characterized either by recurrent attacks of diarrhoea or by persistent malaise with vague abdominal symptoms. Dysenteric symptoms are unusual (28 cases), and then often associated with a bacillary infection, while, in 82 of the cases the primary admission to hospital was for some other disease. There is no definite evidence that an avirulent strain of *E. histolytica* exists, although it might be doubted if the amoeba was the cause of the vague general symptoms predominating in so many of these cases. The presence of ulceration as seen with the sigmoidoscope and the response to specific treatment, with subjective improvement much more pronounced than could be accounted for by a similar period of rest in bed and an adequate diet, leave little doubt that the amoebic infection is the cause of the symptoms and that the amoeba is not a harmless parasite in the bowel. Bearing in mind the possibility that some of these patients will, if untreated, develop signs of amoebic hepatitis or hepatic abscess after the war, the demonstration of *E. histolytica* in the stools should lead to the institution of a full course of anti-amoebic treatment. Although doubt exists whether an emetine-resistant strain of amoeba may be reproduced by repeated inadequate courses of treatment, there is little doubt that the relapse rate under these conditions will be high, and so during the first course of treatment every effort should be made to eradicate the infection.

The diagnosis of clinical intestinal amoebiasis is as unsatisfactory as that of clinical malaria, and the empirical use of emetine or emetine bismuth iodide in all cases of chronic diarrhoea is rightly condemned. Especially in the type of disease described in Italy with such vague general symptoms it is important to make an exact diagnosis by demonstrating the amoeba before starting a long unpleasant course of treatment. With the aid of the method of examining succeeding stools following a single purge as described in this paper and used in many hospitals in the C.M.F., it should be possible to make an exact diagnosis in nearly all cases of intestinal amoebiasis. Characteristic lesions seen with the sigmoidoscope should lead to a search for *E. histolytica* either by means of mucosal scrapings or by examination of the stools after purgation.

The diagnosis of amoebic hepatitis is nearly always a matter of considerable difficulty, and little help is obtained from stool examination, which gives positive results in only about 45% of cases (Manson-Bahr, 1940). The six cases of acute amoebic hepatitis treated all showed leucocytosis, tender enlargement of the liver, and fullness of the right lower chest, and responded to emetine injections. The diagnosis of chronic amoebic hepatitis usually has to be made on clinical grounds only. The finding of an enlarged tender liver in a patient giving a previous history of recurrent attacks of diarrhoea, with negative results from stool examination and sigmoidoscopy, is not

uncommon in this theatre. If marked subjective improvement and diminution in size of the liver follow the administration of a course of emetine injections the diagnosis of chronic amoebic hepatitis is probably the correct one. Frequently, however, the liver remains unchanged in size and the diagnosis is in doubt. Because of this difficulty it was decided to follow up the 103 cases with liver enlargement occurring in this series of 252 cases with positive stools. Thirty-seven of these were originally admitted with infective hepatitis, and the persistence of hepatomegaly long after the jaundice had disappeared led to a search for possible contributory causes and the discovery of a latent amoebiasis. All cases were afebrile, with a normal white count and sedimentation rate, and their failure to respond to emetine treatment made the diagnosis of amoebic hepatitis unlikely. A follow-up of this group of cases over a period of six months showed that no case developed an amoebic abscess and that in all but seven cases the liver had returned to normal size in three months without further anti-amoebic treatment. The course of these cases has been exactly comparable to that of similar cases of infective hepatitis with residual hepatomegaly in which no evidence of amoebiasis was found and no emetine was given. One patient with combined infective hepatitis and amoebic dysentery with residual hepatomegaly died of intercurrent disease six weeks after he had completed his anti-amoebic treatment; histological examination of the liver showed no evidence of amoebic hepatitis and nothing to suggest that he had had a recent attack of infective hepatitis. Considering the large number (2,016) of cases of infective hepatitis admitted and the probable high carrier rate in troops exposed to amoebic infection, it is suggested that the association of these two diseases is accidental, and that the amoebic infection played no part in causing the persistence of the liver enlargement.

The cause of liver enlargement—usually two or three finger-breadths—in the remaining 66 patients who gave no history of preceding infective hepatitis remains uncertain. In addition to the vague general symptoms and mild recurrent diarrhoea typical of chronic amoebiasis, a history of aching pain in the right subcostal region, worse on lying on the right side, and a sense of fullness in the right lower chest, was often obtained. All of these cases were afebrile, with a normal white count and sedimentation rate. Aspiration of the liver gave negative results in all cases in which it was performed. In one-half of these cases the liver returned to normal size after a course of emetine injections, and the aching pain and sense of fullness in the right lower chest disappeared. In these cases the diagnosis of chronic amoebic hepatitis in association with intestinal amoebiasis seems justified. Diminution in liver size after emetine treatment in the remaining patients was no more than could be ascribed to a long period of rest in bed with a bland high-carbohydrate high-protein diet, and at the conclusion of treatment the liver remained slightly enlarged, firm, and often tender. These cases with persisting liver enlargement were down-graded, and were observed at base for a period of three to six months. At the end of this time all were in good health; none had suffered a relapse of amoebiasis or showed signs of liver abscess, but the liver was still undiminished in size. In view of the failure of the therapeutic test a diagnosis of chronic amoebic hepatitis seemed unjustified, and other possible causes were looked for. During the autumn of 1944, when many of these cases of amoebiasis occurred, there was a high incidence of infective hepatitis in the New Zealand Expeditionary Force, and it is known that many cases of "hepatitis without jaundice" occurred in which the prodromal febrile illness with digestive symptoms was not followed by the development of jaundice, although the liver became enlarged and tender. These cases ran a mild course and the liver returned to normal size in two to three weeks, so that it is unreasonable to ascribe the persistent liver enlargement in amoebic dysentery to a previous unrecognized attack of infective hepatitis. It is more probable that it is a chronic non-specific hepatitis related to the hepatitis sometimes found in association with chronic non-specific dysentery or in chronic diarrhoea. Whether it represents an early cirrhosis is a problem which might be solved by liver biopsy, and further observation of these patients over a period of years is indicated.

Clinically, chronic amoebic hepatitis and chronic non-specific hepatitis found in association with intestinal amoebiasis are

usually indistinguishable. Thickening of the skin and subcutaneous tissues over the right lower chest wall without actual pitting oedema is often found in chronic amoebic hepatitis, and localized tender spots in the intercostal spaces over the liver would also point to this diagnosis. The distinction is largely academic; from a practical point of view it is important that any case of intestinal amoebiasis in which liver enlargement is found should receive a full course of emetine injections, and reliance in treatment should not be placed solely on drugs such as emetine bismuth iodide, quinoxyl, and carbarsone, which act only on the amoebae in the bowel wall.

The occurrence of vague abdominal symptoms in a soldier returning from an overseas theatre where amoebiasis is known to be prevalent should lead to the diagnosis of chronic amoebiasis being considered. These symptoms may easily be labelled functional in origin, as indeed they often are. The question of amoebiasis can be quickly settled by sigmoidoscopy and examination of successive stools after a brisk purgative has been given. If sigmoidoscopy shows lesions in the rectum and colon, and vegetative forms of *E. histolytica* are found in the stools, a full course of anti-amoebic treatment should be given. There is some doubt whether it is justifiable to institute a long and unpleasant course of treatment in amoebic "carriers," where the only positive finding is the presence of cysts of *E. histolytica* in the stools. As it is impossible to forecast which of these patients will, at some later date, develop amoebic hepatitis or liver abscess, it has been our practice to attempt to eradicate the infection with emetine bismuth iodide, quinoxyl, and carbarsone.

Summary

An account has been given of the cases of amoebiasis treated in a New Zealand General Hospital in Italy during the period July, 1944, to June, 1945.

True dysenteric symptoms were rare and were often associated with a bacillary infection. The disease was usually of the latent or chronic type, with recurrent mild attacks of diarrhoea and general symptoms of malaise, dyspepsia, and slight loss of weight predominating.

Tenderness and thickening in the region of the caecum were the most important physical findings. Liver enlargement was present in 103 cases, of which 37 had had a preceding infective hepatitis. Half of the remaining 66 cases were considered to have a chronic amoebic hepatitis, and the remainder a chronic non-specific hepatitis which did not respond to emetine.

70% of the cases showed abnormalities on sigmoidoscopy which were typical or suggestive of amoebiasis.

Considerable difficulty in demonstrating the vegetative forms of *E. histolytica* was encountered until we adopted the routine of examining all stools passed after vigorous purgation. Using the method described, a positive result could usually be obtained in one day.

Amoebiasis contracted in Italy responds well to standard methods of treatment, and the relapse rate is low.

Chronic amoebiasis should be considered as a possible cause of vague abdominal symptoms occurring in a soldier returning from an overseas theatre where amoebiasis is known to be prevalent.

I am indebted to the Director of Medical Services, 2nd New Zealand Expeditionary Force, for permission to publish this paper.

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Middlesex County Council, in pursuance of a scheme approved in 1945 regarding the medical staffing of its hospitals, has just made sixteen senior medical appointments—five appointments of physician, seven of surgeon, three of pathologist, and one of radiologist. The salary attaching to the positions of physician and surgeon starts at £1,200 per annum and rises by annual increments of £100 to £1,800, and on proof of outstanding achievement and subject to the specific approval of the Council there may be further increments of £50 per annum up to a maximum of £2,200. For the positions of pathologist and radiologist the salary starts at £1,100, and rises by annual increments of £100 to £1,700, with further increments on a similar basis to those of physicians and surgeons up to a maximum of £2,000.

A CASE OF HYDATIDIFORM MOLE AT AGE 52

BY

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Apart from the advanced age of the patient this case does not present any remarkable features. It is not a record, for Feenders (1936) has reported a mole occurring in a multipara of 55. Vassbuch and Vermelieu as quoted by Sherman (1935) found twenty pregnancies in women over 50, five of whom had hydatidiform moles.

Hydatidiform mole occurs most often between the ages of 20 and 30, but if the total number of pregnancies occurring over 40 is considered hydatidiform mole appears two and a half times more frequently in this age group. Of the cases reported by Brews (1939) 37.5% were in women over 40, but 89.7% of Sherman's series of 78 cases from the Lying-in Hospital of the City of New York were under 40.

Most American authors are agreed that the best treatment for hydatidiform mole occurring in women over 40 is hysterectomy, particularly if they are multiparae. There is little reason to quarrel with this view when one considers the incidence of chorion-epithelioma after hydatidiform mole. Published figures show a wide variation in this incidence of from 5% to 31% (Nelms, 1939) (Brews, 8.3%). It does not seem reasonable to take a 1 in 10 chance of chorion-epithelioma developing in an elderly woman if she is fit for a radical operation when the mole is discovered.

Case Report

In March, 1945, a woman aged 52 consulted Major Matthews, R.A.M.C., on account of a blood-stained discharge of a month's duration. She had been married for 14 years and had one child, aged 11. In 1937 Fothergill's operation for prolapse was performed in England. In 1938 she had an abortion of a 2½-months gestation. A curettage was done after the abortion. In 1940 she had whooping-



FIG. 1.—Photomicrograph showing oedematous villi.

cough, during which a painful swelling appeared in the abdomen and gradually disappeared—possibly a haematoma of the abdominal wall. Her menses began at the age of 10 and were regular 4-5/28. She had a normal period from Dec. 31, 1944, to Jan. 4, 1945; her next period began on the correct day, but the flow ceased after 24 hours; four days later a brownish discharge appeared, and continued for a few days without remission. Since then she had had a slight loss each day.

Major Matthews found an enlarged uterus, suspected carcinoma of the body of the uterus, and performed a diagnostic curettage. The report on the curettings was anaplastic carcinoma. He referred the patient to me owing to the limited surgical facilities in his locality. She was transferred to Cairo on March 10, and on examination a large soft uterus the size of a 10 to 12 weeks pregnancy was found. The breasts were negative.

The slides and the paraffin block were sent with the patient. Major Alan Morgan examined the slides. He could not confirm the original diagnosis, and cut further sections from the block, on which he submitted the following report: "The scrapings show evidence of conception, with numerous chorionic villi and sheets of decidual cells containing vascular spaces. The villi are enlarged

owing to oedema of the central stroma (Fig. 1), the Langhans cells are frequently two layers in thickness, and syncytial cells show distinct proliferation. In my opinion this is not an adenocarcinoma, nor a chorion-epithelioma, and the swelling of the villi and chorionic proliferation are suggestive of a hydatidiform mole, possibly of the invasive type."

On March 13 examination under a general anaesthetic confirmed the previous findings; the cervix was easily dilated, and a pair of sponge forceps introduced through it withdrew typical vesicles, the largest being about the size of a pea. The cervix was closed with sutures after a gauze plug had been inserted. Total abdominal hysterectomy and bilateral salpingo-oophorectomy was then performed. The ovaries did not contain any cysts. Apart from some post-operative distension convalescence was uneventful, and the patient left hospital on the seventeenth day.

The tissue removed and the uterus were examined by Major Morgan, who reported as follows: "The curettings have the same microscopical appearances as given in the previous report, and con-



FIG. 2.—Sagittal section of uterus after fixation.

firm the diagnosis of hydatidiform mole. The uterus on sagittal section (Fig. 2) is packed with firm reddish tissue, probably a molar pregnancy, the size of a hen's egg. There is no macroscopic evidence of invasion of the uterine wall."

It is interesting to see how little the uterine contents were disturbed by the two explorations; the main mass is a firm coagulum of retained blood forming a fleshy mole in addition.

Two Friedman tests were performed after operation. In the first instance the rabbit died, but the second test, done on June 26, gave a negative result. X-ray examination of the chest showed no abnormality. The patient is well to-day.

My thanks are due to Major G. D. Matthews, F.R.C.S., M.R.C.O.G., for referring the case to me, and to Major Alan Morgan, M.D., for his pathological examination and the photographs.

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The Ministry of Health reports an increase in the number of cases of venereal disease. Last year 10,706 new cases of syphilis were treated at local authorities' clinics in England and Wales. This is 1,388 more than in 1944, and more than double the pre-war total. During the war the annual total rose steadily from 4,986 in 1939 to 9,642 in 1943. There was a slight improvement in 1944, when the figure was 9,318; but the 1945 total is the highest recorded for at least 14 years. The campaign of public education, carried out since 1942 by means of advertisements, posters, films, and exhibitions, is to be continued.

Medical Memoranda

An Unusual Complication of Thiouracil Therapy

There is little doubt in our minds that in the following case thiouracil caused the severe constitutional symptoms, which included prominent adenopathy on two occasions and pancreatitis in the second attack, which necessitated a laparotomy.

Mrs. A. was admitted to hospital on Nov. 7, 1945, with a diagnosis of angina pectoris, intermittent claudication, and cardiac infarction. Her symptoms, which had started three months before, were becoming increasingly severe. The blood pressure was normal. The electrocardiogram showed inversion of the T waves in leads II and III. She was nervous and excitable, but there was no evidence of thyrotoxicosis, and the basal metabolic rate was $+2\%$. She continued to have many short attacks of chest pain, usually brought on by excitement, and as rest and sedatives produced no improvement it was decided to try to reduce the number of anginal attacks by depressing the basal metabolic rate with thiouracil (Raab, *J. Amer. med. Ass.*, 1945, 128, 249). Treatment was started with 0.2 g. three times daily, and this was uneventful for three weeks. The white cell count was maintained at 7,000 to 10,000 per c.mm.

On Jan. 29, 1946, she developed painful enlargement of the submandibular glands on both sides, with a temperature of 101°F . (38.3°C .): No other glands were enlarged, and the spleen could not be felt. The fauces were red, and there was an area of white exudate from which a smear demonstrated Gram-positive streptococci in short chains. A vesicular rash resembling cheilopompholyx appeared on the hands. The white cells numbered 7,200 per c.mm., of which 74% were polymorphonuclear neutrophils, 2% transitionals, and 24% lymphocytes. Thiouracil was discontinued and a course of sulphadiazine given. The temperature fluctuated between 100°F . (37.8°C .) and 102°F . (38.9°C .), and five days later it was 99°F . (37.2°C .); other symptoms, including the glandular enlargement, had abated, except for a dull epigastric ache which had appeared insidiously several days previously. Phenobarbitone, $1/2$ gr. (32 mg.) twice daily, was continued throughout. It was not clear whether the fever, rash, and glandular enlargement were independent of the thiouracil. The exact origin of the swelling in the neck, whether from upper cervical lymph glands or submandibular salivary glands, was also uncertain because of its great size. Accordingly, thiouracil was restarted on Feb. 8 in doses of 0.2 g. four times a day. On the afternoon of Feb. 9 there was rapid and dramatic enlargement of the submandibular salivary glands, with sudden severe epigastric pain. Thiouracil was discontinued at once. Vomiting of bile-stained fluid occurred and several loose stools were passed. That evening the temperature was 101°F . (38.3°C .) and the pulse 88. The abdomen was rigid and tender, particularly in the epigastrium and also posteriorly over the upper lumbar spinous processes. There were no sounds on auscultation of the abdomen. The electrocardiogram showed no change, and a further coronary thrombosis did not seem likely. During the night her condition deteriorated, and there was no relief from the pain after morphine, atropine, and pethidine. The next morning the temperature was 102.4°F . (39.1°C .) and the pulse 104, and the pain was worse. Its site was the upper abdomen, and it spread to the back on the left side; signs of collapse were evident. There was no jaundice or cyanosis. Urinary diastase was within normal limits. Mesenteric lymphadenopathy, mesenteric thrombosis, and acute pancreatitis were all entertained as possible diagnoses, but as peritonitis could not be excluded the patient was immediately transferred for surgical treatment.

The only abnormal finding at laparotomy was a hard generalized enlargement of the pancreas, and the gland was swollen to about twice its normal size. There was no free fluid, nor was there any evidence of fat necrosis. The abdomen was closed and the patient made good progress after administration of intravenous saline and glucose. The submandibular glands subsided slowly and some abdominal discomfort remained for a time.

R. C. BARCLAY, F.R.C.S.

AUBREY LEATHAM, M.B., M.R.C.P.

Ascariasis Causing Acute Intestinal Obstruction

Round-worms are known occasionally to cause intestinal obstruction. The following is a case in point.

CASE REPORT

The patient was a female house-servant aged 45, and was admitted to hospital on Aug. 12, 1940. Five days previously she began to have spasms of colicky generalized abdominal pain, which doubled her up and caused her to cry out. These continued until the day of admission. She had lost her appetite and had vomited a few times, bringing up about fifteen round-worms, and had passed two with her faeces. There was no history of urticaria, cough, fever, or haemoptysis during the previous weeks. On examination she was thin and a little anaemic; nothing more abnormal was found except for slight general tenderness and a doughy feeling in the abdomen. Santonin 3 gr. (0.2 g.) and calomel 2 gr. (0.13 g.) were given on admission, followed later by 6 drachms (21 ml.) of castor

oil and a belladonna and hyoscyamus mixture. The result was the passage of a large mass of tangled round-worms; this was followed by some relief of her symptoms.

On Aug. 14 the pain became very severe and was accompanied by vomiting. There were abdominal distension and a marked "ladder-pattern" of small-gut obstruction during each spasm. A diagnosis of acute intestinal obstruction caused by round-worms was made, and laparotomy performed forthwith under open chloroform and ether anaesthesia. A right lower paramedian incision revealed almost the whole of the small intestine distended with masses of coiled-up conglomerate round-worms. Two coils obstructed by especially large knots of worms were packed off, and through a small incision in the summit of each, guarded by a purse-string suture, 100 and 40 worms respectively were removed with long-pronged artery forceps. When no more could be removed from those portions of the gut the openings were closed. There appeared to be many hundreds of worms still left in the intestine. As the chief sites of obstruction had been dealt with, these were left alone and the abdomen was closed.

During the post-operative period there were slight suppuration of the wound, pyrexia (100 – 101°F . = 37.8 – 38.3°C .), general weakness, and, at first, some abdominal distension. Pituitrin and intravenous saline and glucose were given during the first day. Almost all the hair of her head fell out in the next few days. Anthelmintic treatment was recommenced on Aug. 18, repeated on the 21st and 27th, and on Sept. 1 and 3. (A change from santonin 3 gr. (0.2 g.) to oil of chenopodium 15 m. (0.9 ml.) was made on Aug. 27.) Each treatment yielded only a few worms. The patient insisted on leaving hospital on Sept. 3. When seen again on March 26, 1946, she appeared well nourished, was feeling very fit, and stated that she had had no more pain or other discomfort since leaving hospital: also that she had not passed any more round-worms. She had remained bald since the time of her previous illness.

COMMENTARY

With such a heavy infestation with round-worms it is curious that there was no history suggesting "ascaris pneumonia," nor of toxic manifestations such as urticaria. The diagnosis of the cause of the obstruction became fairly certain after the passage of the large mass of round-worms as a result of the first anthelmintic dose. It is surprising that no more worms were passed following post-operative anthelmintic treatment, and that after leaving hospital until she was seen again five and a half years later no more worms had been passed. The loss of hair was probably due to the effect of a severe illness, though under these circumstances it is usual for the hair to grow again. It should be added that the patient was of a somewhat eccentric mentality, which may explain both the gaps in the history and the almost certain eccentric eating habits leading to her heavy infection with ascari, though there was nothing clear-cut in the dietary history to suggest how such a massive infection had come about.

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Carcinoma of Colon causing Acute Intestinal Obstruction in Youth of 17

Carcinoma of the colon in adolescence, without a history of familial polyposis, is uncommon, and the following case seems to be interesting enough to warrant publication.

CASE REPORT

A youth just 17 was admitted to the West Middlesex County Hospital in May, 1939, with a five-day history of colicky abdominal pains situated in the umbilical region and associated with absolute constipation. He had vomited several times on the two days before admission.

On examination gross tympanitic distension of the abdomen was found, but no mass was palpable and rectal examination was negative. He denied any previous bowel trouble; he had always enjoyed perfect health. A diagnosis of acute small-gut obstruction of uncertain aetiology was made, and laparotomy advised. A typical "ring" carcinoma of the splenic flexure was found, with gross distension of the proximal colon and small intestine. Caecostomy was performed. Three weeks later resection of the growth (Mr. W. J. Ferguson) was done, with end-to-end anastomosis, and subsequently the caecostomy was closed. He made an uneventful recovery. The operative diagnosis was confirmed by microscopy. On subsequent questioning no family history of colonic neoplasm could be elicited, nor could polypi be demonstrated in the excised specimen.

A carcinoma of the colon of the adult type was an unexpected operative finding. The previous history gave no clue as to the correct diagnosis, and failure to recognize it could, I consider, be excused. A further interesting point is the long survival after the resection, the patient being recently seen in perfect health some seven years after operation. This is contrary to the usual experience in intestinal cancer in the young, early recurrence being only too frequent.

J. SCHOLEFIELD, F.R.C.S.

Reviews

MYOMECTOMY AND OVARIAN CYSTECTOMY

The Technical Minutiae of Extended Myomectomy and Ovarian Cystectomy. By Victor Bonney, M.S., M.D., F.R.C.S., F.R.A.C.S. (Pp. 282; illustrated. 30s.) London: Cassell. 1946.

Probably no one of this generation has done more for the development of gynaecological operative technique than has Victor Bonney. Chief among the subjects with which his name will always be associated is the development of radical surgical methods (the Wertheim operation) for treatment of carcinoma of the cervix. But no less should he be honoured for his insistence on conservative surgery—when that is possible—for non-malignant gynaecological conditions, notably the substitution of myomectomy for hysterectomy, and ovarian cystectomy for ovariectomy. Perhaps because conservatism has less “news value” than radicalism, Bonney’s achievements in this field have never received the notice they have undoubtedly merited; even to-day the ease with which ovarian cysts can be shelled out is not fully realized, and too often one hears of the needless sacrifice of ovaries, and even of complete castration, in young women.

In his well-known book written in conjunction with the late Sir Comyns Berkeley (*A Textbook of Gynaecological Surgery*) an excellent account is given of both myomectomy and ovarian cystectomy, but the discussion on these operations, and the details of technique, had of necessity to be compressed in order to maintain a balance with the other contents of the volume. This restriction Bonney has now removed by a new publication dealing exclusively with these two operations. In it the fruits of a ripe, and probably unrivalled, experience are presented with the author’s customary vigour and enthusiasm. Every aspect of the subject is discussed, and no fewer than 241 line drawings—each made by the author himself—are included to illustrate the various manoeuvres. These illustrations are specially noteworthy, for by them the author’s meaning is conveyed with a greater directness and clarity than would be possible were the more “beautiful” type of medical illustration used.

That it is possible to conserve the uterus when massive fibroids are present, or when the tumours are so numerous that 100 or more are encountered, or when a large fibroid awkwardly distends the lower part of the cervix, may come as a surprise; so also may the conservation of ovarian substance when a cyst weighing 20 lb. or more is found to be filling the abdomen; yet all these events are recorded by the author, and their appropriate treatment is discussed. Of particular interest is a case in which 40 fibroids were removed, weighing in aggregate 21 lb.; and another in which 6 dermoids were removed—3 from each ovary—and the woman later became pregnant on two occasions. In all, the author records 806 personal cases of myomectomy with a mortality of 1.1%. Ovarian cystectomy he has performed 301 times without a death. Every type of operation—simple myomectomy in all its forms, multiple myomectomy, cervical myomectomy, caesarean myomectomy, block uterine excision, adenomyomectomy, and ovarian cystectomy—is depicted, and the means of dealing with almost every conceivable difficulty discussed.

This is a remarkable book and one which will take an honoured place alongside the already widely known *Gynaecological Operations*. To the gynaecologist its appeal is certain; to the general surgeon whose practice includes pelvic surgery it can be recommended as the best account we have seen of this highly important though strangely neglected field of conservative surgery.

DRUG ADDICTION

Narcotics and Drug Addiction. By Erich Hesse, M.D. Translated by Frank Gaynor. (Pp. 219. \$3.75.) New York: Philosophical Library, 15, East 40th Street.

This book has been translated from the German, “published and distributed in the public interest by the Alien Property Custodian” in the U.S.A. It is a useful book of reference for those wishing to have available an account of the different substances which are commonly found to produce addiction. It contains not only pharmacological but chemical information,

and a limited but well-chosen selection of cases illustrating the effects produced by the narcotic, and the results on the individual. All the opium derivatives are discussed together with artificial products like heroin and eucodal; cocaine, mescaline, hashish, and kava-kava are also considered. Not everyone knows that atropine and scopolamine have been used as intoxicants, and that muscarine from the *Amanita muscaria* has also: it produces an urge to keep talking incessantly. There is also a useful discussion on alcohol and tobacco.

While the effects of opium derivatives and of cocaine are well known, those of mescaline are less so. Heffter has given a description of its effect on himself. He lay down in a darkened room and closed his eyes.

“Despite the darkness, after-images were remarkably sharp and lasting. The after-images were frequently followed by series of pictures in gorgeous colours, some of them like carpet designs and mosaics, others showing intertwined coloured stripes moving at lightning speed. Colourful rays of intense brilliance shot across my dark field of vision, like projectiles from a firearm, but moving even at a higher speed. All colours were represented. These visions were followed by a series of beautiful landscapes, characterized primarily by a wonderful colour effect. Thus, for example, I saw the broadwalk of the Nervi beach; the branches of trees of a remarkably rich red colour hung over the walls. . . . Often I saw also the interior of richly decorated banquet halls, their walls, ornaments and chandeliers decorated with colourful jewels, opals and pearls. It was odd that the ceiling sometimes seemed to be down below, or hanging vertically at the side: this experience produced a violent vertigo and an increasing sensation of nausea. The visions disappeared as soon as I opened my eyelids. A very remarkable symptom was the loss of the sense of time; what I estimated to be half an hour was really just a few minutes.”

There is also a useful account of the effect of hashish, or Indian hemp, given by Joel and Fraenkel, of which the following is an extract:

“One of the first signs indicating that the toxin is beginning to take effect is a dull sensation of premonition and uneasiness. Something strange, something inevitable seems to be approaching. Next, activity wanes, and a sensation of helplessness and anxiety may be experienced. If the addict yields to this state, he will soon realize that he is caught. Scenes and series of scenes of experiences long past flash on, entire scenes and situations are relived. First, they arouse interest, occasionally pleasure, and finally, when there is no escaping from them, tiredness and torment. And this compulsory state cannot be broken by saying to yourself: ‘This is nothing but the effect of the toxin.’”

It is interesting to learn that the reputed aphrodisiac effect of hashish is produced only in orientals and not in white people.

JOB PLACEMENT FOR THE DISABLED

Job Placement of the Physically Handicapped. By Clark D. Bridges, Director of Conservation Services, Zurich Insurance Companies, Chicago. (Pp. 329; illustrated. \$3.50 or 17s. 6d.) London and New York: McGraw-Hill Book Company, Inc. 1946.

A national scheme for the reablement and resettlement of our disabled workers is already with us; comment has been made in these pages upon the capabilities of the officials who will work the scheme, and upon the training they ought to receive. It is therefore appropriate and welcome to see a book which will go a long way to provide the basic knowledge needed by everyone, whether in Ministry or industry, who is asked to provide for disabled men but who has no grounding in medicine. But this is more than a textbook of medicine simplified. With good sense the author has included only those illnesses which most commonly occur, and his emphasis is upon the disability caused in each case, the conception of disability throughout being as optimistic as the facts will allow. Parallel to the descriptions of disease are analyses of the many physical demands which work may make upon a man in industry: his posture, his possible output of energy, his contortions, his environment; the dangers and toxic hazards he may have to endure, are each dealt with separately and defined as carefully as in any dictionary. This analysis is the basis of job-analysis, which all will agree we should postpone no longer. To assess a man as a working unit and to assess what his job will demand of him is the logical way of finding him satisfactory work and ultimate contentment. The doctor may know his man, the works manager and foreman may know the job, but it is time that each knew more of the opposite side of the problem; in this lies the value of the book. It is based upon field research,

and the wealth of material is presented ingeniously and with accuracy. Though it is evidently written with the close co-operation of medical men there is a tendency for the space allotted to certain diseases to exceed their relative importance, and others suffer thereby. On the whole the balance is good, for the field to be covered is uncomfortably wide. The American phraseology and the inclusion of references to United States laws and institutions should by no means discourage people in Great Britain from reading so valuable a contribution to the subject as this. Whatever his nationality, the problems of a handicapped man in a post-war industrial world must be much the same.

PSYCHOLOGY OF WOMEN

The Psychology of Women. A Psychoanalytic Interpretation. By Helene Deutsch, M.D. Foreword by Prof. Stanley Cobb, M.D. Volume I: Girlhood. (Pp. 312. 21s.) London: Research Books Ltd. 1946.

Dr. Helene Deutsch is a strict psychoanalyst and was a personal pupil of Freud. She has now set out to conduct a study of her own sex. The present volume, the first of the series, deals with girlhood studied along psychoanalytic lines. Here we have displayed, with case histories and narratives, the results of the Oedipus situation, castration complexes, penis envy, and of oral, anal, and urethral eroticism, which are the universal background of Freudian psychology. The book is persuasively and clearly written, and there is at least an apparent logical sequence between these mental adventures of the early years and the resultant manifestations of female eroticism, masochism, the "active" masculine woman, homosexuality, and the rest. There is no doubt that neurotic traits and some not so neurotic traits can be explained by tracing them to these emotional reactions of the young child; and, inasmuch as the patient is convinced of the validity of these explanations and is thus given a satisfactory face-saving device so that she can reorganize her attitude to life, she will be helped and perhaps cured; but that all behaviour, even all abnormal behaviour, is to be traced to these few common denominators is not so certain. However, full and prolonged psychoanalysis works; therefore where the physician and the patient have time to undergo the discipline is entirely justifiable. Certainly every serious student of psychology should study the subject and its conclusions, but if he can help his patients to a better understanding of themselves and a greater security of emotional attitude by shorter methods so much the better for him and them. This book will therefore be useful to the knowledgeable but must not be taken too seriously by the uninformed.

GYNAECOLOGY FOR NURSES

Gynaecology. A Handbook for Nurses. By Gladys H. Dodds, M.D., F.R.C.O.G. (Pp. 202; illustrated. 10s. 6d.) London: Faber and Faber. 1946.

Although the author states that "this book has been written to provide the nurse with the fundamentals of gynaecology," one gains the impression on reading it that this is rather a book for the specialist nurse or sister. In other words, there is too much detail in parts, and subject matter is included which is not entirely relevant. The chapters on ante-partum haemorrhage and pregnancy toxæmias should be excluded, and judicious pruning of ante-natal care and post-natal care would help to reduce the plethora of fundamentals that the student nurse has to assimilate. The gynaecological nurse is not a midwife, and here "a little learning" would be "a dangerous thing." Three operations are described for shortening of the round ligaments, but Bonney's plecting operation is not mentioned. Alexander-Adam's operation is seldom, if ever, done nowadays.

The book is well produced and the illustrations are excellent. The above criticisms do not condemn the book and the reviewer hopes they will serve to have the material groomed into a minimum of valuable data from the nurse's point of view.

Notes on Books

A Guide for the Tuberculous Patient, by Dr. G. S. ERWIN, was noticed with warm approval in this column when it first appeared in 1944. A second edition has now been published by William Heinemann Medical Books, Ltd., at 3s. 6d. New sections have been added on "nerves," social statistics, and aviation. In no other disease of common occurrence is the intelligent co-operation of the patient more necessary. Dr. Erwin's little book will save the physician's time and advance the patient's understanding.

HANNS SACHS, author of *Freud: Master and Friend* (Imago Publishing Co.; 9s.), was a member of that inner circle which gathered round Freud and were largely responsible for the spread of the doctrines formulated by the master all over the world. This biographical sketch—it is no more—is admittedly a panegyric of the father of an increasingly large family, but it is pleasantly and most sympathetically written and gives the reader an excellent picture of the genius who was so extravagantly execrated and perhaps as extravagantly praised by learned men and others throughout civilized society. Freud's rigid adherence to what he regarded as first principles is described, and it explains his apparent intolerance of those who differed from him and broke away from the original circle to become bitter critics and opponents. The final chapters give a moving picture of Freud's fortitude in bearing these defections and later the ravages of a painful and fatal malady needing repeated severe operations and culminating in persecution and exile. It is gratifying that this country afforded him asylum and such peace as was possible in the last days of a really great man.

Atlas to Surgical Approaches to Bones and Joints, by TOUFFIC NICOLA (New York: The Macmillan Company; 25s.), consists of a series of simple but adequate diagrams of the bones and joints which are accessible to surgery. The diagrams are skilfully conceived and well drawn, and descriptions are cut down to a minimum. It will be difficult to imagine a better exercise for the student than to copy the diagrams, while from the point of view of the demonstrator of surgical anatomy the book is a gold mine.

Preparations and Appliances

A CONTAINER FOR THE CULTURE OF GONOCOCCI IN CARBON DIOXIDE

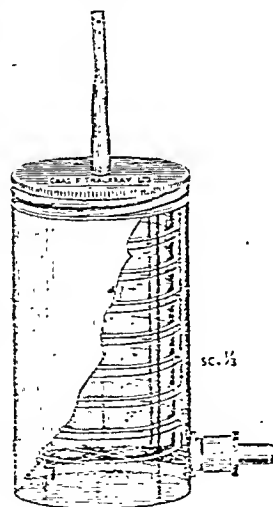
Dr. JOHN A. BURGESS, V.D. Officer, West Riding County Council, writes from Wakefield:

The usual laboratory methods of culturing gonococci in an atmosphere containing some carbon dioxide are unsuitable for use in venereal disease clinics where culture plates are often inoculated and placed in the incubator by the nursing staff. The container described below has been found to be simple and satisfactory in use at a venereal disease clinic. It occupies a comparatively small space in the incubator and is economical in the amount of carbon dioxide-air mixture used.

The container consists of a cylindrical tin box measuring 103 mm. in height by 75 mm. in diameter. It has a quarter-turn screw-on air-tight lid through which has been fitted a small brass tube with a rubber outlet valve similar to the type found in double bellows. Inside the container there is a wire rack which will hold 8 Petri dishes (each 60 mm. diameter by 12 mm. deep). The side of the container near the base has a brass tube fitting, with an inlet valve of the same type as that on the lid.

Method of Use.—The culture plates are inoculated in the usual way and placed in the wire rack. The latter is inserted into the container and the lid screwed on. The inlet tube at the base of the container is then connected to a rubber tube from a gas cylinder containing 8% carbon dioxide in air. Sufficient of this gas mixture is run in to displace all the air in the container (approximately 400 ml). The CO₂ mixture being heavier than air displaces the latter upwards and out through the outlet valve. The tube from the cylinder is then disconnected and the container placed in an incubator at 36° C. for about 48 hours. At the end of this time the culture plates are removed and sent to the laboratory for examination.

The container has been made for me by Messrs. C. F. Thackray, Ltd., Leeds, from whom similar containers can be obtained.



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CARE OF THE CHRONIC SICK

The Institute of Almoners is a relatively new body incorporating the Institute of Hospital Almoners and the Hospital Almoners Association. A suggestion made by Sir Ernest Rock Carling was taken up by the Institute early this year, and a questionnaire on the care of the chronic sick was addressed to almoners at the 350 hospitals throughout the country which provide an almoner service. An analysis of the replies received bears out the view of Dr. Sturdee and Lord Amulree¹: "Not only is the problem of the treatment of the chronic sick not being met, but most people do not realize that there is a problem."

Almoners everywhere report a disturbing lack of accommodation for the chronic sick and particularly for those suffering from inoperable cancer. In Carlisle "there are available only six female and six male beds for the chronic sick." Municipal hospitals at Hull "are now so overcrowded that it is difficult in some of them to get a dressing trolley between the beds." Other accounts reflect an administrative dilemma. Either patients die miserably at home or they occupy for months, or even for a year or longer, beds intended for more acute cases. Where there is accommodation either in municipal hospitals or in public assistance institutions it is too often in "old workhouses" or in "a grim, depressing, and ill-cared-for place," or else in "out-of-date buildings, quite unsuitable for the purpose of nursing patients who need especial care, in surroundings calculated as far as possible to give them confidence and cheer them in their last illness." Proper segregation is impossible and cases of inoperable cancer may be in one small ward with senile patients, noisy mental cases, and even "isolation cases from the maternity ward." In public assistance institutions conditions seem to vary greatly, and in general provision is "for the senile rather than the sick, and even less for the suffering." A further disadvantage is the old Poor Law stigma which still clings to so many of these places. This is especially the case in those areas where admission can be obtained only by application to the relieving officer, and according to one account "relieving officers have not always the right attitude." Another administrative difficulty is "the law of settlement, which may prevent a patient being transferred from a voluntary hospital outside his county direct to a public assistance institution without at least one night at home." The same difficulty arises when a patient has to go to the hospital which serves the district in which

he lives, even though it may not be nearly so accessible as a nearby hospital administered by a Public Assistance Committee. Fair comment on the combined effects of lack of accommodation, difficulties in administrative areas, and often justifiable dislike of poor accommodation as is available is provided by the Godalming report which concludes: "fortunately she here sooner than expected." The gloom of this and other case histories is not relieved by such background as the daughter who had a "nervous breakdown from strain of nursing him"; a wife "worn out with nursing him at home and ill herself"; a husband who nursed his dying wife until he was in debt, "in danger of losing his job" and "in a completely exhausted state."

The picture presented by the Institute of Almoners is not all black. In some few areas there are both voluntary and municipal hospitals making more than adequate provision for at least some of their chronic sick. Others are well cared for at their own homes by district nurses. Almoners were practically unanimous in describing local district nursing associations as efficient and cooperative. The home help service seems to be developing, though slowly and somewhat feebly and only in larger towns. The problem of the chronic sick is a large one and one that is not likely to grow less. It seems possible that by 1950 there will be five million people in Great Britain over the age of 65. Their needs are many and it is not easy to visualize any one scheme which will meet all of them. There is probably a place for homes and hospitals for the dying in any scheme that may be devised. There are a handful of such homes scattered throughout England and Wales where those who are in the last stages of illness have preference over those who still have some capacity for living. Their great disadvantage is the depressing effect on both patients and relatives of this segregation of the dying. But for selected patients who are aware of their condition the special care and attention that can be given to them at such homes is of value. As Cunningham Dax and Reitman² pointed out recently, there is an increasing need for special psychiatric hospitals for the aged where with proper treatment, especially in the affective group, rehabilitation can be achieved in a fair proportion of cases. There is a need, too, as Mungo Park suggested, for infirmaries where the simple types of senile dementia who are not in need of special psychiatric treatment could be looked after. The same applies to elderly patients suffering from cancer who have passed the stage where they might benefit by treatment but still need a great deal of nursing. Probably such patients could best be cared for in an annexe to a cancer hospital. Fractures in the elderly need much more than orthopaedic attention, but might well form a special group within the orthopaedic department. Much the same arrangement of a block or a single ward for any type of chronic sick might profitably be arranged within each and every department of the larger hospitals. Sir Alexander Macgregor suggested to the Glasgow Corporation in 1944 that 10 to 20% of the total beds of general hospitals should be allotted to chronic sick. Most hospitals tend to give priority to acute cases

¹ *British Medical Journal*, 1946, 1, 617.

² *Dudley Committee's Reports*, 1944, H.M. Stationery Office.

³ *British Medical Journal*, 1946, 1, 736.

⁴ *Ibid.*, 1946, 1, 549.

and to discharge or transfer the chronic sick unless they are of special interest for teaching purposes.

These considerations apply to one large group of the elderly chronic sick. Another group needs only an expansion of existing district nursing facilities. Yet another would be more than content with a regular home help service. Others still could look after themselves in well-designed hostels with only occasional nursing or medical supervision. All these groups merge imperceptibly one into the other and all of them may need at some time expert diagnosis and treatment. They overlap, too, the increasingly large section of the population which is not old and infirm but merely old. The problem of the chronic sick is closely related to that of provision for old persons generally. Clearly, men and women who are old and sick and not likely to recover are just as deserving of the best kind of care as those for whom there is hope of recovery. The provision of that care will tax the administrative ingenuity and the clinical and nursing skill of all concerned, even assuming a more humane, enlightened, and individual outlook towards the chronic sick than has hitherto been manifest. The creation of an adequate and comprehensive scheme to cover these needs is becoming urgent.

BRITISH-SWISS MEDICAL CONFERENCE

The Swiss Academy of Medical Sciences last week entertained a large number of British medical men and women at a British-Swiss Medical Conference held at Basle. Those who were fortunate enough to be present will long cherish the memory of a week which, for the British visitors, passed all too quickly in a city which blends the old and the new in an architectural unity of surpassing charm and vigour. Of the new, the British visitor took home with him an impressive recollection of the new university building completed during the war, and more especially of the Bürger-spital, which was opened last year. This new building is a landmark in hospital development and by contrast shows up the deficiencies of so many of our own institutions. But what struck the British guests even more than this lovely city untouched by war was the sincere friendliness of their Swiss hosts and the Swiss people, the sense of unity they had with British democracy, the eagerness and anxiety with which they had watched the fall and rise of our fortunes of war, the feeling, perhaps, of obligation felt by the Swiss nation towards Britain, which in its victory had preserved the democracy of Switzerland. In his thoughtful address of welcome to the Congress Prof. Edgar Bonjour, Rector of the University of Basle, stressed the elements common to both countries. "What counts with both people alike," he said, "as the only genuine goal of all political exertion is not might but freedom, the rule of law, justice, and moderation. This system fully recognizes the overwhelming importance of the individual, with whom every renewal, and therefore also every culture capable of establishing permanent values, ultimately begins. In both States the individual is constitutionally safeguarded against the encroachments of the multitude."

The relations between Basle University and England are described with much point and interest by Prof.

Bonjour in an article published in a special edition¹ of the *Schweizerische Medizinische Wochenschrift* to commemorate the Conference—an edition which includes in full the papers read at the scientific sessions, and short illustrated articles on the medical schools and faculties of Great Britain and Ireland; an edition, moreover, which in its format and printing is worthy of the high tradition of one of the oldest centres of printing in Europe. The University of Basle was founded in 1460. In the Basle matriculation rolls of the sixteenth and seventeenth centuries "one is amazed to discover," writes Prof. Bonjour, "how many English names which figure there have left their mark on history." Perhaps one of the most interesting links between England and Basle is to be found in the person of that mocker of human folly—Erasmus of Rotterdam. Intense individualist and lover of personal liberty, he found England and Basle two places congenial to his temperament. He completed his New Testament at Cambridge and had it printed at Basle, where he died. At Basle, also, two men famous in medical history threw down their challenge to authority. The turbulent Paracelsus burnt the works of Galen and Avicenna in the market-place, and from the printing presses of Basle came the *De Fabrica* of Vesalius in 1543. Familiar enough to Britons is the Basle-born Holbein, whose pen-and-ink sketch of Sir Thomas More and his family is one of the treasures of the Basle Art Museum.

The Conference last week enabled the Swiss—in particular the Baslers—and the British to renew once more their centuries-old friendship. Our Swiss colleagues reminded us on more than one occasion of the intellectual isolation into which the war of 1939–45 had placed them and welcomed this occasion for the exchange of information and ideas. A first summary of the papers read at the meeting appears elsewhere in this week's *Journal*. The British speakers and subjects were chosen by a committee under the auspices of the Royal Society of Medicine, to whose efficiency in organizing the British side of the Conference we would pay tribute. A varied intellectual fare was provided for our Swiss hosts and showed, we may believe, that in spite of our preoccupation with practical issues during the war years fundamental research in medical science was pursued with vigour. Our Swiss colleagues in return gave in full measure of the fruits of their work. If the Swiss have suffered intellectual isolation during the war we on our part have been isolated from the graces and comforts of civilized life, and these we found in abundance in the generous hospitality of our hosts and in the intellectual and physical amenities of Basle and Switzerland—a welcome refreshment of mind and body. Among the places of interest visited not the least were the chemical factories for which Basle is famed and in which the devices of modern technology have reached such a high pitch of application.

It is not possible here to mention by name the many Swiss doctors who in so unobtrusive a fashion gave freely of their time and energy to making the Conference the outstanding success it undoubtedly was. It will not, however, be invidious if we refer especially to Prof. Karl Wegelin, the President of the Swiss Academy of Medicine, who,

urbane and witty, was always apt to the occasion with well-chosen phrases in good English, whether at the scientific sessions or at the Banquet in the hotel on the bank of the Rhine. He was ably seconded by the Secretary-General of the Academy, Prof. A. Gigon, chief editor of the *Schweizerische Medizinische Wochenschrift*. It was to Prof. Gigon that the idea of such a conference occurred, an idea which he did not relinquish until it took shape; and once it had taken shape he did not cease to labour at all the many details of organization which make or mar a meeting of this kind. It is to be hoped that the time will not be long before we in this country will be able to make a fitting return by entertaining Swiss doctors on British soil.

STREPTOMYCIN

Antibiotics¹ are substances elaborated by micro-organisms which act as antibacterial or antifungal agents. It is attractive to postulate that these substances are formed by their producers as a defence mechanism. They have often a very marked, specific, antibacterial effect against important human pathogens.

Penicillin,^{2,3} which is a wholly British discovery, is the most successful antibiotic so far exploited therapeutically, but there remain many organisms pathogenic to man which are insensitive to penicillin and the sulpha drugs, or demand for effective control of the infection doses so large as to be toxic to the host. It is customary to reserve the term antibiotic for a substance of natural origin and to exclude from this designation synthetic antibacterial substances such as the sulpha drugs. Gramicidin⁴ is an antibiotic finding increasing favour in surface wound dressings, but streptomycin,⁵ an American discovery, is showing great therapeutic promise in combating Gram-negative bacilli and *Mycobacterium tuberculosis*. Penicillin is a purified metabolite of the aerobic culture of the green micro-fungus *Penicillium notatum* (Westling's original culture was made from the decaying herb hyssop from Norway), and streptomycin can be somewhat similarly made by filtration of the product of aerobic culture of the ray fungus, originally isolated from soil, *Actinomyces (Streptomyces) griseus* (not to be confused with either the human disease actinomycosis or with streptococci). It was found, by its isolator Waksman's collaborators,⁶ to have a wide and intense potency in animals, and after a very few months of scattered American biochemical effort the pure base and crystalline salts were prepared. It is thought significant that penicillin—an acidic substance—should have maximal action on Gram-positive bacteria and that streptomycin—a base—should have maximal action on the Gram-negative series.

The pharmacological development of streptomycin in America is proving very like that of penicillin in England, and, as the first few clinical observations with crude concentrates showed such promise, the American Streptomycin Clinical Trials Committee, under the chairmanship of Dr. Chester Keefer (Harvard), has been set up to control location and method of clinical trials and to assess results before the general release of the substance. The Committee buy the entire output (some 35 kg. a month in May, 1946) of the ten firms who have subscribed \$500,000 to the Committee for this purchase. Similar controlled clinical trials are about to start in England under the aegis

of a committee appointed by the Medical Research Council to exploit the pilot-scale production of streptomycin which is being organized by the Ministry of Supply.

It is too early to assess accurately the American clinical results, but it is almost 100% effective in tularemia (rabbit fever), which though rare in England gives rise to some 1,000 serious cases a year in U.S.A. In the residuum of bacterial infections of the urinary tract which are insensitive to penicillin and/or sulpha drugs considerable success has been reported ranging up to 100% elimination of *B. proteus* and *B. pyocyaneus*. In tuberculous meningitis great promise has been shown, though residual nervous or hydrocephalic lesions often remain, and all strains of *Mycobacterium tuberculosis* seem sensitive in some degree. In pulmonary tuberculosis, for which probably the minimal effective trial period may be 5 years, Dr. Corwin Hinshaw (Mayo Clinic) and Dr. Walsh MacDermott (New York) report considerable therapeutic possibilities with streptomycin in extension of Dr. Feldman's Mayo Clinic demonstration of its value in experimental guinea-pig infections. (Penicillin will, of course, tend to repel some of the secondary bacterial invaders in the tuberculous pulmonary lesion.) Treatment is a great trial to the tuberculous patient, because it involves at present some six daily injections of the equivalent of about 600 mg. of the pure base, over perhaps six months. Cost has to be considered, with the present price of the substance at about \$15 a gramme and the lowest likely price in full production falling to \$5 a gramme, but if this is weighed against the long sanatorium treatment and even longer subsidy for the patient and his dependants it is hardly significant. Dosage is to be calculated by dry weight of base, equilibrated against the standard powder of 1,000 units per mg. potency, but this introduces the slight complication that the soluble salts (hydrochloride 842 units, sulphate 798 units per mg.) have a lower unitage than the base. Plague and leprosy are other diseases in which the effect of streptomycin is being investigated. Streptomycin, though rather more costly than penicillin, is more stable in aqueous solution and dry form, and it can be heat sterilized. Being relatively stable at acid pH levels it would survive passage through the stomach, but it has so far not been possible to give effective treatment by mouth (a very desirable route) because adequate concentrations cannot be maintained in the blood, probably owing to simultaneous excretion and absorption from the gut.

It is important to stress that a complete and final opinion on the therapeutic value of streptomycin, particularly in tuberculous infections, cannot be expected yet, and that streptomycin is unlikely to be available either in America or England for use outside the official trials for some time. The unwary philosopher may ask himself whether, with streptomycin complementary to penicillin, there will be any pathogenic bacteria for human beings to die of in the Brave New World.

CIVILIAN DEATHS FROM AIR BOMBARDMENT

The Statistical Bulletin of the Metropolitan Life Insurance Company for July, 1946, contains a useful article, under the above heading, which summarizes the available data on British civilian loss of life amounted to something over 60,000 deaths, more than two-thirds in the first "blitz" between August, 1940, and June, 1941. French losses were almost as heavy, nearly 54,000, more than two-thirds of them in 1944. In proportion to population the Netherlands suffered more than any other ally; 30,000 are estimated to have perished in the dastardly raid on Rotterdam. No figures seem to have been available with respect to Russia and Poland; Norway lost 1,000 lives. The Axis Powers

¹ Oxford, A. E., "Antibiotics," *Annual Review Biochemistry*, 1945, 14, 749.

² Fleming, A., *Brit. J. exp. Path.*, 1929, 10, 226.

³ Florey, H. W., et al., *Lancet*, 1940, 2, 226.

⁴ Dubos, R. J., *J. exp. Med.*, 1939, 70, 1.

⁵ Waksman, S. A., et al., *Proc. Soc. exp. Biol.*, 1944, 55, 66.

⁶ Waksman, S. A., et al., *Science*, 1944, 100, 103.

said heavily for their choice. The United States Strategic Bombing Survey estimates German losses at over half a million, and Japanese losses as between 360,000 and 175,000; the two atomic bombs are thought to have killed about one-third of this total, 105,000 to 120,000; but the most destructive single raid is thought to have been that on Tokyo on March 9, 1945—the estimate is 85,000. These are statistics of deaths alone. In time a medical and statistical study of all the effects of air raids, mental as well as corporal, will no doubt be made. The psychological effects have been, perhaps, less serious than was expected before the attacks began, but a comprehensive study requires leisure.

DR. OLIN WEST

The centenary session of the American Medical Association will be held in Atlantic City in June next year. Already plans are afoot to make it "the greatest medical assemblage that the world has ever known." At its annual meeting, which took place this year at San Francisco, the House of Delegates unanimously appointed Dr. Olin West as President-Elect. This is a remarkable tribute to the man who has been Secretary to the A.M.A. for the last twenty-four years.

Olin West graduated from Howard College in Alabama, practised at Nashville, and was instructor and later associate professor in the medical department of Vanderbilt University. In 1910 he became director of the Rockefeller Sanitary Commission and the International Health Board in Tennessee, a position which he held for eight years. Then from 1918 to 1922 he was secretary and executive officer of the Tennessee State Board of Health. It was at this stage, following the death of Dr. Alexander Craig, that Dr. West became Secretary to the A.M.A. Later he combined the functions of Secretary with those of General Manager. Dr. George F. Lull, of Chicago, has now succeeded Dr. West as Secretary.

At San Francisco the address of the President-Elect was a characteristic compliment to the staff of nearly 700 whose activities he had directed for so long, and concluded with a statement on the importance to America of "an untrammelled and idealistic profession." Dr. West's unopposed election to the presidency of the A.M.A. and the ovation which greeted his presentation to the House of Delegates were a well-merited recognition of the steadfast manner in which he has supported the ideals and dignity of the profession in the United States for a quarter of a century.

RAG FLOCK

Rag flock is manufactured mostly from strips of cast-off clothing and carpets. This material is collected mostly by rag-and-bone men, who go from house to house with a barrow and scavenge for the material in tips and dumps. Considerable amounts of material are imported from abroad, particularly from the East, including used Army clothing, underclothing, surgical dressings, and sleeping-bags. The rags may be cleansed, but dirty flock can be produced at a cost of about £5 a ton less than that which has been washed. Manufacturers who carry out their obligations are therefore at a serious disadvantage. The rags, washed or unwashed, are dried and then disintegrated in a laniator (laniate means "to tear to pieces"); the rags are conveyed on a belt to a rapidly revolving cylinder studded with steel teeth, which tears them into shreds, and they emerge from the machine a fluffy resilient mass. The flock is used in the manufacture of bedding and upholstery. There do not appear to be any authenticated cases of

infectious disease from mattresses filled with dirty rag flock, but the risk may be assumed to exist. In any case it is undesirable that anyone should have to sleep on unclean bedding. There is also a risk to the health of the workers who handle the flock, apart from the presence of vermin in it.

An attempt to control this material was made in the Rag Flock Act, 1911; the Rag Flock Amendment Act, 1928; and the Public Health (London) Act, 1936 (Section 136); but an inadequate definition of rag flock and too small penalties for contravention of the law have defeated the intention of these Acts. An Interdepartmental Committee was therefore set up in 1938 to make recommendations to ensure proper cleanliness of rag flock used for the manufacture of upholstery, bedding, and other household furniture in Great Britain. Its report and recommendations are now published.¹ These include the registration of all premises used for the manufacture of rag flock and inspection by local authorities. It is further suggested that it would be wise to apply these regulations to premises in which any kind of filling material is used.

THE REHOUSING OF BRITAIN

The five-figure totals in the latest housing returns issued by the Ministry of Health appear encouraging, as all big figures are apt to do, but they have to be measured by the dire need of housing brought about by war damage and by the cessation of building for six years. In England and Wales, up to the end of June, 12,000 new permanent houses and over 30,000 temporary houses had been put up; 20,000 unoccupied houses had been requisitioned for residential purposes, and many thousands of existing premises had been converted and adapted for family units. The new permanent houses under construction numbered over 100,000 and the temporary houses nearly 22,000. Nearly half a million operatives, excluding prisoners of war, are engaged in tackling the housing problem. The Midlands stands highest in the number of houses completed, and the north-western area—Lancashire and Cheshire—in the number under construction. In London something like 94,000 war-damaged or war-damaged houses have been or are in process of being rebuilt, repaired, and made habitable.

The Ministry's housing returns, presented to Parliament just before the recess, give all these figures and many more; but to the departmental statistician a house is just a house, and no hint is given as to size, type, or position. When a huge demand is being met by mass-production the tendency is to be impatient of any variation of pattern, and, for anything we know, all these thousands of houses which are coming into view, whether they are built by housing authorities or under licence by private builders, may be six-roomed boxlike dwellings, suitable to a family of three or four. According to the last census nearly 22% of the family units in this country consisted of two members, and this proportion is not likely, with a diminishing birth rate, to have lessened since 1931. What is being done for the housing accommodation of single persons and of old couples? The widespread provision of a standard size of house to meet the needs of families which vary widely in size will create new social problems.

We announce with much regret the death of Dr. T. Watts Eden, consulting obstetric physician to Charing Cross Hospital and consulting surgeon to Queen Charlotte's and to the Chelsea Hospital for Women.

¹ Report of the Interdepartmental Committee on the Rag Flock Acts, Ministry of Health and Dept. of Health for Scotland, 1946, H.M.S.O. Cmd. 6366, Price 9d.

CONDITIONS DESIRABLE FOR THE RAPID PROGRESS OF GERONTOLOGICAL RESEARCH

BY

V. KORENCHEVSKY, M.D.*

(From the Gerontological Research Unit, Oxford)

The conditions necessary for the rapid progress of gerontology are much the same as those required for the rapid advance of any abstruse problem of science or medicine. In the first place the very great difficulty of the problem of ageing must be strongly emphasized. It is as difficult as, or perhaps more difficult than, the splitting of the atom, provided that the aim of gerontology is fully faced. This aim is not only a longer life but a stronger one—"to add life to years, not just years to life"—not only prevention of the premature appearance of senile decay but also elimination of those pathological features which are not necessarily associated with normal old age, since they are not present in some rare cases of less pronounced pathological ageing. As ageing starts very early, actually with the normal process almost the whole of the span of human life will be changed, and therefore in some distant future man will probably become in some respects a different creature.

In short, science and medicine confront the task of preventing the present definitely premature and pathological ageing.

Here, however, is another great difficulty, because we do not know what are normal ageing and normal old age, what is a normal span of life, and for how long in normal ageing wear and tear could be prevented in different organs and tissues. Moreover, the basic elements and conditions of normal life, such as proper nutrition, are most probably still very far from ideal in spite of the truly remarkable progress in this field of physiology and medicine.

At the present time, in geriatrics (the medical treatment of old age) the greatest pitfall appears to be the temptation to use stimulating compounds only, of any origin and structure, in order to prevent pathological ageing (Dr. Voronoff's glandular grafts, hormones, Prof. Bogomoletz's reticulo-cytotoxic serum, etc.). The danger and disadvantages of these geriatric methods are twofold: (a) A degenerated old tissue or organ cannot stand vigorous stimulation, just as a tired horse, when whipped to do extra work, cannot withstand the strain and suddenly collapses from heart failure. (b) The causes, producing decreased function or morphological changes of certain organs and tissues and acting from elsewhere, are not removed by stimulating these organs. Therefore with such treatment the basic causes of ageing of organs or tissues will still be present and will continue to produce fatal effects.

The "elixir of life" appears to consist mainly in elimination of all abnormal causes of ageing, and not in the use of stimulating compounds only. This statement, however, should not be misunderstood. Of course, various stimulating compounds (vitamins, hormones, etc.) are naturally present in the organism, and their absence or decreased production might also come one of the important causes not only of premature ageing but of death. Therefore their role in geriatrics might be very important and, in some cases of deficiency of these compounds, be not only rejuvenating to a certain degree but might actually save the life of the organism. With regard, however, to the general basic causes of ageing and the respective approaches to their treatment, it is important to allocate a proper place to stimulants and urge their correct application in geriatrics.

Taking into consideration all the enormous difficulties of gerontological and geriatric research involving all branches of science and medicine, the following conditions appear to be necessary for a rapid advance towards a solution of this vital problem of humanity:

(1) Just as in the case of the splitting of the atom, co-operative research work of scientists and medical men of all civilized countries is necessary. With this aim in view, the Club for Research on Ageing has been established with branches already formed in England, U.S.A., France, Denmark,

Sweden, and Switzerland; branches in other countries are in a state of formation or, as we hope, will soon be established.

(2) Large funds must be available for financing gerontological research in all its manifold aspects. The grants, given for few years, will not tempt many research workers to become specialists in gerontology and geriatrics, since any clinical or experimental research scheme on ageing necessitates some years of careful work. For example, it takes about 2½ years to breed old rats before starting any experiments on them. Besides, the research worker has to think about his future and that of his family.

(3) The establishment, in each major country, of an Experimental and a Clinical Institute for Research on Ageing.

(4) The formation of a sufficient number of groups of gerontologists and geriatricians in each civilized country. Obviously points (2) and (3) are essential for this purpose.

(5) The continuation of the policy of interesting in gerontology different existing biological and medical laboratories and research hospitals so that they devote at least some of their efforts and time to research on ageing. Co-operation between scientific bodies and municipal hospitals and infirmaries for old people is most desirable, as the experience of the British Branch of the Club has shown in the case of co-operation with the London County Council. Long-term grants, of at least five years' duration, are necessary in these cases. Experience has also already shown that voluntary workers without remuneration, and "temporary gerontologists" (i.e., those who have agreed to do some gerontological research for a few years only), are often not to be counted upon for any length of time because of the call of their direct duties or their acceptance by them of permanent posts elsewhere.

Summary†

For the rapid advance of gerontology and geriatrics the following conditions are desirable: (1) Co-operative research work of scientists and medical research workers in civilized countries. (2) Large funds for financing this research. (3) Establishment of experimental and clinical Institutes for Research on Ageing in major countries. (4) The formation of groups of research workers in gerontology and geriatrics. (5) Large long-term grants to existing scientific and medical laboratories and research hospitals who will agree to stay in gerontological or geriatric research work.

BRITISH-SWISS MEDICAL CONFERENCE INTERNATIONAL MEETING AT BASLE

A British-Swiss medical conference, organized jointly by the Swiss Academy of Medical Sciences and the Royal Society of Medicine, was held during the week beginning Sept. 1. About 150 members of the medical profession, largely representative of the medical faculties of the universities, travelled from Great Britain to Basle, where they were received with the most generous hospitality by their Swiss hosts, who, to about the same number, attended the conference.

The opening meeting was held in the fine hall of the Natural History Museum and the other sessions in one of the theatres of the University. Twenty-four papers were read, fourteen of them by British authors, and the remainder by professors or directors of departments in the universities of Basle, Bern, Zurich, Lausanne, and Geneva. The great majority of the Swiss speakers delivered their papers in English, and for members of the audience who could not follow the language system of simultaneous interpretation was organized. The text of all the papers was published in a special number of the *Schweizerische Medizinische Wochenschrift* and a copy was presented to every visitor. Alike on the social and scientific side everything possible was done, under the guidance of Prof. G. G. Gigon, secretary-general of the Academy, to make the sojourn of the visitors in this historic and dignified city, untouched by war damage, pleasurable and stimulating.

† All statements in the summary have been approved by the conference of the British Branch of the Club for Research on Ageing as expressing the views of the conference, and have been adopted as resolutions by the conference.

* An address to the first conference of the British Branch of the Club for Research on Ageing, held on July 16, 1946, at the Imperial

Cultural Relations

The President of the Swiss Academy of Medical Sciences, Prof. C. WEGELIN, in welcoming the visitors, mentioned that an invitation had been sent to Mr. Winston Churchill, who was visiting Switzerland, to attend the opening ceremony. He was unable to do so, but sent his best wishes. They had greatly desired to see Mr. Churchill, said Prof. Wegelin, because of their admiration for the way in which he had stood like a rock against Nazi aggression. He referred to the long history of cultural relations between Great Britain and Switzerland. Such names as Harvey, Sydenham, and Jenner were honoured among the Swiss. During the war the Swiss had felt the liveliest sympathy with the British people in their sacrifices and had mourned especially the isolation of cultures. To help to bring that isolation to an end and to abate the psychological disturbances which the war had left behind was the aim at the back of their meeting.

The British Minister in Switzerland, Mr. P. M. SNOW, followed on the same lines. Switzerland and Great Britain were divided during the war, but it was a physical division only; spiritually they had never been divided. He mentioned the names of a number of men of science who had both British and Swiss affinities. LORD AMULREE attended to bring the blessing of the British Minister of Health and spoke of various directions of advance in social medicine, especially in respect of the problems of the care of the aged. The Swiss Minister in London, M. RUEGGER, a member of the Federal Council, Dr. ETTER, and a representative of the Basle civic authorities endorsed the welcome.

Finally the rector of the University, Prof. EDGAR BONJOUR, spoke of the close alliance of the Swiss and British medical professions. It belonged, he said, to the best traditions of Basle and of Switzerland to promote the international exchange of the treasures of culture. Basle stood at the intersecting point of important arteries of communication and on the frontier of old cultures. To re-establish internationalism in a world where so much had been destroyed was to her a task of capital importance. Heroin she adhered to the good old tradition of *Helvetia Mediatrix*.

"During the world war that has just terminated England has drawn support from her great prestige of earlier centuries. We in Switzerland felt for the fate of England with all our hearts, rejoicing in her victories with a gasp of relief. What made the greatest impression on us was the spiritual power which enabled England to triumph in the end. We admired the way in which, through many anxious years, the men of science and learning resisted all temptations to lose heart and never betrayed the mind."

The Task of Reconstruction

Mr. J. B. HUNTER, of King's College Hospital, acknowledged the welcome on behalf of the British visitors, and described the great tasks of reconstruction which now awaited the British universities. The health services of Great Britain, he said, were also in the process of reorganization, calling for much physical and mental readjustment, but it was hoped that as a result new facilities for research would come into being. The various Faculties of Medicine were sure that present difficulties would be overcome and that progress in the future would be as steady as in the past.

Dr. ALAN N. DRURY, for the British Organizing Committee, recounted the circumstances which gave rise to the conference. The first move was a letter by Prof. Gigon to Sir Henry Dale, who took the matter up with warm sympathy. Prof. J. H. DIBLE spoke on behalf of the scientific societies in Great Britain which had co-operated in the event. In an eloquent plea for the conception of the social and spiritual duty of medicine he referred to the contributions of the ordinary research worker and clinical observer. In the extension of knowledge it happened now and then that some genius constructed a viaduct or laid a long stretch of permanent way, but in the main progress came about through the steady plodding labour of innumerable workers.

First Scientific Session

After these allocations the scientific work of the conference opened with an address, delivered in German, by Sir HUGH CAIRNS on head injuries in the second world war. It was a

recapitulation of what has appeared under his name in the *British Medical Journal*. He illustrated the design of the crash helmet, which, he said, had reduced the number of head injuries and modified the effects of concussion. He claimed that crash helmets had reduced hospital admissions by 50%, fractured skulls by 75%, and the prolonged amnesias following injury by 66%. He stated that long bed-rest was not essential to the after-care of head injuries; a short bed-rest of a few days, together with graduated physical exercise and psychological treatment, was more effective. He also discussed surgical intervention in compound injuries of the anterior fossa of the skull.

This and a number of subsequent papers were discussed together at a special meeting under the chairmanship of Sir HENEAGE OGILVIE. Sir Hugh Cairns, in reply to questions, said that the weight of the crash helmet was 900 g., and it was quite comfortable to wear. He thought there was a case for making it compulsory for motor-cyclists.

In the afternoon, with Sir LEONARD PARSONS presiding, Prof. LUZIUS RUEDI, of Berne, discussed acoustic trauma, its origin and prevention. He divided acoustic trauma from the functional point of view into two groups: (1) noise trauma, together with trauma associated with certain blunt head injuries, and (2) explosion trauma; and he indicated the pathological grounds upon which the special place occupied by the latter could be supported. A number of experiments on the human and animal ear were described which led to certain new conceptions of the physics of the internal ear. The observations, he said, appeared to confirm the hypothesis that all natural sounds such as industrial noises or explosions had a broad frequency spectrum which in a cochlea gave rise to certain pairs of eddies. These opposing eddies changed direction at a range of frequency of 4,500 cycles per second, so that at that point the basal membrane was exposed to great tension which might result in permanent damage. He also demonstrated a new ear defender, an outer shell covering the whole ear and studded with tiny holes, thus forming a resonator whose resonating frequency was very much damped down. With this instrument, on a pistol shot the pressure amplitude was diminished by about 1:10. The protective function of the ear defender had been tested both on guinea-pigs and on human ears.

Circulatory Failure

The final paper of the session was given by Dr. JOHN McMICAL, of the British Postgraduate Medical School, who discussed circulatory failure. The failing human heart, he said, responded like the overloaded heart in Starling's heart-lung preparation. Mechanical reduction of venous pressure led to improvement in cardiac function. He stressed the importance of the pressure-reducing action of digitalis in bringing about improvement in cardiac output. In ordinary cases of heart failure the aim should be to bring down the venous pressure to normal as soon as possible. Within half an hour it was known what result was going to be obtained with digoxin, and if the venous pressure did not come down altogether to normal as a result of digoxin, theophyllin ("cardophyllin") should be given, and if these two measures were not enough, resort should be made to venesection. These procedures could be followed one after the other, and the clinical results were well worth while. The aim was to carry out all these measures if necessary in order to bring the venous pressure down, and the measures were quite safe and painless.

At the subsequent discussion meeting Dr. McMichael's paper called forth a considerable amount of comment. Asked why he used digoxin instead of strophanthin, and whether the one was superior to the other, Dr. McMichael said that he did not know why digoxin was used, but his chief at the British Postgraduate Medical School, Sir Francis Fraser, never used strophanthin, although it was introduced into therapeutics by his father, Sir Thomas Fraser, of Edinburgh. He had tried to find out why strophanthin was so much emphasized in American literature, and he learned that when Vaquez put digitalis on a frog heart it stopped in diastole, but when he used strophanthin it was arrested in systole; on that subtle difference it was supposed that strophanthin acted on the muscle, so that if an effect on the myocardium was desired, strophanthin was used. Dr. E. ROTHLIN said that the frog was not a good experimental animal; it reacted in the reverse way to the cat, and usually in

Switzerland, as in Great Britain and America, they standardized on the cat.

Stilboestrol

A crowded audience listened to an exposition by Prof. E. C. DODDS on oestrogens in cancer. He referred chiefly to the treatment of prostatic cancer by stilboestrol. The result of the introduction of oestrogens, he said, had been a widespread tendency to "dose" with stilboestrol everybody who had any type of cancer, but a careful examination of the claims showed in almost every case an absence of justification for the widespread use of this and its sister substances in the treatment of carcinoma in general. The interesting fact did appear, however, that in inoperable carcinoma of the breast some 5% of cases received a definite benefit, varying from a slight improvement in the local condition to a tendency of a fungating carcinoma to heal, and in a few cases to the disappearance of the lesion. But in the treatment of carcinoma of the prostate the results were clear-cut. The opinion of expert urologists of most countries was that such patients should be treated with stilboestrol, though even here it was in no sense a cure; it was a control, a means of palliation, lasting for varying lengths of time, in some cases for the whole five years over which the observation had extended, and sometimes only for six months.

In some later discussion on Prof. Dodds's communication Dr. J. McMICAL pointed out that the patient with cancer of the prostate very frequently had no very definite prostatic symptoms. He might arrive at hospital with symptoms due to secondary deposits, and an examination of the prostate by means of x rays might show calculi, which possibly co-existed with carcinoma. A diagnostic measure which had been suggested was the administration of testosterone, 50 mg. daily, upon which the acid phosphatase level, if it had not already risen, would steadily rise. In one patient the answer was clear: there was a steady rise of acid phosphatase level, which fell as soon as administration ceased, and this patient, after being given stilboestrol, was able to leave hospital. But in another case the response to testosterone injection was very irregular, falling while injections were continued, and rising to a peak after they were stopped. This patient also was put on stilboestrol, but went downhill quickly and died with massive secondaries about four months later. Sir HENEAGE OGILVIE said that he had the impression that the Americans were now preferring castration to stilboestrol.

The Kidney in Infancy

Prof. R. A. McCANCE, of Cambridge, discussed the physiology of the kidney in infancy. For some time after birth the kidney did not function as in adult life. The excretion of water was adequate for normal requirements, but defective by adult standards; the osmotic pressure of the infant urine was low, and only rose to adult levels when the serum became highly abnormal. The glomerular filtration rates in infancy appeared to vary with the hydration of the body, whereas in adults they were relatively constant, so that quite mild hydration in an infant was almost equivalent to acute renal failure, and, finally, urea and mineral clearances in infancy were very low. It was obvious, said Dr. McCance, that this work had great practical applications, because if the infant, newborn or in early infancy, was so incapable of regulating the constancy of the internal environment it was clearly for paediatricians to do their best to maintain, and if necessary to restore, such constancy in their patients. But no one could say how much water and how much salt must be given to the next dehydrated baby he was called upon to treat; such decisions could be made only at the bedside.

Sir LEONARD PARSONS said that this paper was important because it stressed an aspect of physiology which had received little study. The physiology of the newborn infant was different, just as its anatomy was different, from that of the older child or adult. In reply to a question by Prof. ROLF MEIER, Dr. McCance said that the adrenal cortex was extremely hypertrophied at birth, and he had often wondered whether the hormone excess secreted by the gland at that time might not be the cause of the oedema seen in premature babies, but he had no evidence to that effect.

Sympatheticotrophic Drug Action

A most interesting paper on the differentiation of sympatheticotrophic drug action was read by Prof. MEIER, who is the head

of the pharmacology department of Basle University. From an investigation of a large series of such compounds—phenyl ethylamines, phenylpropylamines, and others—he came to the conclusion that their type of action was identical in only a few cases; mostly there existed marked qualitative differences especially in blood-flow reaction. Instead of classifying substances generally, therefore, as "sympatheticotrophic drugs," their several effects throughout the system should be considered as differentiated with higher or lower specific affinity for some part of the sympathetic system.

Dr. E. ROTHLIN, of Basle, considered that what was needed was a real definition of sympatheticotrophic drugs. Adrenaline, the most effective product in the group under review, was a sympatheticotrophic drug; on intravenous injection there was a rise of blood pressure, but if the blood pressure rose 20 or 30 mm. Hg, it was counterbalanced by a parasympathetic action which, on the heart and vessels, was stronger than the direct action of adrenaline. If an intravenous injection of ephedrine were given the blood pressure rose much more than with adrenaline, but there was no parasympathetic action. There must be a very big difference between adrenaline and ephedrine, yet both were sympatheticotrophic. The question of classification badly wanted clearing up.

Pulmonary Tuberculosis and High Altitude

Dr. J. E. WOLF, of Davos, discussed the effect of altitude in the treatment of tuberculosis. High altitude—meaning heights of 4,000 to 6,000 ft. (1,200 m. to 1,800 m.)—exercised partly a stimulating and partly a sedative influence on the tuberculous patient. The increased power of resistance induced in tuberculous patients after a stay at a high altitude was partly due to a change in the vitamin metabolism.

Another Swiss tuberculosis expert, Prof. E. GRASSET, of Geneva, described some work on tuberculosis in virgin stock (a South African population). The moral of a long discourse was the usefulness, in view of the impossibility of controlling the bacteriological and epidemiological conditions of primary tuberculous infection, of the "pre-munition" method which substituted for the virulent, invading germ an avirulent one such as the B.C.G. With improvements such as the percutaneous inoculation method, "pre-munition" had entered a new and promising phase.

Amputations

Mr. GEORGE PERKINS, president of the British Orthopaedic Association, gave an exposition of amputation. Unless the surgeon could guarantee a stump which would satisfy the requirements of the limb-maker, he should plan to perform two operations—a provisional amputation, followed at a later date, when the requirements could be met, by a definitive amputation at a higher level. On Syme's amputation Mr. Perkins said that few would decry it when cleanly performed by the experienced surgeon. It was not a question of whether the Syme was a good or a bad amputation, but whether the results in the hands of the average surgeon justified recommending it as a suitable amputation for the "greenhorn." It was of no use relying on the good sense of the surgeon, because he did not know his limitations. The technique of the definitive operation which he described was based on two considerations: (1) amputations were of necessity performed by all manner of surgeons, so that there was much to be said for a simple technique applicable to all four main amputations, and (2) the technique chosen should conform to the wishes of the limb-fitting surgeon, who alone knew what sort of stump best stood up to the stress of limb wear. From the limb-fitting surgeon they learned that in the ideal stump the scar was not exposed to pressure and was not adherent, the skin was not infolded, there was no redundant soft tissue and no projecting spur of bone, the stump was not tender, and the wound had healed by first intention.

Sir HENEAGE OGILVIE said that the paper raised some controversial points. Most surgeons, he thought, if they themselves required an amputation would "pray that their friends would do a Syme before sending them to Roehampton." Mr. Perkins appeared to be of opinion that a "below-knee" was as good as a Syme and less trouble. But the Syme did not need a prosthesis. The below-knee amputation seemed to presuppose that the men would be for the rest of their lives under the care of the Government, which would supply them with whatever



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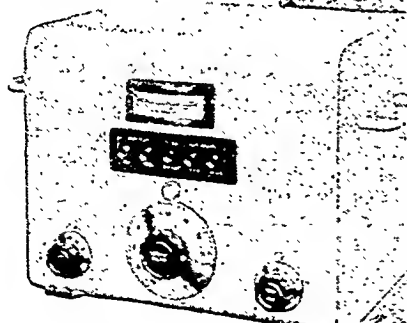
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procedure was necessary. But the man on whom the Syme operation had been done, even if he went to the ends of the earth, could always make his own prosthesis. His own feeling was that the Syme operation, even if it meant re-amputation in seven or eight years, was the operation of choice for injuries in which that amount of foot could be saved.

Acclimatization to Heat

The subject of man in relation to his environment was taken by Dr. E. A. CARMICHAEL, of Queen Square Hospital, London, but he had time only to deal with tropical climates. When exposed to a hot environment men reacted differently according to their previous experience. The process of acclimatization or adjustment required from 4 to 7 days, by which time approximately 80% acclimatization had occurred. He emphasized the need for taking fluid in a hot environment. A man might lose as much as 10 litres of sweat a day, which meant 50 g. of salt. If replacement was restricted to fluid, without taking account of salt, there was a tendency to heat cramp. Recent work at Cambridge had shown that breakdown occurred at an earlier time and at a lower level for psychological than for physical efficiency. On the subject of clothing for the Tropics, he said that experiments with various garments had shown that a closely woven cotton fabric was more to be recommended than open-mesh poplins. A point to be considered also was the desirability of making people in the Tropics drink more than was actually necessary to alleviate thirst.

In reply to a question Dr. Carmichael said that in air-conditioning in the Tropics it was well not to reduce the temperature to the levels obtaining in a temperate climate.

Prof. McCANCE pointed out that large numbers of people in the Tropics were living in a state of dehydration. The only stimulus to make one drink was thirst, and in the Tropics water was lost so quickly that that stimulus was never quite sufficient to enable the individual to drink himself back to normal. This had not been appreciated by those who had to live and work in the Tropics and to handle men there. Sir Heneage Ogilvie said that this was also a great problem in desert warfare. The liability to shock was greater and the resistance to infection much less if little water was available. Sir P. MANSON-BAHR said that a queer aspect of the problem was the existence of some animals in Africa—antelopes and gazelles—which lived from one year's end to another without any water at all. There were also geographical questions to be considered. How was it that heat stroke was much more common in the Irak area than anywhere else—for instance, in western Libya—where the conditions were much the same?

Nutrition in Switzerland

Prof. ALFRED FLEISCH, of Lausanne, described the state of nutrition in Switzerland during the war. One of the tables he exhibited showed the total mortality and the mortality from certain intestinal diseases:

Annual Mortality per 100,000 inhabitants

	1934-38	1939-43	1944	1945
Total	1,154	1,136	1,200	1,160
Deaths due to digestive disorders ..	72	62	63	64
Deaths due to gastric and intestinal ulcer ..	7.5	8.3	9.7	10.0
Deaths due to appendicitis	12.5	9.4	7.2	—

During the last six years in Switzerland rationing had covered nearly all important food products. It had been well organized, with the minimum of "black market," and during the war years the amount of food had been diminished little by little to a level which was plainly below the theoretical minimum. The results suggested that the large amounts of calories, proteins, and fats formerly considered optimum in Switzerland, as in England and the United States, were not necessary. Instead of the 2,400 calories daily claimed by the League of Nations for adults not doing special manual work, 2,160 calories daily seemed sufficient. In particular the large quantities of fat consumed before the war were unnecessary and even injurious. For a long time paediatricians had admitted that somewhat scarce feeding was better than over-feeding, and this was as true for adults as for children.

Sir LEONARD PARSONS challenged this last statement; it was not true of British and American paediatricians. Certainly if a child was fed on a rather larger diet than normal it grew more quickly, and, bone formation not keeping pace, there might be some rickety tendency; but to say that a child was better on a starvation diet, or something approaching it, was not correct.

Prof. McCANCE said that it was interesting that Prof. Fleisch should have found seasonal variations in haemoglobin—a maximum in summer and autumn and a minimum in spring. There were also quite striking seasonal changes in the ability with which adults absorbed calcium—the majority absorbing it much better in summer than in winter. The reason was obscure, but it was not due to insufficiency of vitamin D. There was too great a disposition to regard the human being as "aseasonal."

Experimental Diabetes Mellitus

Prof. F. G. YOUNG, of University College, London, gave an account of experimental diabetes mellitus in depancreatized animals. It was almost certain that the human disease was not a single syndrome with one cause; it must consist of a number of different conditions arising from various causes, but with the majority of symptoms in common. The anterior pituitary gland almost certainly ranked as an extra-pancreatic factor of importance in a proportion of cases. Despite the extensive investigations since the classical work of von Mering and Minkowski, the causes of diabetes mellitus in all its forms were still unrevealed.

In the ensuing discussion it was mentioned that children born of diabetic mothers were often larger than children born of normal mothers, and this obtained even in children whose mothers did not develop diabetes until five or ten years after the child was born.

Another interesting paper was presented by Prof. A. VANNOTTI of Lausanne, on the adaptation of the human organism to effort, altitude, and to pathological oxygen deficiency. He said that to a prolonged deficiency of oxygen the organism reacted not only through a modification of respiratory and circulatory mechanisms, but also through reactions at the tissue level where the purpose was to facilitate the transport of capillary blood oxygen. He discussed a number of observations which, he said, demonstrated the clinical and other importance of the cellular system of biological catalysers, the insufficiency of which was able to exert unfavourable consequences upon the organism. Prof. Vannotti was highly complimented upon his paper by the British physiologists present. Any extended reference to the other papers must await a subsequent issue. They included an excursion into the therapeutic possibilities of the new discoveries in nuclear physics, by Dr. J. S. MITCHELL; a discussion on normal and defective fat absorption, by Prof. A. C. FRAZER; the chemotherapeutic control of malaria, by Prof. Hamilton FAIRLEY; the rhesus blood groups, by Dr. R. R. RACE; arterial injuries, by Mr. Mason BROWN; a paper on child health, by Prof. C. McNEIL; a demonstration by Sir Reginald WATSON-JONES on surgical rehabilitation, and Dr. Donald HUNTER's "popular lecture," delivered at Rheinfelden Spa, on industrial medicine in Great Britain. As the President of the Swiss Academy, Dr. Wegelin, said in closing the conference, the subjects taken had embraced the whole of medicine. They had not been confined to a few narrow specialisms. The difficulty was to bring so wide a range into focus. Dr. Wegelin added that if he were not an old and retired professor he would go to England as a student of medicine.

The names of many of the British visitors have been mentioned in the foregoing account. Others who were present included:

Dr. C. SHATTOCK, Prof. John McGrath, Prof. David Campbell, Prof. C. Bruce Perry, Prof. A. W. M. Ellis, Prof. John Cruickshank, Prof. J. Henry Biggart, Dr. Douglas McAlpine, Prof. L. P. Garrod, Prof. Sydney Smith, Dr. H. A. Clegg (*British Medical Journal*), Dr. G. H. Macnab, Dr. N. Howard-Jones, Sir John Fraser, Sir P. Manson-Bahr, Dr. S. Cochrane Shanks, and Dr. J. M. Graham.

The Swiss Academy paid a compliment to their English visitors by asking one of them to preside over each session, and the respective chairmen were Sir Leonard Parsons, Dr. R. A. McCance, Prof. R. St. A. Heathcote, Dr. Alan Drury, Sir Heneage Ogilvie, Dr. C. E. Newman, and Prof. A. St. G. Huggett.

At a conference banquet held at the Hotel Drei Könige, which was attended by the President of the Canton of Basle and other Swiss notabilities, Prof. WEGELIN, who presided, again expressed his pleasure in the occasion, and showed an appreciation of the medico-political situation in Britain when he said that the shackling of the free activities of medicine by the State was not to be tolerated. The Dean of the Medical Faculty of Basle, Prof. LUTZ, spoke in praise of the international commerce of medicine, and a general practitioner, Dr. OTTO LEUCH added a few words as representative of the Swiss Medical Federation, a small sister, he said, of the British Medical Association. Sir HENEAGE OGILVIE replied for the guests and offered their congratulations upon the splendid organization of the Conference.

Those attending the Conference learned with much regret that Mr. J. B. Hunter had been taken seriously ill after the opening sessions, and had been taken to a nursing home. On the final day of the Conference it was announced that he was going on as well as could be expected.

Correspondence

Postgraduate Education and the Health Service : Training the Specialist

SIR,—Those of us who hold that all is not well with the system of training of the future specialist in Great Britain will welcome Sir Francis Fraser's plain statement (Sept. 14, p. 354) that "the holding of a responsible hospital appointment does not of itself suffice," and his plea for a more positive training in which the working conditions have the setting of an intellectual background. Sir Francis goes on to suggest that these conditions are likely to be found only in the hospitals of the medical schools. But I would ask (and I do not ask Sir Francis, for he knows the answer as well as I do), in how many teaching hospitals, general and special, in Great Britain to-day can evidence be found of purposive training? In how many hospitals are there libraries accessible to the wards or departmental libraries within units, and as part of the regular weekly routine, hospital, departmental, or "trainee" conferences? Again, in how many hospitals is sustained research a feature of the period of training? And finally, how many trainees go out into the world indoctrinated with the faith that they are debtors both to their profession and to medical science?

In arrangements for the training of the future specialist we have lagged behind the U.S.A. and Canada for some considerable time. The experiences of a recent visit to the North American continent (June-July, 1946) have once more reminded me of the great defects in our own system—or of the lack of

In the United States to-day, among the chiefs of the various clinical services in the great medical centres, there is a sense of responsibility in this matter; for there is the same need for a widely distributed specialist service in North America as in Great Britain. It was to me a stimulating and inspiring experience to enjoy the keen atmosphere of this post-war training drive in all too brief glimpses of such functions as surgical conferences at the Massachusetts General Hospital; the fortnightly tea meeting of residents, research fellows, and staff in the surgical laboratory of the Harvard Medical School, with the gallant Elliott Cutler in the chair; the weekly residents' and fellows' conference at the Hospital for Special Surgery in New York; and of the purposive training of the young surgeon in the great Toronto school of surgery directed by W. E. Gallie. These are a few examples of what can be found in almost every hospital of high repute in the United States and Canada.

If the essential working conditions and intellectual background of this period of hospital training for a specialist career, as set out by Sir Francis Fraser, are to be established in our teaching and non-teaching key hospitals, far-reaching reforms will be needed in the pattern of hospital staffing. It is clear that these standards must become part of the policy of the new Regional Boards. But Regional Boards will need instruc-

tion and advice. Meanwhile, a move is required from two sources: on the one hand the teaching hospitals, or more specifically their senior staffs, and on the other hand the Royal Colleges, stimulated by the specialist associations which have already enunciated progressive views on this subject. The universities also have their part to play by demanding evidence of such a standard of training before they recognize an individual as a clinical teacher.—I am, etc.,

Manchester.

HARRY PLATT.

Further Education of General Practitioners

SIR,—To those who are particularly keen on postgraduate medical education, irrespective of the proposed National Health Service, the lecture by Sir Francis Fraser in your current Educational Number (Sept. 14) is concise, interesting, and most stimulating. The scheme outlined by him on "Further Education for General Practitioners" should definitely assist in the "breaking down of the barriers to the exchange of knowledge and experiences and frequent contact with centres of teaching and research . . . should improve the standard of medical practice." More important still in my opinion "it will increase also the confidence of the medical profession in their ability to perform their high calling and give them cause for pride and happiness [my italics] in their chosen career." Please excuse extensive quotations from his lecture. It is such an important article that reprints of it should (if possible) be sent to every medical man and woman—whether G.P. or specialist. The latter would learn very much from it in the assurance and encouragement they could give to the "more enlightened and progressive members of the profession." Hospital authorities, too, would gain by a serious study of its contents.

Shortly before the war—in July, 1939—I was very fortunate in that I was able to attend an intensive refresher course of 2 weeks at Oxford, under the auspices of the Ministry of Health. I can vouch for the extreme usefulness of that particular course and I returned to my general practice, much stimulated and suffering in no way from "mental indigestion." It was very well organized. It was a happy and useful fortnight in a most congenial and learned atmosphere. Therefore it is with great pleasure that I note that the Ministry of Health is now contemplating the reintroduction of such intensive courses in general medicine and on some approved specialized subject, in 1947. I agree with Sir Francis that "now is the time to plan, and it is the time also to start boldly."

With regard to his first suggestion for the furtherance of the education of the G.P., viz., "Clinical assistantships at nearby hospitals," perhaps the hospital authorities and the powers that be would take due note of this and also of the method adopted at some hospitals as mentioned by the lecturer—e.g., at New castle-upon-Tyne. Perhaps when the demand for postgraduate instruction for demobilized doctors declines (? in 1947) the hospital authorities will open their portals to the interested G.P.—I am, etc.,

Leeds.

HARRY SUGARÉ.

Selection of Medical Students

SIR,—Light-hearted disregard of appropriate randomization is a little shocking in an article wielding the prestige of statistical methods, such as that by Mr. J. S. Wilkie on the selection test for medical students (Sept. 14, p. 367).

Questions 1 and 2 in the test are looked at askance because the score of the first-year candidates averages nearly 10% higher than the score of the second-year candidates, a whimsical possibility being suggested to account for so curious a result. In fact, the separate batches of first- and second-year papers were assessed at different times, the examiner was instructed to allow for the expected difference of standard in first- and second-year candidates, due to difference in age and experience, and he was further instructed to widen this difference in standard because the proportion of first-year applicants to be admitted was much higher than the proportion of second-year candidates to be admitted. Imagine the examiner's surprise and delight in achieving his intention, as shown by Mr. Wilkie's figures, and his bewilderment at Mr. Wilkie's attempt to explain them as an odd property of the candidates. Question 1 involves subjective and objective observation of superficial physiological changes in the candidate and her friends as a result of running. Mr. Wilkie emphasizes the exceptionally low correlation

between the marks in this question and those in the paper as a whole which predominantly involved general knowledge with its current connotation of somewhat academic erudition. The relative importance of tests of keenness of personal observation and of academic prowess can, of course, not be decided by correlation between them but only by correlation with subsequent success in medical practice. One might guess that both, however independent of each other, had some relevance in such a test.

Any criticism of the second half of Mr. Wilkie's article in so far as it detracts from the important conclusions he draws in the first half, namely that assuming that a general knowledge paper tests relevant qualities in intending medical students, then it is at least as reliable and much more economical of examiners' time to set questions in questionnaire form. One hopes that the general knowledge test will soon be compared with an intelligence test, and with other aptitude tests, in relation to success in choosing medical students, despite the difficulty and slowness of validation.—I am, etc.,

London, W.C.1.

F. R. WINTON.

Physiology of Vision

SIR,—Prof. Burridge takes me to task for having failed to point out to your readers the fact that Prof. Granit's work confirms his own views on the nature of colour vision which were first made public in his book, *A New Physiology of Sensation*.

I should like to point out to Prof. Burridge that in fact this work confirms the far earlier views of Prof. Wundt, published in 1893 (*Grundzüge d. physiol. Psychologie*, 1, 535). Very briefly, Wundt's theory was that two different mechanisms are put into operation when light is incident on the retina: (a) chromatic, and (b) achromatic. The former consists of many sharply defined receptors, which vary in their relative activity according to the spectral composition of the stimulus which is applied to them. The latter mechanism, on the other hand, is the same for all parts of the spectrum, except that a maximum effect is produced by the yellow-green, and that there is a gradual decrease in effect as the red and violet ends of the spectrum are approached. The resemblances between this theory and Prof. Granit's discoveries on the mammalian retina are very striking, for whereas Wundt's chromatic mechanism is well represented by Granit's seven "modulators," his achromatic mechanism finds its counterpart in Granit's "dominators."

Under these circumstances, I feel it is unnecessary to refer to other people who may subsequently have had the same idea.

Recently I have obtained some confirmation of the view that Wundt's theory applies to human vision. Using a micro-stimulation apparatus, by means of which very narrow rays of light can be applied to the fovea, it has been found that there are eight different fixation-points for rays of different wavelength. These lie within what may be called "areas of high visual acuity." Thus, when we want to see the detail of a red object, it is this area for red light which is utilized. Several other pieces of evidence are also available, confirming the same idea.

The present position can be summarized, I think, as follows: that, so far as can be seen at present, Wundt's polychromatic theory is at least as likely as the trichromatic theory of Thomas Young, which has served us so well and has been so prolific in stimulating human invention, since colour-printing, technicolour, and various other methods of three-colour reproduction and measurement have been derived directly from it.—I am, etc.,

London, E.C.1.

H. HARTRIDGE.

Migraine and the Sympathetic Nervous Pathways

SIR,—Mr. R. G. Rowbotham's article on "Migraine and the Sympathetic Nervous Pathways" (Sept. 7, p. 319) raises several points about which I am not quite clear. In the first place if we are to ascribe the cause of migraine to dysrhythmic impulses from the hypothalamus, which in turn is reacting excessively to stimuli having their origin in the blood or higher nervous centres, then the fact that the headache of migraine is essentially unilateral would mean that the hypothalamic imbalance was asymmetrical, or even unilateral, itself. Yet the postulated blood stimulus is presumably bilateral. Mr. Rowbotham would ascribe the beneficial effects of the operation to the interference

with the ascending sympathetic pathway from the upper thoracic cord. However, he also divides the external carotid artery at the same time. It is a well-known clinical fact that some migrainous headaches will respond to some degree to digital pressure over the carotid, superficial temporal, or other vessel, and an alternative explanation of the operative results might be that the external carotid was now ligated. Further, although the pain of the migrainous headache is now believed to have its origin in an abnormal dilatation of the dural and extracranial branches of the external carotid, yet in addition the internal carotid, via the meningeal and superficial frontal vessels, also supplies branches to the dura. This fact might explain the persistence of the pain, to a milder degree, after ligation of the external carotid. Finally, I should like to make it clear that it is not with the fundamental postulate that I disagree, but with the explanation offered for the beneficial effects of the operation—effects which might be due to the ligation of the external carotid alone.—I am, etc.,

London, W.14.

DAVID P. NICHOLSON.

Disability from Dust Diseases

SIR,—Your leading article on "Assessment of Disability in Dust Diseases of the Lung" (Aug. 31, p. 301) is of considerable interest to those of us practising in mining areas, and while we have received some new information, we feel there are some certain points that we cannot allow to go unchallenged. In your article you state: "difficulty of the assessment of disability is still there, and at present it is decided largely by radiographical appearances. This method is not satisfactory because it is impossible to differentiate between nodulation caused by iron oxide in the siderosis of arc welders and that shown by the fibrous nodules of silicosis." Surely you cannot seriously give this as a reason that radiographical appearances are not satisfactory; and if so, can we take it that the same applies to a fracture, as the radiologist cannot state whether the fracture is due to direct or indirect violence? Must we therefore cease to use the x ray for diagnosis of fracture? The fact that the reticulation in lungs of arc welders, South Wales colliery miners, and workers in iron foundries are essentially similar surely does not preclude x ray in the diagnosis of pneumoconiosis in any of these workmen.

While it may be true as you state that the men with iron oxide in their lungs suffer little or no disability, it is certainly not true that miners of the South Wales anthracite area suffered "little or no disability due to the presence of reticulation in their lungs." If the reticulation is coarse or dense, then there certainly is disability present among these workmen. We agree that there has been an increase of the number of men certified by the Board, not as "totally" but as "partially," disabled. This is not due to the difficulty of assessing disability, but is due to the fact that the disease has been recognized as disabling at an earlier stage. Hart and Aslett are to be congratulated in suggesting the inclusion of reticulation as a compensatable disease. We cannot agree that "many men with reticulation who are not disabled are obtaining disablement certificates," and we should be pleased to have your authority for this assertion. While we think the members of the Silicosis Board in this area would be the very last to claim infallibility, and while we are prepared to admit that some very few men with early reticulation suffer little or no disability, we are not prepared to allow to go unchallenged "that there is no doubt that many men with reticulation who are not disabled are obtaining disablement certificates." We have not found that the Board make partial awards without good reason.

In your summing up, we quite agree that physical examination is necessary, but reticulation (coarse) and nodulation do in our opinion mean that the patient is disabled. It would seem to us that research in this matter is being carried out at the wrong end of the stick, and while any method by which pneumoconiosis in miners can be easily and quickly diagnosed and the correct disability determined would be welcomed, we were always under the impression that preventive medicine was the present teaching in medical schools and not "locking the stable door after the horse has been stolen." In other words, compulsory examination of all mine workers at stated periods—both physical and with the aid of x rays unless x rays can be specially supplanted by a more definite and less expensive method. The crux of the matter is that the problem is primarily

a mining one, and secondarily a medical one. Over a period of some twenty years, when one of us was totally occupied by x-ray examination of miners' lungs, we were frequently struck by the number of men who, although working side by side with cases of silicosis later proved by necropsy, showed only very early evidence of pneumoconiosis. Is there some missing factor "X" which renders one man more liable to the disease than another? If there is, the finding of it and not the awarding of compensation when the workman is no longer able to follow any occupation would seem to us to be of prime importance.

Quoting again from your first paragraph "... diseases resulting from the inhalation of siliceous matter. The latter produces a fibrous reaction." Surely there can be no question that a widespread fibrosis of lung tissue, as is seen in these cases, must result in impaired lung function and therefore in disability. Furthermore, your leader states that "even if tuberculosis is not a complicating factor the lung is still gradually destroyed." This is surely good reason for removal of men with well-marked reticulation from the dust risk—which practice we invariably carry out. The questions of disability and compensation are later decided by the Silicosis Board with, in our opinion, a high degree of reliability, and yet they use no complex biochemical tests such as you suggest, but one means of assessing disability which you have apparently overlooked, namely, sound judgment based on clinical experience.—We are, etc.,

ARCHIBALD HARPER.
J. MANSEL MORGAN.

Ammanford, Carmarthenshire.

Facial Palsy Accompanying Acute Mastoiditis

SIR,—I was interested in Dr. Kenneth R. Ogilvie's article on the above subject (Aug. 24, p. 263). It is often assumed that facial palsy is indicative of an affection of the inner ear or the meninges. Dr. Ogilvie's cases show that it may indeed be only one of the signs of acute mastoiditis. May I add that facial palsy may also be one of the first signs of a simple acute otitis media, whether catarrhal or suppurative in origin? Every otologist has seen them; I personally have records of six such cases within the last few years.

What is the explanation of a facial palsy, both in simple acute mastoiditis and otitis media? How is it possible for the facial nerve, being tucked away in a bony canal, to be involved in a simple affection of the middle ear with or without extension into the antrum and mastoid process? Is it that in these cases the bony canal surrounding the facial nerve is either totally missing or that there is a dehiscence in the canal? These conditions are well known to anatomists. If this were the correct explanation one could well imagine that the facial nerve, being covered only by a mucous membrane, would participate in any inflammation of the latter. The facial palsy in these cases would therefore be due to a transitory neuritis of the nerve caused by extension of the infection. It would be interesting to hear the views of other otologists on this interesting condition.—I am, etc.,

London, W.1.

ARTHUR MILLER.

Folic Acid for Nutritional Oedema

SIR,—In your leader on "Malignant Malnutrition" (June 22, p. 958) you suggested that folic acid might possibly be of use in the treatment of nutritional oedema. We have employed folic acid (synthetic *L. casei* liver factor) in one case and found that the oedema disappeared in 7 days. The patient, a Bantu child 1 year old and weighing 13 lb., weighed 10 lb. after 5 days' treatment with folic acid.

The use of folic acid was originally suggested by one of us (L.G.) as the outcome of an investigation carried out by P. Fleming, H. D. Barnes, and ourselves during 1944-5, on the treatment of nutritional oedema with a papaic liver digest. It was felt that the oedema vanished, not as a result of added vitamins but through the action of some "anti-oedema" factor. No child ever improved, nor was in a position to absorb from the gut, until the oedema had begun to disappear.

Further cases are in process of being treated with synthetic folic acid, kindly supplied by Lederle Laboratories, New York, to whom our thanks are due.—We are, etc.,

S. SELBY.
L. GOLBERG.

South African Institute for Medical Research,
Johannesburg.

Health Service Bill

SIR,—Dr. C. E. S. Flemming is unfair to Dr. Dain in accusing him (Sept. 14, p. 399) of lack of logic and of using statement difficult to substantiate, for he quotes in support of his criticism Mr. Key's remark that every doctor will be free to enter the Service. Now Mr. Key had previously described this claim as impossible and impertinent, and at the time of Dr. Dain's speech nothing had been said to alter that view. Dr. Flemming falls victim to his own complaint. It is not easy to substantiate his claim that the new method of getting a practice has been shown to be a real improvement on the old or that the result of payment by part salary will not be a new form of control over the general practitioner. All this depends on the nature of the regulations made by the Minister. His policy must not be confused with that of his friends, upon whose support he depends, and whose policy still demands a "national, full-time, salaried, pensionable service."

Few Ministers and no Governments feel bound to honour the promises or intentions of their predecessors. On Mr. Bevan's ability to remain at his post and to continue to control the policy of his party depends the realization of Dr. Flemming's hope that much that we do not like in the new Service will in time be regarded with satisfaction. Surely our recent treatment over the Spens Report and the capitation fee tends to show not that the Minister is unwilling but that he is unable to control his friends and advisers. To bargain for delay and hope for the best is little more than a policy of despair, which will not bring us towards contentment but may lead us elsewhere by a way paved with Mr. Bevan's good intentions.—I am, etc.,

Warminster.

R. W. GRAHAM-CAMPBELL.

SIR,—I congratulate Dr. H. M. R. Waddell on his admirable letter (Sept. 7, p. 340). He gives expression to a dissatisfaction which I have so far endured in silence. To many of us it must be impossible to be strongly for or against central versus regional administration and Government ownership of hospitals when we have not experienced them. We cannot be expected to wax indignant about the interference in the doctor-patient relationship under National Health Insurance, a relationship worn so frail by inadequate payment for large numbers of chronics and hypochondriacs that we care not who leaves our panel as long as new arrivals replace them. Nor can we be very exercised about our right to enter a new and similar service when doubtless the Government will be only too glad to accept all comers in view of the shortage of doctors.

What interests me most vitally is: (1) whether or not I shall have to work longer hours for less money; (2) the pension of a middle-aged practitioner now entering the Service will get on retirement; (3) the basis of compensation for practices bought since 1939; (4) whether I can retire when I wish and receive the compensation for my appropriated practice.

From Mr. Bevan's refusal to accept the recommendation of his own Spens Committee on the capitation fee I can only draw a sinister conclusion, unless he intends that we shall really be Civil Servants with a fixed-hour day of limited duration and absolute freedom from responsibility outside those hours. Yet the sudden incorporation of the whole population in the new health scheme implies that the existing force of doctors must undertake more work until its numbers are increased—an ironic result, since its detractors condemn as an evil of the Panel system the tendency for doctors to take on more patients than they should in order to augment their income.

This Government came into power as the champion of the oppressed worker. What it and the public do understand are hours and wages. Let us talk to them in their own language and command their appreciation and respect.—I am, etc.,

Bournemouth.

A. R. THATCHER.

SIR,—It is possible that, on balance and in the long run the National Health Service will prove beneficial to hospital practice and detrimental to general practice. How does the B.M.A. suggest that consultants should vote in its referendum assuming (as is not the case) that sufficient information lies before them upon which to form an opinion?—I am, etc.,

London, W.1.

ROYDON PEACOCK.

Two-grade Medical Service under the Act

SIR,—It is a truism to-day that medical man-power is inadequate for the decent care of our population. All parties are pledged to make an equal distribution of what is available regardless of the patient's finances. When a vital commodity, e.g., milk, is in short supply but is rationed equally among us we are satisfied. If, for comparison, we express medical services in terms of doctor-hours, which is mainly what they consist of, then the Act falls short of the objective. The Bill will mean, so to speak, skim milk for the masses while the cream will go to the private patient; and more patients who can pay will resort increasingly to doctors privately and so procure less meagre doctor-hours. It will be galling for the man-in-the-street to be taxed for what amounts to skim medical milk for the next ten years.

Under the Act payment will be at a fixed rate and virtually automatic owing to the scarcity of doctors. This stultifies effort, for the average doctor is only human and puts forth the extra effort when there is corresponding reward. Half the good the patient gets out of his doctor is in service of an intangible kind not susceptible of supervision; and the amount of care he gives, not the fittings and style of his surgery, is what counts most. When patients are too numerous for decent handling, then those among his clientèle who are willing to pay will, by reason of the private contract, command that personal touch which we all covet. The Act will perpetuate the present *versus* private division of medical service which has led to the disrepute of the profession. The distinction is disconcerting and demoralizing to the young doctor who at hospital learns how to *extinguish* disease and not to *distinguish* between the victims of it. That is the mainspring of professional life, and proficiency has been furthered by an atmosphere of competition which fosters ambition, enterprise, and effort. The guardians of health cannot afford to ignore healthy rivalry which bred the renowned English family doctor; and loyalty to the profession forbids acquiescence in conditions calculated to lower our standard. Parliament may be satisfied, but we shall not be until medical service of one grade, equal in quality and quantity, is meted out to all according to the disease, not the purse, of the patient. To attain service of the best quality a competitive element must be conspicuous in the scheme. In these vital principles the Bill largely fails, but voicing them in the *Journal* will show future generations the feeling of some of our profession in these matters.—I am, etc.,

Clifton, Bristol.

A. WILFRID ADAMS.

Early Treatment of Ocular Defects

SIR,—Dr. M. C. Mason's letter shows how important it is that children who begin to squint or have signs of any eye trouble should be seen *at once* by an eye surgeon (Sept. 7, p. 338). When I first commenced as an eye surgeon some thirty-odd years ago, I well remember the parents of squinting children objecting to the school authorities saying their children should have treatment, and that as a higher power had made them like that they would allow no treatment. That was in an age when employees were afraid to wear glasses because they thought they would be thought old and lose their work; yet six years ago I saw three American sailors together and two were wearing glasses.

I noticed when examining recruits for the 1914-18 war that short-sighted young ladies kept their glasses in their handbags; the men, however, wore theirs. At the clinics at which I work there is nowadays no objection on the part of the parents or children to any form of treatment, and although the districts from which the children come vary greatly, I find the children equally keen to do anything to get rid of a squint or to remedy any other defect. In the case of squinters they want to look like their companions; for a girl it is a tragedy, as it lessens her matrimonial chances; and in either sex it may prevent its owner from getting employment. Again, children are not very kind about another person's defects, and it is difficult to hide a squinting eye—the most successful instance that I can think of being one of our lecturers, who wore a monocle in his left eye, which so fascinated us students that we almost forgot that the right eye turned in.

Well, an operation will at any time of life put a non-paralytic squint straight, which is all that the patients or their

parents worry about, *but* it does not make the eye that squinted see. Many of these eyes only have a tenth of full vision even if the appropriate glass is worn to correct the refractive error, while they are nearly useless for fine near work unless they have been properly trained. Unfortunately the last two wars have produced many instances of good eyes being lost or damaged, the owner being left with an almost useless squinting eye to carry on with. In 1935 (*Return of Sight in an Amblyopic Eye. Journal*, 1935, 2, 317) I showed how these amblyopic eyes could be trained to see; and in my clinics, where the proportion of squints is fairly high, I am much struck by the fact that we have a large number of cured cases that report regularly who started treatment at the age of five and have had squints of half a right angle cured by correcting almost all of the optical defect and covering up the good eye, thus making the child use its bad eye three or four hours daily. These children had even the smallest amounts of astigmatism corrected by my predecessor, Mr. A. E. A. Loosely, with the most scrupulous care.

Dr. Aston Key has a letter also in the column adjacent to Dr. Mason's. We find we get children with migrainous headaches caused by quite small visual defects who can see all the letters in the tests, and who gladly come back for replacements if they break or lose their glasses. This vast change in public opinion has been brought about in less than a generation by reason of the good results obtained and the spread of knowledge among the public.—I am, etc.,

London, W.1.

SYDNEY TIBBLES.

Sir Almroth Wright and Anti-typhoid Inoculation

SIR,—I happened to be a surgeon-on-probation at Netley in the year 1897 and remember the points made by Dr. Leonard Colebrook very well. A man called Marshbanks and I were both vaccinated by Wright to test out the dose of his anti-typhoid vaccine that summer, and very sick we both were, especially Marshbanks, after the inoculation. I have always attributed my almost miraculous immunity to the germ, when a year afterwards I had charge of a big camp of typhoid cases of the worst sort at Darmali in the Sudan, to my fortunate inoculation at Sir Almroth's hands. Leishman, as reported by Colebrook, arrived from India and was attached to Wright's laboratory at about that time. He was quite out of it as regards the initiation of the anti-typhoid vaccine but became intensely interested in it and in all the work that Wright was doing in subsequent months. At that time or a little later he invented his method of working out the phagocytic index, a method later modified by Wright to be the opsonic index, with which everyone is familiar.

After the transfer of the R.A.M.C. headquarters from Netley to London, Wright's interests in the immediate problems of anti-typhoid vaccine, though keen, were for the time being less great than Leishman's, who, as the professor of pathology at the R.A.M.C. College, was obviously the right man in the right place for the continuous work that went on at the vaccine between the South African and the 1914-18 wars—an effort in which Harrison, Grattan, Webb, Kennedy, and myself were all interested, as his assistants. But I feel sure that of all men Leishman was the last who would have claimed to be the originator of the anti-typhoid vaccine which was actually in hand and very far advanced at the time of his return from India.—I am, etc.,

Thaxted.

S. LYLE CUMMINS.

Shock Treatment of Bronchial Asthma

SIR,—Subsequent to my letter (June 1, p. 849) and that of Dr. Bowman Edgar (July 20, p. 101) I would like to clarify certain points omitted in my short letter. In full agreement with Dr. E. M. Fraenkel (Aug. 3, p. 174) and Dr. E. S. Fennell (Aug. 24, p. 275) I wish to point out, as I have done elsewhere, that the *B. coli* shock treatment is neither the only cure for asthma nor the cure for every asthmatic. I always carry out an investigation of the nose and throat and other possible causes, according to the history of each individual patient. For instance, an asthma attack brought on usually by a head cold could indicate an infection of the sinuses. If this or any other organic cause cannot be found, or if after the removal of one the asthma persists, and if also

no specific allergen (outside the body) can be found by means of skin tests, etc., then the "pyrifer" shock treatment—as an "unspecific" measure—is indicated.

I would not use shock therapy in cases of chronic nephritis, auricular fibrillation, coronary sclerosis with clinical manifestations, severe hypertension, advanced age, decompensated heart, pulmonary tuberculosis, and pregnancy. On the other hand, the usual cardiac enlargement—with dyspnoea, occasional cyanosis, and emphysema—so frequently met with in asthmatics, is no contraindication.

It is, of course, left to every practitioner's discretion to judge for himself and withhold the therapy where he thinks that any intercurrent febrile illness (as demonstrated by the reaction) would be dangerous. I have used "pyrifer" for the past ten years in a fairly large number of cases and have never had any unduly severe reaction which would have caused me anxiety as far as dosage is concerned. I may mention that I give children under ten about half the amount for adults. I always use "pyrifer" in the free interval between and not during the attacks, and visit my patients about 4 hours after the injection to watch the reaction.—I am, etc.,

Spennymoor, Co. Durham.

E. BRAUER.

** This correspondence is now closed.—Ed., *B.M.J.*

Royal College of Physicians of London

SIR,—The recent letter in the *Journal* (Aug. 31, p. 313) has focused attention once more on the statutes, bye-laws, and regulations of the Royal College of Physicians and the justifiable discontent which they arouse. As is well known, the present regulations do not allow Members to take any part in the running of the College. In fact, they are specifically debarred from doing so under Bye-law CXVIII, which says: "... they shall not be entitled to any share in the government, or to attend or vote at General Meetings of the Corporation." Surely this state of affairs is quite out of date, and in view of the great changes now taking place the time is ripe for the College to broaden its representation with a view to ensuring that Members obtain a voice in its counsels and deliberations on common-sense, democratic lines.

Our College instead of remaining a mere academic institution should become a dynamic force, capable of exercising a profound influence for good on various medical, social, and educational problems confronting us and pressing urgently for solution. The first step in this desirable aim must be the provision of facilities for adequate representation by the Members, who should be given every encouragement to form their own standing committee, etc., and take an active part in the management of the College. Obviously one of the important tasks of any newly elected committee should be to go into the question of the revision of the existing regulations concerning the election of Fellows.—We are, etc.,

C. ANDERSON.

M. N. PAI.

D. SHAW.

Sutton, Surrey.

Proposed Ex-Serviceman's Committee

SIR,—I have received many letters strongly approving my suggestion for the formation of an Ex-Serviceman's Committee of the B.M.A., and if I may trespass further on your space wish to suggest as a basis for discussion the form such a committee might take.

- (1) Specialists, 4 } All ex-Servicemen (Temporary Officers).
G.P.s, 5 }
Retired Regular Officer, 1.
Ex officio, one member of Council.
Secretary, an official of the B.M.A. staff.
- (2) Chairman to be elected by the committee and to be *ex officio* member of Council.
- (3) The retired regular officer would act usefully in an advisory capacity, and for liaison purposes should preferably be a member of the Naval and Military Committee.
- (4) The terms of reference should be: "To consider all matters concerning the problems confronting ex-temporary medical officers of the Services and to report to Council concerning their deliberations and recommendations."—I am, etc.,

Brookwood, Surrey.

H. M. STANLEY TURNER.

Obituary

G. DOUGLAS GRAY, C.B.E., M.D.

It is with sorrow that we report the passing of George Douglas Gray, C.B.E., M.D., of Dalkeith, Scotland, and with pride that we here briefly record a remarkable career.

At 15, George Gray matriculated with honours, but finding that Edinburgh University was not prepared to enrol a boy of that age to enter as a medical student he falsified his age, adding a sufficient number of years to qualify for entry. It was not to be the only time that he disremembered his age. At the outbreak of the 1914 war Gray removed the requisite number of years to allow him to go to France. Having graduated M.D. (with honours) soon after his 21st birthday, he became assistant to the late Dr. Murray of Leith. After other assistantships in England he went to British Central Africa under the aegis of the Foreign Office in 1894, and was appointed Principal Medical Officer of a district the size of Scotland. There he battled successfully with the scourges of blackwater fever, dysentery, malaria, and all the ills that beset the white man pioneering in, and ill-adjusted to, an unknown "Darkest Africa." After six years of experience this young doctor established a laboratory for experiment, and for the development of tropical medicine, at Zomba on the Zambesi.

During the South African War Dr. Gray served with the King's African Rifles, and in 1901 was one of the exhausted band of half-dying men who staggered back from the relief of Kumassi. It was during the S.A. campaign he met his future wife, Lucy Harrison, a nurse who had volunteered to serve up-country, in circumstances that would have quelled the ardour of any young woman less wholeheartedly dedicated to a career of healing. Between them, they worked a wide field, his doctoring backed up by her nursing. Lucy Harrison was awarded the R.R.C. In 1902 they were married in England. Immediately on their return to Africa the Foreign Office appointed Dr. Gray to be Principal Medical Officer and Physician on H.B.M. Minister's Staff in Peking, China. Gray relieved Dr. Wordsworth Poole, who had lately died. He found a legation and a Peking slowly recovering from the effects of the Boxer Rebellion siege. He also found the embryo of a hospital, started by Dr. Poole, far outside the city walls in a courtyarded Chinese house for Chinese sick. This he organized and developed until it became something akin to a flourishing cottage hospital, staffed by Chinese doctors and nurses trained by himself, where he performed an average of 20 major operations a week. It was typical of his robust approach to life in general, and his work in particular, that he never begged for money for his hospital. He supported it largely by his own earnings, and when he left Peking for France in 1915 he wrote the songs and music for a pierrot show and with the proceeds endowed the hospital with a handsome carry-on even against his return.

In 1906, on the outbreak of pneumonic plague in Manchuria, he again, with an instinctive sense of fitness, knew that the problem must be faced by the Chinese themselves, but that he, with his British Foreign Office backing, could guide the gigantic task of plague suppression and restriction. He therefore initiated the appointment by the Empress Dowager of the then foreign secretary, Saoke Alfred Sze, to the presidency of the committee for combating the epidemic, and enlisted the services of medical experts on plague, irrespective of nationality and creed, and with them not only fought and overcame the pneumonic plague but collected research information which proved invaluable when later outbreaks threatened. 1915 saw Gray in France in the R.A.M.C. organizing and running the 2,400-bed hospital for the Chinese labour battalions. For this work he was three times mentioned in dispatches.

In 1929 he "retired"—we put the word in inverted commas for it has but academic meaning when applied to the career of one whose energies and activities were boundless. Having spent some years travelling round the world as a ship's surgeon he returned to Scotland and immediately identified himself with work connected with China. Gray championed the cause of the Chinese student in this country. He found that with the outbreak of China's war with Japan, many students were cut off from home supplies, and were, through no fault of their

own, well-nigh destitute—unable to return home, unable to continue their studies for lack of money. Gray saw to it that they received an allowance from the Boxer Indemnity Fund—again he permitted no question of charity or dependence to creep up. When the 1939 war came George Gray, at 70, threw himself into a multiplicity of activities, organizing and training the Dalkeith Home Guard; then combining the chairmanship of a recruiting board in Edinburgh with almost nightly lectures as first aid to units of the Army and Home Guard in the district. It was this intensive activity that brought on his collapse in 1943, and the stroke which paralysed his right hand. Even then he was not beaten, and, having taught himself to write with his left hand, continued to review books for the *British Medical Journal* and other publications.

It was the intention of the present writer to give a short summary of George Gray's career and leave space for an appreciation of his character, but a life so crowded with sheer going cannot be compressed into a few sentences, and there is left but little room to sum up a character of such unusual and sterling worth as Dr. Gray's. Dogged perseverance, humour that brought him lifelong friendships for his "entertainment value," his imaginative consideration for others, his love of children, animals, the sick, and all helpless things—all these were his. But perhaps his devotion to duty and his gaiety of heart combined were the two most outstanding characteristics of this man who so surely earned the title of "Beloved Physician." Our sincere sympathy goes out to his sorrowing wife and family.

W. R. M.

For the first 35 years of this century ROBERT MARSHALL practised in Shanghai, and his sudden death in London last month was a sad blow to a great number of old friends and patients from the Far East. Born in 1870 at Girvan, Ayrshire, he was educated at the Ayr Academy and at Glasgow University, graduating M.B., C.M. in 1891. For the next five years he was medical officer to the Rio Tinto Company at Huelva in Spain. While there he made observations on the malaria parasite, whose life history was being unfolded at the time. In 1896, in collaboration with Dr. George Thin, he read a paper on the subject to the Royal Medical and Chirurgical Society in London, taking his M.D. degree at Glasgow in the same year. For the next two years he worked in Bombay on the Plague Commission, and in 1899 transferred to Shanghai, where he joined Dr. Neil Macleod and Mr. W. Jennings Mills in a practice dating back to 1854. Shortly afterwards a fourth partner, Dr. E. L. Marsh, was taken in, and for thirty years his famous partnership was known throughout the Far East as the "M firm," though later additions and replacements did not keep strictly to the initial letter. In Shanghai Marshall found full scope for the development of his powers. The important professional posts he held he filled admirably. He was a good general surgeon, a wise administrator, a kindly and understanding family practitioner, and above all a man of action who never spared himself. In any emergency his action was as quick and decisive as his thought. Short in stature, deep chested, sandy haired, and of extraordinary vitality, he stood for the clean hard life. A fine athlete himself, he encouraged every kind of healthy recreation among his patients as the finest antidote to the depressing, and sometimes disastrous, effect that life in a strange land and trying climate is apt to produce. He was a living example of his own precepts, and retained a boyish vigour and enthusiasm almost up to the time of his death. He was a major in the Shanghai Volunteer Corps, President of the St. Andrew's Society, founder of one of the two chief golf clubs, and served in turn on the committees of most of the athletic clubs in the town. After retirement his sociable nature, and his considerable skill at billiards and bridge, made him an ever welcome member at the Hatched House Club in London. He leaves a widow, three married daughters, and one son, who is in practice at Brockenhurst and married to the daughter of the late Mr. Rowlands, of Guy's Hospital.—W. B. B.

Prof. JAMES DREVER, of Edinburgh University, speaking at the St. Andrews summer school of the Scottish Council for Health Education recently, drew attention to the part to be played by psychiatrists in the prevention and early treatment of certain organic diseases. He mentioned claims that certain psychological groups of people had gastric ulcers, other groups hypertension, and so on, and said that hospitals were admitting increasing numbers of sufferers from chronic disease of heart and stomach. It was to the detection of this type of disease that he expected psychiatrists would eventually make valuable contributions.

Universities and Colleges

UNIVERSITY OF LEEDS

The inaugural lecture of the faculty of medicine of the University of Leeds will be given in the Riley-Smith Hall of the University Union at 3.30 p.m. on Monday, Oct. 14, by Lieut.-Gen. Sir William MacArthur, K.C.B., D.S.O. Subject: Insect-borne disease and English history. Members of the medical profession are cordially invited to be present.

We are informed by the Society of Apothecaries of London that the name of O. G. Bennett was included in the list of successful candidates for the Diploma in Industrial Health (*Journal*, Sept. 7, p. 349) in error; it should have read "G. B. Oliver."

The Services

The Leishman, the Alexander, and the Parkes Memorial Prizes are open for award in the year 1947 for work done in 1946. Recommendations should be sent in through the usual Service channels with copies of original articles or reports of investigations to reach the hon. secretary, R.A.M.C. Prize Fund Committee, R.A.M. College, Millbank, London, S.W.1, by Dec. 31, 1946. The Leishman prize is for work done in any branch of medicine, surgery, or the allied sciences, or in connexion with the general duties of the R.A.M.C., or of the Army Dental Corps. The Alexander prize is for meritorious work in promoting the study and improvement of military medicine, military surgery, military hygiene, or military pathology. The Parkes prize is for outstanding merit in the promotion of the study of naval or military hygiene; it is open to regular serving medical officers on full pay in the Royal Navy, the Army, or the Indian Army. The Alexander and the Parkes prizes are not open to officers on the staffs of the Royal Naval Medical School, the Royal Army Medical College, or the Army School of Hygiene.

Medical News

A report of the Minister of Health's speech at the annual luncheon of the Society of Medical Officers of Health will be found in the *Supplement* this week.

The inaugural address of the first post-war course of clinical neurology at the National Hospital, Queen Square, Medical School will be given by Dr. Gordon Holmes, F.R.S., on Sept. 30, at 4 p.m.

At a clinical meeting of the Medical Society of the L.C.C. Service on Thursday, Oct. 3, at 3 p.m., at Dulwich Hospital, Dulwich Grove, S.E., the staffs of Dulwich and St. Olave's Hospitals will demonstrate cases. The hon. secretary of the Society is now Mr. Iain Matheson, F.R.C.S., at St. Giles's L.C.C. Hospital, S.E.5.

A meeting of the Faculty of Homoeopathy will be held at the London Homoeopathic Hospital on Thursday, Oct. 3, at 5 p.m., when the presidential address, "Looking Before and After," will be given by Dr. Charles Edwin Wheeler.

At a science meeting of the Colour Group of the Physical Society to be held at 3.0 p.m. on Oct. 3 at the Lighting Service Bureau, 2, Savoy Hill, W.C., papers will be read by Mr. N. E. G. Hill.

The Royal Sanitary Institute has arranged the following programme: Oct. 4 and 5 in the Town Hall, Lewes, papers on rural housing, and on army sanitation overseas. Oct. 9, 2.30 p.m., at 90, Buckingham Palace Road, S.W., discussion on the manufacture of ice-cream: the public health aspects, opened by Dr. W. R. Martine. Oct. 26, 10.30 a.m., in the Castle School, Cyfarthfa Park, Merthyr Tydfil, discussion on housing and its amenities.

The Minister of Health will distribute prizes at the Royal Dental Hospital of London School of Dental Surgery on Saturday, Oct. 5, at 3 p.m., at 32, Leicester Square.

The following public lectures will be delivered under the auspices of the Chadwick Trust: Tuesday, Oct. 8, at 2.30 p.m., at 26, Portland Place, W., Sir Arthur MacNally, "Sir Thomas More as Public Health Reformer"; Tuesday, Nov. 5, at 2.30 p.m., at London Missionary Society, 42, Broadway, S.W.1, Mr. A. Briggs, "Public Opinion and Public Health in the Age of Chadwick"; Thursday, Dec. 5, at 4.30 p.m., at St. Mary's Hospital Medical School, W., Prof. C. H. Stuart-Harris, "The Problem of Prevention of Acute Diseases of the Respiratory Tract, with particular reference to Influenza." Further particulars may be obtained from the secretary of the Trust (204, Abbey House, Westminster, S.W.1).

The programme for the 1946-7 session of the Chelsea Clinical Society has now been issued. The session will open with a dinner meeting at the South Kensington Hotel on Tuesday, Oct. 8, when the president, Dr. Ronald Jarman, will open a discussion on modern anaesthesia. The subjects for discussion at later meetings are as follows: Nov. 12, backache; Dec. 10, plastics in surgery and medicine; Jan. 14, osteopathy; Feb. 11, artificial insemination; March 11, industrial medicine.

The annual general meeting of the Association of Industrial Medical Officers will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Friday, Oct. 18. Private business will begin at 5 p.m., and will be followed by a dinner at the School at 7.30. Details are being posted to members. On Oct. 19 at 10.30 a.m. at the School, Dr. Donald Hunter and Dr. R. S. F. Schilling will address the Association on "Industrial Medicine in the U.S.A."

The date of the Louis Gross Memorial Lecture to be given under the auspices of the Montreal Clinical Society at the Jewish General Hospital, Montreal, has been changed from Oct. 16 to Oct. 23 (see *Journal*, Sept. 14, p. 404).

A new quarterly scientific journal named *Anaesthesia*, the organ of the Association of Anaesthetists of Great Britain and Ireland, is being published on Oct. 1. Intending subscribers should communicate with the publishers, George Pulman and Sons, Ltd., Thayer Street, London, W.1.

A clinical meeting of the Irish Tuberculosis Society will take place at Newcastle Sanatorium, Co. Wicklow, on Saturday, Oct. 19, at 2 p.m. Speakers will be: Dr. F. R. G. Heaf, "Recent Trends in Tuberculosis," followed by Dr. J. A. Deeny; Dr. Dorothy Price, "Is B.C.G. Vaccination a Practical Proposition in Ireland?" followed by Prof. J. C. Saunders; and Prof. F. J. Henry, "Surgery in the Treatment of Tuberculosis." A film (with explanatory commentary) dealing with the modern methods of the treatment of pulmonary tuberculosis in an Irish sanatorium will be included in the programme. Members wishing to attend should notify their intention of doing so to the honorary secretary, the Hospital, Newcastle, Co. Wicklow, not later than Oct. 5. Membership is open to all registered medical practitioners; annual subscription 10s. 6d.

The largest blood transfusion centre outside the London area was officially opened in Whitechapel, Liverpool, on Sept. 12, by Mr. C. W. Key, Parliamentary Secretary to the Ministry of Health. Operated by the National Blood Transfusion Service of the Ministry, it will serve a population of 3,500,000 people in Lancashire, Cheshire, and North Wales, supplying the needs of some seventy hospitals in that region.

Dr. A. L. Crockford has taken up the duties of secretary to St. Thomas's Hospital Medical School on the resignation of Dr. R. J. C. Thompson.

The Court of Governors of the London Hospital has appointed Mr. Osmond Clarke, F.R.C.S., to be surgeon and assistant director in the orthopaedic and accident department of the hospital.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* further falls in the incidence of measles 24, whooping-cough 152, and scarlet fever 76 were recorded, a rise was reported for diphtheria 22.

The fall in measles, which started at the end of June, continued, and small declines were recorded in most areas. The fall in whooping-cough was Lancashire 81, and only small variations were recorded in the remainder of the country. Small increases in the notifications of scarlet fever were general. The largest variations in the local returns of diphtheria were increases in Lancashire 15 and Durham 11.

Fourteen further cases of paratyphoid were reported from the outbreak in Yorkshire West Riding, Halifax C.B. The rise of 12 in the returns for dysentery was mainly due to an outbreak in Hertfordshire, Elstree R.D., which involved 16 persons.

In *Scotland* the notifications of diphtheria decreased by 15, while whooping-cough increased by 48. The cases of dysentery were only 3 less than in the preceding week, one-third of the total being recorded in Glasgow.

In *Eire* a further rise occurred in diarrhoea and enteritis; 51 of the 70 cases were reported from Dublin C.B. The notifications of measles increased by 12, while a decrease was recorded for scarlet fever 13 and whooping-cough 11.

In *Northern Ireland* the cases of diphtheria increased by 6; 10 of the 21 cases occurred in Belfast C.B.

Week Ending September 14

The notifications of infectious diseases in *England and Wales* during the week included: scarlet fever 791, whooping-cough 1,744, diphtheria 255, measles 1,213, acute pneumonia 284, cerebrospinal fever 28, dysentery 68, acute poliomyelitis 22, paratyphoid 33, typhoid 17.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 7.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	33	2	23	—	2	25	2	22	2	—
Deaths	—	—	1	—	—	—	—	—	—	—
Diphtheria	284	29	77	31	21	423	20	135	51	2
Deaths	2	—	2	—	—	14	—	1	—	—
Dysentery	86	7	42	3	—	278	39	93	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	1	—	—	2	—	—	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	39	8	4	—	—	38	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	70	—	—	—	—	97	—
Deaths	31	—	9	10	2	64	9	9	25	1
Measles*	1,321	93	62	40	9	538	36	53	10	—
Deaths	—	—	1	—	—	—	—	—	—	—
Ophthalmia neonatorum	74	8	18	—	—	74	6	21	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	42	—	49 (B)	1 (B)	1 (B)	12	—	—	—	2 (B)
Deaths	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	292	13	1	1	1	268	4	6	1	—
Deaths (from influenza)†	5	2	1	2	—	8	2	—	1	—
Pneumonia, primary	—	23	133	13	6	—	12	126	7	6
Deaths	—	—	4	—	—	—	—	—	—	—
Polio-encephalitis, acute	5	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	19	1	3	2	—	25	2	1	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	2	20	—	—	—	2	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	136	11	10	1	—	160	8	9	2	—
Deaths	—	—	—	—	—	1	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	668	44	144	17	26	1,151	90	260	14	2
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	21	4	6	4	3	12	—	2	8	—
Deaths	1	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,824	130	139	27	27	1,177	59	65	53	—
Deaths	6	—	1	1	1	7	3	2	1	—
Deaths (0-1 year)	345	46	41	22	11	305	42	48	41	2
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,844	598	501	160	91	3,663	541	549	177	12
Annual death rate (per 1,000 persons living)	—	—	11.0	10.3	—	—	12.5	11.4	—	—
Live births	8,784	1451	1,028	330	236	6,528	802	842	356	23
Annual rate per 1,000 persons living	—	—	20.7	21.1	—	—	16.8	23.0	—	—
Stillbirths	236	34	45	—	—	182	18	24	—	—
Rate per 1,000 total births (including stillborn)	—	—	42	—	—	—	28	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Vitamins in diseases of the muscular system

The following are suggestions for the application of vitamin therapy in certain diseases of the muscular system. Space limits the conditions that can be dealt with here but a sequel will appear in the next issue of the Journal.

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STICITY; paralysis agitations.	Vitamin B ₆ has been found to reduce the muscular rigidity in ambulatory patients in whom the condition has not been of long standing.	PYRIDOXIN Vitamins Ltd. 10 mg. tablets, one or more thrice daily or 50-100 mg. daily by injection.
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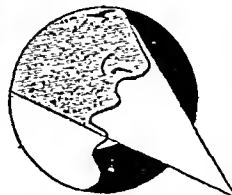
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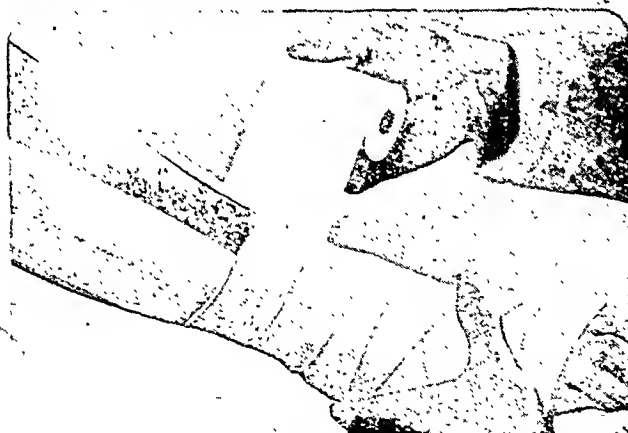
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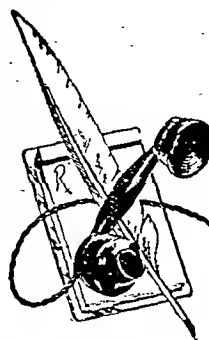
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B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

ANY QUESTIONS?

Electroencephalogram in Epilepsy

Q.—I have under my care a child aged 3. In the first year of life this child had frequent epileptic fits. Phenobarbitone $\frac{1}{2}$ gr. (32 mg.) night and morning was given and the fits completely ceased. The child has continued with the treatment for two years and is healthy and intelligent. Would electroencephalogram indicate whether there is still a liability to fits and whether the drug may now be left off?

A.—In a case of this sort a normal electroencephalogram would add weight to the view that the epileptic process has been terminated by phenobarbitone, but it would not indicate with certainty that no further fits will occur. It may well be—particularly in a child—that in spite of prolonged medication and the absence of fits the electroencephalogram will remain abnormal. In these circumstances an abnormality which is associated with paroxysmal disturbances in the records, known as larval outbursts, would indicate an active epileptic process, and would suggest the advisability of continuing treatment. Unfortunately difficulty is encountered in that the relationship of the number of larval outbursts to clinical attacks is very inconsistent. It seems that some subjects have a clinical attack whenever the epileptic process begins, whereas others have a high resistance to this process. It follows that the absence of any abnormality between clinical attacks does not necessarily reflect the prognosis for further attacks. This difficulty can to a large extent be overcome by obtaining serial records at intervals throughout treatment.

Recurrent Bee Stings

Q.—A farmer, aged 48, who has kept bees for 20 years and who has been stung many times, was stung again recently. The sensation was similar to that experienced under gas. He managed to stagger into the house and collapsed. He was blue in the face, his lips were swollen, he was very pale, and soon broke out into a profuse perspiration. He slowly "came to" as if he was coming out of an anaesthetic. What are the chances of the same reaction should he be stung again?

A.—The attack was an allergic or anaphylactic reaction and the chances of a similar attack if stung again are high. He should get rid of his bees and, so far as possible, avoid further bee stings. Hyposensitization with bee antigen can be carried out and might be considered. The reaction due to any future bee sting would then be at least modified. In view of the severity of the reaction extra care would be necessary with regard to the dosage. Adrenaline is the best and quickest antidote.

Anaesthesia for Perineal Tear

Q.—Can you give me any information about the technique of local anaesthesia for repair of perineal tear?

A.—Various methods of local anaesthesia, or as it is more correctly termed of local analgesia, for the repair of the torn perineum or of an episiotomy have been described. A simple and entirely satisfactory method consists in local infiltration of the wound in the perineum and posterior vaginal wall. A

sterile solution of procaine, 1 or 2% strength, with 1:100,000 adrenaline is used, or alternatively one of the proprietary self-sterilizing solutions, which are convenient in domiciliary practice. It is advisable to use a syringe of 10 or 20 ml. capacity and two needles, one hypodermic and one intramuscular (gauges 17 and 12).

The patient is placed in the lithotomy position and the vulva is cleansed with an antiseptic solution. With the fine needle a weal is raised at the posterior end of the wound. With the larger needle the tissues under the edge of the skin and of the vaginal mucosa are thoroughly infiltrated to a width of about half an inch. Finally the deeper tissues are infiltrated. A swab soaked in the analgesic solution may be placed on the raw surface. It is necessary to wait at least five minutes before attempting to insert any sutures. This period of waiting, though perhaps tedious to the operator, is well worth while, as by this means a much more satisfactory analgesia is obtained.

Pitressin Test in Epilepsy

Q.—How is the pitressin test in epilepsy carried out? What is its value and are there any dangers attached to the procedure?

A.—The water-pitressin test is carried out as follows: The patient is given copious fluid, his fluid intake and output being measured, and he is weighed night and morning. An increase of 2% in the body weight with an excess of fluid intake over output is taken as proof that a positive water balance has been established. This point is usually reached in forty-eight hours. Pitressin 0.25 ml. is then given intramuscularly with 300 ml. of water by the mouth. Further doses of pitressin, 0.5 ml., with 300 ml. of water, are given every two hours to a total of ten injections, unless a fit occurs before, when the test is stopped. A positive result may be expected in at least 30% of epileptic subjects. The test is contraindicated in diabetes mellitus, nephritis, arteriosclerosis, and myocardial degeneration. Otherwise the test appears to be free from danger.

D.D.T. and Animals' Parasites

Q.—Is D.D.T. of any use against sheep ticks and, if so, can it be applied to a dog's coat without noxious effects to the dog?

A.—D.D.T. has been found effective as a constituent of a sheep dip against the tick *Ixodes ricinus* L. The easiest way to apply it to a dog's coat would be by shaking in a powder containing 10% D.D.T. Such a treatment would not affect the dog.

Chronic Osteomyelitis

Q.—What is the treatment of chronic osteomyelitis? Is it justifiable to treat cases with discharging sinuses in the outpatient department?

A.—Both depend upon so much else: first, the age of the patient, cause of the infection, and number of lesions present. Generally speaking if one is dealing with an old-standing haematogenous staphylococcal infection the local lesion can often be dealt with by relatively radical surgical measures. Certainly sequestra should be removed and cavities opened up for adequate drainage and to facilitate healing. Direct chemotherapeutic attack may hasten the cleaning up of such cavities, but general systemic penicillin in very chronic cases has not yet shown the dramatic effects produced in acute haematogenous osteomyelitis. The opening up of chronic bone cavities must be tempered with some moderation in view of the risks of later pathological fracture. When such cavities are relatively clean further surgical treatment should more frequently be considered in order to obliterate them and give sound final closure. The trouble with the treatment of bone cavities is the natural rigidity of the walls, which, of course, prevents their collapse when the active infection has died down. Organisms tend to remain latent within the extensive scar tissue. In chronic osteomyelitis or, as Rutherford Morrison stressed that it should be called, *osteitis* due to compound fractures or war wounds, Robertson and Barron have shown how excision of scar tissue and infected bone, followed by the insertion of muscle flaps or skin grafting, and later by the obliteration of cavities with iliac cancellous bone grafting, can heal chronic offensive disability.

The answer to the second part of the question is that it depends on the "out-patient department." Treatment as suggested above? Certainly not. The week-in, week-out dressing of chronic sinuses? Certainly not, for this is not treatment of the disease. Treatment as part of a planned programme may have some place in an out-patient department if the department is such that complete surgical precautions are followed: Too often cases of chronic osteitis are regarded as dirty problems which cannot be made dirtier—let alone the impunity with which such cases are treated alongside cases of industrial injuries to the hand, burns, and other wounds.

Treatment of Empyema

Q.—What is the accepted treatment for acute and chronic empyema? When is rib-resection performed?

A.—A full answer to this question would require a volume. Treatment of acute empyema varies greatly according to the causative organism, the presence of accompanying lesions in the lung and elsewhere, and anatomical aspects. The exact place of penicillin in the treatment of acute empyema has still to be determined. With all these variable factors there is no one "accepted treatment" for empyema, and it is impossible in a short answer to deal in any useful way with the first part of this question.

With regard to the second part—in acute empyema rib-resection is indicated only when the collection of pus is localized by pleural adhesions, which will generally be the case if the pus has become thick. While the pus is thin and there is no evidence of adequate pleural adhesions ("pyothorax" rather than localized "empyema"), the pus must be removed by aspiration or by intercostal drainage. Drainage by a closed method may be indicated even after rib-resection. The most important part of the treatment is to secure complete re-expansion of the lung. This is helped by the early application of suitable active inspiratory breathing exercises. The tube should not be removed from a drained empyema so long as there is evidence that any residual empyema space remains; and if there is any doubt about this it is well to outline the sinus and residual space, if any, with iodized oil and take radiographs before deciding about removal of the tube. Recently some success has been reported in the treatment of acute empyema caused by penicillin-sensitive organisms by aspiration and injection of penicillin until the pus becomes thick, followed by intercostal drainage, which is used as a method of continuing the intermittent aspirations and injections of penicillin. The exact place of this line of treatment has still to be determined. With regard to chronic empyema it should be realized, first, that many such empyemata are the result of inadequate treatment of acute empyema. In any case of chronic empyema the diagnosis is not complete until the underlying disease, especially tuberculosis, new-growth, and chronic suppurative processes in the lung, has been considered. The diagnosis of chronic simple empyema having been thus established the first step is to secure free drainage by adequate rib-resection. Suction drainage, breathing exercises, and, unless there is a pleuro-bronchial fistula, irrigation of the cavity should then be instituted. If this does not result in obliteration of the empyema space plastic operations on the chest wall, combined in resistant cases with one of the several special surgical techniques for mobilization of the thickened parietal pleura, will become necessary.

Sequelae of Encephalitis Lethargica

Q.—Is there any effective treatment for chronic encephalitis lethargica? Have penicillin, the sulphonamides, fever therapy, protein shock, or repeated lumbar punctures any proved value in the treatment of this condition?

A.—Penicillin and the sulphonamides are of no value in the treatment of chronic encephalitis lethargica. There is no reason to suppose that repeated lumbar puncture would be helpful. Artificial pyrexia, most simply induced by the intravenous injection of T.A.B. or *B. coli* vaccine, has a limited value, especially for encephalitic parkinsonism, when the disorder is not too far advanced.

LETTERS, NOTES, ETC.

Medical Service in Australia

SIR ERNEST GRAHAM-LITTLE, M.P., writes: Dr. Gilliland quoted a letter from the High Commissioner of Australia received by *Medical World*, the organ of the Medical Practitioners' Union, containing the statement: "No Bill to establish a State medical service has been introduced into the Commonwealth Parliament of Australia (*B.M.J.*, Sept. 14, p. 407). Dr. Gilliland declares that this "condition" "calls for explanation from me," and I hope you will all me to supply it. The information from my correspondent in Canberra upon which I based my letter (*B.M.J.*, Aug. 24) was to the effect that an Act containing proposals for State-provided and partly State-controlled medical services was passed some years ago by the Socialist Government in Australia; that the medical profession in Australia, regarding these proposals as a threat to their freedom, refused to accept service under the Act and that consequently it has not been put into operation up to the present date. (I would like to see the letter from the M.P.U. (a consistent advocate of State service) that elicited the above very guarded reply which it is to be noted, does not "contradict" my statements but merely repudiates a description (which nobody offered) of that Act as "establishing a State medical service." (Fortunately, as the Minister of Health, confronted with the Australian revolt, realized, one cannot establish a State medical service without the consent of the doctors. I have not seen the text of the Australian Act and I am writing to Canberra asking to be furnished with a copy, but from my correspondent's description it would seem to present a general resemblance to Mr. Bevan's Bill. A State service postulates national full-time salaried pensionable medical personnel which has been the declared goal of the Socialists for more than a decade. (See *Hansa* May 1, Col. 225.) Mr. Bevan's Bill goes a very long way towards achieving this aim: he prudently forbears for the moment to do all the way, but he has not forgone the hope and expectation that this aim will be achieved when, as he expressed it in the debate, the time is "ripe" for that ultimate complete fulfilment. It is significant that a motion to introduce such a service in Britain was proposed to the Representative Body in 1943 and was rejected by twenty-to-one majority at a meeting attended by practically the entire membership of that body: their verdict has been repeated on several occasions since that date. It is clear that our Australian colleagues saw in the Act which they rejected a similar threat to their freedom, and I submit their example is one which we must well follow now.

Varicose Ulcers and Penicillin

DR. W. T. E. BLACKMORE (Abergavenny) writes: A reference to Letters, Notes, etc., in the *Journal* of Aug. 17 (p. 252) prompts me to relate my experience of the value of penicillin cream in the treatment of varicose ulcers. Thirty-two varicose ulcers, with penicillin-sensitive organisms, have been successfully treated during the last ten months by adopting the following technique. After thorough cleansing with warm saline a dressing of penicillin cream (100,000 units to 1 oz. (30 g.)) is applied on a gauze pad. The entire lower leg—foot to knee—is then firmly bandaged with a supporting bandage of the Unna type and a second layer of gauze bandage applied over it. This is left in position for a week the patient being advised to pursue in the meantime his or her normal activities; then the dressing is renewed. The average length of treatment is seven to eight weeks, that is, seven or eight dressings after which the ulcer is firmly healed; and treatment of the underlying cause is then carried out. One case, which took twelve weeks to clear, was a varicose ulcer some 6 by 2½ in. (15 by 6.4 cm.); so one is entitled to assume that this form of treatment is of definite value.

An Offer of Medical Equipment

A medical man in the South of England informs us that the doctor son of one of his patients was killed in Burma. The father has a sphygmomanometer, an electric ophthalmoscope, and an auroscope; also one or two oddments. He would like to give the lot to a doctor who has lost his equipment by reason of war, or to a doctor returning from the Forces and in need of professional apparatus. Letters addressed to this office will be forwarded.

Corrections

We apologize for the oversight by which the words "encephalitis" and "encephalopathy" were misprinted in the footnote to C. E. S. Harris's letter last week (p. 442).

The word "undermined" should have read "underlined." Dr. Anthony C. Hamer's letter published under "Tobacco and Ulcer Dyspepsia" in the *Journal* of Sept. 14, p. 402.

A misprint occurred in FL-Lieut. W. P. U. Jackson's letter (Sept. 14, p. 403). The word "trend" in the first sentence should of course be "triad," and the clause should run "the triad of symptoms polyarthritides, urethritis, and conjunctivitis noted in my article (Aug. 10, p. 197) as being characteristic of Reiter's disease may also be associated with bacillary dysentery."

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 28 1946

British Medical Association REPORT OF INSURANCE ACTS COMMITTEE, 1946

Chairman

Dr. E. A. Gregg was reappointed Chairman of the Committee for the session 1945-6.

Obituary

The Committee regrets to record the deaths of:

Sir Kaye Le Fleming (Wimborne, Dorset), member of the Insurance Acts Committee, 1922-39; Chairman of the Conference of L.M. and P. Committees, 1924-9; past Chairman of the Representative Body and Chairman of Council of the B.M.A. Dr. David Rorie (Aberdeen), member of the Insurance Acts Committee, 1923-5; member of the Insurance Acts Scottish Subcommittee, 1923-5. Dr. W. H. Smailes (Huddersfield), member of the Insurance Acts Committee, 1927-46; member of Council of the B.M.A., 1938-9. Dr. W. E. Thomas (Ystrad Rhondda, Glam.), member of the Insurance Acts Committee, 1922-44; member of the Council of the B.M.A., 1923-44.

Ministry's Distribution Committee

The Committee's nominees on the Ministry of Health Distribution Committee in connexion with the 'Central Practitioners' and Mileage Funds are: Dr. E. A. Gregg (London), Dr. D. J. B. Wilson (High Wycombe, Bucks), Dr. D. B. Evans (Coedpoeth), and the Assistant Secretary (Dr. L. S. Potter), together with Dr. J. A. Pridham (Weymouth), Dr. J. C. Pearce (Diss, Norfolk), and Dr. J. D. Wells (Billericay), when questions concerning mileage are under consideration.

INSURANCE CAPITATION FEE

The report of the Spens Committee (*Supplement*, May 18, 1946) was issued at the beginning of May. Its findings confirm the statement, made repeatedly by the Insurance Acts Committee, that the remuneration for the treatment of insured persons is and has been quite inadequate. The Committee welcomed and approved the Majority Report of the Spens Committee, and a communication to this effect was sent to the Minister of Health. The Council and the Representative Body of the B.M.A. have since adopted similar resolutions.

In March the Committee, without waiting for the Spens Committee's report, decided to make an application for an increase in the insurance capitation fee, with effect from Jan. 1, 1946, and to ask the Minister of Health to receive a deputation to discuss the matter. This step was taken, not only because of the deep and widespread dissatisfaction among insurance practitioners with the existing fee but because the present Minister's two predecessors had given an undertaking that the whole question would be re-examined "from the ground up" as soon as the war was over. The Minister's reply was that he felt that such a discussion should be postponed until the Spens Committee's report had been published and he had had an opportunity of studying it.

Eventually the Minister received a deputation, but no progress was made because the Minister persisted in the view that the first step should be to translate the Spens recommendations into terms of remuneration for services under the proposed new Health Service. At this stage the Minister had not indicated his acceptance of the substance of these recommendations. Sub-

sequently interviews with Ministry officials took place. The Committee's representatives made it clear that they were not authorized to enter into discussions on the remuneration of general practitioners under the new Health Service. It was demonstrated to the Ministry that it was possible to determine, in the light of the Spens recommendations, what the appropriate capitation fee for present services should be, without embarking on discussions to be covered by Regulations under legislation not yet approved by Parliament.

Subsequently the Committee's representatives were informed that, as they were unwilling to enter into discussions on remuneration under the new Health Service, it would not be possible for the Minister to do more than make an arrangement for the interim period while negotiations were proceeding on the long-term agreement. The Minister put forward a capitation fee of 12s. 6d., with effect from Jan. 1, 1946. This was considered at a special meeting of the Committee on July 22, when the following resolutions were adopted and forwarded to the Ministry:

That the Minister of Health be informed that the Insurance Acts Committee, while it welcomes the Minister's acceptance of the Majority Report of the Spens Committee and his recognition of the inadequacy of the insurance capitation fee, regards the proposed increase of two shillings in the capitation fee as gravely inadequate.

That the Minister be informed that the Insurance Acts Committee would be prepared to recommend insurance practitioners to accept, in the interim, a capitation fee of fifteen shillings, retrospective to Jan. 1, 1946. The Committee would be willing, if the Minister so prefers, that the Spens Committee should be asked to state the implications of its Majority Report in relation to the current insurance capitation fee, upon the understanding that the Insurance Acts Committee and the Minister accept, in advance, the findings of that Committee.

Further correspondence took place with the Ministry, in the course of which it was pointed out to the Ministry that a definite promise had been given in 1941, and repeated in subsequent years, that the capitation fee for services rendered at the present time would be considered "from the ground up" and quite apart from the new Service. It was with this promise in mind that the Ministry proposed the appointment of the Spens Committee, which would, to use the Ministry's words (in 1944), "approach the whole subject of public remuneration of the general practitioner with an open mind and a clear field," and whose findings "would apply irrespective of the institution of any National Health Service and would directly bear upon existing conditions under the present National Health Insurance scheme . . . to give effect, indeed, to the assurance given by Mr. Ernest Brown last year that the whole question of public remuneration of the general practitioner should be approached anew 'from the ground up.'"

The Minister persists in his view that it is impossible at the present time to consider the remuneration of general practitioners in the proposed new Health Service and the present N.H.I. Service separately. As his offers to discuss the two matters concurrently cannot be accepted by the Insurance Acts Committee he has given instructions for the 2s. increase, mentioned above, to be paid to insurance practitioners, with effect from Jan. 1, 1946. In other words, he imposes the condition

that negotiations for remuneration for a Service not yet approved by law must precede consideration of proper remuneration for a Service already in being, and in the absence of acceptance of such a condition he arbitrarily awards an increase which is regarded as completely inadequate and does not fully implement the report of the Body set up to advise on the subject—namely, the Spens Committee.

The Insurance Acts Committee at its meeting on September 5 had before it a full report on the situation. It could come to no other conclusion than that the Minister of Health was failing to redeem the promises already given that the adequacy of the capitation fee would be the subject of a complete investigation after the war, and that such an investigation would be conducted in the light of the report of the Spens Committee. No such investigation has in fact taken place, and as the Insurance Acts Committee is unanimous in its view that the offer of a 2s. increase is totally inadequate it has decided that it cannot recommend insurance practitioners to continue to give service for an inadequate capitation fee. The Committee is willing that the matter should be referred to the Spens Committee itself, or some other agreed body, and if this is done it is prepared to accept, on behalf of the insurance practitioners, the findings of such a body.

A recommendation on these lines to the forthcoming Annual Conference is set out below. This recommendation has been sent to Panel Committees with a request to call meetings of all insurance practitioners in their areas to discuss it and instruct representatives to the Conference. It should be emphasized that the instrument of resignation is proposed, not to obtain a particular sum but to press for the proper application of the Spens Committee's report to the current capitation fee.

The Insurance Acts Committee is confident that the lead it is now giving to insurance practitioners will be solidly supported. The principle at stake is similar in character to the principle for which 95% of insurance practitioners signed resignation forms in the autumn of 1923. On that occasion their action was successful. The same determination must be shown on the present occasion.

Recommendation: That, in view of the Minister's failure properly to apply the report of the Spens Committee to the current capitation fee—despite explicit Government promises that this would be done—and in view of the grave inadequacy of 12s. 6d. as remuneration for assuming medical responsibility for an insured person for a year, it be recommended to all insurance practitioners in England and Wales, Scotland and Northern Ireland to place their resignations from the National Health Insurance Service in the hands of the Insurance Acts Committee and to authorize that Committee at its discretion to put in such resignations to Insurance Committees unless the Minister is willing fully to apply the Spens Report to the current capitation fee with effect at least from Jan. 1, 1946, or, failing agreement, to refer to the Spens Committee or a representative section of that Committee, or other agreed independent body, the interpretation of the Spens Committee Report in relation to the current capitation fee, both parties agreeing in advance to accept the findings of such body.

NATIONAL HEALTH SERVICE

The resolutions of the Special Conference of Representatives Local Medical and Panel Committees on April 30 were passed on to the Special Representative Meeting on the following day. It will be remembered that the Special Conference expressed general approval of the Council's Report to the Special Representative Meeting.

Several points have been raised by Panel Committees on matters relating to the terms of service of practitioners participating in the proposed National Health Service, and these will be brought to the notice of the Negotiating Committee at the appropriate time.

JOINT COMMITTEE WITH PHARMACISTS

The Council of the B.M.A. agreed to a suggestion from the Pharmaceutical Society of Great Britain for the appointment of a joint *ad hoc* committee of doctors and pharmacists to consider matters of common interest arising out of the proposals for a National Health Service. The Association's representatives are the Chairman of Council, three appointed by the General Practice Committee, three appointed by the Insurance Acts Committee, and one appointed by the Scottish

Committee. The pharmacists represent the Pharmaceutical Society, the National Pharmaceutical Union and the Pharmaceutical Standing Committee (Scotland). One meeting of the Joint Committee has been held, and among the subjects discussed was the question of dispensing in rural districts. No recommendations have yet been submitted to the constituent bodies of the Joint Committee.

SCHEME FOR AN EMERGENCY GENERAL PRACTITIONER MEDICAL SERVICE

In conjunction with the General Practice Committee, the Insurance Acts Committee has been endeavouring to evolve a scheme for a medical service which could be put into operation in the event of the profession being unwilling to accept the Government's proposals for a National Health Service. Such a scheme would take the place of the present N.H.I. medical service, other persons being treated privately except where local contract arrangements of one kind or another are in operation.

The draft scheme was sent to Panel Committees for their observations. A number of Committees do not believe such a scheme to be practicable, especially in rural areas. To sum up, there appears to be a strong body of opinion that if the profession decides not to accept service under the proposed National Health Service there should be a return to private practice so far as the present insured population is concerned. The Committee has, therefore, abandoned as impracticable any idea of a scheme for the whole country, but is revising its draft scheme to meet, as far as possible, the wishes of those areas, including some of the largest in the country, which would like to be prepared with an alternative general practitioner medical service on a contract basis.

TERMINATION OF PROVISIONS FOR PROTECTION OF PRACTICES

The Ministry of Health recently decided to issue instruction to Insurance Committees on the termination of the special wartime provisions for the protection of the insurance practices of absentee practitioners. These wartime provisions were intended to remain in operation until a date to be agreed between the Panel and Insurance Committees or, failing agreement, no later than the date of the termination of the emergency, as fixed by Order in Council. It was announced, however, that no such Order in Council would be issued, and the date beyond which the wartime provisions will not continue to operate has been left for agreement between the Insurance and Panel Committees in each area.

PROTECTION OF PRACTICES—ADJUSTMENT OF LISTS

At the request of the 1945 Annual Conference consideration was given to the practicability of making provision, on a national basis, for returning insurance practitioners to receive for a limited period payment out of the Local Practitioner Fund of not less than they were receiving in 1939. The intention was that the practitioner should have the benefit of the payment for six quarters following his return to his practice unless he had succeeded in building up his practice to the 1939 level earlier, when the arrangement would cease to apply to him. A national scheme of this nature, involving the creation of a central pool, would be administratively possible only if a very high percentage of Panel Committees throughout the country were willing to co-operate and could give the necessary assurance that their constituents were in favour of the scheme. An inquiry revealed that in a substantial proportion of areas the Panel Committees were not in favour of dealing with the problem on a national basis, preferring that it should be left to each area to make its own arrangements if it considered that any action at all was desirable.

In the circumstances, the Insurance Acts Committee decided that it could not press the Ministry of Health to put the necessary machinery into operation for the creation of a national pool for this purpose. The Committee advised any area that wished to guarantee, for a limited period, the pre-war insurance income of a returning practitioner, to seek the collaboration of the Insurance Committee in securing the necessary amendments of the local Allocation and Distribution Schemes.

It is understood that, provided it can be shown that there is no substantial opposition from insurance practitioners in the area, the Ministry of Health would be willing to sanction amendments of the schemes.

POST-WAR FINANCIAL ASSISTANCE

The 1945 Annual Conference asked that the new scheme to enable medical practitioners to obtain financial assistance on advantageous terms be sent to all serving doctors. The scheme is referred to in the booklet *The Returning Doctor* which was published by the B.M.A. and issued to every doctor on demobilization. The Committee felt that in view of the paper shortage and other difficulties associated with the preparation and issue of a separate booklet, the reference to the scheme in *The Returning Doctor* would meet the position of serving doctors.

MEDICAL RECORDS OF DEMOBILIZED SERVICES PERSONNEL

The 1945 Annual Conference (Min. 26) asked that it should be made possible for Clerks to Insurance Committees to obtain a précis of the medical record of a demobilized person on the request of the patient's doctor and subject to the patient's permission. Arrangements to meet this request have now been made.

Service medical histories of demobilized persons are held by the appropriate Service Department and applications should not be made to the Ministry of Pensions. The War Office and Admiralty are prepared to furnish a photostatic copy and the Air Ministry a summary of the Service medical history to the doctor responsible for the patient's treatment, provided that the doctor gives an assurance that it is required for actual medical treatment and that no disclosure will be made from the documents. Applications, which should quote the Service particulars and be accompanied by the patient's written consent, should be addressed by the doctor as follows: *Royal Navy*, The Medical Director of the Navy, Queen's House, 64, St. James Street, S.W.1. *Army*, The Secretary, War Office (C2a), Whitehall, S.W.1. *Royal Air Force*, The Under-Secretary of State, Air Ministry (MA2), London, W.C.2.

TITLE TO MEDICAL BENEFIT OF DISCHARGED SERVICES PERSONNEL

The Annual Conference (Min. 71) expressed the view that discharged Services personnel should not be supplied with medical cards until they actually re-enter insurable employment. Men and women discharged from the Forces are entitled to medical benefit immediately they are demobilized and the Committee is assured that in computing the numbers of persons entitled to medical benefit the Government Actuary takes into consideration details of discharges and releases furnished to him by the Service Departments and the Ministry of National Insurance, and appropriate payments are made into the Central Practitioners' Fund.

Generally speaking every man and woman below commissioned rank who leaves the Forces is immediately entitled to a "free period" of insurance, including medical benefit. So far as commissioned officers are concerned the position is somewhat different. An officer is entitled to medical benefit after demobilization if he was compulsorily insured under the N.H.I. Act during his service. Liability to compulsory insurance during service is determined in the following way. Regular officers, that is officers appointed to permanent commissions and, in the case of the Navy, to permanent warrants, are not compulsorily insurable. Other officers, that is officers of the reserve and auxiliary forces and officers appointed to temporary commissions or warrants, are compulsorily insurable during their period of service if they were to any extent insured under the National Health Insurance and/or the Contributory Pensions Acts at the date of calling up or at the commencement of commissioned service. The only exception to the latter is that officers appointed from the ranks (and therefore insured at the commencement of their commissioned service) have the option of electing within two months from the date of their appointment to discontinue their insurance if they were not insured when their war service began.

IRREGULAR REMOVAL OF NAMES FROM DOCTORS' LISTS

The 1945 Conference resolutions (Mins. 38 and 39) on the subject of the irregular removal of names from doctors' lists have been carefully considered by the Committee. The increase in this irregularity is understood to be largely due to the abnormal movements of insured persons during the final stages of the war and the beginning of the post-war period, and to the shortage and inexperience of clerical staffs. The Committee decided that if, after a reasonable interval, there is no improvement in the position, it will again press the Ministry for vigorous action.

NEW ENTRANTS INTO INSURANCE

Minutes 35 and 36 of the 1945 Annual Conference, recommending that Form Med. 50 be amended to show that the insured person is already employed, and asking that some way be found for issuing medical cards to new entrants immediately they become insured, have been considered by the Committee. It has not been possible to persuade the Ministry to accept the Committee's suggestions either for a form of certificate on Form Med. 50 for completion by the employer or a space on the form for the insertion of the name and address of the employer. The Ministry has, however, amended the insured person's contribution card by the inclusion of the following paragraph:

"You are entitled to Medical Benefit as soon as you enter insurable employment. If you need medical treatment and have no medical card, get a Form Med. 50 at a Post Office, fill it in and give it to an insurance doctor before posting it to the Insurance Committee—address obtainable at the Post Office. Failing that, tell the doctor (who can require a deposit) that you are an insured person."

The Committee is not satisfied that this new paragraph will be effective in speeding up the issue of medical cards to new entrants into insurance. The new paragraph is also unsatisfactory in that the direction to obtain a medical card is limited to those who are in need of treatment. If evidence is forthcoming that the delay in the issue of medical cards continues to give rise to difficulties, the Committee will again take the matter up with the Ministry.

ELECTION OF PANEL COMMITTEES

In reply to the request of the Annual Conference (Min. 59) for a resumption of the election of Panel Committees, the Ministry stated that it did not consider it would be justified in issuing a general direction on the subject to Panel Committees. At the same time the Ministry is prepared to consider any application made by a Panel Committee to fix the date for the termination of the term of office of its members.

REGIONAL MEDICAL SERVICE

Reference of Patients to Specialists

In the Committee's last Report to the Conference (paras. 25-28) an account was given of exchanges with the Ministry of Health on the attitude of the Ministry in cases where an insured person is referred to a Divisional Medical Officer for an independent medical examination, and a tuberculous condition is diagnosed. The Ministry of Health gave an assurance that in those cases where the opinion of a specialist was considered to be desirable for reasons other than to enable the examining medical officer to report whether or not the insured person was incapable of work, no steps would be taken for the specialist examination without consulting the insured person's own doctor. This was satisfactory up to a point, but it was thought that it would be in the interest of the patient, the N.H.I. medical service, and the maintenance of a high standard in the settlement of cases of doubtful incapacity for work if, in the first instance, the patient's own doctor was given an opportunity of arranging for a second opinion. The Ministry does not consider it practicable or desirable to adopt this suggestion, expressing the opinion that by keeping the patient's own doctor informed of arrangements for a specialist examination the interests of patient and doctor are adequately met.

The Ministry is being pressed to reconsider its decision, particularly on the ground that it is not sufficient that the

insurance doctor is invited to be present at the examination by the specialist. The present arrangement does not give the patient or his doctor any choice of the specialist chosen for the examination.

Examination of Pregnant Women

The Ministry has again been pressed to agree that an examination of a pregnant woman by a Regional Medical Officer should be made at home if she is within eight weeks of the expected date of confinement. In 1935 it was arranged that any woman referred for examination, who was stated by her doctor to have reached the 36th week of pregnancy, would not be summoned to an examination centre. The Ministry is prepared to extend this arrangement to women who are stated to have reached the 34th week of pregnancy, but the Insurance Acts Committee is urging that the 32nd week should be the outside limit.

It is necessary, in order that full advantage may be taken of the arrangement described above, for a practitioner to state on Form R.M.2 the stage of pregnancy in weeks that has been reached.

Sickness Benefit in Relation to Pregnancy

At the Committee's request the Ministry of Health approached the Ministry of National Insurance with a view to arranging that in cases where Sickness Benefit is paid for incapacity for work due to pregnancy the attending doctor would not be required to give more than one certificate to cover the whole period. The Ministry of National Insurance indicated that it could not recommend Approved Societies to accept a single certificate to cover the whole period in cases where the cause of incapacity is due solely to pregnancy. The Insurance Acts Committee has made the further suggestion that in cases where the doctor is satisfied that the patient will not be capable of work until after her confinement it should be possible for the doctor to make use of the Special Intermediate Certificate forthwith.

Min. 43 of the 1945 Annual Conference expressed the view that employed women should be given a weekly maternity benefit for a total period of thirteen weeks, extending on both sides of the date of confinement. Such a benefit, amounting to 36s. a week, will be paid when the new National Insurance Act becomes operative.

POSTGRADUATE COURSES FOR INSURANCE DOCTORS

The Ministry of Health is contemplating the reintroduction of postgraduate courses for insurance practitioners, pending the provision of such facilities under the National Health Service. The proposal is dependent upon the universities being willing to continue, during 1947, the courses of postgraduate instruction for demobilized doctors, the demand for which it is anticipated will shortly decline.

The proposed course may be of several types: (a) a two weeks' intensive course of 22 sessions in general medicine; (b) a two weeks' intensive course of 22 sessions in some specialized subject approved by the Ministry; (c) a one week's intensive course of 11 sessions in general medicine; (d) a one week's intensive course of 11 sessions in some approved specialized subject; (e) an extended course—e.g., two afternoons a week for 11 weeks in general medicine or some approved special subject.

As in the case of similar courses before the war, the syllabus will be subject to the general approval of the Minister of Health. An insurance practitioner will be given freedom of choice of the centres where courses are available. In the case of a specialized subject the Ministry will exercise its veto only in cases where the subject is considered to be inappropriate.

An insurance practitioner will be allowed to take one two-week course during 1947, or two one-week courses. To be eligible for financial assistance he must (a) have at least 300 insured persons on his list or lists, if practising in an urban area, or 150 if practising in a rural area; (b) have been registrably qualified for at least three years; and (c) must not have attended one of the courses for demobilized officers.

Financial assistance towards the expenses of insurance practitioners attending the courses will be paid out of National

Health Insurance funds. Such expenses will include a gratuity for the provision of a locum tenens, where necessary; the fee for the course; subsistence allowance while attending the course, and actual travelling expenses.

In due course the Ministry proposes to send a circular on the subject to every Insurance Committee, with copies to Panel Committees, for their information. There will also be appropriate announcements in the medical press.

CERTIFICATION

The Ministry of Health is again being asked to take appropriate action to prevent official National Health Insurance certificate forms from being used for other than N.H.I. purposes.

Revision of National Health Insurance Certificate Forms

The 1945 Annual Conference (Min. 29) asked that consideration be given to the need for a revision of the certificate forms, both in the number of different forms and the wording of them at present in use. The suggestion has been noted for consideration at a favourable opportunity and will be brought to the notice of any committee which will be dealing with the terms and conditions of employment under National Health Insurance.

DISPENSING AND PRESCRIBING

Dispensing Capitation Fee

As the result of representations to the Ministry of Health the dispensing capitation fee has been increased from 3s. to 3s. 6d. per annum, with effect from November 1, 1946. Consideration is being given by the Committee to the adequacy of this increase in view of the heavy rise in the cost of drugs, etc. There is also dissatisfaction with the date from which the increase is effective. In the autumn of 1945 insurance chemists were awarded an increase in their dispensing fees which was dated back to Jan. 1, 1945.

Penicillin

The Ministry of Health has included "penicillin and preparations of penicillin" in the list of drugs appended to Part II of the Distribution Scheme, with effect from June 1, 1946. In the interest of the economical use of penicillin it has been suggested to the Ministry that direct pathological facilities should be made available to insurance practitioners for the testing of organisms of certain infections in relation to their sensitivity to penicillin. It has also been represented to the Ministry that doctors should be given priority for the supply of refrigerators for the economical preservation of penicillin and other drugs.

Drug Tariff

The Ministry of Health has been asked to revert to the pre-war practice of issuing the Drug Tariff to individual insurance practitioners.

Schedule of Appliances

An application has been made to the Ministry of Health for the addition to the Schedule of Appliances of a preparation of sterile vaseline gauze for use in the treatment of burns and wounds.

GROUPING OF AREAS FOR ELECTION OF I.A.C.

The Committee was asked by the Conference to reconsider the grouping of areas for the election of direct representatives on the Insurance Acts Committee, with special reference to the position of Derbyshire. The committee has to report that it has found it impossible to rearrange the groups without serious disturbance to the basic foundation of the present arrangement of areas.

FEES FOR PART-TIME R.M.O.s

The Ministry of Health has increased from two to two and a half guineas, with effect from March 1, 1946, the sessional fee payable to medical practitioners employed as part-time Regional Medical Officers in the examination of cases of doubtful incapacity for work. The announcement of this increase followed a request by the Insurance Acts Committee for an increase in the fee to three guineas.

DEMOBILIZATION OF PRACTITIONERS FROM H.M. FORCES

At the request of the Conference the Central Medical War Committee was asked to agree to increase its membership so as to provide for the representation of medical practitioners who have held commissions in territorial or temporarily mobilized forces since September, 1939. Three such representatives were appointed, and they have been added to the Services Committee of the C.M.W.C.

EXAMINATIONS BY MASS MINIATURE RADIOGRAPHY

The Ministry of Health has been asked to arrange that in all cases where persons are examined by mass miniature radiography, and the taking of a full-size skiagram is subsequently found to be necessary, the findings, positive or negative, will be communicated to the person's own doctor.

NATIONAL EYE SERVICE (N.O.T.B.)

The Insurance Acts Committee strongly endorses the appeal recently made to Panel Committees by the National Ophthalmic Treatment Board for more support for the service it provides, which is generally known as the "National Eye Service." This service was established in 1929 to provide insured persons with an ophthalmic medical examination and any necessary spectacles at a cost well within their means, and is available to all who are granted ophthalmic benefit by their approved societies. In view of the probability that the present arrangements for ophthalmic benefit will continue in many areas for some time after the commencement of the proposed National Health Service, it is hoped that general practitioners will encourage their insured patients to use the National Eye Service. The Head Office of the N.O.T.B., Tavistock House, Tavistock Square, London, W.C.1, will be glad to send full particulars of the service to any medical practitioner.

PURCHASE TAX ON DRUGS, INSTRUMENTS, AND CARS

The 1945 Annual Conference asked that the purchase tax be removed from all doctors' legitimate prescriptions, drugs ordered in bulk for dispensing, surgical instruments, and motor cars. This question was taken up with the Treasury by the Council of the B.M.A., but without success. The view of the Treasury is that there is no provision in the law which would enable goods subject to purchase tax to be exempted from tax on the ground that they have been sold to particular persons or are to be used for a particular purpose. If an exception of this kind were made it would be impossible to draw a line. It has accordingly been regarded as an essential principle of the tax that there should be no classes of consumers privileged to buy chargeable goods free of tax, and in these circumstances the Treasury regretted that it was not possible to give doctors any relief from purchase tax.

NATIONAL INSURANCE DEFENCE TRUST

The Balance Sheet and Statement of Expenditure and Income of the Trust for the year ending December 31, 1945, are being sent to every Panel Committee.

An appeal has been made to every Panel Committee that is not already doing so to take immediate action to implement the Trustees' decision to increase the objective amount of the fund to one million pounds. The Trustees have also asked every Panel Committee to undertake to make available to the Trust, on demand, all the funds at its disposal over and above the amount required for current administrative expenditure.

Emergency Guarantee Fund

The establishment by the Council of the B.M.A. of an Emergency Guarantee Fund should, by now, be known to every medical practitioner in the country. The Fund came into being as the result of proposals by the Trustees of the N.I.D.T., who had been giving consideration to the best method of building up a fund to be used if the Government proposals for a National Health Service proved unacceptable to the profession and if the Council of the B.M.A. decided to recommend practitioners not to accept service.

In 1942 it was decided that the objective of the N.I.D.T. should be one million pounds. But it was realized that, at the present rate of progress, it was likely to be many years before this amount was reached. At present the Trust Fund amounts to just over £300,000 and it was thought that insurance practitioners should not be asked to do more without a corresponding appeal to the whole profession. So the question of a fund to which the whole profession should be asked to contribute was raised.

On the recommendation of the Trustees, through the Insurance Acts Committee, the Council decided in February:

(a) That an Emergency Guarantee Fund be established for the whole of the medical profession;

(b) that the proposed Emergency Guarantee Fund be composed of pre-determined contributions from the British Medical Association and the National Insurance Defence Trust, together with the amounts guaranteed by individual members of the profession;

(c) that the amounts so guaranteed be called in only on the decision of the Council;

(d) that the unexpended portion of the total Fund be refunded to the B.M.A., the N.I.D.T., and individual guarantors in proportion to the amount contributed;

(e) that each individual member of the profession be asked to guarantee a minimum contribution of £25.

Under (b) the Council of the B.M.A. and the Trustees of the N.I.D.T. have each guaranteed an initial amount of £100,000. The resolution of the Special Conference on April 30, that the N.I.D.T. guarantee should be increased to £200,000, has been noted.

The Emergency Guarantee Fund will be administered by seventeen Trustees, representative of the Council of the B.M.A., the N.I.D.T., and the Negotiating Committee. Eleven of the seventeen are Trustees of the N.I.D.T. The whole of the administrative expenditure will be borne equally by the B.M.A. and the N.I.D.T.

The fund will be in two parts:

Part A.—To be used in any way which the Trustees deem advisable in the interests of the profession, where the Government plans are considered to conflict with those interests.

Part B.—To be used for all the purposes of Part A and, in addition, as far as funds permit, at the discretion of the Trustees to afford help to practitioners who suffer hardship as a result of their loyalty to the cause of the profession.

The B.M.A.'s guarantee is to Part A, as the Association is debarred by its constitution from contributing to Part B.

SCOTLAND

This particular section deals with matters which are of a purely domestic Scottish nature and which have not been referred to in the preceding paragraphs, or upon which action in England and Wales differs from that taken in Scotland.

Chairman and Deputy Chairman

Dr. J. F. Lambie (Glasgow) and Dr. A. F. Wilkie Millar (Edinburgh) were reappointed Chairman and Deputy Chairman of the Insurance Acts Scottish Subcommittee respectively for session 1945-6.

Advisory Distribution Committee of the Department of Health

The following were nominated as representatives of the Insurance Acts Subcommittee on the Advisory Distribution Committee: Dr. J. F. Lambie, Dr. A. F. Wilkie Millar, Dr. Robert Bruce, and Dr. R. W. Craig, Scottish Secretary.

Medical Advisory Committee

The Department of Health was informed that all members of the Insurance Acts Subcommittee would be available for service on Medical Advisory Committees constituted under the Medical Benefit Regulations (Scotland), 1938.

Rural Practitioners Subcommittee

The Rural Practitioners Subcommittee was reconstituted, with Dr. Robert Bruce (Aberdeenshire) as Chairman.

The main business dealt with by the Rural Practitioners Subcommittee was the remuneration of dispensing doctors in Scotland, in view of the increase given to dispensing doctors in England and Wales. Correspondence with the Department of Health for Scotland on the subject was considered and there-

after it was resolved that approval be given to the suggestion that an increase of 4d. per person be made in respect of 1946 instead of 1d. per person in 1945 and 3d. in 1946. The question of a Scottish capitation fee for dispensing doctors in place of the existing areal arrangement is at present under consideration.

Consideration was also given to the type of Health Centre likely to prove most useful in rural areas. The views of rural practitioners on the matter are being obtained. The Subcommittee noted with satisfaction the opinion expressed in paragraph 16 of the Report of the Inter-Departmental Committee on the Remuneration of General Practitioners regarding the average income of rural and urban practices, and agreed that the various mileage schemes of Panel Committees in Scotland be examined.

References to Tuberculosis Officers

The statement in the Annual Report of the Insurance Acts Committee for 1945 was considered. It was agreed to express the opinion that the Scottish Subcommittee was quite satisfied with the present position in Scotland.

Scottish Scheme for the Protection of Practices of Absentee Practitioners

Two joint meetings of representatives of the Insurance Acts Subcommittee, of the Scottish Association of Insurance Committees, and of the Department of Health were held when the recommendations to be made to the Department of Health regarding the amendments of Regulation 17 of the Medical Benefit Regulations (Scotland), 1938, and the Amendments of the Distribution and Allocation Schemes were considered. These amendments were necessary in view of the following provision in the Model Scheme for Scotland:

"At an agreed date after the end of the emergency the Insurance Committee shall issue blank Medical Cards to all persons whose names do not appear on the closed list of an insurance practitioner, in order that a fresh selection of practitioner be made."

On Dec. 11, 1945, a circular was issued to the Secretaries of Panel Committees in Scotland setting forth the agreed procedure.

Proposal for a National Health Service for Scotland

At a meeting held on Nov. 9, 1945, the Subcommittee considered the findings of the Special Scottish Representative Meeting held in June, 1945, in relation to the proposed National Health Service for Scotland. A document setting forth the main decisions of the various Committees of the Association in Scotland and other interested bodies was submitted and discussed. In general the Subcommittee agreed with the views expressed by the Scottish Committee.

At a meeting held on April 11, 1946, the Report of the Council of the B.M.A. on the Government's National Health Service Bill was considered, including the recommendations of the Insurance Acts Committee there anent. The Subcommittee, by a large majority, decided that the right to buy and sell practices be retained—that remuneration should be by capitation fees, and that the effective distribution of doctors should be secured by means of attraction and not by direction. In general, the terms of the report of the Council were approved.

Maternity Services (Scotland) Act, 1937

It was reported that the Department of Health had asked for the views of the Scottish Committee as to whether an insured woman applying for services under the Act should be required, as hitherto, to select her insurance doctor if he had agreed to render services under the Scheme. It was further reported that the Scottish Committee had expressed the view that an insured woman should have free choice of doctor, but that the opinion of the Insurance Acts Subcommittee be obtained. The Subcommittee endorsed the opinion of the Scottish Committee.

Estimated Number of Insured Persons in Scotland

The Subcommittee is informed that the number of insured persons in Scotland for whom payment has been made in respect of medical benefit for 1945 was 2,052,000. This was an addition of 44,000 to the provisional estimate of 2,008,000.

HEARD AT HEADQUARTERS

Full Calendar

After a brief interval for staff holidays and for taking break after the Annual Representative Meeting, Headquarters is piling up a busy time-table. During October the sessions of committees seem to be almost continuous. In addition to a special meeting of the Council in that month and the annual conference of Local Medical and Panel Committees, no fewer than fourteen standing committees of the Association are to meet as well as three group committees, six special committees, and two liaison committees. Liaison committees or joint committees with other organizations are becoming an important feature of headquarters activities. At present there are four of them, the other partners being respectively the Trades Union Congress, the British Hospitals Association, the Royal College of Nursing, and the Pharmaceutical Society. In addition to all these committees which have their dates well fixed in advance there are six or seven others in the offing whose meetings are arranged as required. All the indications point to a year of unprecedented medico-political activity. The direction which such activity may take is, of course, still uncertain. The turn of events may bring less or more work than is a present forecast, but most probably more. But Headquarters is in good heart and shape, and the Secretariat of the Association has been enlarged not a moment too soon.

Doctors' New Cars

It is distressing to receive from the British Motor Trade Association a complaint that some doctors—it is to be hoped the number is very small—have bought new cars which they do not need and have sold them again at inflated prices. The general body of doctors have enough difficulties on their hands in these days in getting and maintaining cars for their ordinary professional use without having the pitch queered for them by profiteers of this description within their own ranks. The car manufacturers and distributors, ever since the abolition of the Government licence system, have done their best to ensure that the legitimate demands of doctors are met as expeditiously as possible, but if doctors make use of their professional position to get priority deliveries of new cars which they do not need and do not intend to use, the result is to feed the black market, to maintain present inflationary tendencies, to add to the difficulties particularly of practitioners recently demobilized from the Forces, and to cast suspicion upon the whole profession. On a slightly less reprehensible in this present time of scarcity is the action of the doctor who obtains priority delivery of a new car when he already has a car which is reasonably roadworthy. The British Motor Trade Association states that it has brought in a requirement that all purchasers of new cars shall sign an undertaking not to dispose of them for six months. This sounds reasonable enough, and the assurance is repeated that the manufacturers and traders will do their utmost to get the earliest possible deliveries to doctors genuinely requiring new cars.

REMUNERATION OF DENTAL PRACTITIONERS

The Minister of Health and the Secretary of State for Scotland have appointed a committee of nine members, including four dentists, to recommend "what ought to be the range of total professional income of a registered dental practitioner in any publicly organized service of general dental practice." The full terms of reference are similar to those of the committee, of which Sir Will Spens is chairman, which has recently submitted a report on the remuneration of general medical practitioners (Cmd. 6180), are "to consider after obtaining whatever information and evidence it thinks fit what ought to be the range of total professional income of a registered dental practitioner in any publicly organized service of general dental practice; to consider this with due regard to what have been the normal financial expectations of general dental practice in the past, and to the desirability of maintaining in the future the proper social and economic status of general dental practice and its power to attract a suitable type of recruit to the profession and to make recommendations."

The Minister of Health has written to the chairman of the committee, Sir Will Spens, regarding the interpretation of the terms of reference. It had been suggested that the inclusion of the word

with due regard to what have been the normal financial expectations of general dental practice in the past" might in some way and the committee to base their recommendations on the past earnings of dentists. On this the Minister writes: "I can assure you—though I know you already fully understand the position—that any such conclusion is wholly mistaken. It is obvious that in quiring into this question of remuneration the committee would have to ascertain what dentists have, in fact, been earning in the past, and the exclusion of the words to which I have referred would only serve to throw doubt on this. But that would not mean that making their recommendations for the future they were in any way limited by their knowledge of what dentists have been earning in the past. As to this the terms of reference make it clear that the committee would have to have regard to the desirability of maintaining in the future the proper social and economic status of general dental practice and its power to attract a suitable type of recruit to the profession and it would be wholly a matter for the committee to say what, in their view, the remuneration of dentists should be in order to achieve these objects. As you know, words similar to the words in question have already appeared in the terms of reference of the committee over which you also presided, which inquired into the remuneration of general medical practitioners; and I think you will agree that that committee did not feel themselves limited in any way by the words."

MR. BEVAN ON THE HEALTH BILL

The annual luncheon of the Society of Medical Officers of Health was held in London on Sept. 20, the President, Prof. Johnstone Jervis, in the chair. The principal guest was the Minister of Health, the Rt. Hon. Aneurin Bevan.

Mr. BEVAN, in proposing the health of the Society, said that he would not be doing justice to his opportunity if he did not take advantage of the occasion to pay, on behalf of his Ministry, a very deep and sincere tribute to the work of the medical officers of health in Great Britain during the years of his war. They had done a most remarkable administrative job. He did not wish to apportion any awards for the comparatively good state of the nation's health, but it was an astonishing fact, and a tribute to all who had contributed towards it, that we were more immune from epidemics than at the end of the 1914-18 war.

The National Health Scheme

The House of Commons, Mr. Bevan continued, had passed the Health Services Bill with its main structure unaltered, though there had been some modifications in detail—a number of improvements made at the suggestion of colleagues in the House of Commons and of those representatives of the medical profession "whom I met from time to time in very amiable circumstances in the course of the passage of the Bill." He must not be too optimistic, because it had still to go to the House of Lords, and a number of very eminent persons were ready to pounce upon it there, but he did not anticipate any important alteration in the main principles. It would be unfortunate if a Bill of this sort should be the occasion for any misunderstanding or friction between the two Houses, and he was convinced that the House of Commons, having passed the Bill with its main structure unaltered, could look for the same co-operation on this very important measure as it had received on every measure in the course of the last twelve months.

When the Bill became law the main task would begin, the task of the administrators, which would be the harder task, that of clothing the structure with flesh in order to make it the best health service in the world. This would require the energies of the medical profession and not least those of medical officers of health. "The controversy has not completely died down, the armies are still arrayed on the battlefield, but they are becoming, I think, increasingly listless, convinced that the issue has really been determined, and that all we need do now is to get round the peace conference table with a little more fertility than is being achieved in other places." It was necessary to draft regulations, and he frankly confessed that it would be impossible to frame the regulations effectively and to administer them properly without the co-operation of the representative organizations of the medical profession in

all its branches. Therefore he was hoping that when the main battle had been determined, and when the representatives of the people had made up their minds what they wanted to do, all loyal citizens would co-operate in carrying out the will of the people so expressed. Any other course would spell anarchy and division, and there were too many urgent tasks awaiting them at the moment and for some time to come to allow them to fritter away their energies in internecine strife.

The main criticisms levelled against the scheme were to some extent contradictory, Mr. Bevan continued. A great publicist. "A well-known friend of the medical profession," had been stating that in his opinion the scheme provided far too much self-government for the doctors and he thought it disastrous that so conservatively minded a profession should be entrusted with so much self-government of its own affairs. Another critic, who was a medical politician, took the opposite view and said that the whole scheme made the Minister of Health a complete tyrant and that the doctors had no effective say at all in the management of their profession. "You can take one of those points of view—indeed, I am quite satisfied from what I have seen in the *British Medical Journal* that you can take both." It had been his purpose to follow with fidelity the principle laid down by Lord Dawson of Penn—namely, to create an apparatus of medicine, and then to leave the profession to exercise it in freedom and independence. It was for "us" to decide ultimately what the apparatus should be, but certainly they would be overstepping the frontiers of their rights if they attempted to interfere, to guide, or even to advise as to how members of the profession should use that apparatus when it was put in their hands.

"We are facing a very critical year. As soon as the Bill becomes law we have to face the task of carrying it out so that the whole machine will be ready to come into operation by April 1, 1948. It is a year of hard work. It is our intention to try to use, so far as they will allow themselves to be used, all the vast body of health workers who have built up such a splendid tradition. We do not want to discard in any way the services of those who have accumulated so much experience. I am deeply conscious of the fact that one of the great dangers of a Government service is over-centralization, and the wider the decentralization we can bring about the better for everybody. Therefore our first task will be to get the regional organizations established and then to get the management committees set up. Then, with the co-operation of the medical profession, we hope to get the medical councils established in the districts for the proper organization and supervision of the services."

The PRESIDENT, in response, said that they had admired the way in which the Minister had piloted this measure and was bringing it to port. To say that the measure was perfect would be an appraisal beyond its merits, but it was incontestably the greatest thing that had been done in social legislation in this or in any other country. The Society felt that the measure should have a fair chance to justify itself. There was nothing to be gained by adopting an unfriendly or hostile attitude towards it, and so far as he and his colleagues were concerned they might be relied upon to play the part allotted to them in an earnest desire to carry it to a successful issue. Prof. Jervis added that he himself had spent thirty years in the Local Government service, and next year he "laid down his tools" and went into obscurity. But before he went, in that gathering of friends and colleagues, he wanted to pay tribute to a very great British institution—Local Government. If the health services of this country had attained a high degree of perfection the credit was in great measure due to the initiative, enterprise, and hard work of local authorities. Local Government was the custodian of democracy. It was because of this that he deplored the present tendency of Government Departments to encroach upon the province and powers of these authorities.

Dentists throughout Great Britain are being advised by the Joint Advisory Dental Council to tell insured patients that their "dental letters" cannot be accepted, and that no contract can be entered into with the Government or Approved Societies, but that patients can be treated privately—on the scale of fees recommended by the Council which has been rejected by the Ministry of National Insurance. The Joint Advisory Dental Council on Sept. 13 announced almost unanimous support from the dentists in 26 London boroughs of its policy in the dispute over the new scale of fees payable under the National Health Insurance Acts.

Correspondence

Freedom and Financial Security

SIR,—To an inarticulate onlooker at various meetings and discussions, and after assiduously reading the voluminous correspondence appearing in the *Journal*, it is becoming abundantly clear that out of the welter of proposals, resolutions, etc., nothing has crystallized which will command universal support, so presenting our somewhat autocratic Minister of Health with a united front, and a determination that a more accommodating spirit is required if he is to enlist the willing co-operation of those whom he is at present coercing.

Should Mr. Bevan be so unwise as to offer an inadequate salary or capitation fee, then our ranks would be closed. This is the only issue on which we are united, but our astute Minister has no intention of falling into the error of promoting such a unity. It is likely that the initial remuneration will be up to expectations—in other words, the bait will be attractive enough for the other unpleasant features of the scheme to be swallowed, hook, line, and sinker.

The profession, whether we like to think so or not, is essentially concerned with making as good a living as possible out of its ministrations to ailing humanity. Those of us who cherish the thoughts of professional freedom, and of a way of life, will inevitably fall into line with our more materialistic brethren, justifying our action on the score of domestic commitments and other financial burdens which general practitioners find themselves saddled with. The élite among us may prefer to remain outside the scheme, feeling sure that their superior abilities will command a ready market for their services.

At this critical juncture we should be sufficiently frank with ourselves to admit that, however much we may think of professional freedom and independence, financial security is the only plank on which we will make a stand. It then becomes necessary to add that if we will not fight for the things we believe in, then quite properly we suffer the fate of those who, when the occasion arises, fail to adopt this manly expression of their convictions.—I am, etc.,

Blakeney, Glos.

J. M. ASHTON.

Tyres for Doctors' Cars

SIR,—Reading the correspondence in the *Journal* makes me very much aware of the difficulties placed in the way of the doctor by the present Government with its many restrictions—and despite its dissatisfaction with the country's existing medical arrangements. In my own case the difficulty is the inability to obtain tyres for my car. My present ones are nine years old and have lasted so long because I passed nearly six years of my medical career in the Services. They are now down to the canvas and are a danger, for they may burst any time. I applied to the petrol control officer of my district for the necessary form of application for tyres, and hearing nothing for three weeks I telephoned him and eventually the form arrived. This was completed and handed in to my garage, and I have been waiting nearly five weeks but still no tyres have arrived; either can I be given any date when I may expect them. I am delayed almost daily, due to punctures caused by the sharp flints on the country roads that I am compelled to use in this type of practice, and my patients suffer in consequence.

What is the use of all these priority forms, permits, etc., if the material isn't available? I am quite ready to pay for my tyres. Can't the Government do something really helpful for the frustrated doctor and see that he gets his tyres when he needs them, and help and not handicap him?—I am, etc.,

COUNTRY DOCTOR.

A deputation from the National Veterinary Medical Association, representing over 1,000 members throughout the country, visited the Ministry of Agriculture on Sept. 20 to oppose the Ministry's scales of pay for technical officers of its animal health division. The Association holds that the salary of the Ministry's chief veterinary officer should be similar to that of the chief medical officer of the Ministry of Health, and that the pay of other Government grades should be fixed accordingly.

Association Notices

Branch and Division Meetings to be Held

WILTS BRANCH

At the Mental Hospital, Devizes, Sunday, Sept. 29, 3 p.m.
Agenda: Discussion on new Insurance Capitation Fee, etc.

POSTGRADUATE NEWS

The Fellowship of Medicine announces: (1) Week-end course Ear, Nose, and Throat Diseases (for general practitioners) all day Saturday and Sunday, Sept. 28 and 29, at Metropolitan Ear, Nose and Throat Hospital; (2) course in gynaecology, daily, Oct. 7 to 11 at Samaritan and Soho Hospital; (3) week-end course in medicine and surgery (for general practitioners), all day Saturday and Sunday Oct. 12 and 13, at Royal Hospital, Richmond, Surrey; (4) Neurosurgery (suitable for F.R.C.S. (Final) candidates), lectures on Mondays, Tuesdays, and Wednesdays, at 2.30 p.m. from Oct. 20 to 29, at West End Hospital for Nervous Diseases.

The Edinburgh Postgraduate Board for Medicine has arranged series of open lectures on subjects of wide biological significance to be held in the West Medical Theatre of Edinburgh Royal Infirmary on Tuesdays, Oct. 15 and 29, Nov. 12 and 26, and Dec. 10, at 5 p.m. The lectures are being held in connexion with the postgraduate courses in medicine and surgery and all graduates and students are invited.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Mr. Lamont: Common Disabilities of the Shoulder Joint.

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre Edinburgh Royal Infirmary, Thurs., 4.30 p.m. Mr. J. R. Cameron: Congenital Anomalies of the Kidney.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—Wed. 8 p.m. Mr. John Foster: An Ophthalmic Tour of Switzerland.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Orthopaedics.—Tues., 8.30 p.m., Presidential Address by Mr. V. H. Ellis: Injuries of the Cervical Spine.

Section of History of Medicine.—Wed., 2.30 p.m., Presidential Address by Sir Arthur MacNalty: The Evolution of English Preventive Medicine.

Section of Neurology.—Thurs., 8 p.m., Presidential Address by Dr. Douglas McAlpine: The Problem of Disseminated Sclerosis.

THE LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C., Tues., 5 p.m. Dr. J. E. M. Wigley: Eczema. Thurs., 5 p.m. Dr. G. Bamber: The Misuse of Antiseptics and other Medicaments in Dermatology.

APPOINTMENTS

ROYAL SHEFFIELD INFIRMARY AND HOSPITAL.—Biochemist, A. Jordan, M.B. Honorary appointments. Physicians, Profs. C. H. Stuart-Harris, M.D. F.R.C.P., and E. J. Wayne, M.D. F.R.C.P. Orthopaedic Surgeon, A. Dornan, F.R.C.S. Ophthalmic Surgeon, Edith Hatherley, M.B., D.O.M.S. Dermatologist, I. B. Sneddon, M.B., M.R.C.P. Radiologist, T. Lodge, M.B. F.R.C. Surgeon to Ear, Nose, and Throat Department, J. D. Gray, F.R.C.S.

RUSSELL, P. M. G., F.R.C.S., M.R.C.O.G., Surgeon in charge Obstetric and Gynaecological Department, Royal Devon and Exeter Hospital.

STOKOE, J., M.D., D.P.H., Medical Officer of Health, Borough of Scarborough.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

AIDNEY.—On Sept. 17, 1946, at Queen Elizabeth Hospital, Birmingham: Constance Aidney, M.B., Ch.B. (née Hughes), wife of J. Denis Aidney, a daughter—Diane Lisbeth.

ANDERSON.—On Sept. 13, 1946, to Doris (née Twiddy, S.R.N., S.C.M.), wife of Dr. C. A. Anderson, 36 Belmont Road, Uxbridge, Middlesex, a daughter.

COLLINS.—On August 23, 1946, at Nelson, New Zealand, to Joan (née Williams) M.B., Ch.B., wife of H. C. Collins, a daughter.

LOW.—On Sept. 20, 1946, at Windsor, to Wendy, wife of Dr. W. J. Low, Flackwell Heath, Bucks, a son.

SILCOCK.—On Sept. 16, 1946, at the Radcliffe Infirmary, Oxford, to Kay (née Carson), wife of Dr. A. R. Silcock, a daughter—Carolyn Mary.

MARRIAGE

ROBERTS—HOLLOWAY.—On Sept. 2, 1946, at Worcester, Keith Danford Roberts, M.B., M.R.C.S., to Margaret Evelyn Holloway, S.R.N.

The twenty-ninth annual meeting of the National Association of Insurance Committees will be held in the Dome, Brighton, on Oct. 3 and 4. On the second day Mr. C. W. Key, M.P., Parliamentary Secretary to the Ministry of Health, will give an address.

BRITISH MEDICAL JOURNAL

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MEDICAL EXPERIENCES IN JAPANESE CAPTIVITY

BY

E. E. DUNLOP, M.S., F.R.C.S., Lieut.-Col., A.A.M.C.

[WITH PHOTOGRAPHURE PLATE]

The fruits of experience as prisoners of war in Japanese hands, though abundant, were exceedingly bitter. Herculean tasks were enforced upon semi-starved and enfeebled captives—for example, the construction of the Burma-Siam railway by slave labour with primitive hand tools. To medical personnel fell the scarcely less arduous task of clearing the Augean stables of sickness. The crude slave-hovels used for the accommodation of prisoners were euphemistically termed "hospitals" when allotted to the sick, and were provided with some slender medical staff. During the days of darkest savagery they were little more than crowded pest-houses where sick were conveniently segregated, though by no means allowed to die in peace.

I have been asked to record briefly some salient impressions of three and a half years of imprisonment in Java and Siam, involving prisoner-of-war command of a number of camps and hospitals, including railway construction camps. The medical problems of the scattered prisoner-of-war groups in the Far East, and the struggles of the medical services against great odds, are of historical interest. The circumstances militated against research or far-reaching discovery but sharpened the unaided senses to greater clinical acuity and necessitated resource and ingenuity of a high degree. It is obvious that many prisoners of war will suffer for the remainder of their lives from disabilities related to their grim ordeal. Those who witnessed their fortitude and unconquerable spirit under conditions of great suffering, slow starvation, and physical wretchedness hope that their disabilities will be fully comprehended and will receive generous consideration.

Conquest of Java

In Java, as in other conquered regions, medical personnel together with sick and wounded shared in the general programme of attrition designed to teach a sharp lesson to "criminals" and "rabble" who had dared to oppose the Japanese Army. All the inmates of an Allied general hospital under my command were ejected at a few hours' notice, and the majority forcibly marched to a fantastically overcrowded native gaol with negligible medical arrangements, where calculated humiliation, gross under-feeding, and savage regimentation were the daily routine.

Only a few medical stores, widely dispersed and concealed, escaped confiscation. Defiance of international conventions was emphasized by the confiscation of Red Cross brassards, along with badges of rank, unit or service ribbons, decorations, etc. Under compulsion all Red Cross markings were obliterated. Mass violence and beatings and some untidy public executions enforced obedience, under vigorous protest. Uniform clipping of the hair to the scalp was required, and the extravagant mass "salutations" enforced by the humblest of Japanese soldiers produced spectacles not devoid of Gilbertian humour. Medical officers and padres spent considerable time and energy in the task of instructing in Japanese drill and ceremony. There was some alleviation of the harshness of treatment in the British P.O.W. camp under my administration at Bandoeng, where for a few months the prisoners carried on highly organized educational and recreational activity in the teeth of difficulties and misunderstandings.

Malnutrition and deficiency diseases were rife within six months, pellagra being excessively common and associated in approximately one-third of all troops with distressing burning of the feet. The ration at this time amounted to about 2,000 calories daily. While much more adequate than that in some later camps, it consisted largely of low-grade rice or dried potatoes, and was thus markedly deficient in protein, fats, and vitamins, especially of the B complex. The Japanese paid little heed to protests, carefully documented requests, or demonstrations of cases, but following the official acceptance of the captives as "prisoners of war" meagre pay for work was introduced. This pay together with some fortunate clandestine negotiation for money on credit enabled us to augment the diet of the sick with purchased foodstuffs according to need.

The Burma-Siam Railway

Late in 1942 the movement of Allied prisoners to Lower Burma and Siam commenced. Soon some 60,000 captives and a larger force of Asiatic coolies were given the gigantic task of cleaving a railway through 400 kilometres of jungle-clothed mountains and oppressive valleys between Thanbyuzayat (Burma) and Bampton (Siam). By the end of 1943 the main task was completed by the enfeebled remnant of the decimated force. Some 15,000 prisoners together with uncounted scores of thousands of Asiatic coolies had perished. While this major tragedy was largely due to calculated official brutality and inhumanity, Japanese medical officers contributed in lending what zeal they possessed to the support of medical enormity in search of further labourers, rather than in a co-ordinated medical plan of evacuation, hospital services, and supply of medical stores.

Indiscriminate treatment of prisoners led to my being placed in command of a working force of Java captives transferred as packed human freight in the holds of a tramp to Singapore, and subsequently by rail for four days in box-trucks to Siam, where in due course they marched into the Konyu-Hintok section of the line in dense jungle about the Kwa-Noi river. Some six months of command of working camps mixed with endless medical work and peripatetic surgery was followed by experience of command of jungle hospitals, including Kinsayok, Tarsau, and Chungkai, before I was transferred in June, 1944, with large numbers of sick of the Siam force to Nakom Patom. There I enjoyed the privilege of working under Lieut.-Col. A. E. Coates, A.A.M.C., as O.C. surgical section of this large hospital, devoted to men still broken in health by the railway construction in Burma and Siam. The grimmest battle for the lives of men had already been fought in the crudity of jungle areas, and the attitude of the Japanese left little doubt that improved conditions bore some relationship to the changed state of the war and to world knowledge of the treatment of prisoners.

Working Camps

During railway construction men worked under savage pressure up to sixteen hours a day for months without rest, so that they rarely saw their squalid bums and tents in daylight. Amid thorny jungle and rotting corruption, with ceaseless monsoon rain lashing their bodies and soaking their miserable accommodation, large numbers were soon bootless, with practically no bedding.

and reduced to rags about their loins. The heat was in general excessive, and well-nigh intolerable to bare feet in rock cuttings, but the greatest load on men's spirits was the pouring monsoon rain, converting the whole area into a quagmire of evil-smelling mud.

Pellagra diarrhoea, irritable bladders, and massed overcrowding interrupted rest, and the urge was often uncontrollable as men floundered out into darkness, rain, and mud. Hunger, food deficiency diseases, malaria, dysentery, ulcers, and skin sepsis, and extreme exhaustion were woven into a dull fabric of suffering rent here and there by sharp outbreaks of cholera. Whatever reserves of physical strength or spirit a man might possess were in the long run exploited, so that the stronger suffered longer, only to pay the same relentless tribute in loss of life and broken health.

Apart from some capricious inoculation measures, preventive medicine, hygiene, and sanitation were negligible. Men and tools were grudgingly spared for the most primitive sanitary measures. Such materials as antimalarial oil or chloride of lime were absent or pathetically scarce. Often there were insufficient containers to supply boiled water. Until the belated supply of limited American Red Cross stores in mid-1944, medical supplies other than quinine were farcical. A typical monthly issue for a thousand men, mostly sick, consisted of 6 to 12 bandages, a small piece of gauze or cloth, 1 or 2 ounces of spirit or iodine solution, and a few dozen assorted tablets of dubious value. Non-expendable stores such as instruments and ward equipment, though freely confiscated in the early months, were afterwards only possessed by cunning or ingenuity, since no issues were made. Allied medical personnel were distributed with scant regard to either incidence of sickness or qualifications on a scale of about 1% of strength—doctors and orderlies combined—for all purposes. Where by faulty distribution the number exceeded this slender provision, as in Konyu and Hintok camps, they were compelled to do routine manual work and the sick were deprived of their services.

"Most Shameful Deed"

As the working force deteriorated under semi-starvation, diseases, and illimitable exhaustion, ferocious pressure was exerted to secure from sick and dying men increased fortitude in the Japanese Imperial cause. As sickness was regarded as a crime, the sick were given no pay and a reduced ration scale. (Col. Nakomura on assuming command of prisoners of war in Siam in June, 1943: "Those who fail in charge by lack of health is regarded in Japanese Army as most shameful deed.")

Relentless insistence upon fixed figures of workmen daily, if defied, led to the sick being turned out of hospital with indiscriminate violence. Sick parades were endless, since the wretched condition of the men required daily assessment and comparison. They dragged in up to midnight or beyond, and attendance was again needed at works parades before dawn. Japanese N.C.O.s and privates frequently overruled medical officers and cut short argument with violence.

In the Hintok area works parades were a deplorable spectacle, featuring scores of men tottering with the support of sticks, or even being carried out bodily to meet fixed figures. Men unable to stand were carried, to work in a lying or sitting position. During the grimmer months of railway construction the sick were deliberately persecuted by works supervisors. For example, men with horribly festering bare feet were forced to work on sharp rocks or in thorny jungle hauling logs; disabling ulcers were struck or kicked; those collapsing were savagely handled; and sufferers from diarrhoea and dysentery were compelled to foul themselves working.

The engineer officer of this area, Lieut. Hirota, led his men in ferocity by personal example, and on occasion flogging of the sick was followed by their demise. Lieut. Osuki, P.O.W. camp commander, stated that he did not care if sick men died, since "working percentage better." Lieut.-Col. Ishii, in charge of 13,000 prisoners, when shown emaciated dysentery sufferers devoid of drugs, commented on the treatment by no food for two to three days with loud laughter and the retort: "In future no food one week, better!" The pungent protests of medical officers against these conditions need hardly be instanced. Capricious evacuations of sick were by casual hitch-hiking on passing lorries or barges. The weak supported or carried the

weaker. Frequently days were spent in transit with exposure and little food. Barges arrived at jungle hospitals with both the quick and the dead in the stench of gangrene and dysentery.

Jungle Hospitals

Typical of early base hospitals heroically evolved under the greatest difficulties in Burma were Thanbyuzayat, Lieut.-Col. T. Hamilton, A.A.M.C.; and 55-Kilo hospital, Lieut.-Col. A. E. Coates, A.A.M.C. In Siam, Tarsau, Lieut.-Col. W. G. Harvey, R.A.M.C.; Takannoun, Major T. M. Pemberton, R.A.M.C.; Chungkai, Majors Reed, R.A.M.C., D. Black, I.M.S., and Lieut.-Col. J. St. C. Barrett, R.A.M.C.; Kanburi, Lieut.-Col. J. Malcolm, R.A.M.C.; Tamarkan, Major A. A. Moon, A.A.M.C.; and Non Pladuk, Major Smythe, R.A.M.C.

The conditions at Tarsau and Chungkai hospitals at the time I was first associated with them are illustrative. Each contained a constant population of approximately 2,500 very sick men as a citadel within a jungle city of sickness. The sick lay massed together on bamboo staging in decrepit collapsing huts. Bedding and hospital utensils were largely non-existent. No instruments and very few medicines were supplied by the Japanese. Lack of tools, materials, and fit men combined with overcrowding to create a nauseating lack of hygiene. Bugs, lice, and almost universal scabies infection produced minor torments and florid skin sepsis. Men were too weak to keep themselves clean, and there were few orderlies, or even containers for water.

TABLE I.—Chungkai P.O.W. Hospital Statistics

Disease	1943			1944		
	Total Treated	Died	Case Mortality Rate %	Total Treated	Died	Case Mortality Rate %
Malaria	3,336	67	2.0	1,753	13	0.74
N.Y.D.	374	—	Nil	142	—	—
Bacillary dysentery ..	734	129	17.5	1,339	—	1.44
Amoebic dysentery ..	1,309	266	20.3	1,113	46	4.13
Enteritis	565	19	1.6	414	12	2.92
Cholera	134	54	40.3	8	—	—
Diphtheria	88	14	15.9	—	—	—
Lobar pneumonia ..	26	23	88.5	13	6	46.15
Bronchopneumonia ..	32	25	78.1	6	3	50.0
Bronchitis	32	—	Nil	47	—	—
Avitaminosis (mixed) ..	774	257	34.5	397	61	15.36
Pellagra	189	110	58.2	62	10	16.1
Beriberi	335	170	50.7	100	11	11.0
Tropical ulcer	1,353	37	2.7	1,129	—	—
Other skin diseases ..	851	—	Nil	674	—	—
All other diseases ..	1,496	89	5.9	795	24	3.02
Grand total ..	11,572	1,237	10.7	6,793	188	2.70

The condition of tropical ulcer patients was pitiable, and these wards stank of the hospital gangrene of pre-Listerian days. Rags, paper, leaves, and locally picked kapok and cotton were employed as dressings. The blowflies hanging in clouds about the patients produced maggot infections with far from benign effect. Dysentery and avitaminosis wards were scarcely less distressing. Some crude operating and pathological facilities had arisen from P.O.W. enterprise. With the easing in the intolerable pressure for workmen following the completion of the railway, more hands were available to help the sick. In the teeth of almost insuperable difficulties, these crude hospitals were equipped, financed, and carried on to signal triumphs almost entirely from P.O.W. resources. Discipline, supremely high morale, and the pooling of resources in foodstuffs, money, materials, and human ability were even more important than purely medical treatment. A duck's egg daily might be all that was needed to turn the scales of a man's life. Herculean labours improved sanitation and accommodation. Patients were trained as medical orderlies, others were employed in the mass production of improvised equipment, even if they were only able to whittle with a knife on their beds. Sick-welfare money from various national and unit sources was directed into a common pool, and used with the utmost economy in a planned series of standard special diets, or in the clandestine purchase of essential drugs from the Siamese. For example, at Chungkai from January to April of 1944 we raised 38,000 dollars from prisoners' meagre resources, largely from the officers' pay of 30 dollars a month. (On capitulation of the Japanese the rate of exchange was 60 dollars to one English

pound.) In addition, friendly sources outside contributed 3,000 dollars a month. Emetine, iodoform, and other drugs were obtained by the risky venture of selling Nipponese quinine. Emetine cost 35 dollars for 1 grain (65 mg.), and iodoform for tropical ulcers several hundred dollars a bottle.

The relationship of equipment to special problems was well illustrated by the great fall in septic cross-infection after the introduction of a rigid "forceps" technique, employing large irrigating cans and small portable sterilizers, made from the mess-tins of dead men and heated by charcoal stoves devised from biscuit tins and mud. Even this simple equipment was extremely hard to obtain; and the striking benefits of mass disinfection and scabies treatment involved stealing petrol drums to make steam disinfectors. Intensive surgical measures were employed to drain pus, remove sequestra, and graft raw areas; amputations were performed where necessary. The steep fall in mortality at this stage was most gratifying.

Nakom Patom P.O.W. Hospital

This huge hospital situated on the paddy-fields some twenty miles (32 km.) from Bangkok contained as many as 8,000 sick during its most active period. Little was provided for prisoners other than the buildings and some Red Cross stores, but with

ordinary experience as yaws and leprosy. The main diseases are shown in tabular form. Chungkai P.O.W. hospital statistics (Table I), kept by Major A. L. Dunlop, R.A.M.C., are self-explanatory. Where multiple diseases were present only the main disease on admission was recorded. Australian figures (Table II) are taken for my seven working camps, since the records I retain of other nationals are less complete. The average camp population from which the Australian casualties quoted were drawn was approximately 1,000. Usually two medical officers and six to eight medical orderlies were available.

Malaria

In the absence of adequate clothing, bedding, and mosquito nets, in jungle areas where there were debilitated troops and negligible larval and mosquito control, the disease was almost universal. B.T. infections predominated over M.T. and showed such phenomenal recurrence rates as twenty attacks in a year. Suppressive quinine in a dosage of 3 to 6 gr. (0.2 to 0.4 g.) daily in my experience was given too sporadically to have noticeable effect.

Blackwater fever was not common—e.g., a total of 17 cases at Nakom Patom among thousands of malarial subjects enduring repeated attacks. Cerebral malaria was not infrequent, and

TABLE II.—*Australian Patients Admitted to Author's Working-camp Hospitals June, 1942 to October, 1943*

Camp	Malaria	Dysentery	Enteritis	Cholera	Diphtheria	Pneumonia	Bronchitis	Avitaminosis and Malnutrition	Injuries	Tropical Ulcers	Other Skin Diseases	Other Diseases	Totals	Deaths
Bandoeng, Java (June 14–Nov. 7, 1942)	37	129	7	—	—	2	2	17	8	3	25	58	238	1
Makosura, Java (Nov. 7, 1942–Jan. 4, 1943)	14	28	1	—	—	—	2	18	1	2	20	27	113	—
Changi, Singapore, south area (Jan. 7–June 20, 1943)	7	29	—	—	—	—	—	33	6	1	12	16	109	—
Konyu (Jan. 25–Mar. 12, 1943)	166	153	21	—	—	—	3	5	5	7	12	18	392	—
Hintok, Mountain Camp (Mar. 13–Aug. 23, 1943)	916	558	340	93	11	18	33	194	113	209	221	171	2,532	57
Hintok, River Camp (July 20–Sept. 18, 1943)	590	98	56	57	—	1	4	78	33	104	213	95	1,334	25
Kinsayok (Sept. 10–Oct. 23, 1943)	288	17	22	—	—	1	—	2	26	49	31	10	446	—
Totals	2,018	1,014	447	150	11	22	49	352	197	375	534	395	5,664	83
Deaths	—	10	—	63	—	1	—	3	1	—	—	5	83	—

Notes.—1. Most cases of enteritis were of pellagrous origin. 2. The figures bear little relationship to total disease, since almost all troops worked through illness, and malaria and pellagra were almost universal. 3. Where several diseases were coexistent only the principal one was recorded. 4. Avitaminosis and malnutrition column: 50% were serious pellagra cases, the remainder cases of protein oedema and beriberi. 5. The low death rate at this time was quite exceptional, and is in large measure due to the fact that most of these troops were seasoned Middle East veterans of very fine physique. Large numbers, however, died at a later date in base hospitals.

more static conditions, and comparatively greater material resources for improvisation, the scope of medical work was made to compare with that of a large civilian hospital. Had even the crude facilities of this hospital been made available at an earlier date, great loss of life might have been avoided. Pin-pricking regimentation and constant interference with medical officers and sick, day and night, made the work of the hospital very difficult, and parties of sick were constantly being transferred in the teeth of medical opposition.

Isolated parties transferred in this fashion were employed in railway maintenance, road construction, and bridge repair in areas harassed by Allied bombing, and some suffered terrible experiences recalling the tragic fate of "H" and "F" forces during railway construction. An epic story was a six-weeks march of 800 British soldiers for some 600 km. (375 miles) from Nakom Nyak to Pitsanloke carrying their sick on rice-sack stretchers. Due to the devoted work of the medical officers, Capt. C. J. Poh, S.S.U.F., and Capt. T. Brereton, A.A.M.C., only three died on the march.

Records and Statistics

All the diseases of the male adult were encountered, and in addition numerous tropical diseases, even those as remote from

with no ampoules of quinine suitable for injection, sterile solutions were made from any quinine available. I found Howards' 5-gr. tablets of quinine hydrochloride very effective given intravenously in a dosage of 10 gr. (0.65 g.).

Malnutrition and Avitaminosis

"Vitamins are luxuries," was the answer of a Japanese medical officer, Capt. Novosawa, to a request for an increase. Pellagra was the most common disorder, and exerted a sinister influence on the course of other diseases. The early symptoms of pellagra appeared after a few months of imprisonment—notably angular stomatitis, glossitis, pigmentary changes, and dry scaly skin. Scrotal dermatitis with erythema and loss of rugae rapidly progressed to exudation and scaly crusting. "Burning feet," much in evidence after six months, gave great distress at night, the sensation being most marked in the ball of the foot and passing forward to the toes. In some the legs and hands were affected. The circulation in the feet was excellent, but free sweating gave them a clammy feeling. The deep reflexes were hyperactive, and some patients had knee and ankle clonus. Rare cases progressed to spastic diplegia. Amblyopia was seen at the same time as the "burning feet," and occasionally both conditions occurred in the same case.

Later experience showed the rapid response of scrotal dermatitis and most mouth lesions to riboflavin, 6 to 8 mg. daily for a few days. Nicotinic acid or nikethamide was effective for other symptoms, except the amblyopia. In my experience the diarrhoea associated with pellagra was not very evident until the second year of prisoner-of-war life, when it became common and distressingly uncontrollable. Mental derangement was seldom marked, though in the terminal phase some cases showed extreme mental apathy and evinced difficulty in swallowing any food, particularly rice.

Nutritional oedema or famine oedema was excessively common, some soldiers becoming horribly bloated. In severe cases alimentary absorption seemed poor, and deterioration continued despite large numbers of eggs daily. Beriberi occurred in all forms, though in some instances it was confused with famine oedema. Scurvy and frank vitamin A deficiency were uncommon.

The basis of these disorders will be evident from the average ration recorded at Hintok camp in March, 1943. (This particular ration is by no means indicative of lower levels.)

Average issue per man per day: sugar 16 g., salt 10 g., fresh vegetables (mostly Chinese radish) 23 g., dried vegetables 6 g., meat 16.5 g., dried fish 26.5 g., oil of coconut 3 g., rice 600 g. (poor quality, some musty and almost uneatable).

Many sources of vitamins were tried in the absence of vitamin concentrates, but none was so effective as fresh foodstuffs obtained by money or credit. The whole question of a man's survival frequently hinged on the provision of money from prisoners' meagre resources, and on purchase facilities. Fresh ducks' eggs and the *katchang idjoe* bean (a lentil favoured by the Dutch) were excellent for all purposes. Meat was more expensive; yeast excellent but difficult to produce economically in concentrated form. Grass extracts were freely employed, but suitable grass was rare in the jungle. Jungle "spinach" was popular. The supply of ducks' eggs for purchase, always hazardous in the jungle, was a major consideration in sustaining life in Siam. Blood transfusions later became a valuable measure in the worst cases of malnutrition, and under all circumstances there was no dearth of volunteer donors.

Cholera

The severe outbreaks of cholera were due to squalid conditions and association with Asiatic coolies, who contaminated water supplies and camp areas. Water sterilization often presented great difficulties. The Japanese showed terror of the disease, and frequently compelled the patients to be attended in appallingly unsuitable jungle sites with little shelter—in the hope they would die quickly. One notorious case where a cholera sufferer was shot by Japanese order illustrates this attitude.

Typical cases showed dramatic prostration, with copious rice-water stools, vomiting, husky voice, cramps, rigging in the ears, weakness, and feebleness. As sterile saline and disinfectants were not supplied, many courageous improvisations were made, particularly for the replacement of fluids in the algid phase. Saline was prepared from kitchen salt and spring, river, or rain water distilled in curiously designed stills. In one instance a medical officer employed a drilled bamboo thorn as an improvised cannula, and on occasion the risk was taken of administering saline with boiled and not distilled water. The most severe epidemic I encountered was one with which Major E. L. Corlette, A.A.M.C., and I were concerned at Hintok, where in our own immediate camp of 1,000 men, 150 showed obvious infection, and there were 63 deaths. Hundreds of deaths occurred in the neighbourhood. The cases were nursed under leaking rags of tents, in an appalling morass in the jungle. Some early cases were given intraperitoneal saline injections of several pints. Three stills were hurriedly improvised from lengths of a stolen petrol pipe surrounded by bamboo jackets, and irrigated by water brought in bamboo pipes from a spring. Some 120 pints (68 l.) were produced and given daily through a number of continuous saline sets manufactured from such oddments as our stethoscopes, bamboo tubing, saki bottles, etc. In cases with extreme fluid loss as much as 20 pints (11 l.) were given in twenty-four hours. Saline was very effective in the algid phase, but numbers passed into the stage of reaction (typhoid state),

rosy flush, and fever, or succumbed to other illnesses related to their gross debility.

Hypertonic saline was seldom employed owing to the clinical facilities. Capt. J. Markovitch, R.A.M.C., reported favourably on the use of double-strength saline. I found potassium permanganate, in the usual 2-gr. (0.13 g.) dose a pill wrapped in a cigarette paper, did not give relief commensurate with the burning discomfort caused.

Dysentery

Despite the appalling mortality and morbidity caused by disease the Japanese refused to recognize its presence and compelled us to refer to it officially as "colitis," or still more vaguely as "other conditions." Amoebic dysentery predominated, but emetine and other specifics were not supplied by Japanese. The terrible severity of amoebic infections and great shortage of emetine presented problems dealt with in a separate paper (1946). Liver abscess was an infrequent complication, which under the circumstances required open drainage by the subcostal or transthoracic approach.

Tropical Ulcer

This disease was highly prevalent in jungle areas and famished fever-ridden subjects exposed to blows and trauma. A distressing feature was massive spreading gangrene with exacerbations of spread. Frequently the deep fascia was penetrated and there followed gross involvement of bone, joint, muscle, tendon, vessels, and nerves. The type of evacuation and the practice of flooding ill-equipped hovels with the patients were disastrous. The base hospital sections receiving them became cesspools of "hospital gangrene." Waves of violence spread about the wards, infecting other wounds—incisions for suppurative bursitis, septic scabetic lesions, healing ulcers.

Ulcers were often multiple; three men seen in association with Capt. J. McConachie, R.A.M.C., were dying in agony from large ulcers arising from minor skin lesions all over the body and limbs. The pain, of which I have had personal experience, was very severe and caused muscle spasm, so that the lower limb frequently contracted with flexed knee and dropped to the ground. Natural healing, where the outcome was favourable, took months to years, and often resulted in severe deformity. Most antiseptics were useless, and for effective action reagents were destructive to normal tissues—e.g., hyd. perchlor. solution 1 in 50, saturated solution of potassium permanganate, strong copper sulphate solution, pure phenol or lysol.

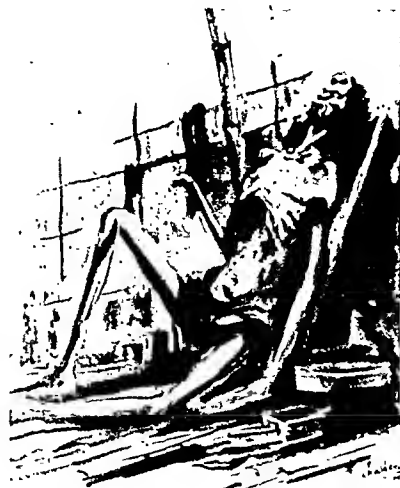
The best measure was removal of all gangrenous tissue by excision and curettage, followed by the application of pure phenol or lysol and a light sprinkle of iodoform powder. The latter was a specific for tropical infection, often effective even with such economy as 1 in 20 dilution. The distressing pain disappeared and the dressing could be left for days; the resulting granulating area was then skin-grafted. With this procedure early cases could be healed in a month without deformity. The Japanese did not supply iodoform, but it could be bought in small quantities at high prices from the Siamese. It was the most economical of all purchased drugs, and the sight of a man brought a glad smile to sufferers.

Many hundreds of men endured the agony of curettage of ulcers necessarily without anaesthesia. Necrosed tendon and muscle required wide incisions in fascial planes and formal excision. Huge sequestra were extracted when they loosened, some constituting the greater part of the shaft of the tibia. Nakom Patom sequestrectomy was accompanied by the "saucerizing" procedures. Amputation was often necessary to save life, and some patients begged for it, despite the cruel knives and butchers' saws employed. Immediate mortality rates were surprisingly good—e.g., under 10%—but there were associated gross nutritional disorders often evidenced by running diarrhoea and famine oedema. Further depletion of body protein occurred with the copious discharges. Ultimately about 50% of amputation cases succumbed, many of them after good healing. Blood transfusion was a valuable measure. When hostilities ceased, 170 amputation cases surviving at Nakom Patom, including two with bilateral amputations, were already provided with useful artificial limbs.

MEDICAL EXPERIENCES IN JAPANESE CAPTIVITY—E. E. DUNLOP



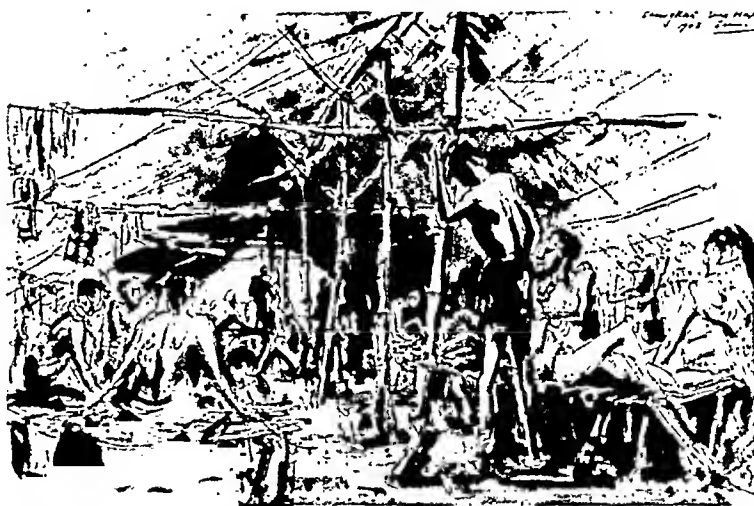
Dysentery



Cholera



Konya Camp



Chungkai Base Hospital



Cholera at Hintok Camp

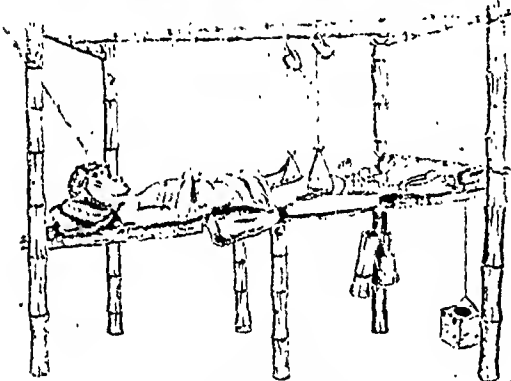


Working Party

The drawings reproduced here were prepared by Gunner J. C. CHALKER

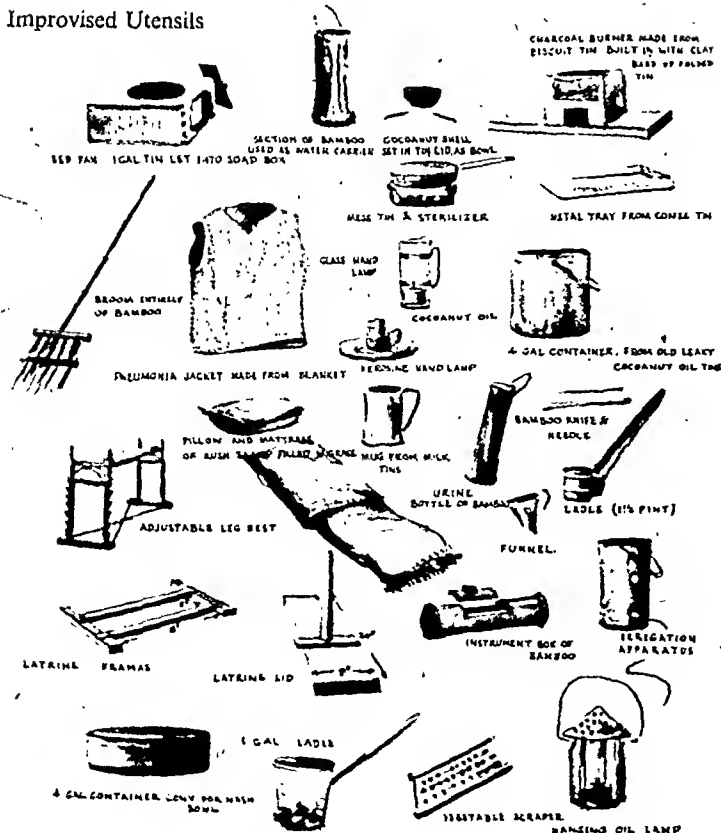


New arrivals at Chungkai

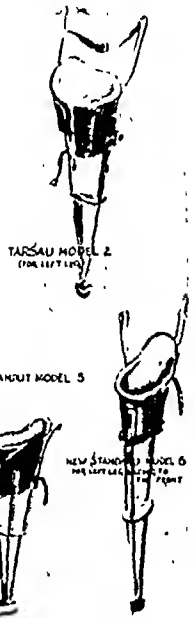


Jungle Orthopaedic Bed

Improved Utensils

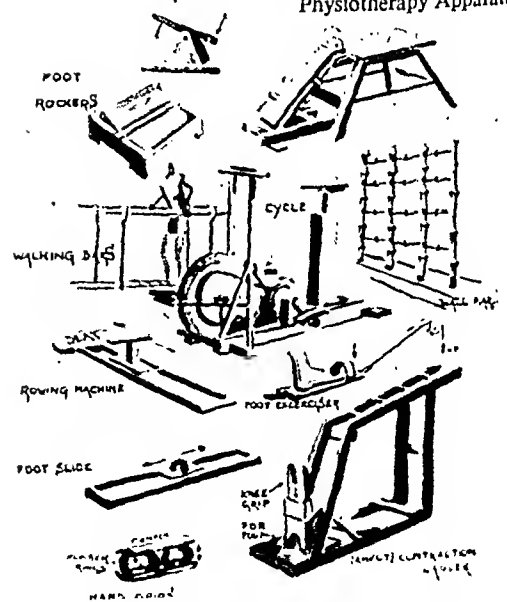


Tropical Ulcer



Artificial Limbs

Physiotherapy Apparatus



Some hundreds of skin grafts in the hospitals with which I was associated showed gratifying results in healing and lessened deformity, compensating for great difficulties in arranging dressings and suitable firm pressure over graft areas. I found that light dust of iodoform powder over the graft area gave considerable protection against recurrence of tropical infection.

Scabies and Infected Skin Lesions

In some hospitals over 90% of the population had scabies, many with florid skin sepsis. Mass treatment by wards was required, using improvised steam disinfectors for personal effects. Sulphur was largely purchased in a crude form. A very economical suspension with a minimum of oil was made by means of ox bile.

The feet of workmen employed without boots and constantly in mud and water became cruelly inflamed with gross septic infection. Cure was difficult without rest.

General Points

Mental disorders were surprisingly infrequent, and neurosis uncommon among Anglo-Saxon prisoners. The hostility of the Japanese to the sick made their lot so unattractive that possibly a source of conflict was removed. Notwithstanding this fact, in well-led camps a heroic feature was the routine way men in the extremity of fatigue and debility lined up to take the place or bear the burden of those in worse case. A minor outbreak of hysterical palsies in the last year of imprisonment was predominantly among Netherlands East Indies soldiers. Suicide was uncommon and I personally know of only six cases. Possibly owing to lack of all privacy, and to the debilitating diet, sexual perversion was very inconspicuous. Though some men inevitably became morose and irritable, and quarrels arose, sanity, good humour, and optimism were predominant.

Ingenuously hidden wireless sets and news translations helped in sustaining morale, as did the organization of recreation, entertainment, and mental activities. Astonishing stage effects were obtained with rice matting, bamboos, rags of mosquito netting, etc., and symphonies were orchestrated from memory and played with impressive effect on instruments of great ingenuity. Fertile minds invented most diverting games. Formal religion appeared to have no enhanced appeal in camps of sickness and death. The maintenance of strict discipline was the greatest factor in preserving life and maintaining morale, and this was never questioned where officers set an example in unselfish devotion to duty.

Jungle Surgery

The Japanese with characteristic interest in the dramatic and sadistic appeared to find a surgical operation a "good show." Shortly after arriving in the dense jungle in the Konyu area I performed a successful night operation for a perforated duodenal ulcer—on a hurriedly constructed bamboo table, lit by a bonfire and a borrowed hurricane lamp. Following this event I was freely allowed to visit other camps to perform operations, and incidentally effect medical and other liaison. In these areas only emergency operations were performed, such as those for acute abdominal lesions; wounds, and gross sepsis, and usually in the open or under a large mosquito net. Many penetrating wounds were seen from brittle fragments of steel drills (e.g., necessitating excision of the eye), and some severe dynamiting injuries.

In the absence of strapping for extension, fractured femurs were best treated by driving the cleanest nail that could be found through the upper tibia. Thomas splints were devised by twisting wire, and pulleys and cords were manufactured. The Hamilton Russell type of extension was used on occasion. It was found that good healing usually occurred in abdominal wounds, using well-washed hands and no gloves. All instruments, along with such drapings as were available, were sterilized by boiling.

Lack of anaesthesia was the greatest difficulty, and it was necessary to perform most minor operations in its absence. Minute amounts of chloroform were obtained from the Japanese and Siamese, and carefully conserved for special procedures. I was able to obtain small quantities of "novocain" products, and this became the sheet anchor for spinal anaesthesia (1-2.5 ml. of freshly prepared 10% solution in distilled water). With variations of technique this sufficed for almost all opera-

tions on the abdomen and lower limb—e.g., gall-bladder surgery and amputations through the thigh. Local infiltration was much less economical but was necessary for the head or upper limb. Lieut.-Col. A. E. Coates did a most impressive series of 120 amputations of the lower limb at the 55-Kilo Hospital in Burma, employing a solution of cocaine (approximately 0.75 ml. of 2% solution intrathecally).

Catgut or other suture materials were rarely supplied by the Japanese, and numerous substitutes were used. I found cotton very useful, also silk obtained in quantity by unravelling the parachute cords carried by R.A.F. personnel. The most useful product was a locally prepared "catgut" from the peritoneum of pigs and cattle, first introduced by an ingenious Dutch chemist, Capt. von Boxtel, working under Lieut.-Col. Coates. The peritoneum was trimmed in 6-metre ribbons of varying width, twisted on a winder and dried. Sterilization was effected at 130° F. (54.4° C.) for half an hour, after which it was put in ether for twenty-four hours, and finally in 90% alcohol and iodine.

Surgical instruments were most scarce, and ingenious improvisations were made. On occasion razors and pocket-knives were used to make incisions, while butchers' saws and carpenters' tools found useful employment.

Surgery in Base Hospitals

In base hospitals the resources in tools, scraps of metal, and cherished oddments were greater, and some quite complex instruments were devised—for example, sigmoidoscopes, bowel clamps, rib shears, Cushing's silver clips and applying forceps, and optical apparatus. At Nakom Patom hospital, where the theatre was reasonably dust-proof and provided with a cement floor, a great range of surgical procedures were carried out under the enthusiastic direction of Lieut.-Col. Coates, who worked tirelessly at surgery in addition to administration. Major S. Krantz, A.A.M.C., has reviewed the surgical work of the hospital, in which he took an important part. Excluding very minor procedures, 773 surgical interventions were carried out, including such varied operations as brain and spinal-cord surgery, thyroidectomy, gastrectomy, enterectomy and anastomosis, abdomino-perineal resection, cholecystectomy, thoracic surgery, splenectomy, nephrectomy, laryngectomy, orthopaedic measures, and nerve sutures.

Appendicostomy, caecostomy, and ileostomy were allotted some place in the treatment of dysentery. Appendicectomy was carried out for appendicitis in 133 cases without mortality. Operations for hernia totalled 114, the majority being repaired with unabsorbable sutures. There were no deaths, 5 infected wounds, and 3 known recurrences. While it cannot be said that surgical procedures played a major part in the survival of prisoners of war, they represented considerable triumphs over unfavourable conditions.

Improvisation

Necessity is indeed the mother of invention, and while the Japanese were in the main obstructive rather than helpful they paid Allied prisoners the compliment of expecting miracles of improvisation to replace normal supplies. In heart-breaking jungle areas devoid of the most commonplace materials, where even pieces of wire, nails, fabrics, empty tins, leather, etc., were prized possessions, and habitations were made of bamboo and palm leaf held together with jungle fibre, ingenuity was indeed tested.

Astonishing uses were made of bamboo, which served for such varied construction as beds, brooms, brushes, baskets, containers, water-piping, tubing, splints, etc. Timber was obtained by felling trees and splitting with wooden wedges, and used for many purposes, including footwear (clogs). Where solder could not be extracted from sardine tins and the like, water-tight tin-smithing was done by ingenious folding. Sources of hydrochloric acid included the human stomach. Flux was readily manufactured if sulphuric acid could be stolen from car batteries. Leather was prepared from buffalo or cow hide, and thread or string from unravelling webbing equipment, kit-bags, etc. It was necessary to equip jungle hospitals by the work of patients as well as staff, and they were organized in mass-production efforts with all available tools and resources.

Articles made by this "cannibalization" of effects at Tarsau and Chungkai included urinals, bed-pans, commodes, surgical

beds and pulleys, feeding-cups, wash-basins, irrigators, sterilizers, small portable charcoal stoves, disinfectors, stretchers and stretcher beds (with sack and bamboo), back-rests, leg-rests, oil-lamps, brooms, brushes, trays, tables, orthopaedic appliances, splints, surgical instruments, and artificial limbs and eyes (from mah-jongg pieces). The artificial limbs made at Nakom Patom under the direction of Major F. A. Woods, A.I.F., were designed from crude timber, leather cured from hide, thread from unravelled packs, iron from retained portions of officers' stretchers, and oddments of sponge-rubber, elastic braces, etc.

Part of an appeal to camp members at Chungkai was: "The following articles are urgently needed: Tins and containers of all sorts, solder, flux, nails, wire, screws, sponge rubber, scraps of clothing, hose-tops and old socks, string, webbing, scraps of leather, rubber tubing, glass bottles of all sorts, glass tubing (transfusion purposes), canvas, elastic, rubber bands or strips, braces, wax, mah-jongg pieces, and tools of all sorts. Nothing is too old, nothing is too small."

Two Life-saving Achievements

A life-saving measure introduced by Major Reed, A.A.M.C., and developed by Capt. J. Markovitch, R.A.M.C., was the use of defibrinated blood for transfusion purposes. Using soldiers trained as technicians, thousands of transfusions were carried out by simply collecting the blood of a suitable donor into a container while stirring continuously with a spatula or whisk. Vigorous stirring was carried on for five minutes after clotting commenced on the spatula. The blood was then filtered through sixteen layers of gauze, and administered. Much help in the preparation of drugs and chemicals was given to medical officers by chemists, botanists, and scientists. Another life-saving achievement was the production of emetine from a limited quantity of *ipecacuanha* by Capt. van Bostel at the 55-Kilo Camp. Sgt. A. J. Kosterman and Sgt. G. W. Chapman did most valuable work in this respect.

Distilled water for intravenous use was prepared in numerous camps and hospitals. Alcohol for surgical and other purposes was obtained by the fermentation of rice with a suitable strain of fungus and distillation up to 90% strength. Grass extracts and other vitamin sources were exploited, and some useful items of *materia medica* were collected from local natural sources. From these, such products as essential oils—e.g., cloves and citronella—were obtained. Milk and bread made from soya bean lent some variety to the diet at times.

Products of minor importance included ink, paper, and cork substitutes. Major T. Marsden, R.A.M.C., provided an ingenious pathological service with improvised apparatus which satisfied most routine requirements. Colour indicators for pH were extracted from local flowers, and litmus paper was manufactured.

Conclusion

The treatment of sick prisoners by the Japanese left almost I civilized behaviour to be desired.

The fortitude and sustained morale of British soldiers under prolonged strain and suffering were most praiseworthy. The toll of long-continued strain and multiple debilitating diseases, merits consideration and sympathy in the problems of post-war rehabilitation.

The survival of many sick prisoners from the Far East was due to ingenious and devoted work by the various medical services, and to the co-operation, disciplined organization, and sacrifice of non-medical personnel.

Summary

1. An account is given of experiences in prisoner-of-war camps and hospitals in Java and Siam.
2. Disease problems and their treatment are briefly discussed.
3. Surgical procedures in remote areas and in prisoner-of-war hospitals are described.
4. A brief outline is given of the scope of measures of improvisation.

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HAEMOGLOBIN AND PROTEIN LEVELS AND SPLEEN INDICES IN N. GREECE THEIR RELATION TO DIET

BY

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The purpose of the present survey was to investigate the haemoglobin and protein levels in Macedonia and Thrace (N. Greece), to compare them with the distribution of malaria, and to discover any changes that had taken place since 1934 that might be regarded as due to the wartime diet of Greece or to the reputed low level of nutrition since the British occupation in October, 1944. In addition it was felt that some information was desirable on haemoglobin values in a part of Europe that is almost entirely agricultural or pastoral.

The results of the surveys carried out in Britain during the past eight years have tended to show that there is a relation between economic status, diet, and haemoglobin levels (Dobbs, Mackay, and Bingham, 1944; Mackay *et al.*, 1942, 1946; Davidson *et al.*, 1942, 1943, 1944; Fullerton *et al.*, 1944; Yudkin, 1944; M.R.C. Special Report Series, 1945; McCance *et al.*, 1938). Some authors (Davidson *et al.*, 1944; Fullerton *et al.*, 1944) have shown that there has been a slight rise in the haemoglobin levels during the war, which they have attributed to the wartime loaf of bread; this has, however, been criticized by Dobbs, Mackay, and Bingham (1944). A Belgian survey by Nizet (1945) states that there is no relation between malnutrition and haemoglobin levels. If malaria is present the haemoglobin picture will probably be further affected, but the relation of malaria to haemoglobin levels appears not to be a simple one, as is shown below.

In view of the British findings of a relation between economic status, diet, and haemoglobin levels it appeared important to ascertain what the situation was in a country that is admittedly at wretchedly low economic and nutritional levels (Fairley, Bromfield, Foy, and Kondi, 1938; Foy and Kondi, 1939).

The results of blood-protein assays in Britain showed values averaging 6.78 g. % in Canadian soldiers and 6.56 g. % in blood donors, with variations of ± 1 g. %, the figures thus being normal. Except in frank cases of starvation or semi-starvation, it is not to be expected that there would be any significant changes in the blood protein.

The relation of blood protein to the haemoglobin concentration has been fairly thoroughly investigated by a number of workers, and the conclusion drawn that there is very little correlation between them, falls in haemoglobin not being associated with similar or concomitant falls in blood proteins. In addition to the estimation of proteins, haemoglobin, and spleen index, a clinical and physical examination of school children for signs of malnutrition was included in the present survey as well as the results of tuberculin tests; the data for these will be published later by Dr. Kornbluh and Miss Rosenfeld.

Methods

For convenience the area of Macedonia and Thrace was divided into six regions, and in each region a number of villages, varying from 5 to 9, were investigated. The villages selected in each of the regions were chosen so as to give information regarding both mountain and plain villages, with a view to ascertaining any difference between them. The whole survey was carried out by the same team, and the haemoglobin and blood protein estimations were done by the same persons throughout the work. Thus unavoidable personal subjective errors inherent in the methods of haemoglobin estimation were eliminated or reduced to an absolute minimum—a point of the highest importance in haemoglobin estimations.

Proteins were estimated by the copper-sulphate specific gravity method (Phillips *et al.*, 1945).

Haemoglobin was estimated by two different methods—the direct Dare and the specific gravity. Hynes and Lehmann (1946) have shown the latter method to be very useful for mass

surveys. It must be admitted that even in the laboratory there is no really satisfactory method of estimating haemoglobin with great accuracy, with the possible exception of the gasometric. For choice in this laboratory the Pulfrich photometer or the Klett photo-electric apparatus has been used with alkaline haematin (Heilmeyer, 1933). It was impossible to use such methods in the primitive conditions under which this survey had to be conducted. The Haldane-Gowers carboxyhaemoglobin method was also impracticable, if only for the reason that neither the apparatus nor the carbon monoxide was available here. Recourse had therefore to be made to the Dare and specific gravity methods. It is fully realized that neither of these methods approaches in accuracy the spectrophotometric methods. More than ten years' experience of haemoglobin surveys in the primitive backwaters of the Balkans and Central Africa has, however, shown us that in experienced hands the Dare method is no more inaccurate than the Haldane-Gowers dilution method, especially when working at temperatures of 35° to 45° C. in the open country. The Dare and specific gravity methods were checked against the spectrophotometric alkaline haematin method of Heilmeyer, and the agreement in the great majority of cases was very good. It is felt, then, that the two methods used in the present survey, although leaving something to be desired, do give a fair and reasonable idea of the haemoglobin levels in this part of Europe. In our notation we have used grammes per cent, as being more in keeping with modern standards, and have taken the mean physiological normal as 15 g.%. The M.R.C. report used the percentage notation of the Haldane-Gowers scale, where 109.8% equals 15.15 g. % (Whitby and Britton, 1942).

The spleens were all palpated in the recumbent position, with the knees flexed, and the Hackett notation was used. This was the system adopted by the Rockefeller Foundation in its anti-malaria campaign, 1929 to 1937, and it has been used in Greece ever since, so that the spleen indices given in this report are comparable with all previous surveys. The blood was taken from the antecubital veins by wide-bore, dry-sterilized needles into tubes containing 2 mg. of dry potassium oxalate and 3 mg. of dry ammonium oxalate. The blood was withdrawn without any constriction whatever, and the specific gravity of whole blood was estimated immediately, and of plasma within from three to six hours after drawing the blood.

In all, some 1,500 protein estimations and 2,500 haemoglobin estimations have been made and 3,600 spleens examined. The cases in the various areas were selected at random from among the working inhabitants, and may fairly be said to represent a cross-section of the community.

The survey was done between the months of January and April, 1946, at a time when there is no malaria transmission, and before the relapse season has started. The spleen rates given are therefore to be regarded as minimal. It should be noted that the past four years have been ones of very low malarial endemicity in Greece, borne out by the spleen size distribution and the relation of the parasite index to the spleen index. In years of high endemicity or during epidemics the proportion of small spleens is high and the difference between the parasite and spleen indices much smaller. A further factor affecting the parasite index will, of course, be the taking of suppressive or curative drugs, of which mepacrine was given in large amounts during and since the war. The effect of these drugs on the spleen index will be much slower.

Protein Estimations

As will be seen from Tables I to VII and the Chart the proteins are within the normal range, in some cases above the

TABLE I.—Mean Haemoglobin and Protein Levels in the Six Regions

Regions	Haemoglobin, g. %				Protein, g. %				Spleen Index %
	Men	Women	Children	Total	Men	Women	Children	Total	
Florina ..	14.30	13.10	13.00	13.50	7.15	7.11	6.98	7.08	13
Kilkis ..	14.06	12.76	12.87	13.23	7.36	7.41	7.15	7.29	23
Nigrita ..	13.59	12.05	12.66	12.88	7.29	7.56	7.22	7.35	46
Salonika ..	13.60	12.36	12.20	12.72	7.52	7.43	7.32	7.42	31
Komotini ..	13.30	11.90	12.10	12.40	7.26	7.16	7.00	7.14	36
Xanthi ..	13.10	11.70	12.10	12.30	7.29	7.40	7.13	7.26	43
Average	13.65	12.31	12.16	12.75	7.31	7.34	7.10	7.25	33

TABLE II.—Florina Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %	Parasite Index %
	Men	Women	Children	Total	Men	Women	Children	Total		
Katoelene ..	14.80	13.05	13.10	13.65	7.14	6.56	6.95	6.88	12	0
Nikis ..	13.70	12.40	12.60	12.90	7.16	7.47	7.03	7.22	18	10
Florina ..	14.65	13.30	13.50	13.81	7.10	7.25	7.03	7.12	10	2
Armenohori ..	14.20	13.50	13.05	13.58	7.26	7.11	7.00	7.12	16	4
Alona ..	14.15	13.15	12.75	13.35	7.11	7.14	6.90	7.05	8	0
Average ..	14.30	13.10	13.00	13.50	7.15	7.11	6.98	7.08	13	

TABLE III.—Kilkis Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %	Parasite Index %
	Men	Women	Children	Total	Men	Women	Children	Total		
Efcarpia ..	13.00	13.30	12.50	13.00	7.36	7.48	7.21	7.35	37	0
Zarato ..	13.65	13.30	13.40	13.45	7.80	7.18	7.42	7.47	26	11
Mavropia ..	13.50	13.20	12.50	13.20	7.15	7.68	7.10	7.31	32	0
Milohore ..	14.20	12.40	11.95	12.88	7.27	7.53	7.27	7.36	48	0
Elepherohore ..	14.25	12.55	12.35	13.23	7.23	—	6.90	7.07	17	0
Palaeosynechokistro ..	13.60	12.45	12.85	12.96	7.66	7.25	7.20	7.37	25	0
Kryston ..	14.60	12.25	13.10	13.31	7.52	7.70	7.36	7.52	25	0
Kilkis town ..	14.30	12.75	12.80	13.28	7.50	6.98	6.95	7.14	17	0
Terpylos ..	14.95	12.75	13.50	13.73	6.77	7.51	6.95	7.07	25	0
Average ..	14.06	12.76	12.87	13.23	7.36	7.41	7.15	7.30	28	

TABLE IV.—Nigrita Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %	Parasite Index %
	Men	Women	Children	Total	Men	Women	Children	Total		
Thermae ..	14.10	12.50	13.00	13.30	6.85	7.40	6.88	7.04	61	6
Flamouri ..	13.40	11.05	12.00	12.35	7.62	7.65	7.52	7.60	87	0
Sesamina ..	14.10	—	12.75	13.42	7.33	—	7.37	7.38	24	0
Nikolona ..	12.75	12.30	11.95	12.33	7.37	7.62	7.14	7.38	36	0
Nigrita town ..	—	—	13.00	13.00	—	—	7.19	7.19	23	4
Average ..	13.59	12.05	12.66	12.77	7.29	7.56	7.22	7.32	46	

TABLE V.—Salonika Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %	Parasite Index %
	Men	Women	Children	Total	Men	Women	Children	Total		
Nea Dorkas ..	14.70	13.00	12.50	13.50	7.45	7.52	7.50	7.49	22	1.5
Xilopotis ..	13.90	12.60	12.50	12.93	7.56	7.63	7.41	7.47	15	6.0
Assiros ..	13.02	11.50	12.20	12.43	7.32	7.13	7.16	7.20	26	2.0
Langada ..	—	12.61	11.95	12.28	—	7.31	7.19	7.25	9	1.8
Nea Halkidon ..	13.50	12.60	12.70	12.93	7.39	7.23	7.32	7.33	42	13.0
Nea and Pala Pella ..	14.40	12.20	11.90	12.85	7.65	7.47	7.49	7.55	21	0.0
Gida ..	12.45	12.15	11.75	12.11	7.60	7.59	7.30	7.50	70	26.0
Ag. Vasilios ..	12.95	12.10	12.30	12.45	7.85	7.54	7.22	7.54	36	8.6
Average ..	13.60	12.36	12.20	12.70	7.52	7.43	7.32	7.42	30.5	

TABLE VI.—Komotini Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %
	Men	Women	Children	Total	Men	Women	Children	Total	
Komotini town ..	13.5	11.7	12.8	12.7	7.16	7.09	6.54	7.03	20
Pandrossos ..	13.7	11.3	12.0	12.3	7.03	7.11	6.93	7.04	50
Aratos ..	12.7	12.0	11.7	12.1	7.31	7.05	6.88	7.08	43
Xilogani ..	13.2	12.1	11.8	12.3	7.33	7.14	7.18	7.22	20
Iasmos ..	13.3	12.2	12.1	12.5	7.45	7.43	7.21	7.36	40
Average ..	13.3	11.9	12.1	12.4	7.26	7.16	7.00	7.14	35.6

TABLE VII.—Xanthi Region

Villages	Haemoglobin, g. %				Protein, g. %				Spleen Index %	Parasite Index %
	Men	Women	Children	Total	Men	Women	Children	Total		
Plastiria ..	13.5	11.7	12.3	12.5	7.11	7.02	7.17	7.10	65	0.0
Yenissia ..	12.6	11.7	12.0	12.1	7.30	7.54	6.98	7.27	46	13.3
Paradissos ..	13.4	11.6	12.1	12.4	7.43	7.56	7.12	7.37	44	—
Stavroupolis ..	13.2	12.5	11.6	12.4	7.41	7.13	7.15	7.23	15	—
Mikis ..	12.5	10.4	11.7	11.5	7.24	7.86	7.20	7.43	69	37.0
Xanthi town ..	13.7	12.7	13.0	13.1	7.25	7.35	7.17	7.26	16	—
Average ..	13.1	11.7	12.1	12.3	7.29	7.41	7.13	7.27	42.5	—

normal mean value. The average for the whole of Macedonia and Thrace was 7.25%. The figures for men, women, and children were 7.31, 7.34, and 7.10 g. % respectively. At first it was thought that the rather high protein values might be associated with malaria, but an examination of the data showed that there was no consistent relation between these two. The lowest protein figure was found in the Florina region for children at 6.98 g. % and the maximum figure in the Nigrita region for women at 7.56 g. %. There was no striking difference between the various regions or between the villages in the same region.

Haemoglobin Estimations

The mean average haemoglobin level for men, women, and children of Macedonia and Thrace was 12.75 g. %. The average figure for men was 13.65 g. %, for women 12.31 g. %, and for children 12.16 g. %. Of the population of Macedonia and Thrace 29% had haemoglobin levels of 12 g. % or below; 10% of the men, 38.3% of the women, and 34.8% of the children were below this level. Thus the number of women and children below this level is nearly four times greater than that of the men. In Table VIII the percentage at or below the 12 g. % level is given for all the different regions.

TABLE VIII.—Percentage of Haemoglobin at or below 12 g. %

	Men	Women	Children	Total	Regional Spleen Index %
Florina ..	0.0	11.9	16.5	11.6	13
Kilkis ..	3.2	22.3	17.9	14.8	28
Nigrita ..	19.4	50.0	33.0	33.8	46
Salonika ..	9.8	34.4	41.8	34.2	31
Komotini ..	14.9	50.6	58.5	42.6	36
Xanthi ..	13.0	51.0	41.0	37.3	43
All regions ..	10.0	35.3	34.8	29.0	33

The lowest figures were consistently found in Thrace in the Xanthi and Komotini regions, where the levels for women were 11.7 and 11.9 g. % respectively. The maximum figures were found in the Florina region, with an average for men, women, and children of 13.5 g. %. It was in the Florina region that the proteins were lowest, but not below normal. This lack of correlation between blood proteins and haemoglobins has been noted by other workers. We have no explanation for

the low haemoglobin levels in the Xanthi and Komotini region. Perhaps the fact that they are predominantly tobacco-growing areas may have a bearing. Alternatively, it may be connected with the rather high proportion of Turks in these regions. We have found that in villages with both Turks and Greeks it is always the Turkish section that has the lower haemoglobin level, and the Turks are generally the more wretched. Whether this is due to economic discrimination, indolence, or race has not been investigated—the fact is merely reported.

These haemoglobin figures for Macedonia and Thrace do not compare unfavourably with those of Britain and the U.S. In Britain, Davidson *et al.* (1943) found that among the municipal school children of Edinburgh 39% had haemoglobin levels of 11.04 g. % or below; that among female

factory workers 23% had haemoglobin levels between 8.7 and 11.0 g. %, and that 72% of pregnant women had values of 11.0 g. % or below. In the U.S.A., Milam and Anderson (1944) found that white and negro children in North Carolina had average values of 13.0 and 12.3 g. % respectively, that white and negro males had 14.6 and 14.1 g. % and white and negro females had values of 13.1 and 12.5 g. %. In Florida, Abbott and his co-workers (1945) found the mean values for male and female

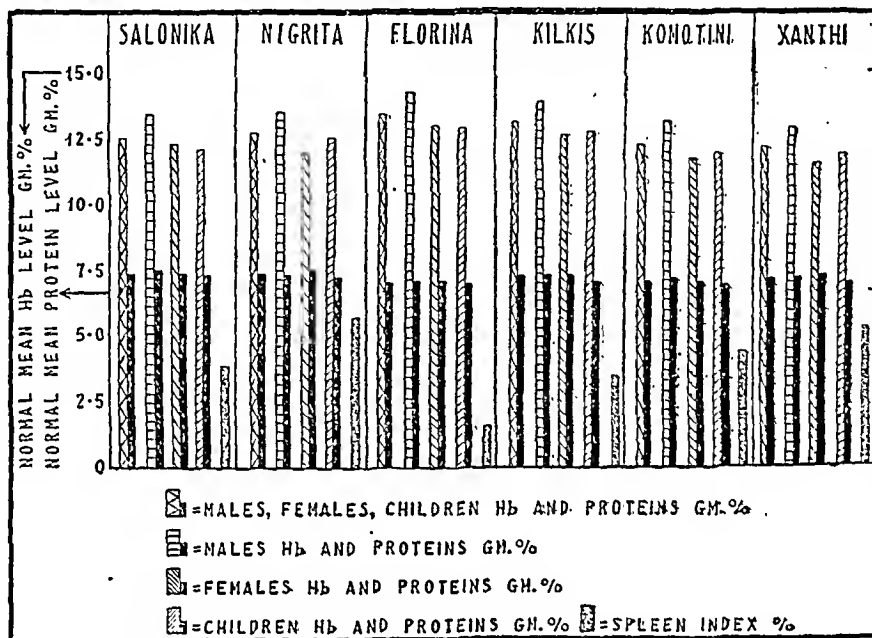


Chart showing mean haemoglobin and protein levels.

adults to be 11.45 and 11.74 g. %, with 43% of their subjects having values ranging from 3.6 to 11.4 g. %.

This relatively favourable haemoglobin picture from Macedonia and Thrace when compared with Britain and the U.S.A. needs qualification. The relation of haemoglobin levels to malaria in Greece is by no means a simple one, and cannot be assessed only on the basis of spleen indices. As is well known, the endemicity of malaria in Greece varies from year to year; in some years it is high, in others low, and periodically it takes on an "epidemic" form, accompanied by the occurrence of large numbers of cases of blackwater fever. After several seasons of low endemicity the distribution of spleen size will differ from that found after an epidemic; after the former there will be a greater proportion of the larger "spleens," while after the latter there will be a relatively higher proportion of small spleens. In addition, after years of low endemicity the relation of the parasite index to the spleen index will be far from unity, while after an epidemic the spleen and blood indices will more nearly approach one another. Similarly the widespread use of antimalarial drugs will be expected to reduce the parasite index more quickly than the spleen index.

Spleen Indices

If spleen indices only are taken into account there appears to be no consistent relation between them and haemoglobin levels, as is shown by a comparison between two villages in the Nigrita region—Flamouri and Nikolona. In the former the spleen index was 87% and the haemoglobin level 12.35 g. %, whilst in Nikolona, with a spleen index of only 36%, the haemoglobin level was 12.33 g. %. The relation of the parasite index to haemoglobin levels appears to be more direct. Fairley (1934) has shown that in chronic cases of malaria the anaemia is far from severe, while in acute cases the blood

picture is quite otherwise. A similar situation has been found to exist in the field in Greece. In Flamouri, where the spleen index was 87%, the parasite index was 9% and the haemoglobin level 12.35 g.%; in Mikis the spleen index was 69%, the parasite index 37%, and the haemoglobin level 11.5 g.%. It is to be expected, then, that in years of high endemicity or during epidemics when the blood-parasite index is high the haemoglobin level will be lower than in years when malaria is less rife and the parasite index is lower. The last four years in Greece have been ones of low malarial endemicity in most parts of the country, and the haemoglobin levels were higher than they would have been if this survey had been carried out after an epidemic or a number of years of high endemicity. It is important, then, to realize that the haemoglobin picture in Greece will vary from year to year, according to the malaria situation, and that the present survey probably shows the haemoglobin at its peak. In such circumstances it is extremely difficult to assess the relative importance of malaria, poor diet, and economic status on haemoglobin levels.

As pointed out in a previous paper (Foy and Kondi, 1939), the rural populations of Macedonia eat meat not more often than two or three times a year; other proteins are of course eaten, such as peas, beans, cheese, and less frequently eggs and sour-milk products. So far as we are aware there is no deficiency of iron in the diet here, but a thorough-going nutritional survey has yet to be made in Macedonia by a competent team of workers. In the past the low intake of meat has been regarded as not unconnected with the great prevalence of hyperchromic macrocytic anaemias in Macedonia (Fairley, Bromfield, Foy, and Kondi, 1938), where they form some 55% of all the anaemias occurring in the country. A consideration of all these facts would make it appear that malaria is not the only nor the most important factor concerned in the anaemia picture of Macedonia and that diet may occupy an important place. The dietary deficiency may not be the same as that in Britain or the U.S.A., as is evident from the greater prevalence of macrocytic hyperchromic anaemia here.

Summary and Conclusions

A protein, haemoglobin, and malaria survey has been made over a wide area of Macedonia and Thrace to investigate the relation of these indices to one another and to diet. In all, some 1,500 blood protein estimations and 2,500 haemoglobin estimations have been made, and 3,500 spleens have been examined.

The proteins were all within normal range, in some regions above the normal mean value. The figures for men, women, and children were 7.31, 7.34, and 7.10 g. % respectively. The mean average for the whole population was 7.25 g. %. No consistent relation was found to exist between protein values and spleen indices.

The mean average haemoglobin level for men, women, and children was 13.65, 12.31, and 12.16 g. % respectively. The mean value for the whole population was 12.75 g. %. Of the whole population 29% had levels that were at or below 12 g. %; 10% of the men were at or below this level, 38.3% of the women, and 34.8% of the children. Thus there were nearly four times as many women and children at or below the 12 g. % level as there were men.

There were no consistent relations between low haemoglobins and high spleen indices; there was, however, a closer relation between parasite indices and haemoglobin values. Spleen and blood parasite indices in Greece vary from year to year, according to the severity of malaria. In years of low endemicity the spleen and blood parasite indices will not approach one another very closely—that is, the spleen rates may be high and the blood-parasite rates low: in years of high endemicity or after epidemics the blood-parasite and spleen rates will approximate much more closely. It follows, therefore, that the haemoglobin level will vary from year to year and will be much more directly related to the high blood-parasite indices than to high spleen indices, as in fact has been found to be the case in acute and chronic malaria.

The relatively favourable haemoglobin levels found in the present survey is accounted for by the fact that the past four years in Greece have been years of low endemicity in most parts of the country. The present figures, obtained during a transmission- and relapse-free period, may be taken as probably representing the peak haemoglobin level of Macedonia and Thrace.

The large proportion (55%) of hyperchromic macrocytic anaemia present in Macedonia and Thrace at all times makes it seem likely that there are other factors as well as malaria that are concerned in the anaemia situation in this part of Greece. So far as is known there is no deficiency of iron in the diet. In the past the very low intake of animal protein, which is eaten only two or three times a

year, has been regarded as related to the high incidence of these macrocytic anaemias.

No relation was found to exist between blood-protein levels and haemoglobin levels; nor were there any constant differences between the haemoglobin and protein values for the mountain and plain areas.

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AN INVESTIGATION INTO CERTAIN TONGUE CHANGES IN BRITISH TROOPS

BY

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The object of the present investigation was to determine the incidence, clinical picture, and, if possible, the cause of a symptomless tongue condition which was occurring among British troops in India and South-East Asia Commands, and which was giving rise to diagnostic difficulties. The principal features of this condition were fissuring, epithelial changes, and changes in the architecture of the papillae. The most probable aetiology was considered to be a nutritional deficiency, probably of riboflavin.

Briefly, the incidence and macroscopic appearance of these tongues were investigated among troops who had been two years in India or on the Burma Front, and for comparison a similar investigation was carried out on British troops fresh to India from the U.K. Therapeutic trials were carried out to demonstrate the effects of thiamine, riboflavin, and niacin on such tongues. All tongues were examined in a good light, both naked eye and with the aid of a $\times 6$ lens. The same macroscopic tongue appearances were found both in troops fresh to India and in those who had served there for a considerable time. Only the incidence of the condition differed in the two groups.

Principal Features

Fissuring.—Difficulty was encountered in defining what constituted fissuring. For the purposes of this investigation all tongues which showed furrows other than the normal single antero-posterior furrow were accounted fissured. Fissures of all grades of severity were seen and were classified according to the depth and width of their troughs. Where they were shallow, appearing as a parting between the papillae, the term mild was applied. Where they were deeper and their troughs were sunk below the level of the papillary bases, the term moderate was applied. Fissures which were deep and wide were listed as severe. Besides differing in depth and width the fissures varied in number, position, and length. Some were sagittal, some coronal, some oblique, some straight, some curved; they varied from a few millimetres to a few centimetres in length; in number they varied from two or three to twelve to fifteen.

The fissuring sometimes occurred alone, sometimes in association with other tongue changes, such as epithelial stripping, loss of fur, or alterations in the papillary architecture, described later. In no case did the patients complain of sore tongue; evidence of inflammation was absent.

Of special interest was a condition in which the whole dorsum and edges of the tongue were the site of multiple deep wide fissures. A number of men with such tongues stated that the condition had been present from birth, or from as far back as they remembered. In these tongues markedly hypertrophic papillae of fungiform shape were a feature of note. These were undoubtedly cases of "scrotal tongue" and were of little clinical significance.

Epithelial Changes.—The following three main types of epithelial changes were encountered.

Type I.—The patches were single or multiple, round or irregular, and varied in size from a match-head to a sixpence. Over these patches fur was either entirely absent or thinner than that of the surrounding dorsum, giving in consequence a redder appearance to the patch. These areas were transient, appearing and disappearing at different sites on the dorsum for no apparent reason. They sometimes occurred alone, sometimes in association with other tongue changes.

Type II: Geographical or "Mapped" Tongue.—In this connexion multiple areas devoid of fur, similar to the patches seen in Type I, were found, most commonly along the edges but also on the dorsum of the tongue. They were distinguishable from the preceding, however, by a distinctly demarcated border, usually incomplete and consisting of a thickened whitish-grey epithelium. This thickened border gradually advanced over the tongue, leaving behind it an area devoid of normal papillae and fur; *pari passu*, the receding edge of the furless area assumed a normal appearance, so that periodic examinations revealed a change in the "map" of the tongue. The significance of this irregular desquamation of the tongue is unknown. Geographical tongue was always associated with fissuring of greater or less degree.

Type III.—Here red, shiny patches, often circular and the size of a shilling or less, occurred centrally on the posterior third of the dorsum. They were sometimes irregular and sometimes enclosed islands of normal epithelium. Over these areas the papillae were absent. In some cases the area was subdivided by multiple tiny cracks, like a crazy-pavement; in some it was quite smooth. The appearance was suggestive of a past inflammation in which the specialized papillary epithelium had been lost and the area covered with a flattened epithelium. If this is the explanation the contraction of the subepithelial connective tissue would explain the fissures. Sometimes the patch was covered with a delicate white epithelium, like a fine film of paper, giving an appearance similar to a mild localized leucoplakia.

Papillary Changes.—Variations in the general papillary architecture were also noted. In some tongues the dorsum was covered with a uniform papillary mat which made it difficult to differentiate, naked eye, the filiform and fungiform papillae. In others the fungiform papillae, especially at the edges, were prominent and injected. This appearance was only transient. In all the scrotal and severely fissured tongues many large mushroom-shaped papillae were found.

Fissuring, epithelial changes, or the papillary changes apart from injection did not seem to be related to the soldiers' age, length of service, use of dentures, alcohol or condiment consumption, or to tobacco smoking.

TABLE I.—Showing Incidence of Fissuring and Epithelial Changes

	U.K. Group		Burma Front Group	
	No.	%	No.	%
Total examined ..	2,390		761	
Tongue changes ..	240	10.04	112	14.7
Fissuring ..	225	9.4	97	12.73
Severe ..	12	0.5	5	0.65
Moderate ..	42	1.75	22	2.89
Mild ..	171	7.15	70	9.19
Epithelial changes ..	73	3.05	46	6.04
.. plus fissuring ..	53	2.22	31	4.07
.. alone ..	15	0.62	15	1.97
Fissuring alone ..	167	6.98	66	8.6

In Table I the comparative incidence of fissuring and epithelial changes in the tongues of troops recently arrived in India and of those who had been fighting on the Burma Front are given. It will be noted that the incidence of both fissuring and epithelial changes is greater in the Burma Front Group

than in the U.K. Group, the increase in epithelial changes being relatively greater than the increase in fissuring. The differences in incidence are significant statistically as seen by χ^2 test. It will be seen from the table that epithelial changes occurred more often in fissured than in non-fissured tongues. The significance of this is unknown, but it suggests that fissuring and epithelial changes are part of a common syndrome or that the fissured tongue is more liable to epithelial changes.

Other Evidence of Nutrition Deficiency

During the tongue examination signs of nutritional deficiency were looked for in the general condition of the soldier, in the eyes, mouth, skin, etc. The only sign of possible nutritional origin discovered was angular stomatitis. In the U.K. Group four cases were seen among 2,390 men examined; in three it was associated with fissuring of the tongue, in the fourth there was no other sign of possible nutritional import.

Among 761 men who had served on the Burma Front, three cases of angular stomatitis were seen; in two mild fissuring was present, in the third there was no lingual abnormality. In none of the cases of angular stomatitis in either group was the condition severe. The usual appearance was a sodden thickened epithelium at the angles of the mouth without actual cracking.

Therapeutic Tests and Results

To demonstrate the effects, if any, of certain vitamins of the B complex on these tongue conditions, 80 men, showing one or more of the tongue changes described, were selected for therapeutic trials. Men showing similar tongue changes were paired off, and to one man was given vitamin supplements while his "twin" received no supplements and was simply observed as a control. Thirty-one men received five compound vitamin tablets per head daily for 24 days (each tablet containing thiamine 1 mg., riboflavin 1 mg., niacin 10 mg., and ascorbic acid 25 mg.); 10 men received five lactoflavin tablets (each containing 1 mg. of riboflavin) per head daily for 15 days. One man receiving vitamins and one from the control group fell out during the course of the experiment.

During the investigation all the men subsisted on the same scale of rations, all underwent the same training, and the two groups lived so far as possible under comparable conditions. The health of the men studied remained good throughout the investigation. In particular there were no cases of diarrhoea.

To minimize subjective influences, drawings were made of the tongue condition at each examination, and a decision whether there was improvement, deterioration, or no change was attempted. The results are shown in Table II. It will

TABLE II.—Effects of Supplements of Compound Vitamin Tablets and of Lactoflavin on Fissuring and Epithelial Changes

	Experiment using Compound Vitamin Tablets		Experiment using Lactoflavin Tablets	
	Experimental Group	Control Group	Experimental Group	Control Group
Fissuring:				
No improvement ..	24	24	6	7
Improvement ..	4	5	3	1
Epithelial changes:				
Type I { No improvement ..	3	4	0	No control
Improvement ..	4	2	1	No control
Type II { No improvement ..	0	1	0	No control
Improvement ..	0	0	0	No control
Type III { No improvement ..	5	3	1	0
Improvement ..	0	0	0	0

be seen from the table that neither in the cases of fissuring nor in the cases of epithelial changes were there any significant improvements due to vitamin administration. A note was also kept of the papillary architecture of the tongues under observation. No significant alteration was observed as a result of vitamin therapy.

Discussion

The frequency among British troops in India and South-East Asia Commands of tongue changes suggestive of nutritional deficiency made the verification or refutation of this diagnosis a matter of importance. From the first it appeared improbable that certain of the cases investigated were due to inadequate

iet; many cases of severely fissured tongue gave a lifelong history of the condition, and two cases of geographical tongue actually appeared after the addition of vitamin supplements to the diet. As, however, there was little to distinguish the tongue changes in cases giving a helpful history from those with no such history, it was considered best during the investigation to lump all the cases together.

In favour of the diagnosis of deficiency diseases was the dietary history. In the forward areas where these tongues were first noted the dietary of the troops was giving rise to anxiety. Their ration scale on paper contained adequate amounts of all the essential nutrients, but in practice their ration was not being implemented, and it was doubtful whether even minimum requirements for calories, thiamine, riboflavin, niacin, and ascorbic acid were being met. Cases of undoubted primary malnutrition among British troops, apart from loss of weight, were nevertheless rare. The chief evidence adduced in support of doubtful cases was the tongue changes here described. The fact that such tongues were present in significantly greater numbers among men who had been in S.E.A.C. for a considerable period than among troops fresh from the U.K. lent weight to a nutritional aetiology. Refined laboratory tests in support of this diagnosis were not possible.

There were factors against deficiency disease as the cause. While many of the tongues were suggestive of B hypovitaminosis, and several might have passed as cases of hyporiboflavinosis, it is significant that no cases were found which conformed with the textbook picture of advanced deficiency. This was all the more striking because typical textbook tongues of riboflavin deficiency were occurring among large numbers of Indian troops in the same region; among them generalized redness and pain were features of note which were not found in British soldiers. Further, the tongue lesions of hyporiboflavinosis among sepoys were generally accompanied by other evidence of the deficiency such as angular stomatitis, skin changes, etc. Among the British cases under consideration such corroborative evidence was exceptional. It has also been shown by Thomson and Freedman (personal communication) that the tongue lesions of riboflavin deficiency in Indian troops clear up after 5 mg. of riboflavin daily for 14 days. Kruse (1942), on the other hand, in his investigations into the tongue manifestations of niacin deficiency, stressed the long period required for recovery, and talked in terms of 200 mg. of nicotinamide daily for 14 months to effect a cure. It is realized that in the therapeutic trials carried out on British troops the vitamin dosage was small, the courses short, supplements of only well-known vitamins were given and it is not certain whether they were absorbed from the gut, but the absence of a favourable response to thiamine, riboflavin, and niacin exhibition was against a deficiency of these vitamins being causative. Again, the occurrence of similar tongue changes (albeit less frequently) among troops fresh to India and among those living in the base areas of India, all of whom had been subsisting on a diet adequate on modern standards, makes nutritional deficiency appear unlikely as the cause.

To sum up, it is considered that the balance of evidence is against the tongue changes investigated being of nutritional origin. An alternative explanation cannot be offered at present. The chief object in publishing this paper is to draw attention to the frequency of tongue changes which are apt to be diagnosed as due to deficiency disease and to enjoin caution in their acceptance as such.

Summary

A tongue condition occurring frequently among British troops and characterized by fissuring and changes in the epithelium and architecture of the papillae has been investigated.

The frequency was less among troops fresh from the U.K. than among those in base areas of India or on the Burma Front.

No improvement in the condition followed treatment with thiamine, riboflavin, and niacin.

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BATTLE EXHAUSTION

REVIEW OF 500 CASES FROM WESTERN EUROPE

BY

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In both the 1914-18 war and that of 1939-45 it has been found that the stress of battle conditions sooner or later proves too much for some men and a breakdown occurs. The effects of this may be short-lived, return to the fighting zone being possible after a few days; but in more serious cases a long period of treatment may be required, and even then it may be necessary to discharge the patient from the Forces. During the fighting on the Western Front it was possible to treat the least serious cases on the spot, but in the more severe cases it was found necessary to remove the casualties altogether from the theatre of war and send them home, in many instances to special neurosis centres. An analysis of the medical records of 500 such cases admitted to E.M.S. hospitals since D-Day has been made by the Ministry of Health Statistical Branch at Norcross, where a survey of the records of every fifth admission for in-patient treatment is being carried out. All of the 500 cases were admitted with a diagnosis of battle exhaustion (Medical Research Council Morbidity Code VX/9496/6X), and were not simultaneously suffering from either trauma or disease. Although such a diagnosis depends to some extent on the medical officer, this fact should not invalidate the statistical comparisons which follow.

The figures for the population at risk were not available, and therefore 5,000 wounded men admitted to E.M.S. hospitals from the Western Front during the period from D-Day to the end of 1944 have been used as a basis for comparison. For the sake of contrast, figures of admission for non-combat neurosis have also been extracted for 1942 and 1943, the years for which the statistics are complete. These have been compared with the corresponding total admissions for all diseases, excluding the infective and acute respiratory infections, which are unduly liable to seasonal variation.

TABLE I.—Percentage Distribution of Battle Exhaustion and Non-combat Neurosis Cases by Age (Males)

	Age Groups				
	15-24	25-34	35-44	45-54	55+
Battle exhaustion (M.R.C. Code VX/9496/6X)	48.6	44.6	6.4	0.4	—
Wounds and other injuries from the Western Front (Codes 80-96)	46.5	47.0	6.3	0.2	—
Non-combat neurosis:					
Anxiety states (Codes 3320 and 3321)	24.2	50.0	23.7	2.0	0.1
Hysteria (Code 3324)	30.9	46.5	21.0	1.5	0.1
Psychoneurosis (unspecified) with somatic symptoms (Codes 3330-9)	33.6	42.7	21.4	2.3	—
All diseases (excluding infective and acute respiratory)	33.6	44.8	19.3	2.1	0.2

Comparison of the age distribution of battle exhaustion cases with that for all injuries on the Western Front shows so little difference that it does not appear that any particular group is more prone to combat neurosis than to any other form of accident. The same applies to non-combat neurosis patients admitted for unspecified forms of psychoneurosis with somatic symptoms, and in a lesser degree to cases of hysteria, when these groups are compared with the general average for all non-infective and non-respiratory illness. The proportional incidence of anxiety states is markedly below the average for ages 15-24, and well above for the 25-34 group.

The distribution of days of in-patient treatment shows little variation for the age groups 15-24 and 25-34, and the median periods are approximately equal. For the age group 15-24 the distribution shows that 11.4% were treated for less than 2 weeks, 14% from 2 to 4 weeks, 31.2% from 4 to 8 weeks, 32.9% from 8 weeks to 3 months, and 10.5% over 3 months; while, for ages 25-34, 11.8% were treated less than 2 weeks, 12.8% from 2 to 4 weeks, 27.7% from 4 to 8 weeks, 36.8% from 8 weeks to 3 months, and 10.9% over 3 months. The numbers in the higher age groups are too small for any

TABLE II.—Length of In-patient Treatment for Battle Exhaustion and Non-combat Neurosis

Days of In-patient Treatment:	0-	4-	10-	14-	21-	28-	42-	56-	91-	182	Not Stated	Total	Med (day)
Age Groups	No. of Cases											Total	Med (day)
15-	4	11	11	18	14	22	49	75	23	1	15		
25-	1	14	11	11	17	23	38	81	22	2	3		
35-	1	1	—	4	3	1	8	9	3	—	2		
45-	—	—	—	—	—	—	1	—	1	—	—		
55+	—	—	—	—	—	—	—	—	—	—	—		
Total	6 (1.2%)	26 (5.2%)	22 (4.4%)	33 (6.6%)	34 (6.8%)	46 (9.2%)	96 (19.2%)	165 (33.0%)	49 (9.8%)	3 (0.6%)	20 (4.0%)	500 (100%)	51
Distribution of 400 cases of non-combat neurosis	0.5%	8.8%	4.2%	10.5%	5.8%	16.2%	15.5%	27.7%	9.8%	1.0%	—	100%	41

conclusion to be based upon them, but from the distribution it does not appear that age is a factor affecting the length of treatment needed. For 400 cases of non-combat neurosis selected at random the median period of treatment was 45 days.

TABLE III.—Length of Service in the 1939-45 War

	Years of War Service							Total
	0-	1-	2-	3-	4-	5 and Over	Not Stated	
Frequency	22	73	55	46	127	98	79	500
Percentage of known cases	5.2	17.3	13.1	10.9	30.2	23.3	—	100%

That only 5.2% of the patients whose period of service was known had had less than 1 year's service may simply reflect the fact that the complexity of modern warfare necessitates longer training before exposure to battle conditions. Men with 4 to 6 years' service accounted for 53.5% of the breakdowns. Of 127 with 4 years' service, 36 had had previous battle experience—8 in France and 28 in the Mediterranean theatre; while of 98 with 5 years' service 16 had been in the fighting in France and Norway and 28 in the Mediterranean. The incidence of breakdown is greatest in those with less than 2 or more than 4 years' service. This may be compared with the experience of Minski (1945), who found that in a series of 54 wounded patients with neurosis, 46 had extremes of service—either 1 to 1½ years, or 4 years or more. It might have been expected that exposure to battle stress would develop a form of resistance to those external causes which promote fear. But for a number of men who had successfully endured all the hardships of the North African campaign, followed in many cases by the Sicily landings, it seemed as if the cumulative effect of their experiences had exhausted all their reserves, leaving them nothing with which to face a new trial. In all, 99 men with varying lengths of service had previously been exposed to battle stress, and of 60 for whom information was given 27 had previously broken down, including 11 who had been treated in neurosis centres.

The view has been expressed that it is not the immediate strain which causes breakdown, but rather a constitutional predisposition. Slater (1943) in an analysis of the records of 2,000 neurotic soldiers found that 55.7% of these men had one or

more first-degree relatives—parent, sib, or child—with definite neurotic illness, psychosis, epilepsy, or some form of psychopathy such as drink, shiftlessness, or violent habits. Ballard and Miller (1945), discussing psychiatric casualties in the R.A., found a positive family history in 60% of all cases of both sexes. In the battle exhaustion series information as to family mental history was given in 169 cases, of whom 71.6% had at least one first-degree relative with neurotic traits, psychopathy, psychosis, epilepsy, mental deficiency, or insanity. A series of 400 records of non-combat neurosis a positive family history was found in 69% of the 248 cases for whom information was given, 60% having at least one unstable first-degree relative. The distribution of such relatives is shown in Table I and rather lends colour to the view that in some families there is an inherent underlying defect, which may manifest itself outwardly in a variety of forms of unstable conduct. The high percentage—71.6—of battle exhaustion cases with an adverse history of first-degree relatives might be accounted for by the fact that, while such individuals adapt themselves more or less successfully to their normal environment, any extraordinary situation exerts a selective action and brings them to notice.

Apart from adverse hereditary factors, a history of previous neuroticism was often found. Compared with 66 records of normal childhood there were 237 in which one or more neurotic traits were mentioned, including 17 who were dull and backward; the frequency with which the symptoms occurred was "nervy" or neurotic, 119; fears, 50; somatic symptoms, 46; shy and solitary, 39; moody, 16; sleep disturbance, 14; breakdown, 10. It was not possible from hospital records to obtain comparative frequencies of family or personal abnormalities in any group of "normal" men, since questions on these matters are rarely put to patients admitted for wounds and injuries.

It has been found that the rate of breakdown is low among the civilian population (Ballard and Miller, 1945), and this is attributed to a better ability to bear strain among familiar surroundings. The rate is also low among submarine crews, despite the dangers of their work.

With a view to seeing whether one type of unit or another was more productive of breakdown cases, the 500 battle exhaustion cases were analysed by units and compared with a similar analysis of 5,000 injury cases from Western Europe

TABLE IV.—Distribution of Unstable Relatives among Men with Battle Exhaustion and with Non-combat Neurosis

Type of Disability	Battle Exhaustion										Non-combat Neurosis									
	Father only	Mother only	Father and Mother	Father and Sibs	Mother and Sibs	Father, Mother, and Sibs	Sibs	Other Relatives	Family Unspecified	Total	Father only	Mother only	Father and Mother	Father and Sibs	Mother and Sibs	Father, Mother, and Sibs	Sibs	Other Relatives	Family Unspecified	Total
Mental disease*	2 (1)	2 (2)	2 (2)	—	—	6 (2)	5 (4)	2 (2)	—	19	3 (2)	—	1	1 (1)	5 (3)	1	3	5 (4)	—	19
Epilepsy	—	1	—	—	—	—	3	—	—	4	1	—	—	2	—	1	6	4	—	14
Psychosis . .	—	2	—	—	—	—	—	—	—	2	5	—	2	—	—	2	1	—	—	131
Neurosis	14	40	23	5	11	11	9	4	9	126	20	43	17	20	21	22	21	—	14	13
Psychopathy	1	1	3	—	—	1	—	2	2	10	4	2	—	—	—	—	—	—	—	—
No. of men with adverse family history	17 (14%)	46 (38%)	14 (11.6%)	3 (2.5%)	4 (3.3%)	6 (5%)	16 (13.2%)	4 (3.3%)	11 (9.1%)	121 (100%)	33 (19.4%)	46 (27%)	10 (5.9%)	12 (7.1%)	12 (7.1%)	10 (5.9%)	26 (15.3%)	6 (3.5%)	15 (8.8%)	150 (100%)

* Under this head figures in parentheses denote the number under treatment in mental hospitals.

In only a few cases was the difference between the numbers derived from the two samples very much more than that due to the chance involved in sampling. In the Infantry and R.E.M.E. the incidence of battle exhaustion cases was significantly less than that of all injuries, while in the Paratroops, R.A.M.C., and A.C.C. it was higher. Hence it does not appear that there is any distinction between offensive and passive units in the proportion of breakdowns.

The predominant symptoms accompanying breakdown were somatic, both in the battle exhaustion cases and in those of non-combat neurosis. While both showed a high incidence of symptoms referable to the nervous system and special senses, the latter showed a much higher frequency of symptoms in the gastric and genito-urinary systems. The incidence of sleep disturbance was higher in battle exhaustion cases, probably due to 13.4% of all patients having battle dreams. The percentage frequency of the various symptoms is given in Table V.

TABLE V.—Frequency of Symptoms per 100 Patients with Battle Exhaustion and Non-combat Neurosis

Symptoms	Battle Exhaustion	Non-combat Neurosis
Somatic symptoms :		
Nervous system	94.2	72
Special senses	31.6	40
Cardiovascular and glandular ..	1.2	19
Respiratory	0.4	12
Upper gastro-intestinal tract ..	4.6	27
Abdomen	6.6	11
Genito-urinary	1.2	40
Limbs	4.6	7
General	7.0	8
Sleep disturbance	32.4	24
Fears	14.8	17
Depression	11.6	14.5
Moodiness	8.6	24
Suicidal tendencies, etc. ..	0.4	2.5

Various reasons were given by the patients to account for their breakdown: 167 could not face shelling, 56 complained of blast, 48 broke down when their friends were killed or injured, 16 were exhausted by being in the front line for days on end, 14 could not endure horrible sights, 10 were trapped in burning vehicles or buried alive, 7 gave domestic worry as a reason, 5 broke down when separated from their unit; only 3 admitted to a fear of being killed or wounded, and one complained of inability to keep up with younger men. After treatment it was found necessary to discharge 5.6% of the patients from the Army; 17.6% were returned to duty, and the rest recategorized or treated under the annexure scheme.

The analysis made here does not suggest that age, length of service, previous battle experience, and type of unit are factors affecting the incidence of combat neurosis, but rather that the causative agent is an inherited predisposition to one or another form of instability.

Summary

A statistical analysis is presented of a random sample of 500 cases of battle exhaustion from Western Europe.

Distributions according to age, duration of treatment, and length of service are given.

A comparison is made with 400 patients admitted for non-combat neurosis.

I am indebted to Dr. Bernard Hart, Consultant Adviser to the E.M.S., Sir Francis Fraser, Director-General, E.M.S., and Dr. Percy Stocks, General Register Office, for their help and suggestions.

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Routine medical inspections to the number of 13,782 on the children attending the primary and secondary schools of Liverpool have shown excellent nutrition in just over 5% of the children, and that in 93.8% the nutrition could be assessed as normal. The proportion in whom the nutrition was slightly subnormal was 1.15%, and in 0.02% it was considered to be bad. These results are given in a report on the work of the School Health Service submitted to the Liverpool Education Committee by Dr. W. M. Frazer. A study has also been made on the school-children from the point of view of physical measurement, from which it appears that at the present time both boys and girls, for the respective age-groups, were heavier than the boys and girls in 1911. The boys aged 12 are, on the average, 12.4 lb. (5.6 kg.) heavier and the girls 10.2 lb. (4.6 kg.).

ABACTERIAL PYURIA PRESENTING AS "URETHRITIS"

BY

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In view of the increasing recognition given to this clinical syndrome (Donovan, 1945; Peters, 1946), the records of these cases, noted over a period of three months at a military hospital in the United Kingdom, are presented in detail. I trust this will lead to a better understanding and treatment of cases previously labelled "urethritis" or "cystitis" of unknown origin.

The patients reported sick, or were referred to a special treatment centre, on account of a persistent urethral discharge. Two cases had been seen on previous occasions and were given courses of sulphathiazole, urethral irrigations, and intravenous fever therapy (T.A.B. vaccine), but with no permanent relief from their symptoms.

Three Case Histories

Case 1.—Pte. X, aged 25, seven years' service, had gonorrhoea in 1940, and mild synovitis of the left knee since April, 1945. He first noticed a urethral discharge, accompanied by an increasing frequency of micturition, with the passing of cloudy urine, in May, 1945. He had been treated at three different special treatment centres in the U.K. in June, August, and October, 1945, for non-specific urethritis, with the usual sulphathiazole courses, but with no permanent relief. Examination on Nov. 8, 1945, revealed scanty urethral discharge, mild circinate balanitis, uniform turbidity of bladder urine after acidification, mild synovitis of left knee, with little or no pain on movement; rectal examination, N.A.D. An early morning urethral smear showed numerous pus cells and a few epithelial cells. Urine: pus cells, +++; albumin, +; aerobic culture sterile. A radiograph of the knee revealed no bony changes. Kahn and gonococcal complement-fixation tests negative. Urethroscopic appearances and prostatic secretions were normal. On Nov. 9, 25 million units of T.A.B. vaccine (Army laboratory preparation) were given intravenously. A good pyrexial response, 103° F. (39.4° C.), was obtained, but with no clinical improvement. On Nov. 13, 15, 17, and 24, 0.3 g. of neosarsphenamine were given intravenously (total 1.2 g.). Frequency ceased and the urine cleared within 48 hours of the first injection. No clinical change was noted in the knee condition. A follow-up one month later revealed no recurrence of urinary complaint; knee i.s.q.

Case 2.—Pte. Y, aged 29, five years' service, had "urethritis" on Oct. 10, 1945. He was treated with sulphathiazole (20 g.), silver nitrate (1:3,000), and irrigations twice daily, and was apparently cured. When first seen on Nov. 6, a diagnosis of non-specific urethritis was made on account of the urethral discharge. He was given 25 million units of intravenous T.A.B. vaccine; pyrexial reaction, 102° F. (38.9° C.), and urine cleared. He was discharged to duty and surveillance. On Nov. 24 he reported sick with recurrence of urethral discharge and marked frequency of micturition. Examination revealed muco-purulent urethral discharge, uniform turbidity of bladder urine after acidification, and mild almost painless synovitis of right knee (a past history of trauma to the knee was admitted); rectal examination, N.A.D. An early morning urethral smear showed numerous pus cells and a few epithelial cells. Urine: pus cells, +++; albumin, +; aerobic culture sterile. A radiograph of the knee revealed no bony injury or disease. Kahn and gonococcal complement-fixation tests negative. Urethroscopic appearances and prostatic secretions were normal. From Nov. 25 to 27 he was given 20 g. of sulphathiazole, with no clinical improvement. On Dec. 3, 5, 7, and 14, 0.3 g. of neosarsphenamine were given intravenously (total 1.2 g.). Frequency ceased, and the urine cleared within 48 hours of the first injection. No clinical change was noted in the knee condition. A follow-up one month later revealed no recurrence of the urinary complaint; knee i.s.q.

Case 3.—Pte. Z, aged 22, two and a half years' service, had no past history of V.D. He was exposed to risk of infection on Oct. 13, 1945. He reported sick with a urethral discharge and frequency to a special treatment centre on Nov. 26. All tests for active V.D. were negative. He was transferred to the surgical ward for treatment of "cystitis." Urine: pus cells, +++; albumin, +; aerobic culture sterile. Cystoscopy revealed a contracted bladder, capacity 3 oz. (90 ml.), with an acute inflammatory condition of the bladder mucosa. He was given 25 g. of sulphathiazole over five days, without any clinical improvement. Examination on Dec. 11 revealed muco-purulent urethral discharge and uniform turbidity of bladder urine after acidification (some shreds in the specimen); rectal examination, N.A.D. An early morning urethral smear showed

numerosus pus cells. A further examination of the urine gave similar results (culture sterile). Kahn test negative. Urethroscopic appearances and prostatic secretions were normal. On Dec. 13, 15, 17, and 28, 0.3 g. of neoarsphenamine were given intravenously (total 1.2 g.). Pronounced clinical improvement was noted within 48 hours of the first injection. The urine became completely clear after the third injection. A follow-up one month later revealed no recurrence of urinary complaint.

Discussion

These cases had all received the recognized treatment for cystitis and urethritis, but in no case had a permanent cure been effected. Specific urethritis was excluded. A cystitis was assumed in all cases, but no organism could be detected after repeated attempts at culture. In the two cases presenting a synovitis of the knee old gonococcal infection was excluded.

Causation is discussed by Donovan (1945). Renal causes were excluded in his series of cases, and a virus cause was suggested; but I question whether organic arsenicals have any therapeutic value in a virus infection (cf. Peters, 1946). According to Lydon (1945) recurrent attacks simulating pyelitis occur during the course of *Trichomonas vaginalis* infection in the male. In view of this I venture to suggest *T. vaginalis* as a possible cause of "abacterial pyuria." Since I had not seen that article before treating the cases, *T. vaginalis* was not excluded as a possible cause of the condition. Stovarsol, an organic arsenical, is widely used in the treatment of this infection in the female. Therefore it is not unreasonable to assume that an intravenous arsenical may reach and destroy such an organism attacking the bladder mucosa in the male.

As the three cases in question had received prolonged treatment by the recognized therapeutic measures, with no permanent relief, the effect of intravenous neoarsphenamine is dramatic in its action. Follow-up was limited to one month because of constant troop movements, etc., but no recurrences of the condition were reported. It would be interesting to know whether any other investigations have been carried out exploring the possibility of *T. vaginalis* as a potential cause of "abacterial pyuria."

Summary

The clinical picture and the histories of three soldiers, originally diagnosed as cases of "non-specific urethritis" but who were found to be suffering from "abacterial pyuria," are recorded in detail.

Causation of this syndrome is discussed. All patients responded dramatically to a course of four injections of 0.3 g. neoarsphenamine given on the first, third, fifth, and twelfth days.

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At a meeting of the British-Yugoslav Association, with Mr. Somerville Hastings, M.P., in the chair, Mr. J. N. BARRON, the retiring chief surgeon to the U.N.R.R.A. plastic surgical unit at the Belgrade Hospital, spoke recently on medical problems of rehabilitation in Yugoslavia. He emphasized that the terribly high rate of amputation in that country, affecting all sections of the people, was the result of incredible hardships of mountain resistance over a period of years in the struggle against the common enemy. As the Allies gave both material and moral support to the resistance, by which countless Allied lives were saved, some responsibility rested upon them to help the Yugoslavs to solve their medical problems with regard to the maimed, blinded, and wounded adults and children. With the lack of doctors and of medical supplies they were faced with an exceedingly grave situation. So far as Mr. Barron could estimate, there were well over 15,000 men and women who had lost their legs as a result of war injuries. The plastic surgery unit had been endeavouring to cover the whole field of accident surgery; this was an immense problem and the hospital had commitments of over 10,000 cases, but in six months Mr. Barron's team had been able to look after less than 400 of these. The primary function of the team had been to train Yugoslav personnel: the treatment of patients, notwithstanding its importance, was secondary to the great need of training others who could carry on the work. A major problem in surgery was that of the thousands of war-injured children. Asked about the future of plastic surgery in Yugoslavia when U.N.R.R.A. closed down he said he wished to stir up interest in Britain, the United States and elsewhere, so that the work now being fathered and financed by the Administration could be carried on. In his judgment Yugoslavia needed help in a programme to solve its surgical problems, and this should extend over the next eight or ten years.

Reviews

THE BRONCHIAL TREE AND LUNG ABSCESS

The Anatomy of the Bronchial Tree. With special reference to the Surgery of Lung Abscess. By R. C. Brock, M.S., F.R.C.S. Oxford Medical Publications. (Pp. 96; illustrated. 42s.) London: Oxford University Press, 1946.

In this volume Mr. Brock attempts to achieve two objects: first to give a coherent account of the anatomy of the bronchial tree and its implications, and secondly to furnish a topographical guide to the surgeon who has to drain lung abscess. Until recently the anatomy of the bronchial tree has been neglected by the anatomist, and the account of it given in the book not only gives a clear picture of our present state of knowledge, but adds much original work by the author which has previously only been available in several journals. Particularly noteworthy are his accounts of the distribution of the bronchi of the axillary area of the upper lobe and those of the lingula; in the former, he adopts a terminology which is rather different from that usually used, but he gives good reasons for it. The last chapter includes a description of the commoner abnormalities of the bronchi which is very interesting and useful.

To the physician, his demonstration that in the recumbent position lipiodol normally flows into areas in the upper part of the lung where spreads of tuberculosis frequently occur affords a possible explanation of some difficult problems. The sections on the surgical treatment of lung abscesses are excellent, and in no other book is such a clear and comprehensive guide available. As a work for the specialist physician or surgeon it is difficult to praise it too highly, and it will probably become the standard textbook on the subject. The reproductions of bronchograms, however, are so good that it seems pity that they are not separately indexed so that they could be used for reference by those who have to interpret bronchograms less frequently.

Most readers are heartily tired of the utility type of production of books generally available at present; but the way in which this volume is produced brings the hope that it is the forerunner of a return to pre-war standard. The x-ray pictures come out very well and show the conditions described clearly; some of the lipiodol shadows show evidence of being touched up, but only sufficiently to clarify them. The book is one of the few which can be recommended without any qualifications to all who are interested in its subject.

WORK ON STROPHANTHIN

Strophanthin. Clinical and Experimental Experiences of the Past 25 Years by Bruno Kisch, M.D. (Pp. 158. No price given.) New York City: Brooklyn Medical Press, 2700, Broadway.

The preface states that this monograph has been written for the purpose of urging the American medical profession to reconsider the question of the clinical application of strophanthin. The author was previously professor in Cologne and came under the influence of the late Albert Fraenkel, who introduced strophanthin for the treatment of heart disease in 1906. Fraenkel was impressed by strophanthin as an agent for intravenous injection which had much less cumulative action than the glycosides of digitalis, and of which injections could be given with safety at intervals of 48 hours, knowing that by the strophanthin of the previous injection had been completely excreted. Owing to deaths which followed the use of too high doses, few doctors were converted to the use of strophanthin, though in 1925 Vaquez succeeded to some extent in popularizing its use in France. In this country strophanthin was known to be a substance of varying potency; in the *British Pharmacopoeia* of 1932 a standardized preparation was included, but by that time digoxin was available, and by reason of Lewis' interest took a prominent place as a heart remedy, which it was certainly to retain. Digoxin is, however, for the most part unknown on the Continent of Europe and in America.

This monograph gives a less interesting account of strophanthin than the glycoside deserves. Of 118 pages of text, 79 are devoted to papers on the pharmacological action in animal tissues, which are so numerous that often the account becomes

catalogue; the remaining 39 pages on clinical action fail to show in what respects strophanthin is superior to digitalis, or to make any comparison with digoxin. It is significant that digoxin does not occur in the index, and is not mentioned in the text. Fraenkel's own writings provide a much more convincing case for the view that strophanthin has a useful place in medical practice, and it is unlikely that this monograph will achieve its declared aim. The English is in several places defective.

MICRO-ANALYSIS IN MEDICAL BIOCHEMISTRY

Micro-Analysis in Medical Biochemistry. By E. J. King, M.A., Ph.D. (Pp. 168. 10s. 6d.) London: J. and A. Churchill. 1946.

Micro-chemical procedures for commonly determined blood constituents, developed by Prof. E. J. King and his associates during the past ten years, have been widely adopted by chemical pathologists. The advantages of micro-methods have been fully appreciated. There is a considerable saving in reagents when an analysis can be made on 0.2 ml. of blood instead of 2 ml.—not to mention the saving of labour in making up reagents. Coagulants may be omitted and samples measured with precision in capillary blood pipettes. Micro-chemical methods are particularly useful in investigations that require the taking of frequent samples.

Hitherto details of such methods were available only in the original publications. Some of the procedures have undergone further modifications and improvements by King and his colleagues since their original descriptions. All users of these methods will, therefore, welcome the appearance of this book, in which the latest recommendations for the published procedures, and also some additional methods, are brought together. Standard procedures are also included, so that the present book forms a complete set of instructions for the execution of all the determinations commonly asked for in routine laboratory investigations.

Analyses include those for whole blood, plasma, serum, cerebrospinal fluid, faeces, urine, gastric contents, and calculi. A chapter is devoted to gastric, renal, and liver function tests. Spectroscopic procedures are described. A most useful chapter on colorimetric and photometric measurements includes details for the construction and assembly of a simple direct-reading photo-electric colorimeter. Tables of normal values and abnormalities in composition of blood, with some very sensible observations on the use of the word "normal" in this connexion, form an admirable introduction to the very lucid descriptions in the analytical chapters.

Since this is a book to buy and not to borrow, the publishers are to be congratulated on the very reasonable price.

ELECTROTHERAPY AND LIGHT THERAPY

Electrotherapy and Light Therapy. With the Essentials of Hydrotherapy and Mechanotherapy. By Richard Kovács, M.D. Fifth edition, thoroughly revised. (Pp. 694; 352 engravings and a coloured plate. 42s.) London: Henry Kimpton.

It must be twenty years since Dr. Richard Kovács produced his first edition of *Electrotherapy and Light Therapy*. The present edition is the fifth, and it comes at a most opportune time, when the whole outlook of the medical profession in relation to the techniques used in rehabilitation has undergone a profound transformation.

Dr. Kovács, in his preface, states quite correctly that in 1927 "medical men practising as electrotherapists were looked upon by many of their medical brethren with suspicion, mingled with pity." Now all this is changed and the whole profession, and indeed not only the whole profession but even Ministers of the Crown, now acknowledge the value and scope of rehabilitation methods. Dr. Kovács's several editions have always moved forward with these developments. One of the great advantages in all his writings is that he never claims a physical or electrical method as a cure-all or a 100% benefactor. The techniques are well set out and the book can either be read consecutively by the aspirant to knowledge of the subject or used as a textbook of reference. It has won for itself an honoured place which it thoroughly deserves.

It is a pity that this edition was in the press at the same time as Dr. W. S. C. Copeman's remarkable paper on fibrositis, but

it is interesting to see that Fig. 296 bears striking testimony in support of Dr. Copeman's theory. It is a pity, too, that war conditions have prevented the author from paying a visit to this country before publication, as had he been able to do so doubtless a number of the advances made during the war here, both in methods and in apparatus, would have been incorporated. In these respects the book is not fully complete for the candidate for the Physical Medicine Diploma. But these small defects in an otherwise excellent and very readable treatise will doubtless be remedied in a subsequent edition, which it is hoped will soon be on its way.

PATENT MEDICINES

Patent Medicines: An Indictment. By Hugh Linstead, M.P. (Pp. 32. 1s.) London: National News-Letter, 162, Buckingham Palace Road, S.W.1.

This is a useful and temperate statement on the position of "patent medicines" in this country, with suggestions for further reforms. Coming as it does from the Secretary of the Pharmaceutical Society of Great Britain, it carries an authority justified by the prolonged work of that body on this problem. The pamphlet has left on this reviewer the general impression that "it does move," if only slowly. Mr. Linstead says that the real "secret" remedy no longer exists, and this, it may be said, is thanks largely to the pioneer work of the B.M.A. in publishing its books on *Secret Remedies* and *More Secret Remedies*. The law now insists on publication of the formula, and this is a great check on "exaggerated claims." Mr. Linstead deals with the great difficulties of controlling the ingenuity of the advertising agent, and points out that his present efforts are mainly devoted to a subtle rousing of a sense of fear—fear of what symptoms may lead to if not abolished by the medicine the potential user is advised to take. Only those who have tackled the job of censoring such advertisements can realize the devilish ingenuity of the advertiser.

The booklet very fairly shows that the better elements of the proprietary trade, of the newspaper proprietors, and of the Advertising Association, have done much to abolish the worst evils of the business; but, as he points out, these bodies are voluntary associations and have no direct control over the outsider. An interesting point is raised both by Commander King-Hall in his preface and by Mr. Linstead—they suggest that there is something wrong in allowing advertisements which would compete with the new Health Service. The Government "cannot permit every device of modern publicity to incite the citizen to ignore a Service which the State provides for him and to accept in its place one provided by the advertiser." It is not easy to reconcile this view with the statement on page 24 which says "it is essential to preserve the right of the citizen to treat his own ailments." Thus we have the usual clash between the duty of the State and the rights of the individual. There is no blinking the fact that there is a danger to individual initiative if the citizen is not to be allowed to treat his own symptoms at his own risk because the State has provided something which *it*, but not *he*, may think better for him. However, the dangers of self-treatment are there and it is necessary to protect the public from false or exaggerated claims. Mr. Linstead, in addition to providing a careful summary of what has been done, makes several suggestions for further reforms when Parliament can find the time.

Notes on Books

The full text of Prof. G. GREY TURNER's Hunterian Oration entitled *The Hunterian Museum Yesterday and To-morrow*, which he gave last year at the Royal College of Surgeons of England, has now been published, with 43 illustrations, as a book of 92 pages by Cassell and Co., Ltd., price 15s. Many of those who read the shortened version in these columns on Feb. 24, 1945, will like to read and possess the oration *in extenso*. It is an interesting contribution to medical history, and the orator's ideas for the future are well worth pondering.

Practical Anaesthetics (2nd edition, Baillière, Tindall and Cox, 10s. 6d.), by Dr. J. ROSS MACKENZIE, shows evidence of thorough revision. In many places the text has been elucidated by the inclusion of additional matter. The book will be helpful for students, house-surgeons, and the occasional anaesthetist.

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WORLD MEDICAL ASSOCIATION

Thirty-one countries sent representatives to the three-day conference held last week at B.M.A. House under the joint auspices of the Association Professionnelle Internationale des Médecins and the British Medical Association. Under the skilful guidance of Sir Hugh Lett, who presided throughout the three days, the conference managed to avoid the shifting sands on which so many other international projects so easily come to grief. Sir Hugh was aided in his task by the readiness of those who had done so much for the A.P.I.M. to merge their identity in the wider organization established by the conference under the comprehensive title of World Medical Association. The objects of this new Association are (1) to promote closer ties between the various international medical organizations; (2) to study the problems which confront the medical profession in different countries; (3) to organize exchange of information; and (4) to establish relations with and present the views of the medical profession to the World Health Organization and UNESCO. It was at the suggestion of Lord Horder, who attended as observer for the American Medical Association, that according to the following agreed form of words the first object was "to promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available in order to assist all peoples of the world to attain the highest possible level of health." There was some discussion on whether the new Association should concern itself with scientific medicine; but the view prevailed of those who pointed out that scientific medicine was well cared for by various national societies and scientific societies. On the last day of the conference a Committee of nine was set up to work out the details of the constitution and to prepare the agenda for the next conference, which is to be held in Paris. The official languages of the World Medical Association are to be English and French. Dr. Charles Hill, Secretary of the B.M.A., and Dr. P. Cibré, of La Confédération des Syndicats Médicaux Française, were elected joint secretaries. The following Committee was appointed to prepare the ground for the next conference: J. A. Pridham, Great Britain; T. C. Routley, Canada; O. Leuch, Switzerland; F. Decourt, France; P. Glorieux, Belgium; D. Knutson, Sweden; L. G. Tornel, Spain; A. Zahor, Czechoslovakia; and I. Shawki Bey, Egypt.

It might be thought that medicine was already becoming well enough represented on the international stage through W.H.O., UNESCO, and indeed through the Food and Agricultural Organization which, under the inspiring guidance of Sir John Boyd Orr, is setting such a wholesome example to U.N.O.; but all those who attended the conference last week were left in no doubt at the end of three days' discussion about the need for a world-wide organization of medical men and women, and came away with the conviction that this new body will not be content with passing high-sounding resolutions which by their vagueness become untranslatable into action. The World Medical Association means business, and the delegates from the various countries came to London last week because they felt the need for the support of their confrères in other countries against the forces they uneasily feel to be menacing the age-old traditions and freedoms of the medical profession. Dr. F. Decourt even expressed doubt about the intentions of W.H.O. and UNESCO. Dr. Decourt indeed said one of the reasons for establishing the World Medical Association "was to defend medical practitioners whose liberty was being menaced in many countries." He was, however, assured by Dr. Chisholm who represented W.H.O., that this organization would not interfere with the medical practitioner in any country. In those valuable contacts that take place outside the official meetings it was clear that doctors from more than one country were gravely concerned about the relationship between the State and the medical profession, and were anxiously watching the developments of the medical services in this country, feeling that what happens in Great Britain may have a profound effect on the evolution of medical services in other nations. Membership of a world-wide organization will heighten the sense of responsibility of the numerous national bodies constituting it and will lend overwhelming strength to the constituent bodies when they severally have to deal with the body politic.

The World Medical Association is in its early infancy. Under the energetic direction of its English and French secretaries it will, we may feel sure, grow speedily and painlessly into a full-grown adult. Once the details of constitution have been worked out W.M.A. will no doubt get quickly on to a fact-finding investigation which will collect the data, and then contrast and compare the systems of medical organizations and administration in different countries. Dr. T. C. Routley, representing the Canadian Medical Association, said early in the proceedings that he wanted to see an organization "which would signify the unity of doctors all over the world." This also was the wish of the thirty-one nationals sitting in B.M.A. House last week. It now remains to see this unity embodied in practical and practicable terms and then to see that those things which doctors in all countries hold to be fundamental principles in professional life are preserved in this atomic age.

CANCER SCHEME FOR NORTHERN IRELAND

Northern Ireland is contemplating a Cancer Act similar to the one which became law in Great Britain in 1939. The cancer death rate in Northern Ireland has risen almost continuously during the last twenty years. No doubt the rise, there as elsewhere, is partly accounted for by the larger proportion of the middle-aged and elderly in the population, also by more precise diagnosis and death certification, but the figures have caused concern among public health authorities and in the Ministry of Health and Local Government. Recently the Ministry invited Lord Amulree, M.D., of the British Ministry of Health, Dr. Ralston Paterson, director of the Holt Radium Institute, Manchester, and Mr. G. F. Stebbing, honorary secretary of the National Radium Commission, to visit Northern Ireland, where they discussed the problem of cancer detection and treatment with Government officials, hospital authorities, and representatives of the medical profession. Many of their suggestions, based on experiences in Great Britain, have been incorporated in a memorandum on the measures to be taken to deal with cancer in Northern Ireland which has been prepared by the Health Advisory Council of the Ministry, a body of some twenty members of whom about half are medical men.

One condition which British experience suggests is that an adequate cancer service must be based on a large unit of population, not less than one million; therefore in Northern Ireland, with a population of not much more than one and a quarter million, there is room for only one cancer organization, with its headquarters obviously in Belfast. It is proposed that the British plan be followed, whereby financial responsibility for cancer schemes is placed on county and county borough councils, aided by grants from the national Exchequer. These local authorities will naturally be represented on the controlling organization, together with the Ministry, the medical profession, and the two Belfast hospitals, the Royal Victoria, and the Mater Infirmorum, where most cancer patients who come under hospital treatment are received (though it is estimated that 75% of the deaths from cancer take place in patients' homes). The centre, both for surgical and radiotherapeutic treatment, if these recommendations are followed, will be set up in the grounds of the Royal Victoria Hospital, though it will be a separate administrative unit. It will accommodate in-patients, about 50 in the radiotherapeutic department and 100 in the surgical, as a start, and it will have a dormitory annexe for out-patients from a distance who do not need admission to hospital wards. An essential part of the scheme will be diagnostic clinics at selected hospitals in various parts of the country, and it is considered that in the remotest areas no patient should have to travel more than twenty or thirty miles to reach such a clinic. Other features of the scheme will be institutional accommodation, where this is necessary, or domiciliary nursing and other aid if more appropriate, for untreatable cases, and a uniform system of records and follow-up. It is hoped to establish co-operation with the Belfast Medical School with a view to courses of undergraduate and postgraduate instruction in the diagnosis and treatment of cancer; with Queen's

University with a view to the institution of cancer research; and with organizations in Great Britain, especially the National Radium Commission. The charter of the Commission does not cover Northern Ireland, and it is suggested that an amendment might be sought in that respect and that it might be possible for Northern Ireland to hire radium from the Commission instead of making fresh purchases.

To organize the entire diagnostic and treatment service a whole-time chief officer would be appointed. This officer, it is thought, should be a radiotherapist with extensive experience in that specialty, as well as some experience in surgery. A staff of whole-time officers would be attached to the radiotherapy department. For the surgical department there would be a panel of consultants holding part-time posts, with junior whole-time officers acting under their direction. The responsibility of the general practitioner in the detection of cancer is strongly emphasized in the memorandum. It is fully appreciated that the success of the scheme will largely depend upon his equipment and vigilance, and the Advisory Council stresses that there is nothing in its recommendations which is intended to imply that any duties of the general practitioner should be taken out of his hands. Through the Northern Ireland Branch of the British Medical Association practitioners will be represented on the controlling body, and immediate steps are proposed for postgraduate training, in which, it is suggested, experts from Great Britain might be invited to come over and assist.

The full development of the scheme, which, of course, will call for legislation, may take a couple of years and may possibly be delayed until it can form part of the framework of a National Health Service for Northern Ireland. Meanwhile some temporary arrangements are proposed whereby a certain number of staff may be recruited, diagnostic clinics set up, special provision be made at some Belfast hospitals for cancer treatment by means of surgery, and cases which need radiotherapy may be concentrated for the time being in the emergency hospital at Musgrave Park. The memorandum strikes a note of urgency, and this is echoed in a foreword by the Minister of Health and Local Government himself, who urges the medical profession, hospital managements, and local authorities to lose no time in making a unified and concentrated attack on a disease which is second only to heart diseases among the principal causes of death.

THE MIASM OF MARASMUS

Apparently as a reflection of an increased incidence of enteritis in the general population, diarrhoea in mothers and babies has of late been observed in the lying-in wards of several hospitals in this country. A typical outbreak described by Brown, Crawford, and Stent¹ was referred to in an annotation² under the title of "What is Gastric Flu?" This epidemic appeared in the general and maternity wards in a thousand-bedded hospital serving a large borough in May, 1945, and the facts are worth review. During a 15-week period 20 patients were found to have had diarrhoea on admission, and 91 persons, inclu-

¹ *British Medical Journal* 1945, 2, 524.

² *Ibid.*, 1946, 1, 459.

ding 27 nurses and 25 babies, developed watery diarrhoea apparently contracted in the hospital itself. Vomiting occurred in 46 of the total of 111 cases, and pyrexia was present in 32 of the 89 adults but not in the babies. Twenty-five of the adults had nausea. The pattern of the incidence was that of a chain outbreak passing from two patients admitted to a surgical ward with suspected abdominal emergencies, through, in turn, a ward maid, a nurse, babies, mothers, medical officer. There were no significant bacteriological findings except that, in the fourth and fifth weeks, *B. dysenteriae* (Sonne) was recovered from fourteen of twenty cases of diarrhoea in one general ward and appeared to be an intercurrent infection affecting this ward only.

An inquiry by questionnaire of the practitioners in the borough showed that the disease, which they considered to be a new phenomenon clinically distinct from bacillary dysentery, had been widespread among the adult population; that it was characterized by sudden onset of profuse watery diarrhoea; that the outbreak had started insidiously; and that there had been two or three waves in April, May, and June, 1945. No deaths were reported. The description of this outbreak corresponds closely with that of the "viroid dysentery" of Reimann *et al.*,³ which had been transmitted to human volunteers by inhalation of nasopharyngeal washings and faecal filtrates. The epidemic was instructive because: (1) The maternity unit at the hospital contained 66 beds and 66 cots in 3 wards, yet one of these escaped entirely, although in the 2 adjacent wards and nurseries 65 persons were involved. (2) All babies were breast-fed, apart from sterile water given with sterile precautions, yet on numerous occasions mothers only or babies only were affected; if both, babies showed signs before mothers, on an average 4.4 days earlier. (3) The outbreak terminated spontaneously without closure of the maternity unit. (4) It in no way resembled in severity a previous epidemic of neo-natal diarrhoea at the same hospital a few months before, when the mothers had escaped. Although a comparison was made both in Brown's paper and in the previous annotation² between the condition and the epidemic nausea and vomiting described by Bradley,⁴ further experience suggests that this condition of watery diarrhoea is distinguishable clinically and epidemiologically from the latter disorder.

We are now informed that in some of the 1946 outbreaks of this apparently novel condition of watery diarrhoea in mothers and babies there has been an appreciable mortality among the infants: in one lying-in hospital 12 of 77 affected babies died. The characteristic orange-coloured stools of the "epidemic diarrhoea of the newborn" described by Ormiston⁵ have not been observed. There has been no evidence of the common respiratory or pyogenic infections in the recent outbreaks, and the diagnosis of parenteral enteritis could not be applied. Sulphonamides were ineffective, but several of the fatal cases showed a biphasic course: after the initial loss of weight and diarrhoea the babies improved until, comparatively suddenly, they collapsed and died. This biphasic course, which may also exist in parenteral enteritis, is referred to by High, Anderson, and Nelson.⁶ They had previously discussed therapy, in particular the correction of acidosis and maintenance of fluid balance (Anderson, Nelson⁷), but they now report less favourable results. They complain about the difficulty of establishing the diagnosis of "epidemic diarrhoea of the newborn" in the initial cases of an outbreak. This experience is shared by others,

and for that reason we should err on the side of safe and treat every infant with diarrhoea, or in fact sudden loss of weight, as infectious. There is another difficulty of diagnosis: it looks as if there were many clinical entities of different aetiology, causing outbreaks of neo-natal diarrhoea. Until the tangle has been unravelled observation should record complete descriptions of all the clinical and epidemiological features of an outbreak. By itself, the term "diarrhoea of the newborn" has little more meaning than "marasmus," or "atrophy," or "decline," or our concept of the cause or causes is not appreciably removed from the "miasm" stage. Systematic observation and record offer the most speedy escape from the present confusion.

PENICILLIN TREATMENT OF MENINGITIS

The treatment of meningitis is technically the most difficult sphere of penicillin therapeutics, and for obvious reasons few extensive studies have been made of it. The largest series of published cases is that described by a distinguished team of investigators at Philadelphia—W. I. White, F. D. Murphy, J. S. Lockwood, and H. F. Flippin—and comprises 71 cases, of which 50 were pneumococcal. The mortality among the latter was 64%, which, as the authors remark, does not appear to represent much improvement on the results of earlier methods of treatment. Unfavourable factors were advanced age—of 17 patients over 50 years old 15 died—and the continued existence of an uncontrolled focus in the ear or elsewhere from which the meningococcal infection originated. This series included patients—evidently treated in early days, when penicillin was scarce—who received doses which would now be considered inadequate. Seven of these patients, and 7 out of 12 cases of meningococcal meningitis, received penicillin by the intramuscular or intravenous route only and not intrathecally.

Since this paper was published it has become recognized that intrathecal injection is an imperative necessity; penicillin, unlike sulphonamides, does not pass into the cerebrospinal fluid from the blood in anything like sufficient concentration. That this is true of the normal meninges has been accepted for some time. W. McDermott and R. A. Nelson² examined the cerebrospinal fluid of 7 patients after the intramuscular injection of penicillin and found only a trace after an enormous dose had been given. Ordinary doses not appearing in the fluid at all. Such doubt as there has been has resulted from the statement that the existence of a meningitis enables the penetration of penicillin into the cerebrospinal fluid to take place: this has been asserted by several authors, and a few successful results have been claimed in the treatment of meningitis by intramuscular injections of penicillin alone. The truth in this matter seems to have been finally settled by J. A. Kinsman and C. A. d'Alonzo.³ These authors, after again demonstrating that in patients without meningitis no penicillin reached the meninges after intramuscular injection, tested the effect in meningitis by using this method of treatment in 9 patients with cerebrospinal fever. This bold step was rewarded by affording a clear answer: there was transitory improvement, due doubtless to the effect on an accompanying bacteraemia, but the signs of meningitis were unaffected. The temperature rose again within 24 hours, and the cerebrospinal fluid still contained as many cells as before together with living meningococci, and never more than a trace of penicillin. Sulphadiazine was then brought to the rescue and all was well.

³ *J. Amer. med. Ass.*, 1945, 127, 1.

⁴ *British Medical Journal*, 1943, 1, 309.

⁵ *Lancet*, 1941, 2, 533.

⁶ *J. Pediatr.*, 1946, 23, 407.

⁷ *Ibid.*, 1944, 25, 319.

¹ *Amer. J. med. Sci.*, 1945, 210, 1.

² *Amer. J. Syph.*, 1945, 29, 403.

³ *New Engl. J. Med.*, 1946, 234, 459.

The logical way of regarding this question is that meningitis has no effect on the permeability of the blood-brain barrier in the ordinary sense; such penicillin as reaches the cerebrospinal fluid in meningitis is simply that contained in the exudate itself. The much higher concentrations attainable by intrathecal injection persist, after an adequate dose, for 12 or even 24 hours, and are sufficient to control not only all coccal infections but even meningitis due to such a comparatively resistant organism as *H. influenzae*. This expectation is at least justified on theoretical grounds, and the single case of *H. influenzae* meningitis described in this *Journal* by McIntosh and Drysdale⁴ affords it some support. Those seeking detailed information about the technique of treating meningitis with penicillin should consult the classical papers of Cairns and his colleagues^{5,6}; they deal with pneumococcal infections, but the methods advocated apply equally to other forms. These authors' results were considerably better than those obtained in Philadelphia: of 38 patients only 9 died, and 4 of these were moribund on admission. In the later cases of this series penicillin was given intramuscularly as well as intrathecally, and sulphadiazine was given in addition. The lumbar route for intrathecal injection was found satisfactory in most cases, and an important feature of this study was the demonstration that penicillin diffuses along the cerebrospinal fluid pathways with extraordinary facility, even reaching the lateral ventricles from the lumbar region. Occasionally, when obstruction exists, cisternal or intraventricular injection may be necessary. The strictest asepsis is imperative: nowhere can penicillin-resistant contaminants in the shape of coliform bacilli do such damage as in the meninges. For these and other reasons, the penicillin treatment of meningitis must remain a serious undertaking, calling for first-class hospital facilities or their equivalent.

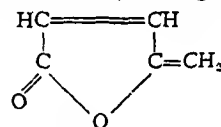
WORKING CONDITIONS IN AUSTRALIAN TEXTILE MILLS

The working conditions in Australian textile mills are liable to be much more trying than those experienced in this country, and Bulletin No. 7 of the Industrial Welfare Division of the Australian Department of National Service⁷ describes these conditions at length, and suggests the most suitable remedies. The Australian climate differs greatly from area to area, and though there is little difficulty in obtaining fairly comfortable working conditions in a temperate climate such as Hobart, it is very different in Sydney and Adelaide. It is well known that the mechanical ease of the spinning process improves as the temperature and relative humidity of the air are increased, but unfortunately such increments—if beyond a moderate limit—become more and more trying to the operatives, so much so that the efficiency of their production is seriously impaired. In Australia some 50,000 textile workers are employed, many of them in old mills with obsolete plant, and in the face of world competition it is vital that they should be replaced by the best types of mill. Some of these mills already exist in Melbourne, Sydney, and elsewhere, and they are described at length in this Bulletin, with many excellent photographic reproductions. Series of tests on atmospheric working conditions were carried out in 67 mills over a fifteen-month period, and especially during the hot months of December to March. It was shown that the effects of solar radiation could be greatly reduced by improving the insulation of the buildings, a fall of

as much as 10° F. in the temperature of the mill, being thereby brought about. The effects of better natural and mechanical ventilation are debated, but it is admitted that on many days of the year tolerable working conditions in some towns can be obtained only by the installation of expensive air-conditioning plants. Series of charts are given showing the number of days on which the mill climate in various towns can be expected to exceed (i) the normal limits for efficient human work, and (ii) the limits which can barely be tolerated.

BUTTERCUPS AND ANTIBIOTICS

Since the discovery that penicillin can be obtained from moulds such as *Penicillium notatum*, similar therapeutic agents have been sought in other fungi and bacteria. This search for new antibiotics¹ has included the higher plants in its scope. Osborn² examined 2,300 species belonging to 166 families by methods similar to those used in the estimation of penicillin, and he found substances inhibiting the growth of *Bact. coli* and *Staph. aureus* in 63 different genera. The most active substances were obtained from plants of the Ranunculaceae family, especially anemone, clematis, hellebore, and ranunculus. Lucas and Lewis³ reported antibacterial principles, varying greatly in their potency and distribution, in the leaves of Scotch thistles, of verbascum, and of peonies, and in the fruits of plants of the rose, saxifrage, and other families. In particular, a species of honeysuckle, *Lonicera tatarica*, was found to contain a potent principle which inhibits the growth of *Staph. aureus* and *Bact. coli*, and another which suppresses coliform bacilli but not Gram-positive organisms. According to Seegal and Holden^{4,5} extracts of buttercups and of *Anemone pulsatilla* showed activity against Gram-positive and Gram-negative bacteria, and against acid-fast bacilli.



Protoanemonin

The active principle in *A. pulsatilla* is protoanemonin. This substance inhibits the growth of *Staph. aureus*, *Bact. coli*, and *Candida albicans*, after incubation at 37° C. for eighteen hours, in dilutions of 1:30,000 to 1:100,000. Protoanemonin appears to be another member of the group of antibacterial agents which includes crepin, penicillic acid, and clavacin, all of which contain a 5-membered unsaturated lactone ring and a highly reactive double-bond system. No information is given about the toxicity of the new compound, so its possible therapeutic value is not indicated. However, judging by clavacin, its antibacterial action will probably be of more academic than clinical interest. But if a practical use were found for it, it would be pleasant to think that the anemones and buttercups which beautify our woods and fields in spring might also cure some of the sickness prevalent at that season.

¹ *British Medical Journal*, 1945, 1, 776.

² *Brit. J. exp. Path.*, 1943, 24, 227.

³ *Science*, 1944, 100, 597.

⁴ *Ibid.*, 1945, 101, 413.

⁵ *J. biol. Chem.*, 1946, 162, 65.

⁴ *British Medical Journal*, 1945, 2, 796.

⁵ *Lancet* 1944, 1, 655.

⁶ *Ibid.*, 1946, 1, 185.

⁷ Department of Labour and National Service, Nicholas Building, 37, Swanston Street, Melbourne.

The Medical Research Council has recently received from Maj.-Gen. Sir Leonard Rogers, K.C.S.I., F.R.S., late I.M.S., a further generous addition to the endowment for research in tropical medicine with which he originally entrusted the Council in 1926. The capital value of the fund thus created is now approximately £15,000. The income is applicable to special purposes within the general field of tropical medical research.

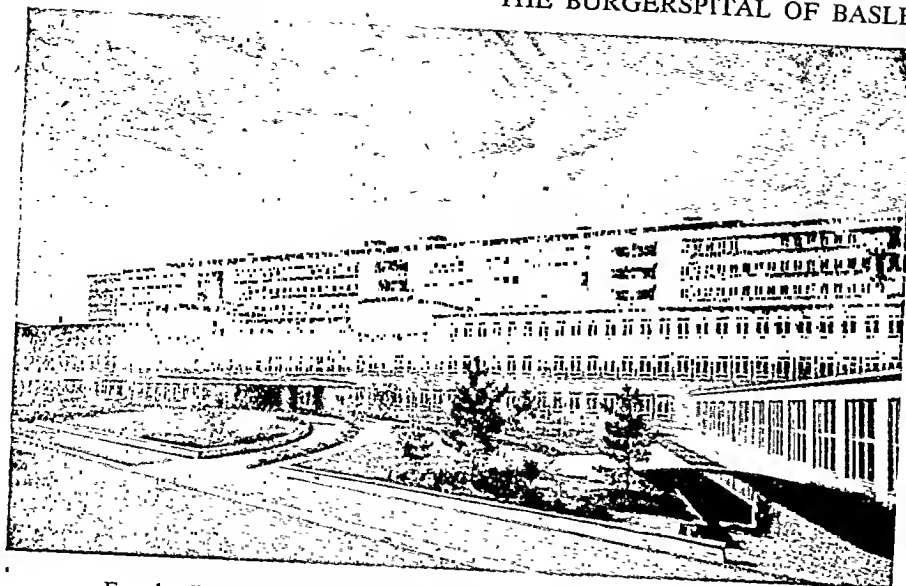


Fig. 1.—Frontage of hospital, showing entrance from the Spitalstrasse.

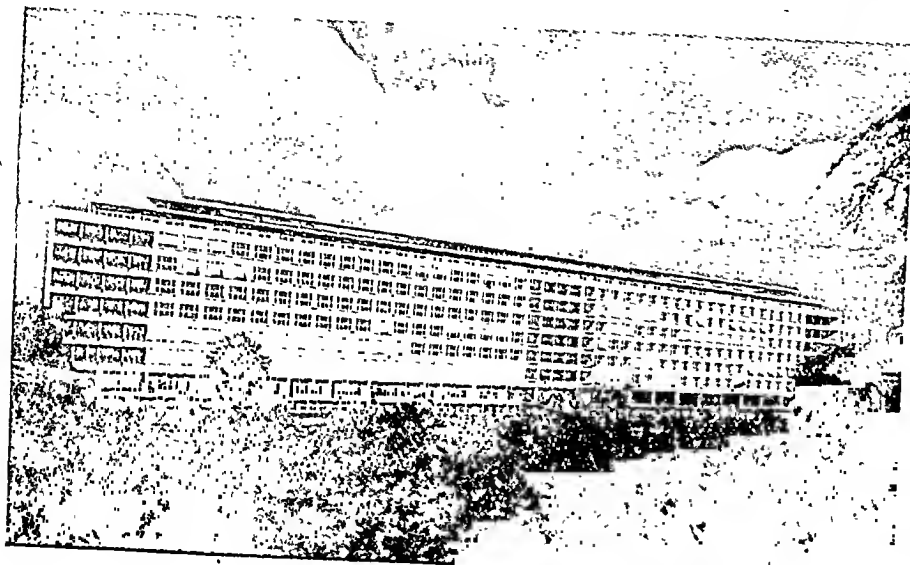
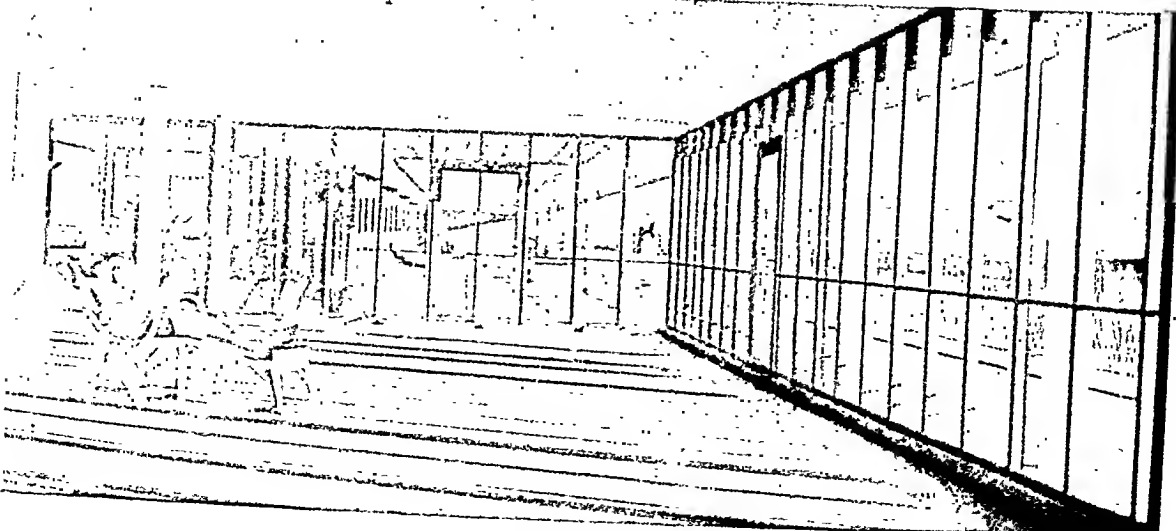


Fig. 2.—South aspect of the ward block.

Fig. 3.—Roof terrace with glass-partitioned enclosure for patients.



THE BÜRGERSPITAL BASLE

A LANDMARK IN MUNI- HOSPITAL BUILDING

Few people who attended the Swiss Conference in Basle a few years ago could fail to be impressed by the new hospital which was opened last year. Here, so far as a quick glance allowed one to judge, was a building which in its appearance, construction, and facilities for patient, doctor, and cook approached the ideal. A few illustrations reproduced will give the reader some idea of its layout.

When the University of Basle was founded in 1460 instruction in medicine was begun on a modest scale; although in those days the sick were for the most part cared for at home there was some clinical instruction at the bedside in the Basle hospital. Already at the beginning of the 16th century the town had two hospitals; in 1260 another hospital was built which continued in use until 1842.

In that year reconstruction of the old and the erection of new hospital buildings were undertaken. The new building consisted of a hospital for the sick, a mental hospital, and an institution for the aged, comprising in all 332 beds. The population of Basle being at that time 26,300. The population rose to 43,540 in 1865 and in 1944 was 172,000. The number of medical students in 1842 was 19 and 562 in 1944. The growth of the town, the advance of medicine, and the increase in the number of students necessitated further building. The pressure on beds and services was relieved by the establishment of a children's hospital, an eye hospital, a women's hospital, and a mental institution. At the same time a number of private hospitals made their appearance. But the need for further extension of hospital facilities soon made itself felt.

The Basle authorities considered the possibility of finding a new site for the municipal hospital building, but a proposal to the effect was rejected in 1935, and a year later it was decided to embark upon a new project of reconstruction. The provisional plans were worked out by 1937 and work on the new building—illustrated in this article—began in 1940.

The Bürgerspital, or

municipal hospital, is situated in a densely populated part of the town and is easily available for patients. The town authorities agreed to divert heavy traffic from the street the new hospital faces so that the patients should not be subjected to too much noise. The hospital extends approximately from west to east in its length. The horizontal building facing the Spitalstrasse, in the middle of which is the main entrance, has in its west wing the surgical polyclinic, and in the east wing the medical clinic. On either side of the entrance are two lecture theatres with glass roofs. The two clinics and the entrance hall are connected with the ward block that lies immediately south, the windows of which face south-south-west. The wards are grouped similarly to the clinics, with the medical wards on the west side and the surgical on the east. The ward block rises higher than the frontage section and the wards are arranged in the seven floors above ground level composing it. Finally there is an extensive roof terrace from which one gets magnificent views of the Vosges and Jura Mountains and the Black Forest. Part of the roof terrace is partitioned off by glass for the shelter of resting patients. The extension from the west end of the frontage houses the kitchens and living-rooms for nurses and other staff. Extending to the south of the wards and from the west angle is a block for infectious diseases. The first basement floor houses the x-ray department and the department for physical therapy; here also is a section for the treatment of emergency cases. In the second floor below ground there is a swimming-pool. In other parts of the building there are pharmacological and pathological departments, and so forth.

In the Bürgerspital no ward contains more than six beds (see illustration). The wards are arranged in units of 16 beds—that is, two wards containing six beds each and on either side two wards containing two beds each. This unit of 16 beds is looked after by a nurse, an assistant nurse, and a probationer. The four wards comprising this unit have intercommunicating doors. These ward units are further grouped into a *Krankenstation* of three such units with an additional two-bedded ward, making in all 50 beds. Altogether there are 671 beds in the main ward block—the *Krankenhaus*. The wards are classified as first-class, second-class and third-class. The "first-class" wards

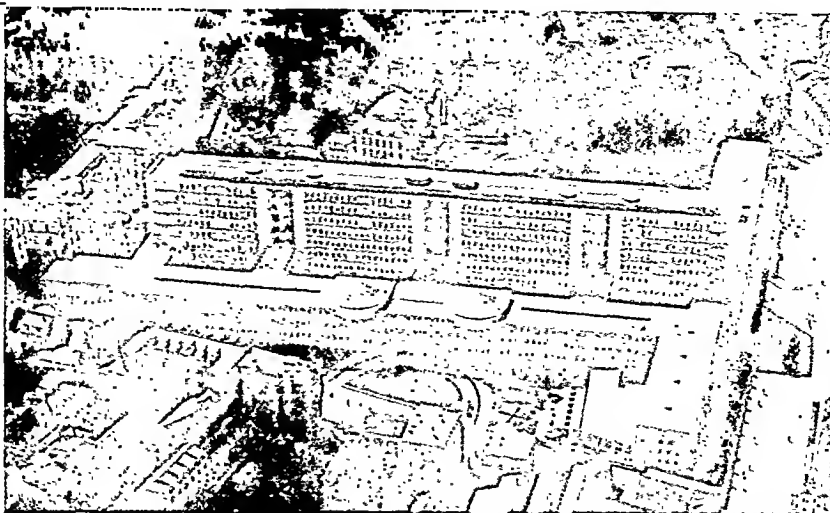


FIG. 4.—Bird's-eye view, showing ward block to south of main entrance building.

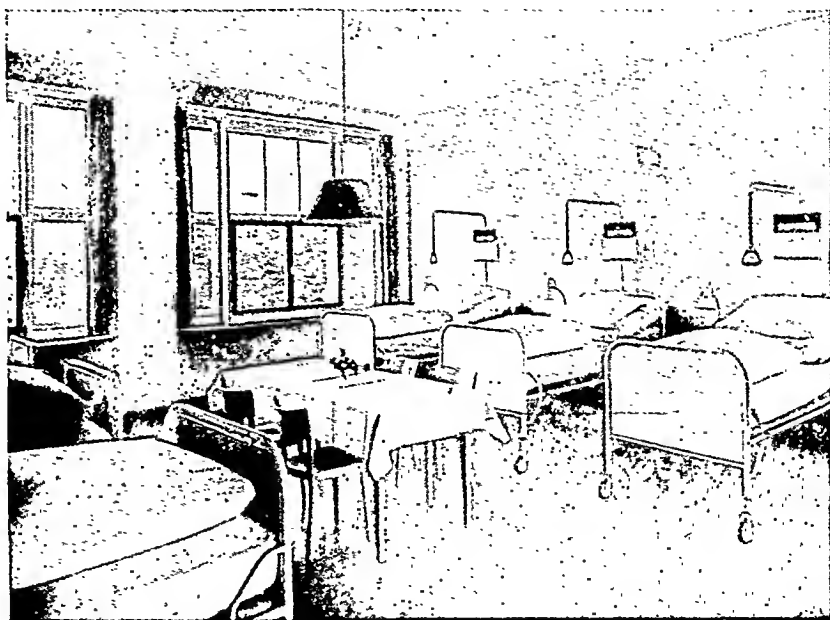
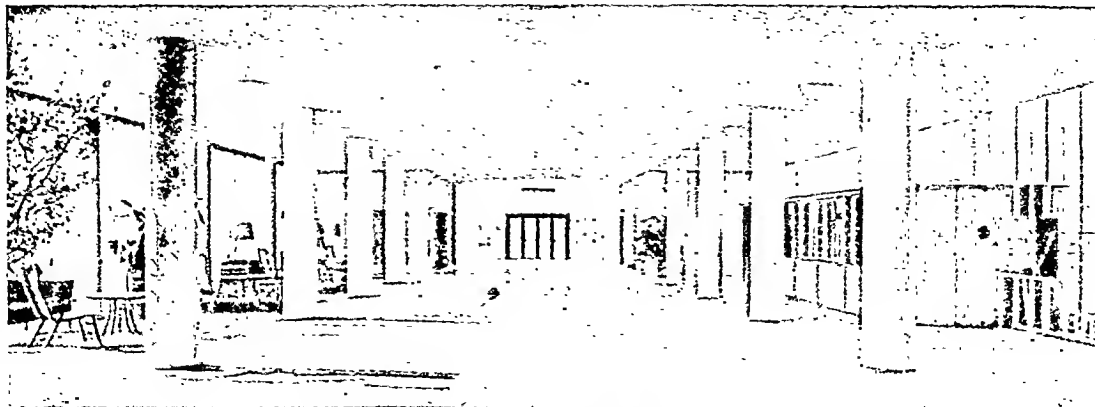


FIG. 5.—A public ward of 6 beds.

FIG. 6.—The Entrance Hall.



on the top floor are single-bedded rooms; on the floor beneath (6th floor) there are two beds to a room, and the third-class wards, comprising six beds each, occupy the first four floors.

There is not the space here to discuss the numerous details of construction, intelligent use of material, heating and cooling systems, methods of delivering meals at their proper temperature to the patients in the wards, etc. It seems as if every conceivable device that could contribute to the comfort and safety of the patient and to the efficient working of the hospital for doctor and nurse had been worked to the finest point of detail. The only point of criticism is that the medical staff appear to have fair distances to walk from one part of the hospital to another, and for the relief of the eye one would have thought that more use could be made of colour on the internal walls.

BRITISH-SWISS MEDICAL CONFERENCE

Concluding Sessions

It remains to refer, all too briefly, to some of the later communications made to the Basle Conference. Several of these were by Swiss specialists. A description of twenty years' research in typhus fever was given by Dr. HERMANN MOOSER (Zurich). Formerly, he said, typhus fever was regarded as a well-defined morbid entity in its epidemiology. Then doubts were raised about the louse being the sole vector. A new variety of typhus was found in Mexico and parts of the United States which was called murine (appertaining to the mouse) typhus which, although it showed cross-immunity with classical Old World typhus, could clearly be distinguished from it by its different course in laboratory animals. He related the results of observations on strains of murine typhus which had laid the foundations of most of the present knowledge of the epidemiology of rickettsial diseases.

Prof. HUGO KRAYENBÜHL (Zurich) discussed the immediate and late results of carotid ligation of intracranial aneurysms. He gave a review of 35 cases, and concluded that, while with infraclinoid aneurysms carotid ligation was a safe procedure, it was not highly dangerous, as some had claimed, in supraclinoid aneurysms; his seven cases had tolerated the ligation wholly without complications.

The regulation of lung volume was discussed by Prof. FRITZ VERZAR (Basle), with emphasis on a new feature of respiration, namely, the increase of the respiratory surface area resulting from an increase in lung volume in hyperventilation. The final Swiss paper was by Prof. P. H. ROSSIER (Zurich) on thromboangiitis obliterans. Postmortem examinations of persons who had died of this disease had shown that the coronary arteries were affected as frequently as the vessels of the lower limbs, and about half of the patients died from coronary occlusion.

Nuclear Physics and Medicine

A paper which broke much fresh ground was read by Dr. J. S. MITCHELL (Department of Radiotherapeutics, Cambridge). He had much of interest to say on metabolic disturbances produced by therapeutic doses of α and gamma radiation, on the production of gene mutations and chromosome breakage, and on clinical problems such as the relation between dosage and permanency of cure of malignancy, and dosage rate and significance of indirect effects, in radiotherapy. The part of his paper which excited most attention was that concerning the biological application of the recent advances in nuclear physics which had led to the atomic bomb. These provided a new powerful method of preparing radioactive isotopes, which are becoming widely used in medicine as tracers for the study of metabolic processes, as artificial gamma ray sources in radiotherapy, and in extension of this, some could be used internally, by taking advantage of their selective absorption by tissues—e.g., iodine by the thyroid gland—to reduce secretion or cell division by local irradiation. He also spoke of the possibilities of fast neutron beams with which previous clinical trials could not be regarded as final because of the difficulties of absolute dosimetry and the inevitable restriction to patients with advanced disease. Evidence was accumulating to indicate differences in the mechanism of the biological action of fast neutrons and gamma radiation, though at present it was difficult to know whether any of these differences were likely

to prove advantageous in therapeutics. There was no alternative to the cyclotron in this field as the neutron energies produced in the "pile" were not sufficiently high for the treatment of deeply situated malignant tumours.

Prof. A. C. FRAZER (Birmingham) discussed fat absorption in the light of the current partition hypothesis and referred their host Prof. Verzár as an authority. Investigations show that in the intestinal lumen emulsification down to 0.5 μ part is largely due to the triple complex fatty acid bile salt monoglyceride, two components of which result from lipolysis which process is often self limiting by local fall in pH as its released fatty acids are removed in virtue of their water solubility.

Emulsified unhydrolysed fat particles, smaller than water-soluble fatty acids *per se*, and the longer chain fat soaps, can be passed, markedly influenced by corticosteroid salt, and the phosphorylation mechanism, through the strict border of the intestinal lining cell. Within the intestinal resynthesis of fat and phospholipidogenesis occur and, with choline, facilitate the further absorption into the blood stream. Distribution in the body, independent of the total quantity ingested, varies with extent of hydrolysis, triglycerides tend to travel by lymph stream to the body fat deposits and hydrolysates via portal venous blood to the liver.

In man, fat-balance experiments, repeated intestinal withdrawals, and blood chylomicron counts are of value in assessing, as yet incompletely, the fat absorption defects of sprue, pancreatitis, regional ileitis, biliary obstruction, gas colic fistula, and gastrectomy.

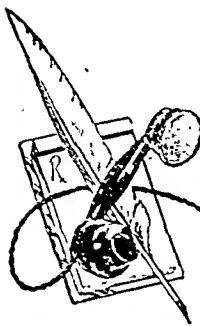
Dr. R. R. RACE (London) presented an interesting paper on the Rh blood groups and on his collaborator Prof. R. FISHER's hypothesis on the inheritance of the Rh genes, which had now brought order out of chaos. So far eight hereditary forms of Rh⁺ had been isolated, the eighth being discovered after Fisher postulated that it must exist.

Chemotherapeutic Control of Malaria

The whole subject of the chemotherapeutic control of malaria in war and peace was reviewed by Dr. HAMILTON FAIR (London). In war the main problem was one of a non-immune population at risk in a highly malarious area, where the question of chemotherapeutic interference with premunity was not involved. In peace the control of malaria was more concerned with communities which had acquired a varying degree of premunity as a result of exposure over prolonged periods to repeated infections with different species of parasite—a condition generally found in indigenous populations residing in hyperendemic or highly malarious areas. In recent war there was a world shortage of antimalarial drugs and such research stimuli as a malaria casualty rate of 74 per annum (later reduced to about 30%) among Australian troops in New Guinea. Dr. Fairley went on to describe results obtained in a medical research unit in Northern Australia where 850 volunteers were experimentally infected with sporozoite-transmitted malaria while taking different antimalarial drugs and he discussed the action of these, dividing them into schizonticidal suppressants (e.g., quinine, sulphadiazine, atabrine); causal prophylactics (e.g., plasmoquine, paludrine). He spoke in particular of paludrine as outstanding in that a single dose of 50–100 mg. given from 48 to 120 hours after exposure was causal prophylactic for *P. falciparum* infections, and similar single dose of 100 mg. would resolve an overt attack of *P. falciparum* malaria through schizonticidal action. The 100 mg. taken twice weekly promised to be a complete suppressant.

"The possibilities of this single dose regimen of paludrine apply to native villages and epidemics in hyperendemic areas open up an entirely new field in the chemotherapeutic control of this disease, not only on account of its schizonticidal value, but also because of its extraordinary potency as a causal prophylactic. . . . The discovery of paludrine and the increased control of the mosquito vector of its larvae by D.D.T. and other means should enable future epidemics to be rapidly controlled."

The subject of arterial injuries was dealt with by Mr. J. MASON-BROWN (Edinburgh). He described 62 operations for traumatic aneurysm, of which 23 were emergencies treated in 20 cases by ligation and 3 by suture. One death followed proximal ligation of the common iliac artery for a huge false



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f the external iliac. In one case there was slightly decreased blood supply in an already ischaemic limb, but otherwise there were no complications. In the 39 operations of election, 23 by ligation and 12 by suture, there was one recurrence in an early case of separative ligation of an axillary arterio-venous fistula. There was good evidence that following arterial suture the related vessels remained patent, and arteriograms taken in three cases of popliteal arterial suture confirmed this. One allied officer actually discharged himself from hospital after a popliteal suture, and fought with such distinction at Cassino that he was awarded his country's highest decoration for bravery.

Social and Industrial Medicine

Prof. CHARLES McNEIL (Edinburgh) read a paper on child life and health which had a medico-political tinge when he declared that in the family the mother ought to be the sovereign power, and her rule almost absolute, but the State, even the democratic State, was beginning to assert itself more firmly, and there were the makings of a conflict between the State and the family.

"The encroachment of the State in the whole life and government of the family must reduce and weaken the responsibility of the mother for the health of her children; and loss of responsibility is likely to be accompanied by a loss of her authority. The crucial question is whether it will or will not promote child health. It may produce healthier bodies. It already has produced better trained minds. It is very doubtful if it will produce more stable and happy personalities. And of these three parts of child health, the greatest is the health of the soul."

The research carried on in Great Britain in problems of industrial health, notwithstanding the difficulties imposed by total war, was related by Dr. DONALD HUNTER (London Hospital) at a special meeting of the Conference held at Rheinfelden Spa. He described work done on factory lighting and ventilation, vocational psychology, prevention of injury, toxicological investigation, industrial lung diseases, and the various new experiences afforded by wartime conditions of employment. Fluorine compounds were particularly interesting, as in one aluminium factory handling *cryolite* some 800 tons a year, much of which was in particulate form and settled on the surrounding fields, were lost to the air. Sheep and cows developed dental fluorosis with gross irregularity of teeth, and some of them died from inanition because of their inability to eat grass. An extensive investigation, not yet complete, of the factory employees and the local residents demonstrated skeletal fluorosis in 28 out of 264 furnace-men examined, but the condition caused no disability even in a man who had been exposed for over 40 years. Blood counts showed no abnormality. The water supply of the neighbourhood contained less than 0.2 parts per million of fluorine.

Surgical Rehabilitation

At a meeting of the Swiss Academy—not technically a part of the Conference—Sir REGINALD WATSON-JONES (London Hospital) gave an account, with cinematograph illustrations, of the work done in this country on surgical rehabilitation. In his story of the orthopaedic service of the R.A.F. he showed what had been done in cases with apparently hopelessly smashed limbs, and he proved by pictures of the victims after their recovery how successful the work of rehabilitation had been. Many of the young fellows who had sustained crash landings had had fractures at many levels—the fractures numbered sometimes as many as 16 or 18—yet in case after case the same boy a year later was shown in perfectly healthy trim, engaging in vigorous exercises, and apparently all the tougher for his experience. In addition to the fractures there were often severe abdominal and other injuries. He showed a photograph of two fellows who had not a single uninjured limb between them. Entirely new complications of injuries presented themselves. But very many of the men returned to non-operational flying within a year and to operational flying within eighteen months. An analysis of 1,058 cases of fractured spine showed that 914 went back to duty. One photograph showed a number of these men who had had fractured spines engaged in a tug-of-war, having provided from their own musculature something better, said Sir Reginald, than any surgical instrument-maker could provide for them.

These changes, he pointed out, were due to three things—good surgery, good rehabilitation, and good resettlement. The last was as important as the first and second. The old way of resettlement was a financial adjustment in the county court; the new way, through the Disabled Persons Act. Everything must be done to influence the minds of these men in the direction of full restoration. The surgeon should be careful of the words he used in their presence, for in their hours of enforced idleness they were apt to brood over them and possibly to get depressed. Physical exercises were no more than a part of the technique. The important thing was the extent to which the mind of the patient was influenced in the right direction.

An interesting morning was spent by the members of the Conference on visiting the several important chemical factories of Basle. Basle for the past hundred years has been the centre of a chemical industry known all over the world. To have been the birthplace of D.D.T. is its latest claim.

"WORLD MEDICAL ASSOCIATION" CONSTITUTED

INTERNATIONAL CONFERENCE IN LONDON

Thirty-three medical associations in thirty-one countries were represented at a three-day Conference held at the B.M.A. House in London, opening on Sept. 25. The Conference was under the joint auspices of the Association Professionnelle Internationale des Médecins and the British Medical Association, and its general agenda were to discuss the objects of international liaison, the setting up of an international body for the achievement of such objects, and the constitution and immediate programme of such organization. It was unanimously agreed that such an association be constituted, to take the place of the old A.P.I.M., with the objects of promoting closer ties between the various national medical organizations, of studying the problems which engage the profession in different countries, of organizing exchanges of information, and of establishing relations with, and presenting the views of the profession to, the new World Health Organization and U.N.E.S.C.O. The Conference was attended by about 43 full delegates and 32 observers.

It was agreed that the title of the new body should be the "World Medical Association," and an acting committee was set up comprising representatives from Great Britain, Canada, Switzerland, France, Belgium, Sweden, Spain, Czechoslovakia, and Egypt.

Sir HUGH LETT, Bt., President of the B.M.A., who took the chair at the conference, extended a welcome to the visitors and mentioned with special pleasure the presence of a representative (Dr. Chisholm) of the World Health Organization. The B.M.A., he said, had always taken an interest in international co-operation. One of its present activities was the arrangement of visits of lecturers to the Continent where such visits were desired, and it was also launching an abstracting service which would cover world medical literature.

Objects of an International Body

On the proposition of Dr. ALFRED CON (B.M.A.), seconded by Dr. F. MORAN (Irish Free State Medical Union), and supported by delegates from the National Medical Chamber of Poland, the General Council of Colleges of Spanish Doctors, and the Svenska Läkaresällskapet, it was agreed unanimously:

That this Conference express the view that there should be an international organization of medical associations.

A long discussion then took place on the objects of such a body, in particular whether these should be limited to professional and social medicine or should be extended to embrace scientific matters. Dr. J. C. MICHAELSON (Palestine Jewish Association) suggested two functions which such an organization could discharge. One would be to act as a clearing house for the resettlement of refugee doctors. In Great Britain since 1933 between 400 and 500 Jewish refugee doctors had been absorbed, and in America about 5,000 refugee doctors, of whom 2,000 were non-Jewish. Such an organization might make an

inventory of the number of refugee doctors in each country and smooth the absorption rate throughout the world. The other function would be to act as a safeguard against the violation of professional ethics by political doctrinaires and to resist political pressure of every description.

The Polish delegate wanted scientific medicine included among the objects of the new organization. Dr. P. GLORIEUX (La Fédération Médicale Belge) did not see how an international organization could successfully operate in this field. Adequate organizations for dealing with scientific matters, he said, already existed in the several countries. Dr. P. CIBRIE (La Confédération des Syndicats Médicaux Française) was of the same opinion. Every country had its academies. There was more need for an international organization to study the professional problems of the private practitioner, especially in view of the social security legislation which had been passed or was pending in many states. Dr. F. DECOURT (Secretary, A.P.I.M.) also considered that scientific medicine was sufficiently well served. The aim of an international organization should be to defend the rights of the ordinary practitioner and also of his patients—perhaps to defend them from the designs of their respective governments. A similar view was expressed by Greek and Dutch delegates.

The World Health Organization

Dr. T. C. ROUTLEY (Canadian Medical Association) said that he had recently attended in New York the meeting of 213 delegates from 62 countries who in five weeks had worked out the basis of the World Health Organization.¹ In his opinion the World Health Organization had the opportunity of going a long way towards solving the future problems of the world, but without the medical profession it would be like an electric grid without current. No parliament or national government would do anything with this instrument unless the doctors in every country in the world made it alive. Therefore there was now room in the United Nations for a movement among the combined medical associations parallel with that which had resulted in the World Health Organization. He had no quarrel with the old A.P.I.M., but in the sweeping movement of world events it was no longer adequate. He wanted to see an organization which would signify the unity of doctors all over the world; it should know no geographical boundaries, and should have as its primary objective to assist mankind to attain the highest possible level of health.

After some further remarks from Spanish, Portuguese, and Palestine Arab delegates acclaiming the idea of closer ties between the national medical organizations, Dr. J. A. PRIDHAM (B.M.A.) said that whatever statement of objects was adopted, it ought not to exclude the possibility at some future time of extension into other fields. The B.M.A., he said, undertook scientific as well as medico-political work, and in its scientific work it did not compete with the colleges and academies; on the contrary, these bodies were quite anxious to come into contact with the Association. If the new medical organization were the medical counterpart of the World Health Organization it would be rendering an important and useful service.

The Search for a Formula

Suggestions were made by the British, Canadian, French, Egyptian, and Palestine Jewish delegates for formulae expressing the objects of the new body, and the following form of words was eventually agreed to:

"To promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available in order to assist all peoples of the world to attain the highest possible level of health; to study the professional problems which confront the profession; to organize an exchange of information on matters of interest to the profession, and to establish relations with, and to present the views of the medical profession to, the World Health Organization and the United Nations Educational, Scientific, and Cultural Organization."

Lord HORDER, who attended the conference as an observer for the American Medical Association, said that it was important to bear in mind that any international medical organization which was set up with some degree of permanency, whether inside larger organizations such as W.H.O. or U.N.E.S.C.O.,

or having its own autonomy, should put in the forefront of its objects the promotion of closer ties among the several national medical organizations. It was at his suggestion that this was placed first among the objects.

Dr. CIBRIE (France) said that in his country there was some suspicion of the World Health Organization and of U.N.E.S.C.O.—suspicion which had arisen, he thought, because these bodies had not clearly stated their aims. If it was decided to co-operate with these institutions it should be determined in advance how far that co-operation ought to extend. If the World Health Organization assumed bureaucratic functions, would they still be prepared to co-operate? Prof. GRZYBOWSKI (Poland) contested the implication that the World Health Organization would associate itself with anything which was not in the best interests of the profession. Dr. F. DECOURT, however, supported his countryman. One of the reasons for the establishment of their own body, he said, was to defend medical practitioners whose liberty was being menaced in many countries, and to proclaim in advance co-operation with this new official institution, unless such co-operation were strictly conditioned, would be unwise.

Dr. T. C. ROUTLEY (Canada), as one who had been present at the birth of the World Health Organization, said that he entertained no fears of its intrusion into political affairs affecting the doctor in any part of the world.

Eventually the phrase was agreed to "to establish relations with, and to present the views of the medical profession to, the World Health Organization and U.N.E.S.C.O."

Dr. CHISHOLM, representing the United Nations Organization at the Conference, gave an account of the World Health Organization and its origin. The interim commission, composed of the nominees of 18 States, was at work on the rapid and effective establishment of the Organization. The constitution had been signed by 61 nations, but needed the ratification of a minimum of 26 before it came into being. Under the constitution of the W.H.O. there would be no interference with the practice of medicine in any country. He realized the concern over possible regimentation of the profession; this was in the minds of those engaged in the work of framing the constitution, but there would be no attempt to control the practice of medicine in any way whatsoever. The Organization would help all bodies engaged in securing the better health of the people, and, well aware of its responsibility, it desired the advice of bodies which could speak for the medical profession.

Nomenclature and Constitution

The Conference agreed that the name of the new body should be "World Medical Association." The French, Greek, and Spanish delegates desired to retain the name A.P.I.M., mainly for reasons of sentiment. Mr. SCOTT STEVENSON, one of the observers on behalf of the American Medical Association, said that a good precedent had been afforded by the change from "League of Nations" to "United Nations." One delegate proposed "World Federation of Medical Associations," but it was pointed out that "federation" involved legal complications.

An amendment to retain the name "A.P.I.M." was rejected by 14 votes to 22, and the name "World Medical Association" was agreed to on the motion of Dr. I. C. MICHAELSON (Palestine Jewish Association), seconded by Dr. J. A. PRIDHAM (B.M.A.).

Some discussion took place on proposed functions of the new Organization. Dr. ROUTLEY was anxious that one of its tasks should be to assist and foster medical education, both undergraduate and postgraduate, but the PRESIDENT pointed out that this was approaching the scientific side which had been accepted as somewhat outside the province of the new body. Dr. CHARLES HILL described what the B.M.A. had already done for the furtherance of international medicine, in particular the arrangement for lectures, by invitation, at Continental centres. Dr. O. C. CARTER mentioned the publication of the specialist quarterly journals and the introduction of the new medical abstracting service.

It was agreed that the members of the World Medical Association should be national medical bodies. The question was raised as to the existence in a given country of more than one medical association which might claim a national character. Dr. CIBRIE suggested that in that case the association which

¹ *British Medical Journal*, 1946, 2, 423.

was the more representative should be selected. The criterion of admission might be that the membership of the association included more than 50% of the practising doctors in the country. In France there was only one association. Dr. VIBAUT (Netherlands) pointed out the singular case of Palestine from which two associations were represented at that Conference—the Palestine Jewish and the Palestine Arab. Dr. ALFRED COX suggested that for the time being all who had been invited to attend the present Conference should be accepted as members, and that the membership question should be referred for permanent settlement to the committee which would be appointed. Dr. DECOURT mentioned Switzerland, where there were three national groups which had combined to send one delegate to the present Conference. Dr. LEUCH, the Swiss delegate, however, stated that there was only one medical association in Switzerland, the *Fédération des Médecins Suisses*.

A form of words suggested by Dr. C. HILL was agreed to:

The Medical Associations which are represented by delegates or observers at this Conference shall be eligible for membership, together with any other national or territorial medical association making application which is representative of the medical profession in its country or territory.

It was the desire of some delegates that the matter of the subscription be referred to the provisional committee, but on the motion of Dr. CIBRIE the Conference agreed, by 18 to 11, to fix the subscription. It was fixed accordingly at half the rate which obtained for the A.P.I.M., namely, at 10 centimes Swiss per member of each national group, up to a total of 10,000 members, and 5 centimes per member above the first 10,000, with a maximum of 1,500 francs Swiss whatever the number of members in a group.

A long and rather confused discussion then took place on the appointment of representatives to the Governing Body or Conference. Dr. CIBRIE urged that there should be only one member for each national organization, though the member might be assisted by an expert who should have no vote. He was anxious that all countries should have an equal voting power in the assemblies of the Association, the voting to be by countries, not by the number of delegates attending.

This matter was left for further exploration by the provisional committee, but it was the general feeling of the Conference that each member-association should have two seats on the governing body, and that whatever the number of delegates from national associations, the voting strength should be the same for each country.

Mr. M. LESSOF, who, with a colleague, was attending as an observer for the British Medical Students Association, asked that the committee to be appointed should be recommended to consider as eligible for membership of the Association the Medical Faculty Group of the International Union of Students. This was opposed by the Belgian delegate, Dr. SANDERVOST, who said that the Association was one of qualified doctors, and asked whether any national medical association admitted students to its membership. The French also opposed this recommendation. Dr. PRIDHAM for Great Britain supported it, as also did the Swedish delegate. Eventually it was agreed to recommend to the committee that the Students Medical Faculty Group be admitted as observers, with two representatives, but without a vote.

Secretariat and Committee

It was agreed that there should be two official languages in the Association—English and French—and that there should be a dual secretariat, in London and Paris. Dr. Charles Hill, secretary of the B.M.A., was appointed secretary in London, and Dr. CIBRIE, of the *Confédération des Syndicats Médicaux Française*, secretary in Paris, the appointments to be acting ones until the next Conference.

Dr. T. C. ROUTLEY proposed the appointment of a provisional Committee of nine persons, this committee to be charged with the responsibility of putting into the two languages a draft constitution and bylaws embodying the recommendations made by the present conference. He suggested that it should report back to the constituent associations and finally present its drafts to the first meeting of the World Medical Association, which would be asked to adopt the constitution as the instrument governing its activities.

Mr. H. S. SOUTTAR seconded, and said that behind the new Association would be the "armed force" of British medicine, and particularly of the B.M.A. Prof. J. F. BROCK (South Africa) urged that in forming the committee some regard should be paid to continents other than Europe. The A.P.I.M. suffered to some extent because it was thought of as only a European body.

The proposal having been adopted, a ballot was taken for the election of the committee, and the result was as follows:

Dr. F. DECOURT (France)
Dr. P. GLORIEUX (Belgium)
Dr. DAG KNUTSON (Sweden)
Dr. O. LEUCH (Switzerland)
Dr. J. A. PRIDHAM (Great Britain)
Dr. T. C. ROUTLEY (Canada)
Prof. I. SHAWKI BEY (Egypt)
Dr. L. TORNEL (Spain)
Dr. A. ZAHOR (Czechoslovakia)

It was agreed to recommend that the next Conference be held in Paris, the date and programme to be left to the committee.

Dr. O. RASMUSSEN (Denmark) referred to a report of a meeting of an international scientific commission held at the Pasteur Institute, Paris, on crimes committed by German doctors during the war; it was proposed to institute proceedings. He suggested that a report on the subject be presented to the next Conference. Dr. CIBRIE said that there existed in France an association of doctors of the Resistance movement, in which he had the honour to serve; it was now preparing a "blue book" on German atrocities. Dr. A. ZAHOR (Czechoslovakia) said that during the occupation 1,080 members of the Czech medical profession were lost—250 by execution, 520 as a result of torture, imprisonment, and general ill-treatment, 300 by exile, and 10 by bombardment. The memories of the dead could best be honoured by devoted work for international co-operation in the medical profession. Dr. I. C. MICHAELSON (Palestine Jewish) suggested that the committee should obtain information from its constituent bodies as to the number of refugee doctors still not absorbed and determine the general absorption rate sufficient to give employment to all refugees.

Dr. LEUCH (Switzerland) proposed and Prof. W. DENK (Austria) seconded a vote of thanks to the British Medical Association. Sir HUGH LETT said that it had been a great privilege to preside. If only they could secure international co-operation between the medical men of the different countries they would have gone far towards bringing about the permanent peace they all desired.

The Conference gave an ovation to Dr. Alfred Cox, a veteran of the A.P.I.M., who, notwithstanding his eighty years, had been as energetic as any in the work of the Conference.

B.M.A. DINNER TO THE DELEGATES

The President and Council of the British Medical Association entertained the delegates and observers to dinner at the Savoy Hotel on the first day of the Conference. Sir HUGH LETT presided, and the guests included the President of the Royal College of Physicians (Lord Moran), of the Royal College of Surgeons (Sir Alfred Webb-Johnson), of the Royal College of Obstetricians and Gynaecologists (Mr. Eardley Holland), and the Director of the British Postgraduate Medical Federation (Sir Francis Fraser).

The PRESIDENT, in proposing the health of the visitors, said that the urgent task was to prevent the continuance of so much avoidable suffering in many parts of the world. It was true that the conditions of a healthy and contented life lay largely outside the medical province, in the realms of political and economic affairs; nevertheless, the medical profession throughout the world could do much to alleviate suffering, and the co-operation of medical men of different nationalities would in itself help to promote understanding between nations. The new international association of doctors would also help to bring to fruition the work of the new World Health Organization.

Four replies were made to the toast. Dr. DECOURT recalled that it was in Dr. COX's office when he was secretary of the B.M.A. that the A.P.I.M. was founded. It soon comprised representatives of 31 nations. Some of its stalwarts were still present among them, but most of those attending the

present Conference were novitiates in medical internationalism. Dr. J. G. BERNER (Norway) prophesied a useful career for the new body in tackling the problems of medical practice in different countries. Dr. T. C. ROUTLEY said that the Canadian Medical Association which he represented numbered rather fewer than 10,000 members, but it recognized no boundaries where the brotherhood of man and the ministry of healing were concerned. The medical profession, in re-establishing world fellowship, could give a lead to other professions and vocations. Dr. J. J. BRUTEL said that among their own sufferings the Dutch people had watched and sympathized with their neighbours on the other side of the North Sea. British example had kept up their own spirits and stimulated their endeavours. He expressed gratitude to Britain for caring for Dutch refugees and also for what it had done since the end of the war to help Holland. He presented to the President a small commemorative plaque bearing the design of the Aesculapian serpent, with the house of the Netherlands Medical Association at Amsterdam as a background.

Prof. J. C. BROCK, in proposing the health of the British Medical Association, mentioned that he started his research career as a Walter Dixon research scholar. He spoke of the gracious spirit in which the B.M.A. had accepted the recent proposals from South Africa. The CHAIRMAN OF COUNCIL (Dr. H. G. DAIN) said that the Association, he hoped, would always be able to play its part on the international stage. They had been watching for some months the politicians trying to hammer out a formula of peace, with little success. He hoped that the medical professions of different countries might seize the opportunity to give a lead, and that other professions, too, would begin to think of world-wide contacts.

GOVERNMENT LUNCHEON TO "WORLD MEDICAL ASSOCIATION" DELEGATES

MR. ANEURIN BEVAN'S "INAUGURATION" SPEECH

The delegates and observers attending the International Medical Conference were the guests of H.M. Government at a luncheon at the Dorchester Hotel on September 26. The Rt. Hon. Aneurin Bevan, M.P., Minister of Health, presided, and was supported by several of the officers of the Ministry. The President, Chairman of Council, and other officers of the British Medical Association were also among the guests.

Mr. ANEURIN BEVAN congratulated the company on having brought to birth this interesting infant, the World Medical Association. He also testified his appreciation of the initiative and imagination shown by the British Medical Association in summoning the Conference.

"The British Medical Association has many virtues; I shall not this afternoon make any reference to its faults. When it leaves the field of inevitable controversy and is able to set aside any subversive predispositions, it takes an objective and scientific and philanthropic interest in the development of medicine all over the world."

The birth of new organizations was always important. On such occasions persons in his position were expected to produce abstract generalizations, often prosy and boring. He would resist that temptation, but he could not neglect taking advantage of the opportunity of pointing out that there was no more important contribution that citizens could make towards universal appeasement than to meet each other as fellow craftsmen and as members of the same profession. When politicians got together all kinds of friction were likely to arise, but when doctors assembled their concern primarily was not as to who was going to do a particular thing but that the thing should be done.

"It does not matter to the doctor whether his patient be black or white, brown or yellow, communist or fascist, rich or poor. There is in medicine a catholic interest in and dedication to the welfare of mankind, a concern for the individual quite independently of his social group or inheritance, his destination or his origin."

It was therefore of supreme importance, Mr. Bevan continued, that the organization which had been born that day should have a successful beginning and carry with it the enthusiasm of its founders. It was born with one great

advantage, which the British Medical Association would appreciate—it was not within official apron strings. It would be in an atmosphere of complete independence and freedom. Those who were in official positions stood in the background smiling benignly on its activities. It would proceed from infancy to adolescence and manhood without official interference.

At the same time, he hoped the World Medical Association would realize the desirability of working in closest association with the World Health Organization. Their functions would be complementary. That was a characteristically British way of development. It was usual in this country for the state to be made by the amateur. Experimentation in the way of voluntary activity came first and gave rise to a variety of ideas of unequal survival value which competed with one another. Then, when one emerged which commanded general acceptance, the State stepped in and gave it formal expression in legislation. It would be one of the functions of the new organization to try out various ideas and eventually present them to more formal organizations as representing the way in which, in the view of the medical profession, these things should be done. One of the functions of the new organization would be to seek to universalize for all mankind the particular services or arrangements which had proved beneficial in certain areas. He wished it every possible success.

Dr. J. A. PRIDHAM, one of the B.M.A. delegates, in responding, said that it was for each society or group to cultivate international co-operation in its own small field, and it was this that those who had assembled at that Conference were trying to do. For the medical profession this should be an easier task than for most, for sick and suffering humanity has a universal appeal, and "there are no visas or tariffs on the traffic of medical knowledge."

Governments the world over were taking a great interest in medicine—a welcome fact, although introducing a disturbing and unpredictable factor into their way of life. The tradition of medicine were centuries old; State medicine was of recent growth. A doctor practised the art as well as the science of medicine. If he was a pure scientist it would be so much easier to integrate him into the State machine. It was the combination of art and science that made medical practice fascinating—and so difficult. The raw material of medicine was human beings, not mere collections of bones, nerves, and blood vessels. A doctor, like a scientist, had to acquire a special mental discipline, but also a discipline of the heart. As the Minister had said, all suffering called for help, whether the sufferer were friend or foe, Christian, Mohammedan, or Jew. The doctor served them all. But when the organized State entered in to provide this service new difficulties arose. A new pattern had to be devised, but it must not be allowed to destroy the spirit of the old. They all realized that there must be some arrangement between the State and medicine, but they hoped it would be of the nature of a partnership or marriage, in which each served the good of the other and neither was subservient to the other. It was to be hoped that those whose particular sphere was politics would approach their common problem in the same way as the good scientist or the good doctor—that is to say, by humble, patient inquiry, observing, recording, deducing, and being ever ready when necessary to cast aside old theories and prejudices. Thus perhaps in medicine they might achieve the first really harmonious international society.

Dr. P. GLORIEUX (Belgium), in a further speech in response, after thanking the Minister, proceeded to make a declaration of the democratic faith of his Belgian medical colleagues. The profession in Belgium was firm in its resistance to political pressure. They believed with all their hearts that in a democracy the doctor must remain a free doctor and the patient a free patient.

Mr. H. E. Durham, Sc.D., F.R.C.S., of Cambridge, who died on Oct. 25, 1945, leaving £32,885 9s. 9d. gross, with net personalty £32,825 2s. 4d., bequeathed his real and leasehold property to his wife, and the residue to her for life and then to his children, who were failing: £2,800 stock to the Royal Medical Benevolent Fund, for the benefit of professional persons afflicted with total or partial loss of vision; his railway stocks and shares to King's College, Cambridge; £500 stock to the London School of Tropical Medicine; £600 stock to the Liverpool School of Tropical Medicine.

MANAGEMENT OF CEREBRAL PALSIES

Dr. EARL CARLSON, of New York, delivered a lecture at the London School of Hygiene and Tropical Medicine on Sept. 9 on "The Modern Management of Cerebral Palsies." The chair was taken by Dr. F. M. R. WALSH.

Infantile cerebral palsy, or spastic paralysis, said Dr. Carlson, was a disturbance of muscular movement which was as prevalent as poliomyelitis. It could be caused by anything that damaged brain tissue before, during, or after birth. The principal types of muscular dysfunction encountered were spasticity, athetosis, and ataxia, and these might be present singly or in combination. The degree of physical incapacity ranged from complete helplessness to a disturbance so slight as to be recognizable only when the patient was under emotional strain. Besides the obvious motor handicaps, speech disorders and difficulties in hearing and vision were frequent accompaniments and made the educational programme more difficult. Thus the spastic who was both deaf and crippled was not accepted in schools for the crippled because of the hearing defect nor in schools for the hard of hearing because of the crippling condition.

Degree of Mental Impairment

The mental state varied from idiocy to a superior intelligence, and the extent of mental disability bore no relationship to the amount of motor handicap. This was specially true in hemiplegic cases. Some children, in spite of having one good arm and leg and no speech involvement, had difficulty at school because of damage to the frontal lobe. They had an excellent memory for isolated facts but failed to organize the facts into a whole. It was not easy to determine the mental level of the cerebral palsied child. No test had been standardized on motor-handicapped children, but in testing children whose speech was intelligible the revised Stanford-Binet test had been found satisfactory. It was also necessary to make a careful analysis of special disabilities of speech, hearing, and vision. The majority of the cerebral palsied had speech defects, the extent of which bore no relation to mental impairment.

The outstanding characteristics of defective speech among spastics were (1) lack of smooth, rhythmic speech; (2) poorly articulated speech; (3) lack of nuances of inflexion, intonation, and volume. One child might need to learn to co-ordinate the expiratory muscle movements with the articulatory movements; another might make progress by imitating good speech models; another might require ear training or visual aid; another might require detailed explanation and demonstration; and yet another might require all these techniques and others in addition. Not infrequently the acquisition or improvement of speech came about with the successful accomplishment of co-ordinated muscular movement, without special emphasis on speech training itself.

Physiotherapy

Physiotherapy exercises must be adapted to the individual case. In spastic conditions the patient was taught to relax one set of muscles as the opposing muscle group was brought into action. Heat and gentle massage were sometimes helpful. Stimulating massage was contraindicated because it increased muscle tension.

In treating athetoid conditions relaxation was of primary importance. As the athetoid had better control of his muscular movements when fear, anxiety, and self-consciousness were in abeyance, training should keep him occupied and his mind diverted from his muscles, which could be done by directing his attention to the purpose of his act rather than to the muscles which performed it. Much reliance must be placed on vision in training. The child must look where he walked or focus on the object he was trying to reach. Occupational therapy was a valuable adjunct in treating cerebral palsy cases. Water treatment was often conducive to relaxation, but not as effective as in cases of poliomyelitis.

Surgery and Drug Therapy

Surgery was more effective in spastic than in athetoid conditions. Lengthening of the heel cord, stabilization operations on the ankle, tendon transplantation, and cutting the nerve supply

to the adductor and gastrocnemius muscles were helpful if followed by exercises. Little was accomplished for the athetoid by peripheral operations on nerves and muscles. The use of braces and splints was also more helpful in spastic conditions: except in mild cases, braces usually aggravated the athetoid condition. In some of the most distressing cases of athetosis cutting the extrapyramidal pathways in the spine had yielded favourable results.

Drug therapy in cerebral palsy had been unsuccessful. Sedatives should not be used except in convulsive disorders. Any drug which tended to depress the mental activity made the patient less responsive to treatment. Snake and bee venom and curare produced partial and temporary relief of muscular tension, but seemed to have no permanent effect and were highly toxic.

Education of the Cerebral Palsied

The traditional view was that the cerebral palsied could not develop mentally beyond the limits of his motor experience, since he had to translate his ideas into muscular activity to grasp them. Therefore the first object in treating the patient was to educate his muscles until some control had been obtained. The movements of a normal infant were inco-ordinated. At birth the brain was unable to select sensory impressions and translate them into purposive action. Until this selective capacity developed the baby grimaced and exhibited degrees of muscular rigidity suggestive of mild spastic and athetoid conditions. As the cortex developed and concentration on a purpose was achieved these aimless movements ceased. It was the same with the cerebral palsied child: fewer purposeless movements occurred when there was something to hold his attention. Education, therefore, was even more important for the cerebral palsied than for the normal child, and it was possible to develop the unaffected centres of the brain. The importance of concentration was evident in the ability of the spastic athetoid to use his hands better in the evening than in the morning: he had become interested in his surroundings.

The value of a school programme could not be over-emphasized. The effect of education on the emotions was important; it was through control of the emotions that the cerebral palsied learned to control muscular movements.

Vocational Problem

The sense of personal worth obtained by economic independence was the best medicine for the spastic, and much attention should be devoted to finding suitable vocations. As a small child, no matter how seriously afflicted, the intelligent spastic was happy; but as he grew older and more self-conscious he might become a social misfit unless he received careful guidance. The blind and the deaf were taught to circumvent their handicaps by braille and lip-reading, and there was hardly a vocation in which they could not excel. But with the spastic the determining factor was variable. With practice his co-ordination improved and he was able to do things previously impossible, so that he began to entertain ambitions, which again were thwarted by his handicap. A remarkable case was that of a man who at twenty years of age was selling newspapers on the street with a placard on his chest because his speech was so unintelligible that he could not call his papers. He determined to educate himself, and now held the M.A. and Ph.D., and was teaching academic subjects in a school for spastics.

Optimism in many cases of the cerebral palsied was justified, but they would never make a normal individual out of such, any more than out of the man with an amputated arm. His mentality might exceed the normal, but unless he had learned the limitations which his hyperactive nervous system imposed on him he was not going to be happy. The solution of the problem of the birth-injured, therefore, was far from being one solely of muscle training.

Dr. Walshe said that he felt a sense of reproach on reflecting how little had been done to help these sufferers, though it was true that certain operative procedures had been devised, including tenotomy, nerve section, and nerve crushing. Dr. Carlson's lecture was introductory to the work which Mr. Leslie Williams was now beginning at Croydon, where a school for spastic children was being founded—the St. Margaret's School for Cerebral Palsy.

Nova et Vetera

PRIMITIVE MEDICINE

Though till now there has been no lack of histories on the origins of special subjects (architecture, ceramics, etc.), there has not been any composed work on prehistoric medicine. Dr. Stéphen-Chauvet, who is the leading French authority on this subject, has set himself the task of elucidating it in all its aspects: morphological, physical, and ethnical.*

Documentary evidence of the palaeolithic and neolithic ages is almost non-existent. We have therefore to depend almost entirely on the evolution and civilization through which the earliest tribes are known to have passed. From statuettes, frescoes, and hewn stones certain deductions can be made. Internal pathology was much less important than external. In Oceania, for instance, we know that such diseases as syphilis, smallpox, tuberculosis, scarlet fever did not exist before the arrival of white people. A common feature of all the statuettes and frescoes representing prehistoric man is the difference between the sexes. Men, who hunted, fought, and worked, are depicted as of slender build; while women are all adipose, with big breasts, abdomens, and thighs, the result, no doubt, of their troglodyte and physically inactive existence reinforcing the hereditary enlargements of their endocrine glands.

Among prehistoric peoples it is evident that magic amulets and fetiches played a large part in the preventive or curative attempts to deal with maladies. The chapter on the methods used is well illustrated. In pharmacy the ancients employed purgatives, diuretics, vermifuges, and even antivenenes and aphrodisiacs. When dealing with external pathology, Dr. Stéphen-Chauvet has to rely mainly on the evidence of bone injuries, such as fractures, dislocations, and cranial wounds. He is astonished at the number of trephine cases that have been found to have healthy bone cicatrization and rarely with secondary osteitis. Dr. Prunières in 1884 found in 186 skulls which had been trepanned that some of the orifices were circular or conical, made by triangular pointed flints. It is, however, doubtful about the skull which is described on page 127 of this book as an Aurignacian skull from La Quina. Aurignacian (upper palaeolithic) skulls are of the neoanthropic or modern type. The skull on the cover, on the other hand, resembles the palaeo-anthropic type and is similar to some of the Neanderthal skulls. The supraorbital ridges are massive, though from the side view it is not certain that they meet in the centre to form a torus. There does not appear to be any canine fossa or mental eminence in this illustration. Dr. Chauvet leaves us in doubt whether the La Quina skulls were Aurignacian or Neanderthal in type.

This thoughtful and well-produced volume represents much antiquarian research.

HANN CHRISTIAN GOTTFRIED JÖRG [1779-1856] AND HIS "EXPERIMENTING SOCIETY"

In 1825 was published at Leipzig the first, and only, volume of Jörg's *Materialen zu einer künftigen Heilmittellehre durch Versuche der Arzneien an gesunden Menschen*, which may be freely rendered as "Towards a new pharmacology by means of trials of drugs on healthy men."

Explaining the purpose of the investigations described in his book, Jörg points out that many others have published reports of the effects of drugs upon themselves, but that such observations lose in significance because they bear the stamp of the individuality of the experimenter. He also insists on the fallacy of conclusions drawn from the pooling of individual published reports based on differing conditions of dosage and subject. It was Jörg's conviction that the way to rational therapeutics was by detailed collective observations of the effects of drugs on healthy persons, and that these could best be made by a group of auto-experimenters who would take the same drugs in progressively increasing doses, carefully noting both negative and positive results. "For my part," he says, "I shall not pause so long as my health permits, but shall continue and count myself fortunate if I can, every year or 2 years, produce a volume similar to the present one." For some reason Jörg's resolution was never implemented, although his literary output was considerable and included books on a wide range of medical subjects.

* *La Médecine chez les Peuples Primitifs*. By Dr. Stéphen-Chauvet. (Pp. 143; 101 figures. No price given.) Paris: Librairie Maloine, 27, rue de l'École-de-Médecine.

For the execution of his plan, Jörg formed a society—to which refers as the *experimentierende Gesellschaft*—of 21 volunteers, self making the 22nd. In addition, his 16- and 14-year-old Eduard and Theodor, were called upon as occasional guinea as also 3 discreetly anonymous females—45, 18, and 12 years of age. Most of the 21 members of the society were in their early two and a short description of each of them is given. Their constitutions are given as "robust," "healthy," or—more specifically—as "phatic," "arterial," or "arterial-florid." Temperaments are "guine," "choleric," "phlegmatic," "melancholic," or various combinations of these. The author describes himself as 45 years thick-set, and of average stature, robust constitution, and sanguine choleric temperament.

In his 500-page book separate chapters are devoted to report the experiments with each of 17 different drugs, which include hydrocyanic acid (in dilute solution), valerian, St. Ignatius's bean (which strychnine had been isolated 6 years before by Pelletier and Caventou), opium, digitalis, and tincture of iodine. It is interesting that valerian is described as "an unreliable drug . . . which remained without any discernible action, even in considerable dose or in some cases affected the head and in others the alimentary canal."

Jörg does not draw the obvious conclusions from his own observations, but prefers to regard valerian, on grounds that it is difficult to follow, as a stimulant, and to speculate on its mode of suppuration in the disorders for which it has been recommended by writers. This mingling of faithful observations with hypothesis which seem to be quite unwarranted by the evidence presented characteristic of the whole volume. Each chapter, devoted to a single drug, follows a similar pattern. About St. Ignatius's bean, for example, we are told that two preparations were used—a tincture and a powder. Then follow summaries of the reports of each of the experimenting members of the Society, with doses, date, time, and the sensations noted. Each experimenter starts with a small dose, notes his sensations, and then proceeds to higher doses. Engler, Friedrich, Glintz, Knesecke, Kummer, Lippert, Meier, Pienitz, Seyffert, Ströfer, Otto, and Jörg himself conscientiously noted headaches (particularly in the region of forehead and eyeballs), colicky abdominal pains, diarrhoea, and miscellaneous other symptoms. Summing up, Jörg concludes that the characteristic action of the drug is as a stimulant of the alimentary canal and brain. There is a conspicuous absence of any reference to strychnine—the actual principle—and the doses were evidently never so high as to cause convulsions.

From 52 pages of subjective reports of the effects of different doses of opium, Jörg concludes that it is "in no way so much to be recommended as the doctors have for centuries believed" and that "more various and stronger in its actions than the practitioners of the present time imagine." The light-headedness and feeling of incubation which followed the taking of opium are interpreted by Jörg as a stimulant action on the brain, and he notes that this was followed by drowsiness and later a deep sleep. He concludes that opium first stimulates, then depresses the whole organism, nervous system and the alimentary canal being particularly affected (as, indeed, would seem to be the case with most of the drugs tested!).

In spite of the poverty of real information on the action and effects of drugs that Jörg was able to gain, the conceptions underlying "experimenting society" were of outstanding merit when judged by the word-spinning and the uncritical empiricism of most of his contemporaries. Imperfectly as he was able to realize them, he seems to have clearly appreciated two important principles: that the effects of individual variation should be eliminated by comparable trials on relatively large numbers of test-subjects; and that comparable results could be attained only by use of drugs prepared by the same method and given in similar dosage. But perhaps of even more importance was his attempt to understand the actions and uses of drugs by study of their effects in the healthy organism.

There is a surprising lack of information on Jörg in the standard reference works of medical history. Garrison does not mention him. Nor do Sudhoff and Pagel, Castiglioni, or a number of shorter works consulted. In Puschmann's *Handbuch* (Neuburger and Pagel), there is a brief reference to him is confined to an appliance which he invented for the correction of deformities of the limbs. Hirsch's *Biographisches Lexicon* refers principally to Jörg as a writer on diseases of women and children (he was professor of obstetrics at Leipzig), although it is mentioned that he wrote also on materia medica and on toxicology. The only reference found to the *Materialen* is in Wailly's *Bibliotheca therapeutica* (1878), which contains a 14-line description of the work.

Perhaps the most striking impression made by this book on a modern reader is—pace the advocates of Clinical Science, and the medical historians who demand that we shall return to Hippocratic methods—of the extreme limitations of the method of unaided clinical observation, however carefully and honestly pursued. It is at about this time that Magendie in France was developing his pioneer work of animal experimentation with active principles of drugs.

Reports of Societies

RHEUMATIC DISEASES

At a scientific meeting of the Westminster and Holborn Division of the British Medical Association held on Sept. 12, with Dr. W. A. MILLIGAN in the chair, Dr. W. S. C. COPEMAN delivered an address on "The Rheumatic Diseases." He said that "rheumatism" was a vague term for a neglected and important subject, the aetiology of which was little known. Ministry of Health figures showed that twelve million of the population suffered from this condition. The Royal College of Physicians classification of 1936 was: A. Acute and sub-acute rheumatism, synonyms for rheumatic fever. B. The articular group—arthritis, the joints being involved: (a) rheumatoid arthritis; (b) osteo-arthritis. An exception was spondylitis of the spine, where both rheumatoid arthritis and osteo-arthritis were involved. C. Non-articular type, where soft tissues only were involved: 60% of the twelve millions. Removed from this group recently were those cases caused by prolapsed intervertebral disk.

Articular Group

Women were affected by rheumatoid arthritis five times as often as men. They were usually in the child-bearing age groups, and frequently bed-ridden—often within 18 months and for the rest of their lives. The patients were commonly of the asthenic type, as in tuberculosis. They were often pyrexial and thought to be infective. The condition usually started in the small bones of the hands and feet and travelled to the large joints and spine. Relapse was frequent, with early and complete crippling. A secondary anaemia, loss of weight, and glandular imbalance occurred, but threw no light on the aetiology. Some cases were infective (e.g., gonorrhoea). Osteo-arthritis was caused by "wear and tear" or trauma to one or more large joints—rare in upper extremity. The cartilage wore thin. The general health was good, and males were the most frequent sufferers. On x-ray examination the rheumatoid type showed atrophy and rarefaction (the American atrophic arthritis), whereas in osteo-arthritis there were osteophytes with overgrowth of bony and soft parts and widening of the joint (the American hypertrophic arthritis).

Non-articular Group

Fibrositis was once thought to be inflammatory and a disease of the muscles. It was now realized that any tissues might be affected. Biopsy showed three types at least: (1) fibrous nodules; (2) local areas of spasm; (3) small hernial protrusions of the fat through the muscle sheath. Features of the disease were definite painful points called trigger points, or palpable fibrositic nodules. General health, blood count, and blood-sedimentation rate remained normal. There was also non-localized fibrositis, as in influenza or sinusitis, due to an open focus of infection, in which the whole muscle was affected. Lastly there was a general condition in which the whole side of the body was involved; it might be psychosomatic or secondary to pain.

Methods of Treatment

Team work was needed, the minimum being the patient and the doctor; but the orthopaedic surgeon, the gynaecologist, the dentist, and the physiotherapist might be needed, the last especially. Physical methods should not be left to the masseuse. Rest should be ordered only in inflammatory cases; if misused it might cause adhesions. In the absence of active inflammation, movement was indicated, but the rheumatoid cases should be rested if possible. Plaster-of-Paris should be used to immobilize joints, and they should be put in extension. Serial plasters should be used, particularly for rheumatoid arthritis, because they prevented deformity. In later stages or less active disease the joints might need to be stretched or manipulated. Analgesics were valuable, especially aspirin. Cinchophen was useful for gouty cases. Iodine was justified in some cases, especially menopausal types. Sulphur and guaiacum were probably inert, but salts every morning seemed to be of some use, while cod-liver oil and arsenic were useful in the rheumatoid types. Gold was the best treatment for rheuma-

toid types, but dangerous in others; the dose was 0.5 g. in eight or nine weeks, and a water-soluble salt was best. Vaccines were not of proved value, and non-specific protein therapy was not as successful as gold, the effect not being lasting. Physical medicine was of great value, and in the U.S.A. psychological treatment now had a vogue. The patients should live in a warm or dry place. A high, sheltered situation, and the type of clothing were important. Industry was a potent cause not generally recognized, and some cases were directly occupational. Of patients in the arthritic group, if treated before two years had elapsed, 70% should be improved; therefore early treatment was indicated. The fibrositic group could be rendered free from symptoms in 80–90% of cases, but they were liable to relapse.

Answering questions, Dr. Copeman said that the condition got better in pregnancy, but rapidly worsened after childbirth. Aluminium, he thought, was not a cause. Rheumatoid arthritis did occur after the menopause, but rarely. Food was not a specific cause, but there was an allergic type. Fat cases should be slimmed, and thin cases fattened up; and he mentioned the use of insulin for the latter purpose. Vitamins were of no value, except perhaps vitamin B. Focal sepsis should be treated. He mentioned the use of local injections of anaesthetics, sterile water, or glucose in the trigger points of fibrositis.

RHEUMATIC CARDITIS IN CHILDREN

A meeting of the Medical Society of the L.C.C. Service was held at Queen Mary's Hospital, Carsbalton, on Wed., Sept. 4. There was an attendance of nearly 100 to see interesting cases of which the bone dyscrasias may have been unique.

Dr. THORNTON, of Queen Mary's Hospital, opened a discussion on the treatment of rheumatic carditis in children. All cases of true rheumatism suffered from carditis, which he divided into 3 groups: (a) fulminating, i.e., appearing initially; (b) acute, appearing in the first 2 or 3 weeks; and (c) smouldering. Complete recovery occurred not infrequently, but the incidence of permanent cardiac damage was high in instances where the rheumatic attack had been preceded by a definite attack of tonsillitis. Permanent valvular damage was present in 35.5% of a whole series of 1,100 unselected cases, but where the attack had been preceded by an acute tonsillitis the incidence reached 70%. The hearts of about 20% of children with rheumatic valvular disease were so severely damaged as to necessitate their leading restricted lives, and 3% were permanent cardiac cripples. In a third group of cases the damage seemed to be restricted to the conducting system resulting in persistent tachycardia or disordered cardiac action, and after generalized pericarditis had occurred expectation of life was inevitably short. Two unselected series of recently analysed cases of children admitted to hospital with rheumatism, 117 in each, showed that, in the children with tonsils present, 25% had severe cardiac damage, and 40% of the total had some cardiac damage. In the tonsillectomized series the respective figures were 12% and 28%. Children with rheumatic fever should not have their tonsils removed during the first three months of the disease, and not thereafter unless the erythrocyte sedimentation rate was consistently normal. Once a child developed permanent valvular damage it might in a large proportion of instances be said to be "written off."

Dr. GERALD SLOT entirely disagreed with Dr. Thornton's view that a child with permanent valvular disease was a complete "write off." He had followed several of these patients, who led perfectly normal useful lives, for over 20 years. Tonsils should not be automatically removed in rheumatic disease, as they were only part of the ring of lymphatic tissue round the pharynx, and removal of part of this ring would not necessarily be beneficial. Many physicians, especially in America and France, were conducting investigations on the lines that practically every child had had an early rheumatic infection, and that the specific changes seen in rheumatic fever were to be regarded as an allergic condition due to a previously infected heart. Dr. Slot fully agreed with Dr. Thornton on the need for rest, but pointed out the difficulty of deciding how long this rest should be. He suggested that when the pulse, the temperature, and the blood sedimentation rate had settled for a fortnight, the patient might be allowed up.

Correspondence

Postgraduate Education

SIR,—I submit that you have allowed the Colossus of London to dominate the picture of postgraduate education in the *Journal* of Sept. 14 to a quite disproportionate degree. In Scotland we are not unfamiliar with this provincialism of outlook, as it must, paradoxically, be called; but hitherto we have associated it with Whitehall rather than with Tavistock Square.

Two nosegays—I cannot call them bouquets—are thrown in passing to the great Scottish and other universities outside London, but otherwise your articles give credit to London and to London only. What is even more disconcerting is that your article entitled "Facilities for Postgraduate Education" devotes some 375 lines to London and only 25 to all the other universities and medical schools in the kingdom put together. Inasmuch as the title of the article purports that it is dealing with facts—and presumably facts in their proper perspective—this rather gross disproportion is open to criticism. Admittedly you say "all the universities are making postgraduate arrangements of some kind [the italics are mine] although, of course, on a very much smaller scale, except perhaps in Edinburgh." Even for Edinburgh it seems to me that this hardly redresses the balance.

Sir Francis Fraser, in another of the nosegays, refers to the pioneer work in postgraduate education which has been carried on in Edinburgh for the last forty years. This has now been intensified and extended under a joint Board representing the University, the Royal College of Physicians of Edinburgh, and the Royal College of Surgeons of Edinburgh—the three bodies which have formed the stable foundation of the Edinburgh Medical School for more than two centuries. Since demobilization began we have conducted no fewer than seven courses of the "fortnight's refresher" type for those in or going back to general practice. These have been attended by 230 graduates, and more courses of this sort will be held at regular intervals.

The Board has also instituted teaching on a level suited to those studying to become specialists, and preparing for higher examinations. In the past year two courses of ten weeks have been held in internal medicine and in surgery; 140 graduates attended the medical and 280 the surgical courses. In the coming academic year we shall provide two courses in surgery, each lasting five months. The course starting in October is already full with nearly 200 entrants; for the second course, due to begin in the middle of March, we have already 150 names. In medicine we propose to hold three courses of ten weeks each, beginning in October, January, and April; 150 names are on the roll for the first of these, opening on Oct. 7. Other projects that the Board has in view are courses in obstetrics and gynaecology on a specialist level, and the teaching of the basic sciences of anatomy, physiology, and pathology. —I am, etc.,

R. W. JOHNSTONE.
Chairman, Edinburgh Postgraduate Board
for Medicine.

SIR,—The issues raised by Sir Francis Fraser in the Frederick Lecture (Sept. 14) are vital ones. The concept of a Federation co-ordinating for teaching purposes all the talent of London's great hospitals will commend itself throughout the English-speaking world. Unless precautions are taken, however, there is a danger that if the recommendations of the Goodenough Report in respect of postgraduate teaching are implemented along the lines suggested by Sir Francis undesirable factors now present may be perpetuated and even increased.

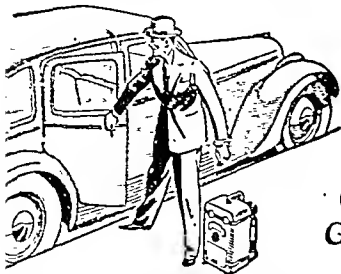
Nearly 13 years ago, as a young graduate of under 4 years standing, I arrived a stranger in London after crossing 12,000 miles of ocean on a pilgrimage which many thousands of men and women from the younger countries have made before and since. It was to seek further postgraduate experience in Great Britain and preferably in London. Of the kindness shown and assistance given by so many senior colleagues, both at that time and in the years since, I can never speak too highly. My only fear in writing this letter is that my criticism of a method, or absence of method, of postgraduate education may be misinterpreted and attributed to a lack of personal gratitude. This

is not so. Fortunately there are many specialists in the United Kingdom who, if they happen to read this, will agree with the criticisms made, for these are the men who, realizing the great deficiencies which have existed in postgraduate facilities in London and elsewhere, have made every effort in their own hospitals and departments to provide appointments so attractive that the best men from over-seas, as well as from here will compete for them. In the same way the Fellowship of Postgraduate Medicine has done splendid work in organizing refresher courses in London. My comments deal only with postgraduate education for consultants and specialists, and chiefly with that aspect which affects visitors from abroad for it is on this that I am best qualified to speak.

In planning the Federation surely one of the first questions demanding an answer is what is meant by postgraduate education in medicine. The answer is not an easy one, for there are many aspects to be considered; and in the opinion of many, of whom I am one, it has been the failure to appreciate this which has been responsible for the unsatisfactory state of affairs now existing. If an effective system is to operate it must provide facilities for men and women with varying degrees of experience. It must provide for those who require refresher courses and for those who require prolonged clinical training in any of the special branches of medicine. It must demonstrate from the outset that the governing body of the Federation realizes that those facilities which are excellent for the one type of graduate are practically useless for the other. If these conditions are not fulfilled the system will be doomed to failure.

The man who comes to England after spending several years in resident and registrar appointments in large and efficient teaching hospitals in his own country comes usually with two main objectives. He wishes to secure appointments in which he can in the minimum of time secure the maximum of the experience he requires, and he usually wishes to obtain higher qualifications. Refresher courses can help him achieve the latter but they will do little to help him secure the former. He knows that the experience he needs cannot be given on mass-production lines, but must be achieved slowly and painfully as he works in personal contact with, and under the supervision of, those who having mastered are now prepared to teach. In terms of numbers the men who receive such training will be the few in comparison with the many who will attend the more popular and more academic refresher courses, but the prestige of the Federation abroad will be largely determined by the facilities it provides for the training of these few. They are the ones who once trained spread across the face of the earth and carry to forgotten places the ideals, traditions, and standards of work of the great hospitals which trained them. It has not been the thousands of occasional visitors attending refresher courses that have made hospitals such as the Brompton, Queen's Square, St. Mark's, the National Orthopaedic, and Chelsea Hospital for Women, to name but a few, such famous influences in world medicine. The secret of their success has surely been the soundness of the routine work done within their walls and the equally sound training given to those fortunate few selected for coveted resident posts. These men have acquired the professional skill, the human understanding, and the ideals of service to which Sir Francis Fraser referred, attributes be it noted which are not the prerogatives of the university teacher. Human nature being what it is the man who comes to London for postgraduate education does not come primarily to learn those important ideals, and I would wish to be the last to minimize their importance. In many, if not in most cases he has already been inspired at a more impressionable age by his undergraduate teachers. He visits London to learn more about the art and science of medicine and, if practice is made subservient to theory and the practical approach to human problems is given second place to the academic, then he will be disillusioned, and, a disappointed man, will seldom learn ideals from the one who has disappointed him. Hence lies the danger of entrusting the future of clinical postgraduate training to academic men occupying full-time chairs unless they have proved their practical ability and consultant status in competition with their colleagues. The contributions which they can make to the Federation are no less valuable than those of their less academic but more clinically minded colleagues. In fact, in some aspects of the work of the Federation their contributions will be by far the

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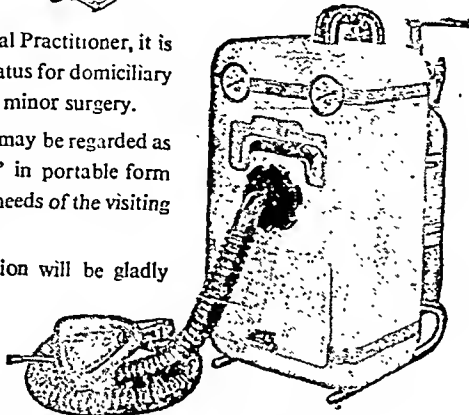


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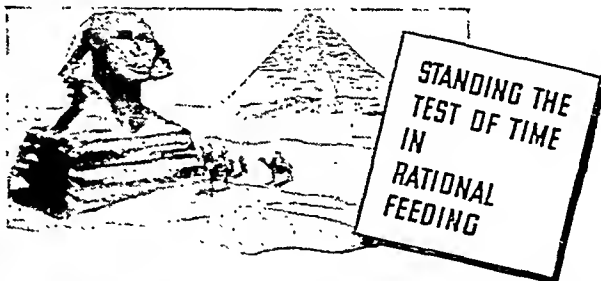
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greater, but the scope and influence of each should be recognized.

One disquieting fact which must be realized at this stage of planning for the future of postgraduate education in Britain is that the ties which have for so long united the younger countries of the Commonwealth to the Mother Country in matters medical have in recent years become weakened. There is a progressive tendency for the best men from the Dominions and Colonies to go elsewhere in search of experience. From South Africa and Canada more and more men are going to the welcome they receive in the United States, and this trend is now becoming manifest even in New Zealand, which up to the present has always looked upon it as a *sine qua non* that any doctor desiring to specialize would naturally go to Great Britain. In Australasia a further development has arisen with the rise of Melbourne as a great and keen medical centre offering excellent facilities for postgraduate study and experience. The result is that many men are asking why they should cross the world for training which they may or may not be able to obtain, when they have the assurance of securing it so much more easily and cheaply nearer home. Others, who are usually carefully selected graduates, when offered Fellowships as incentives to work in leading American clinics accept these gratefully but with a natural regret that similar facilities are not available in Britain. Now the disturbing fact remains that this tendency to disintegrate has developed in some places, and progressed in more, in spite of the work and influence of the British Postgraduate Hospital which was opened in London over 10 years ago. The scheme Sir Francis outlines of building a Federation around this hospital is not free from danger and may even lead to a further weakening of London's influence as a postgraduate medical centre. If those hospitals which have done so much on their own initiative, and without university support, for the advancement of medicine and the prestige of British practice are now to be grouped as scattered departments and institutes "of the Postgraduate Hospital then the union will not be an easy one. Questions of control, direction, and finance will become of paramount importance, especially when it is remembered that under a National Service the money for development will come from the University Grants Committee. The need for goodwill becomes obvious, but if this is to exist there must be adequate representation on the Governing Body of the Federation of those on whom the main responsibilities will fall for the conduct of clinical medicine in all its branches, remembering that these men will not usually be the full-time university professors.

One further way in which the Federation can be made the success which all would wish it to be is by co-ordinating its activities with those of the more important postgraduate units abroad, and particularly with those in the British Commonwealth. This means more than just welcoming visitors. There should be such reciprocity that selected men from abroad should work in responsible positions here and—of equal if not greater importance—selected men from here should work in corresponding positions over-seas. To make this possible in some centres the questions of reciprocity of registration will have to be settled. Only by this honest demonstration that we are as eager to learn as we are to teach will the full co-operation of the younger, and possibly more critical, countries be obtained at a time in our history when it is more necessary than ever before that the British Commonwealth should be united and sharing with sympathetic understanding a common destiny with all English-speaking people.—I am, etc.,

Oxford.

JOHN STALLWORTHY.

Selection of Medical Students

SIR,—Dr. D. H. Smyth's extensive review of medical-student selection (Sept. 14, p. 357) is both timely and stimulating. I was, however, glad to see the case for selection further expanded in your more informed leading article and some of his misconceptions corrected. It may interest him to know that when the original experiments in officer selection were begun in 1941 Army psychiatrists and psychologists took up the problem where he has now left it off. Some of the questions which were asked at that time were: What are the qualities required in an officer? How can these qualities be classified? What tests should be employed to elicit them? How should the

selectors be selected? What is the proper role of the expert? What administrative arrangements have to be made? How should selection integrate with training? Although most of these questions have been thrashed out and answered fairly satisfactorily nothing has as yet been published. This being so, and to minimize blind-alley thinking, it is as well to refer briefly to two major lessons learned in the Army after prolonged experiment.

First, it was found that the listing, classification, and testing of specific qualities was unproductive and unsound. It was soon realized that human personality is not made up of watertight compartments which could be tested independently; like peace, it is indivisible. The static, orthodox approach gave way to more dynamic concepts. To classify the officer's jobs and then to assess the candidate's effectiveness for these jobs was found to be easier and more sound. Since many men with different constellations of qualities could be equally effective in the same job it was of little value to match them against a standard pattern of qualities. Judgment had therefore to be passed upon officer effectiveness and not officer quality.

Secondly, the laboratory type of test, so dear to the heart of the traditional psychologist, was abandoned in favour of the group test. There was a shift in emphasis from the *in vitro* test to the *in vivo*. The laboratory test, in which conditions were artificially controlled, suffered the severe handicap that the individual was extracted unnaturally from his normal social context and subjected to a scrutiny that had little to do with real life. Bion's brilliantly conceived leaderless-group technique is a major advance in the study of personality. After over four years of trial this method has shown that in selection the assessment of interpersonal relationships is at least as important as that of technical competence. Poor "contact" in an officer proved as serious as poor ability.

Psychiatrists on teaching staffs of medical schools—many of them with experience of Army selection—are alive to the problem of medical-student selection. Your leading article points out "... a planned attack must be made on the problem," and again, "There is a research problem here of urgent importance." Not only has this been appreciated here in Aberdeen, but a plan for a three years' programme of research is already being worked out. An investigation will be made into the following problems: the best composition of the selecting team; the development of individual and group tests and interviews; job analysis; the comparison of students' progress (as judged by examination and reputational grading criteria) with predictions based on the experimental procedure. At the end of three years it is hoped that enough will be known to permit of specific recommendations for new procedures to be employed. It will require about six years before the experimental phase is complete and a routine procedure introduced. The fact that this project is being planned and run by the Department of Mental Health should allay Dr. Smyth's anxieties about "psychologists" who know nothing about medicine taking part in the selection of medical students.

The aim of selection is admirably summed up in the last sentence of your leading article. "... the more the selection findings can be used for guiding the student ... the easier will it be to achieve both good selection and good training ...". Teaching is not in fact simply the imparting of knowledge: it is a special type of human inter-relationship which has a therapeutic as well as an academic aspect. During his medical course the student, in addition to the factual knowledge he more easily acquires, must become a balanced, mature, humane, and wise person. He can only build up such attributes through personal contact with his teachers, and the ultimate success of teaching depends upon the cultivation of that relationship. A good teacher is not so much one who "knows his stuff" as one who knows his students. It would be the aim of selection to promote this latter knowledge.

But for the "planned attack" to be effective it is not enough that it should be carefully organized for any single research project by any one medical school. There is a need for some central body which can direct and co-ordinate research in a number of medical schools. A co-ordinating committee should be convened for this purpose. What is required is rationalized research, in which the reputation of any single medical school is made subservient to the common good.—I am, etc.,

University of Aberdeen.

D. R. MACCALMAN.

SIR,—Your leading article urging the co-operation of medical and non-medical psychologists in the selection of medical students (Sept. 14, p. 375) will be endorsed by all psychologists working in universities possessing both medical and psychological departments. But there is one remark which they are tempted to question: "the psychologist has advanced our knowledge of testing abilities, but the major developments in methods for investigating personality have come from medical psychologists." The view that psychologists have been chiefly concerned with the development of tests for intelligence and the like has been repeatedly affirmed by non-psychologists and as repeatedly denied by psychologists themselves. Can the writer cite any authority for his statement? Glance at the references given in standard works on personality by Allport or Cattell; less than 20% are by medical writers, and most of these deal mainly with theoretical inferences from the study of pathological cases. The most systematic researches of "methods of investigating personality" among students have been those concerned with the selection of members for the teaching profession; and these, almost without exception, have been carried out by psychologists. Even the methods of selection in the fighting Services, to which your article refers, have been mainly taken from the field of educational or industrial psychology. —I am, etc.,

University College, London.

CHARLOTTE BANKS.

SIR,—May I offer some comments on the articles you published on the subject of the selection of medical students (Sept. 14)? I am confident that psychological methods could be usefully applied to this type of selection, but there are some details in which my views differ from those expressed by your contributors and in your leader.

A misleading idea of the proper psychological approach to such a problem may be given by too liberal a use of such terms as conscientiousness, sympathy, tact, etc. In order to design an efficient procedure one needs to relate observations made at two points in time: the first, when selection can be applied to a candidate; the second, when his success as a doctor can be judged. The evidence is used to argue from observations made at the first point to observations expected at the second. Terms such as those mentioned, since they describe qualities not directly observed, can only be used as intermediate terms in this argument. Out of the many observations which can be made conveniently and precisely at the first point they may provide a preliminary indication of what is to use. But they may also mislead. Thus Dr. D. H. Smyth includes from arguments about the general nature of interests attempts to assess them are not likely to be reliable or profitable. He recommends assessing only intellect and character. But can we in fact form any opinion about a man's character without collecting any evidence about his interests? Does not this argument lead us to ignore observations which can be made relatively conveniently, precisely, and perhaps usefully, and send us in quest of intangibilities? The condition of the candidates' teeth was reported by Dr. Fraser Roberts at a recent meeting of the Royal Statistical Society as second only to intelligence-test results in usefulness for selecting naval cadets. Could this result have been anticipated by general arguments about the nature of mental traits?

Dr. Smyth's view that the quality that should be estimated is "the ability to do whatever work is undertaken after qualification" rather than success in the second or final M.B. examination is also one that may lead to an incorrect appreciation of the problem. There is, as your leader states, an exceptionally wide variety of jobs open to the doctor; and a qualified man has a very good chance, judging by the evidence, of finding some work which he can undertake with satisfaction and success. But this also makes it exceptionally difficult to relate observations made at the time of selection to such diverse evidence of success. On the other hand, if a man fails to qualify speculation on the success he might have achieved after qualification is idle. Moreover, the open examinations provide a yardstick by which students selected and trained in different ways can be fairly compared. Training for the medical profession constitutes a "successive" selection procedure, and in such procedures, as I have already shown (1946), the most economical method of selection is to choose at each stage the men who have the highest probability of

succeeding at the next. Finally, as every method of selection involves establishing an expectation from given observations a point in time must always be defined at which this expectation can be reviewed and judged correct or incorrect, other than there is no means of judging good selection from bad.

I have some doubts about the suggestion in your leader article that the War Office Selection Boards provide a suitable model for the selection of medical students. The analogy between the selection of officers primarily for infantry regiments and that of medical students is not close. The National Institute of Industrial Psychology has been consulted for twenty years by prospective medical students and has there had exceptionally useful experience in developing methods assessing their suitability. May not this experience prove more relevant? But if your analogy is admitted as valid, would not be advisable also to consider the appropriateness of methods employed in the selection of officers for the Royal Navy? The relative cost of alternative methods should also be taken into consideration. Of two equally successful methods the more economical should certainly be preferred.

But as you have raised this matter, might not this be a suitable occasion for inviting the War Office to publish a scientific scrutiny of the results obtained by W.O.S.B. methods? I would suggest particularly any evidence that is available to answer the following questions: (i) How much do they add to the selection procedures applied to candidates before they reach the Boards? (ii) How much of an improvement are they over methods previously in use? (iii) To what extent do they establish consistent standards at the different Boards? The final question is relevant to your point, "Common standards must be attempted, otherwise there will be injustice." —I am, etc.,

London, W.1.

PATRICK SLATER

REFERENCE

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True Mediterranean Fever in England

SIR,—In your issue of July 20 Dr. E. F. Hunt, of Chichester, Hants, gives an account of what he describes as "a true case of Malta fever infection by *Br. melitensis* in this country." If this claim were substantiated the position would be a very serious one as no case of indigenous infection with the *melitensis* variety of this organism is known to have occurred in this country. *Melitensis* infection usually causes more severe illness than *abortus* infection, and the infection in this case was alleged to have been acquired from the milk of goats, infection in which has been looked for by various investigators for at least eighteen years but has never been found.

It is therefore of the greatest importance that the truth in this case should be made known, so that Dr. Hunt's letter shall not stand unchallenged in the literature. Because of the importance of these issues very thorough investigation of the factors concerned was instituted, and the results so obtained have been uniformly negative.

Let me take first the alleged infection in the goats whose milk had been consumed by the patient. The pathologist on whom findings this statement was based found agglutinins for *melitensis* but not for *Br. abortus* in the blood of one goat. This in itself makes the diagnosis extremely doubtful and subsequent thorough investigations by the Ministry of Agriculture's Laboratory at Weybridge of the blood of all the goats in the flock and the milk whey of the three nanny-goats, as well as culture from the milk of these nanny-goats, have all proved entirely negative, as have also biological tests of the milk by injection into guinea-pigs. Similar agglutination, cultural, and inoculation tests on two male goats, three female goats, and two kids comprising a herd in which one of the male goats was used to serve the nanny-goat in the original herd which aborts have all proved entirely negative.

Now as regards the diagnosis of the patient's disease, Dr. Hunt states that the agglutination test was negative to *Br. abortus* but was positive to *Br. melitensis* in a dilution of 1 in 10. Such a titre has never been considered as diagnostic in itself, though of course it is well known that agglutination is sometimes negative throughout the course of this disease even when a positive blood culture is obtained. In this case, however, the culture of both the blood and urine was negative and the blood count gave 88% polymorphs and 6% lymphocytes, with a total white count of 4,700. This is not at all suggestive

lulant fever. The clinical picture, into which I need not enter in detail, was consistent with undulant fever but, unfortunately, so are the clinical pictures in many cases of many other diseases.

Whilst I cannot help deploring the haste with which a diagnosis was published in this case, this may, I hope, be partly compensated for by the warning which it gives of the care which should be exercised in coming to conclusions in this still elusive disease.—I am, etc.,

Ministry of Health.

WELDON DALRYMPLE-CHAMPNEYS.

Tobacco and Ulcer Dyspepsia

SIR,—While in no way disputing the findings and statistical validity of Messrs. Jamieson, Illingworth, and Scott (Aug. 31, 1946), there are two very important combinations of the factors which they have ignored: individual dosage and route of absorption. Dosage cannot be divided crudely into heavy, medium, and mild, depending upon the amount of tobacco usually consumed. The dosage of belladonna in my Parkinsonism patients varies from 18–360 minims (1.1–21 ml.) per 24 hours, and in each case the requisite dose gives the same amount of subtoxic result; therefore 18 minims is just as big a dose as 360. I have seen a goodly number of patients who get undoubted symptoms of tabagism before they have consumed one cigarette, so that one cigarette per day may be as bad as smoking for some persons.

Differences of toxicity depending upon the route of absorption are still ignored, though it is some years since I pointed out. Thus mercury through the skin is little toxic, by stomach it is very; lead does not give plumbism in enormous doses by skin or vein, but by stomach or lungs traces are deadly; ingested does much good by mouth or injection, but traces inhaled cause degeneration of the lenticular nucleus; fluorides consumed in large amounts in wines, etc., abroad with no results, but inhaled they cause deadly hurt. Tobacco smoked by mouth does very little harm, but inhaled is sympathetically hepatic-depressant. Cigarettes are always inhaled; light pipe mixtures are usually inhaled; and heavy smokers will inhale the strongest tobaccos.

The excited "jittery" person takes to cigarettes; he has not the patience for the longer pipe and he inhales deeply but not consciously; this depresses his sympathetic side with resultant gastroparesis, which induces traction on parts of the stomach and duodenum because these parts are relatively fixed by the gastric "ligaments." This leads to local ischaemia of the stomach wall—well-known parts of the pyloric antrum and the duodenum, for the blood vessels of these parts may not be as elastic as the mesentery, and anyhow the lengthened vessel is bound to be reduced in calibre proportionately to the new length. Thus tobacco inhaled may be seen to be important in the aetiology, but unless these data are recognized it will be found that tobacco may seem to have no place in causation. Cutting down cigarettes, which is often advised, does no good; the one who does it invariably inhales all the more to get the desired result, so that the man who reduces from 20 to 10 may get more poisoning from the 10 than from the larger number. Even if it takes about 6 weeks to get the effects of tobacco inhalation away from the sympathetic system of a severe addict, the relationship of tobacco inhalation, not smoking, to dyspepsia and ulcer formation requires a real investigation; it is not yet been done.—I am, etc.,

Bristol.

A. T. TODD.

SIR,—Dr. Anthony C. Hamer's attempt to classify smokers according to types (Sept. 14, p. 402)—the lean cigarette smoker and the placid, comfortable pipe-smoker—is interesting. But is it not time at someone protested against the silly theory that smoking is a "reversion to the infantile sucking instinct"? What justification is there for this theory other than that of a would-be-guess? If mankind has to sublimate his "sucking instinct" by smoking it should seem strange to the logically-minded that he never felt this urge until the 1600's, when tobacco was generally introduced. Strange, too, that men (and women) are prepared to pay the price of tobacco when a three-halfpenny teat would be cheaper and equally effective. And the pipe smoker is psychologically sucking his mother's teats, so surely we should regard the gum chewer as a cannibal who is actually masticating them.

A protest, too, must be made against these loose remarks about nicotine. It is "swallowed in mouthfuls," and produces "nicotine-stained hands," according to Dr. Hamer. But the fact is that nicotine is colourless, and the brown stains caused by smoking are due to the products of combustion and would equally result from smoking brown paper. By all means let us observe that cigarette smokers have stained fingers, but do not let us be so unscientific as to speak of "nicotine" stains. With regard to the "mouthfuls of nicotine" said to be swallowed, it might be well to remember that tobacco contains about 2–4% of nicotine and that much of this is said to be destroyed by combustion. What is swallowed is saliva mixed with pyridine bases, particulate matter, a *soupe* of the brothers Mono- and Di-oxide, and just a possible pinch of nicotine which had escaped combustion and condensation.—I am, etc.,

Alverstoke.

W. H. EDGAR.

Endotracheal Tubes

SIR,—The rubber endotracheal tubes that are available for purchase at the present time are so hard that bleeding from the turbinate bones is easily caused during intubation via the nose, and this might bring the endotracheal technique in anaesthesia into disrepute.

These tubes can, however, be effectively and permanently softened by immersing them in ordinary kerosene, or lamp-oil, for one and a half hours. The tubes swell up somewhat during this process so that a size three Magill nasal tube, for example, becomes as large as the number five. Different degrees of softness can of course be produced by varying the time of immersion in the oil.—I am, etc.,

London, W.1.

J. U. HUMAN.

Chronic Undermining Ulceration

SIR,—Owing to much travelling I have only just read Mr. Aubrey Leacock's article (Dec. 1, 1945, p. 765) on chronic undermining ulceration. In North India we saw many cases in infants of severe phagedenic ulceration of the scrotum, in some cases both testicles being denuded. All except those moribund on admission reacted very quickly to dressings of potassium permanganate and left us only with a problem of surgical reconstruction.

I assume that the action in these cases is due to the high oxygen content. I suggest that potassium permanganate is easier to come by than zinc peroxide, used by Mr. Leacock.—I am, etc.,

Liverpool.

GLADYS RUTHERFORD.

Penicillin Treatment of External Eye Infections

SIR,—I should like to add a few of our observations to Mr. J. Minton's article (Sept. 7, p. 324) on penicillin treatment of common external eye infections.

We find that although chemical lesions of the conjunctiva, especially lime burns, heal with less adhesions when treated with penicillin drops or ointment, complete healing of the lesions can be accelerated when the penicillin treatment is discontinued after about 1 week and replaced by sulphacetamide drops or ointment. Continued application of penicillin seems to delay the healing of these lesions.

Lacrimal sac infections which recur after treatment with penicillin drops and probing will often clear up with repeated syringing (twice daily) with penicillin 500–1,000 units per ml.

We also find that the skin lesions in herpes ophthalmicus will heal very quickly when treated with penicillin ointment, and if secondary infection is heavy with a course of systemic penicillin—15,000 units of penicillin intramuscularly every 3 hours up to 500,000 units. The post-herpetic pain seems less severe and if treated early enough the skin lesions seem less numerous and less extensive.—I am, etc.,

P. H. MERRORY,
Registrar.

Wolverhampton and Midland Counties
Eye Infirmary.

SIR,—Mr. Joseph Minton's paper on penicillin for external eye infections (Sept. 7, p. 324) prompts us to comment on some of the points that he raises. Mr. Minton states that he would expect his anhydrous ointments of penicillin in "eucerin L.M." to retain their full activity for over six weeks. We have found

that such ointments based on eucerin and containing 1,000 Oxford units per gramme show no noticeable signs of loss of activity after being kept at room temperature for over four months. By comparison it is of interest to note that an aqueous penicillin cream made with "eucerin L.M." and possessing an initial activity of 500 Oxford units per gramme will lose not more than 50% of its original activity after fourteen days' storage at room temperature; kept in the refrigerator such creams will retain at least 50-60% of their initial activity after three months. Similar results have been recorded for "eucerin L.M." creams by Greey and Hebb.¹

It may be helpful to your readers if we add a few words on the difference between the original eucerin base ("eucerin anhydrous") and "eucerin L.M." We were first prompted to investigate the suitability of a eucerin type of base for the preparation of penicillin creams by the fact that "lanette wax," the base originally advocated for penicillin creams by the Medical Research Council, was found by a number of workers to exhibit certain unsatisfactory features. Among these were liability to cause irritation, conflicting reports regarding the stability of penicillin in creams based on the M.R.C. formula, and variations in the pH of the base. It was soon found that eucerin was useful and in some cases preferable to "lanette wax." However, constructive criticisms, particularly from Dr. M. Sciler of the Luton and Dunstable General Hospital, led us to develop a modified base which we called "eucerin L.M." and which has since been found very suitable for the preparation of penicillin creams.^{2,3} This base, like eucerin itself, is of constant pH, conferring upon the aqueous phase a pH of about 6.5, and it was therefore expected to be particularly suitable for penicillin. The absence of irritant effects and the softness of the cream would appear to make it especially useful in eye work.

The main difference between ordinary "eucerin anhydrous" and the new base "eucerin L.M." is purely physical, the latter being more easily emulsified at ordinary temperatures and giving rise to a softer cream. There is no noticeable difference in the stability of penicillin in the two respective bases; both are anhydrous and neither gives rise to irritant effects. "Eucerin L.M." has therefore, in our opinion, no particular advantage over "eucerin anhydrous" in the preparation of anhydrous penicillin ointments for general work. It is, however, to be preferred for use in hydrous penicillin creams and, owing to its softer texture, particularly perhaps for eye work.

We agree with Mr. Minton's comments on the official B.P. ointment, and we feel with him that careful attention must be given to the points he raises if such an ointment is to be used with success. In particular, the possibility that he points out of pH changes in an ointment based on wool fat warrants careful examination. This danger of free acidity developing does, of course, not arise when eucerin bases are employed, as we are dealing with preparations of wool alcohols, which are free from the acid components still present in wool fat. —We are, etc.,

Herts Pharmaceuticals Ltd.,
Welwyn Garden City.

D. MCANALLY.
C. W. PICARD.

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- ² Grossmark and Plewes, *British Medical Journal*, 1945, 1, 906.
- ³ Stark Murray, *Lancet*, 1945, 2, 544.

Erythroblastosis: Liver and Brain Lesions

SIR,—On June 29 you published an article by R. J. Drummond and A. G. Watkins¹—in which they show that chronic hepatic enlargement in children and adolescents may have its origin in congenital haemolytic disease. They suggest that Rh-factor investigations might reveal the cause in some cases of familial hepatic cirrhosis. On the other hand, it is well known that the icteric form of erythroblastosis often leads to damage of the basal ganglia and of other nuclear masses (kernicterus) and that a number of survivors suffer from a permanent affection of the nervous system. I have seen a case of double athetosis in which the family history was extremely suggestive of Rh-dyscrasia.

If then erythroblastosis can produce chronic liver damage on the one hand and chronic nervous disease on the other (especially disease of the lenticular nucleus) may it not also be an aetiological factor in those diseases in which the two pathological changes are found combined—Wilson's disease and

Westphal's disease? Some of the family histories in classical accounts of hepato-lenticular degeneration are well in keeping with this idea.

Kinnier Wilson's first case² was the youngest but one of children of whom 3, including the last one, had died in infancy. The two firstborn children were healthy as were some of the intervening ones. His fourth case was the last of three children of whom the first died at the age of 10 of ? tuberculous peritonitis, while the second was all right at the age of 22. At the birth of No. 3 (the patient) the mother had a miscarriage. Hadfield's case³ was the survivor of two children. The other one had died at the age of six with an enlarged liver and ascites and was certified as *tuberculous peritonitis*. Barnes's family⁴ consisted of 8 children. The three eldest were healthy, the following three developed progressive lenticular degeneration, the next had cirrhosis without evidence of lenticular involvement, and the last had a palpable liver at the age of the patient.

Not all the family histories on record fit in equally well with our hypothesis, but we know by now that the march of erythroblastosis does not always follow the classical pattern. The difficulties of fitting all the known facts into this Rh-theory are, however, enormous and I offer them together with a hypothesis to anyone who is interested. The facts seem to be suggestive enough to warrant further investigation, especially as the proof one way or the other should be a comparatively simple matter—viz., by Rh-investigations in sufferers from Wilson's and Westphal's disease and in their families. I am, etc.,

Surgeons Hall, Edinburgh.

ERIC GIERINGE

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- ² *Brain*, 34, 295.
- ³ *Ibid.*, 46, 147.
- ⁴ *Ibid.*, 47, 239.

Trilene in Midwifery

SIR,—Recent correspondence in your columns on the use of trilene in domiciliary midwifery reminds me that you were good enough to publish a letter from me on the subject (18, 1943). At that time I had been using Marrett's machine for over a year. I have now used it for more than four years in nearly two hundred maternity cases in private houses, in nursing homes, and I like it more than ever. With experience, this machine can give analgesia, amnesia, or full anaesthesia. I never now find it necessary to change to ether or chloroform. As overdosage is so quickly signalled by tachypnoea, and as dosage can be immediately adjusted by the six quadrant lever of this machine, there is never any anxiety. In a number of cases I have had the opportunity of comparing this machine with a standard gas and air machine, and in every case the patient has been strongly in favour of the trilene. Such remarks as "I wasn't getting much relief from that thing; but it made all the difference when I got your machine" are usual.—I am, etc.,

Ashted, Surrey.

W. EDWARDS

Africans, Peptic Ulcers, and Parasyphilis

SIR,—It is perhaps fortunate that Dr. Wright's Abolition of Africans (Aug. 31, p. 311), or for that matter the great mass of Africans, cannot read the large conglomeration of medical inaccuracies which has already been written about them. Dr. Wright should not be dismayed because history is repeating itself and we are again witnessing the outpouring of so-called authoritative pronouncements from medical men who have spent a few brief months only in tropical Africa. It does not appear that they have taken the elementary precaution to consult the easily accessible medical literature on their particular subjects before rushing into print with them. On the other hand we must not assume that peptic ulceration exists to a great extent among East African natives merely because Abdulla, a Nubian, who has lived on a diet of rice, eggs, maize, ehicken, and curries for most of his Kenya existence, has fallen a victim to this disease.

Abdulla's dietetic habits cannot be compared with those of the rural Nilotic Luo or the rural Bantu Kikuyu, and it is surely from these tribes, which comprise the great majority of the African population of Kenya, that reliable statistics must emanate—and these statistics will not be available until national hospitals in reserves are equipped with x-ray plants. As the

spitals have not yet emerged from the bucket-latrines and kerosene-lamp stage of development we shall, alas, have to wait many years for reliable figures. In the present state of our knowledge Sir Heneage Ogilvie and Dr. Wright are merely guessing, and their observations should not therefore be taken too seriously.

As regards parasyphilis, Dr. Wright is on much safer ground. Neurosyphilis is far from being unknown among East African natives. During a medical survey of a native population heavily infected with syphilis I found four undisputed cases among over 90,000 people examined. Reference to Dr. Gordon's work at Mathari Mental Hospital, Nairobi, would have been sufficient to dispel the illusion of the non-existence of parasyphilis among East African natives.

After twenty years' experience of East African tribes I would confirm the present position with regard to peptic ulceration and parasyphilis as follows: (1) Peptic ulceration is uncommon among rural East African natives but more common among their urban detribalized brethren. (2) The incidence of parasyphilis in relation to other forms of syphilis is low.—I am, etc..

"AJUGA."

Health Service Bill

SIR,—I fail to see the use of a referendum until the proposition is told the detailed terms of the Service on which it is to be voted. Few doctors will be voting for or against an ideology, but rather from the practical standpoint of the advantages offered by a State Service against those offered by the present methods of private practice.

Speaking as a general practitioner, there are certain advantages which a State Service could offer for which I would willingly give up my so-called freedom. I would wish to know first, that I am to be paid a salary which I consider an adequate recompense for the amount of work I do; for my professional knowledge; for the responsibility I bear; and for the position I have to keep up. I, personally, believe that all private practice should be abolished, and that all doctors should be paid salary and not remunerated by capitation fee. Only so can professional competition be eliminated, which, *per se*, leads to exploitation of the "bedside manner." Secondly, that I shall be paid a living pension at a reasonable retiring age. With present taxation and the high cost of living there are few who can even contemplate retirement before we drop in our tracks. Thirdly, that provision will be made for a twelve-hour day, which is certainly practicable in urban areas. What other "working man" is expected to be on duty day and night, 24 hours a day, 7 days a week, and for at least 11 months of each year? I fail to see where our freedom lies. The public, because of a free service (the N.H.I.) and the increased consciousness of health, expects so much of a doctor now that someone, for humanity's sake, must protect us against the greater labour demanded of us. We should be entitled to the same freedom as other men to give to our other pursuits and to our families, and the profession should have been sensible enough long ago to have instituted such a service within itself.

Nor do I see the practical purpose of a referendum (in the event of the majority of the profession voting against a National Health Service) unless the B.M.A. is ready to play its one and only trump card against a dictated Service, and, like all good trade unions, calls a general strike. If the Minister is not willing to negotiate, what other redress has the profession got? Are we to surmise that the B.M.A. is willing to do this?—I am, etc..

Englefield Green, Surrey.

W. E. R. BRANCH.

SIR,—In 1942, while D.A.D.M.S. of a division in the Middle East, I had to arrange discussions by British medical officers of the then proposed national health scheme. These doctors, whose ages ranged from 25 to 45, comprised a representative cross-section of the profession. They were all keenly interested and nearly all favourably inclined towards the plan. Two recommendations were made by that group: (1) That the serving doctors be kept informed of all progress; (2) That the final draft should wait until general demobilization to allow of consultation with the rank and file of the profession before reference to Parliament.

Since demobilization in April this year I have been able to discuss the new Bill with a large number of doctors, many

of whom are ex-Servicemen, in urban and rural practices in different parts of the country. Their unanimous antagonism towards the Bill struck me forcibly. I am convinced that this impressive change of attitude is due entirely to the despotic manner in which the Bill is being imposed upon us. Among the very men who were once so anxious to co-operate in the planning and working of a national health service there is now a bitter resentment and anger against the unscrupulous employment of political advantage to drag down the entire profession into the sullen, reluctant acceptance of a scheme in which the basic conceptions of British justice and individual liberty are so ruthlessly denied—denied, moreover, to a body of men and women whose pride has always been their personal and corporate service, their self-sacrifice and devotion to the needs of all people in both peace and war.

Drs. Zoë and Paul Harris (Sept. 21, p. 439) have clarified the issues and exposed the basic reasons for this bitterness and reaction. Others have pointed the way to a just remedy. Each and every one of us who believes that this Bill is unjust, contrary to our conceptions of individual liberty, and not in the best interests of the people and the profession must resolutely refuse to compound with those who seek its imposition; until reason replaces repression. We must realize that every advantage will be taken of us: our lack of unity, divergent interests, our innate dislike of "trouble," our fear that, unless we come in, we alone, or almost alone, will remain outside, and above all our absorption in the unceasing duty of caring for our patients, in whatever capacity we treat them. Who hate evil must resist it. Shall it be said of us that we, who counsel and tend others in their adversity, are helpless in our own cause?—I am, etc.,

Birmingham.

DOUGLAS VANN.

SIR,—I would like to reply to Dr. Norman Maple's comments (Sept. 14, p. 400) on my letter of Aug. 31. To confuse Nazism with Socialism is to reveal an extraordinary lack of political insight. This is regrettable, for without such insight it is impossible to understand the economic and social changes, including the integration of medicine, which must take place, and which are taking place in the world to-day. Dr. Maple obviously deplores the fact that a Labour Government was returned to power by less than one half of the electors in the country (and I presume that he would have been quite content if the party for which he cast his vote had been similarly returned), but we must face reality and accept the fact that the present Government was returned and is in power right now. What he and many others are in effect saying is that "democracy is all very well just so long as it doesn't touch us." It is naïve to a degree to suggest that the Minister of Health will have dictatorial powers. Every Minister of the Crown is responsible to Parliament. I quite fail to see how there can be dictatorship provided that doctors and other health workers make use of the democratic machinery which will be at their disposal. The profession will have adequate representation at all levels.

I am not uncritical of the Bill. I think it could be improved in many respects. Least of all do I suggest that Dr. Maple should be prohibited from making his attitude known in whatever way he thinks fit, and nobody can stop him from striking if he thinks it will do him or anybody else any good. I do maintain, however, that once the Bill becomes law we should do our best to make the Service a success and that we should thereafter constantly try to improve it in the light of experience. Finally, I repeat that I think an appreciable number of doctors will work in the new Service to the best of their ability despite the irresponsible accusations that they are "quittings," "traitors," "blacklegs," or what you will.—I am, etc.,

Scarborough.

PETER WADDINGTON.

Equal Opportunity for Specialists

SIR,—Medicine is gravitating towards State control and Mr. Bevan announces that it is hoped to operate the scheme contained in the Health Service Bill some time in 1948. When the Bill has become law the vast majority of the medical profession will in fact be servants of the State, owing allegiance to a common higher ultimate authority—the Minister of Health. The members of the profession will (so Mr. Bevan hopes) be united by a mutual bond, that of unstinted service for the

common health, and conditions of service within the State medical scheme will follow a uniform pattern according to grades—e.g., clinician or administrator, general practitioner or specialist. In the case of the specialist, and, in particular, that of the surgical specialist, I would make a plea for non-preferential consideration and equality of opportunity with regard to appointments. Is it just to preclude a surgical specialist with a diploma of Fellowship other than that of the Royal College of Surgeons of England from applying for specialist appointments as is very frequently the case at present? Will this selectivity persist when the profession comes under the aegis of the State, and does this suggest that political support may even be accorded to particular medical schools to the exclusion of others? It is devoutly to be hoped that no such bias will develop, for herein lies the threat of aggravation of the preference already in existence.

It is as true to-day as it was a hundred years ago when Dr. Andrew Combe in his "Memoirs"—quoted by Dr. John Brown in *Horae Subsecivae*—said: "The one great object ought to be the due qualification of the practitioner, and whatever will contribute to that end ought to be retained, whether it may happen to agree with or differ from the curricula of other universities or licensing bodies. The sooner one uniform system of education and equality of privileges prevails throughout the kingdom, the better for all parties."—I am, etc.,

W. R. BLACK.

Capitation Fee

SIR,—This fight has got to come, and the sooner the better. My own feeling is that the Resolution of the Insurance Acts Committee is not strong enough. We must be as uncompromising with the Minister as he has been with us, and as he obviously intends to be in the future. Though the Resolution notes the failure of the Minister to keep a specific pledge to apply the Spens Report to the current panel remuneration, it somewhat naively suggests asking him to renew and keep the identical pledge, or alternatively to pledge himself in advance to accept an interpretation by the Spens Committee or some other agreed-on body. We have learnt the value of ministerial pledges. More important still, perhaps, is the fact that reference to the Spens Committee or other body involves delay—possibly, on the Minister's part, intentional delay. As he is admittedly attempting to make the N.H.I. capitation fee the criterion of payment under the medical Service, it is essential, in our present interests and the future interests of the profession as a whole, that our attitude on terms of service should be definitely crystallized, if possible before the Bill gets its third reading in November and certainly before the Regulations are even discussed by the appropriate Parliamentary committee.

As I see it, we have now reached the last ditch but one in which to fight for proper terms. The suggested course of resigning from the N.H.I. is a pistol at the Minister's head which will be only at half-cock if we palter about asking for further pledges, the value of which we have learnt to assess to a nicety. This question of panel remuneration is one which affects our own present financial position no less than our future prospects. Definite and decided action now will have a very healthy moral effect. Fight, and no quarter!—I am, etc.,

Arlesey.

M. LETHBRIDGE FARMER.

The World Health Organization

SIR,—In the *Journal* of Sept. 21 (page 428) information is given about the World Health Organization of the United Nations. The functions proposed for this body appear to be useful, reasonably precise, and what might be looked for in an effort to share medical knowledge throughout the world. Unfortunately, some "principles" are announced as a basis of the work and these are either useless platitudes or clownish nonsense. What faith can be put in the work of people who announce that they will be guided by the proposition that "health is a state of complete (sic) physical, mental, and social well-being and not merely the absence of disease or infirmity"? Are the members of this organization to be people who believe that such a state is compatible with human life in a state of consciousness? If a poet spends nights in mental struggle and his son suffers from eating too many apples and his daughter is ostracized by the church choir, what is the World Health Organization going to do? Next it is declared that

"the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being." Who conferred this right and who has deprived us of it? Then we are told that "the health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States." If so, peace and security must be things as yet quite unknown and perhaps non-existent. Other "principles," equally ridiculous, follow, and lastly this: "Governments have a responsibility for the health of their peoples." God save the peoples!—I am, etc.,

London, W.1.

J. M. ALSTON.

Sir Almroth Wright and Anti-typhoid Inoculation

SIR,—I have read with interest the letter of Dr. Leonard Colebrook on the above subject (Sept. 14, p. 398). I was surprised to see that in Dr. Guthrie's *History of Medicine* the discovery of anti-typhoid vaccine was attributed to the late Sir William Leishman.

I would like to confirm Dr. Colebrook's letter from my own personal experience. I entered the Royal Victoria Hospital, Netley, as a surgeon-on-probation, A.M.S. (as it then was), in October, 1897, for a four-months' course of instruction. At that time Wright was professor of bacteriology there. During the course he was stressing the importance of anti-typhoid inoculation and did many inoculations among our members. His laboratory assistant was Capt. F. Smith, A.M.S. Sir William, then Capt., Leishman had only recently joined the staff of the Royal Victoria Hospital, and had no connexion with the bacteriological laboratory at that time.

I would further add that had he been alive Leishman would have been the first to disclaim any credit for this discovery, as he was one of the most modest and unassuming officers I have ever had the privilege of being associated with.—I am, etc.,

A. H. O. YOUNG,
Lieut.-Col., R.A.M.C.(Ret.)

Tavistock.

The False Preconceived Notion

SIR,—In an address to the Indian Congress of Philosophy last year I drew attention to a test for what Hippocrates termed the false preconceived notion but which, when you believe in it, you consider to be a well-established principle. The test is based on the capacity of the false preconceived notion to give rise to conflicting hypotheses of seemingly equal validity. If then one meets such conflicting hypotheses one should not humanly attempt to make choice between them but instead be critical enough to find out what all are agreed on and reject that. The simplest case comprises the conflicting hypotheses of dissociation and repression. Since both parties through these hypotheses agree that consciousness is a force, one rejects the assumption that consciousness is a force.

As noted by Parsons, the physiology of vision comprises a mass of hypotheses which are in conflict but of seemingly equal validity. Hypothesis-making may well be held to have run riot over dark accommodation. In this case the common factor is a belief that the natural stimulation of the eye is the same as the electrical excitation of muscle and nerve. We therefore drop this belief and get a clean slate to write on. I believe, however, that statistical treatment of those theories would "prove" that their common false assumption was true. I have taught my own students that the false principle, if firmly held, makes us puck-struck and starts us arguing to no result. Perhaps we are all puck-struck over shock. If such be the case, then after the next symposium of surgeons on shock some young surgeon should critically examine its proceedings to find out what theory about it his seniors agree on. This theory he should reject. After the rejection he will have an entirely new field to survey. He might even find that the word shock itself serves as a wand to Puck.—I am, etc.,

University of Rangoon.

W. BURRIDGE.

Pronunciation of Medical Words

SIR,—I would like a ruling on the pronunciation of the word schizophrenia. Even among alienists one hears a bewildering assortment of pronunciations: skizo, skitzo, skidzo, shizo, etc. I incline towards skitzo, but would like to know which is correct.—I am, etc.,

Bournemouth.

MARGARET VIVIAN

Obituary

T. WATTS EDEN, M.D.,
F.R.C.P.Lond., F.R.C.S.Ed.

Although Dr. Watts Eden had been living in retirement in South Devon for some years, he is still remembered as one of the foremost obstetric physicians and gynaecologists in London hospital and consulting practice for thirty years or more, and to many who knew him, both in professional and private life, will learn of his death on Sept. 22 with more than ordinary sorrow.

Thomas Watts Eden was born on May 8, 1864, at Evesham in Worcestershire. He was educated privately and took his medical training at the University of Edinburgh, graduating in 1888 M.B., C.M. with first-class honours. He said in later life that when he was capped bachelor of medicine he believed himself to be equipped with a great body of exact knowledge which would carry him through everything, but that his post-graduate career had been a salutary succession of discoveries of his own lack of omniscience and also of the fact that teachers and even textbooks might occasionally be wrong. But he had ground for self-confidence, for he was an exceptionally brilliant student. He gained the Ettles Scholarship, awarded to the most distinguished Edinburgh medical graduate of his year, also the James Scott Scholarship, awarded for the greatest proficiency in midwifery and gynaecology. In 1889 he received the Leckie Mactier Fellowship of the University as he graduate best fitted to undertake research. If Edinburgh left any gaps in his equipment, these were made good by later studies in London, Berlin, and Leipzig, where he gained practice in operative midwifery. In 1891 he proceeded M.D., again with honours. The Fellowship of the Royal College of Physicians of London and of the Royal College of Surgeons of Edinburgh were added to his distinctions some years later.

From the beginning of his career he devoted himself to the practice of midwifery and gynaecology. Apparently his first published writing was "A Study of the Human Placenta" in 1896. He soon acquired a high reputation in his chosen field. In 1906, at the time he wrote his *Manual of Midwifery*, he was already assistant obstetric physician and lecturer on practical midwifery to Charing Cross Hospital, physician to out-patients at Queen Charlotte's, and physician to in-patients at the Chelsea Hospital for Women. He retained his connexion with these three hospitals throughout his career, and on his retirement on reaching the age limit became a member of the consulting staffs of all of them. It was at Charing Cross that he had the greatest opportunity of exercising his teaching gifts. He once declared that it was obstetric teachers rather than obstetric teaching that needed reconstruction. Teachers, he said, should be men with a fair amount of leisure, and teaching ought to be their principal occupation instead of being, as it was with so many of them, a mere incident in a busy life. His life was busy enough, but he was nevertheless a popular and brilliant teacher, and generations of students learned from him lessons of incalculable value in obstetrics—resource in emergency, foresight, scrupulous care. He was first of all examiner in midwifery and diseases of women for the Conjoint Board, and afterwards examiner to the Universities of Oxford, Cambridge, Edinburgh, and Leeds. Thus he came to exercise a large influence upon the progress of midwifery in this country. He was one of those to whose work must be attributed the striking change in obstetrics and its practice, chiefly as a result of its permeation by the spirit of preventive medicine, which came about in the second and third decades of this century. He insisted that the conduct of labour must always be regarded as a surgical procedure; it was true that it might be, and generally was, the simplest kind of surgery, but, on the other hand, it might be transformed into a major surgical operation. Always an opponent of narrowness in specialism, or what he called "the keyhole view" of medicine, he insisted that it was the duty of the obstetric specialist to maintain his touch with normal labour by undertaking the private care of a number of such cases every year, in addition to his hospital work. The deplorable thing, in his opinion, was that complicated cases should pass into the hands of a few men

in each locality, while the remainder of practising doctors withdrew from midwifery work and left it to midwives.

With such ideals he helped to found the British (afterwards the Royal) College of Obstetricians and Gynaecologists in 1929. He was one of the first Fellows of the new College and a member of its first full council. He was also President of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, and in 1930 he succeeded Lord Dawson of Penn as President of the Society itself, being the second President since the amalgamation—Sir Francis Champneys was the first—to represent the province of obstetrics. On several occasions Watts Eden held office in the Section of Obstetrics and Gynaecology at Annual Meetings of the British Medical Association, and at Cardiff in 1928 he was President of the Section. From 1932 to 1940 he served the Association as a member of the Consultants Board, which was set up to deal with applications by practitioners for the inclusion of their names in the Consultants' List. Another of his interests was his membership of the Governing Body of the British Postgraduate Medical School. He was also an honorary member of the American Gynaecological Society.

Dr. Eden's best-known writing was his *Manual of Midwifery*, which went through seven editions. In 1911 he wrote a *Manual of Gynaecology*, and in 1916, with Mr. Cuthbert Lockyer, his colleague at Charing Cross Hospital, he produced a very large work, running to a thousand pages, entitled *Gynaecology for Students and Practitioners*, which went into four editions. In 1917, again with Mr. Lockyer, he edited *The New System of Gynaecology*. In addition he wrote numerous articles in Green's *Encyclopaedia of Medicine*, Quain's *Dictionary*, and the *Proceedings* of various societies. Early in his professional career he edited the *Journal of Obstetrics and Gynaecology of the British Empire*, and he continued to serve it as chairman of the Board. The *British Medical Journal* over a period of many years had the advantage of publishing reviews by Dr. Eden of works on his own subject. He was as conscientious a reviewer as he was a physician, and although some authors may have felt that he exposed their weak points, they could not complain that he had not read their books before reviewing them. A review, according to his practice, should include an outline of what the book is about, instead of, Macaulay-like, making the book a peg on which to hang a brilliant dissertation on its subject.

In the great inquest which occupied the attention of obstetrical circles during the years following the first European war, when the obstinately high maternal death rate seemed to defeat all efforts to bring it down, Dr. Eden took a conspicuous part. He served on the Committee on the Causation of Puerperal Morbidity and Mortality from 1925 to 1928, and in all the important discussions of that time his voice was heard, and always to some practical effect. It was his view that the general practitioner had not always been fairly treated in the criticisms which were forthcoming, and he insisted that in domiciliary midwifery which the practitioner attended the minimum of safety given by the presence of a trained midwifery nurse should be provided. The old-fashioned "handy-woman" he called an unclean anachronism, a reminder of the days which produced Sairey Gamp. No one was more earnest in pointing out the importance of antenatal and postnatal care.

Until well over seventy, when cardiac weakness prevented much physical exercise, Watts Eden enjoyed a round of golf, and in earlier days riding horseback. To one who had the privilege of his companionship the distinguishing features of the man were his modesty and lack of self-seeking, his moral courage and wisdom in counsel, his dry but kindly humour, and above all his tender concern for the welfare of friends.

NEIL MACLEOD, M.D., D.P.M.

His many friends and colleagues were shocked to learn that Dr. Neil Macleod, the well-known psychiatrist, had been found shot dead on the night of Sept. 21 in a ditch at Tingley crossroads, five miles from Leeds. A man was arrested later and charged with his murder.

For several years up to 1939 Neil Macleod was medical superintendent of The Retreat, the famous mental institution run by the Society of Friends in Haslington Road, York. He became honorary physician for mental and functional nervous diseases at York County Hospital and adviser in psychological

medicine to the regional headquarters of the Ministry of Labour and National Service in Leeds. He was born in 1894 in the Island of Skye and studied medicine at the University of Edinburgh, where he graduated M.B., Ch.B. in 1918 and M.D. with commendation in 1928. He joined the Army as a private in the 1914-18 war, but when the authorities found that he had medical knowledge he was transferred to the Navy and was present at the Battle of Jutland as a surgeon probationer. He took the English D.P.M. in 1924. Before taking up the post of medical superintendent of The Retreat he had been assistant physician at the Royal Edinburgh Hospital for Mental and Nervous Disorders, Morningside, and at the Sunderland Mental Hospital. He joined the B.M.A. in 1919, was a member of the Royal Medico-Psychological Society, and a past president of the York Medical Society. During his time in York and Leeds Dr. Macleod often gave expert evidence at murder and other trials. He contributed the section on psychological medicine to the eighth and ninth editions of *Savill's System of Clinical Medicine*. A brilliant after-dinner speaker, he was in much demand by St. Andrews societies and other Scottish gatherings in the North of England. He met and married his wife, formerly Dr. Mary Elizabeth Macarthur, while they were both on the staff of The Retreat, and he leaves her with two young sons.

Dr. PETER MACDONALD writes:

It was an overwhelming shock to see the announcement of the tragic death of Dr. Neil Macleod. His many friends, among whom I am proud to claim that I was one of the most intimate, will regard it as a disaster of the first magnitude. They will remember his genial character, his outstanding prowess as an orator, his apt phrasology, his quite remarkable choice of the fitting word, and with all and over all his transparent sincerity in everything he said and everything he did. He had not an enemy in the world, and those who knew him will treasure his memory with both affection and respect.

During his tenure of office as superintendent of The Retreat, it is not too much to say that he added lustre to that pioneer institution in the modern treatment of lunacy, and since he retired from that position he bade fair to become, in fact he had become, one of the leading psychiatrists in the North of England. His loss is a calamity not only to his many friends but also to the general public, who can ill spare him.

LIEUT.-COL. HASSAN SUHRAWARDY, M.D.,
LL.D., D.Sc., F.R.C.S.I.

Sir Hassan Suhrawardy (as he was known until recently) died in Calcutta on Sept. 18 aged 62. He was the first Indian to be appointed an honorary surgeon to the Viceroy of India, and had a most distinguished career in medicine and in the public service of his country.

He was educated in Calcutta at the Mohammedan Madras College and at the Medical College Hospital, where he held resident appointments. He subsequently studied in Great Britain, where he took surgical, obstetrical, and public health qualifications. On his return to Calcutta he had a distinguished professional career and rose to be Chief Medical and Health Officer of the Indian State Railways, honorary professor of public health and hygiene, and Vice-Chancellor of Calcutta University, vice-president of the Medical Council of India, and honorary consulting surgeon, Medical College Hospitals, Calcutta. He was the author of a *Manual of Post-operative Treatment* and of many papers. Great as were his professional attainments they were supplemented by public service and activities in many directions. He was a strong supporter of the Mohammedan cause in India and the Moslem League, and made a number of pilgrimages to holy places of Islam. As recently as 1945 he was appointed to the chair of Islamic history and culture in Calcutta University. He early entered the Bengal Legislative Council and became deputy president in 1923-5. His versatility is further shown by his appointments as President of the Board of Studies in Arabic and Persian and of the Calcutta Branch of the British Medical Association. He was also a first class magistrate and J.P., and did good work in organizing railway ambulance and nursing services. In 1930-3 he commanded the 2nd Battalion Calcutta University Training Corps.

In 1932 he was knighted immediately after a brave act in saving the life of the Governor of Bengal when a student attempted to shoot him in the Senate House of the University.

A very distinguished career was crowned by his appointment in 1939 as Adviser to the Secretary of State for India in London, a post he only relinquished in 1944. His whole life was one of devoted professional and public health service, which gained him universal respect and admiration. In spite of his political activities, he remained most loyal to his *alma mater*, the Calcutta Medical College, and did not fail when in Great Britain to visit his old medical college teachers. If Indians of his stamp and unswerving devotion to the interests of the Indian people as a whole are forthcoming in sufficient numbers to administer the country the outlook need not be despaired of. Sir Hassan renounced his knighthood a few weeks ago, when the Moslem League decided that all its members should give up their British decorations.

The untimely death, at the age of 59, of Dr. STEWART HODGSON, M.C., occurred at his residence in Edinburgh early in August. Educated at George Heriot's School, Edinburgh, he proceeded to the University, where he graduated M.B., Ch.B. in 1910. After a period as resident physician to the late Prof. Greenfield, in the wards of the Royal Infirmary, he began practice in the north side of Edinburgh and continued there to within a year of his death. On the outbreak of the 1914-18 war, Dr. Hodgson was gazetted to the R.A.M.C., and was awarded the Military Cross for his excellent work on the Western Front. After demobilization he resumed practice in Edinburgh, and was also actively engaged in Ministry of Pensions work, where his intimate knowledge of medicine proved of inestimable value in this department. At the outbreak of the recent war he quickly offered his services in A.R.P. duties, and was in charge of one of the aid posts which, owing to his enthusiasm and good example, was organized as a most efficient unit. Dr. Hodgson will be remembered with esteem by his patients and colleagues alike, not only for his efficiency, kindness, and sympathy, but also because of his cheerfulness and good humour. He joined the B.M.A. in 1920, and in 1935 represented his Division at the Annual Representative Meeting held in London. He was keenly interested in all forms of sport, and in his younger days captained George Heriot's Cricket XI. As a schoolboy he was outstanding in athletics, being games champion in two successive years.

Dr. JAMES WILLIAM ALBERT WILSON, of Wisbech, died while on holiday after only a few days' illness at the Royal Infirmary, Cardiff, on Sept. 10 at the age of 66. He was a native of Portaferry, Co. Down, and received his medical education at Queen's College, Belfast, graduating M.B., B.Ch., B.A.O. in 1903. He then went as an assistant to Dr. J. L. Thomas, who had a large colliery practice at Blaengarw, Glamorgan, and when Dr. Thomas left Dr. Wilson succeeded him. He soon won the confidence and even the affection of the Welsh colliers. One indication of his whole-hearted interest in the colliers' life and welfare was his study of miners' nystagmus. He made one of the earliest and most valuable contributions to the study of this industrial disease, and his thesis on this subject won him the M.D. degree in 1912. In 1915 he moved to Wisbech, but decided to join the Indian Medical Service for the period of the war, and was sent to German East Africa. Few doctors have had to solve such difficult medical problems as those that presented themselves to Dr. Wilson during the next two years. Although his health had been greatly impaired by malaria and dysentery during this period he returned to Wisbech in 1919 with his characteristic buoyancy and cheerfulness. In virtue of his medical and surgical skill, Dr. Wilson's practice soon became one of the largest in the Wisbech district. For many years he was honorary medical officer of the North Cambridgeshire Hospital, served on the Ely Panel and Medical Committee, and gained experience of public health work as medical officer for Walsoken, Walton, and Emneth. Dr. Wilson (writes E.O.L.) was a general practitioner of the best type—a keen and discriminating observer, well-informed in the most modern treatments, had a broad conception of the essentials of health, physical and mental, and, above all, a sympathetic understanding of human nature. At the present time, when many of us are concerned about the "municipalization" of the doctor, would that some of our best writers were to portray the drama, romance, and devotion of the general practitioner's life! Such writers could do much to stir the public and its legislators to a realization that our country will probably lose much more than it can possibly gain if the medical services are over-standardized. One danger of general practice is that it tends to exclude all other activities; the doctor has no time to be a citizen also. Dr. Wilson, like many others, avoided this danger and did so without neglecting his patients. He had made public interests. In 1923 (while chairman of the Ely Division

of the B.M.A.) he became a member of the Wisbech Borough Council and was mayor in 1932 when the late Duke of Kent visited the agricultural show at Wisbech. He took a lively part as a Liberal in politics, and his ready Irish wit made him a popular platform figure. In this field, as in all others, he was thoroughly sportsmanlike. The burial took place at Wisbech amid many manifestations that the town had lost a great citizen. A memorial service was held at the Congregational Church; every aspect of the town's activities and social services were represented in this large assembly. Dr. Wilson married twice. His first wife died in 1928. Heartfelt sympathy is felt with Mrs. Wilson, especially as it was but two months ago they settled in their new home and looked forward to years of ease and even greater happiness.

The death on Sept. 19 of JOHN HOWARD COOK, M.S., F.R.C.S., at his house in Hampstead, aged 75, removes the younger of a pair of medical brothers who were, in their own sphere, as famous as their contemporaries the Mayo brothers in the United States. They were the sons of W. H. Cook, M.D., of Hampstead, and both were educated at St. Paul's School, where each in turn swept the board in scholarships and prizes. Both in turn went to Uganda to the C.M.S. Hospital at Mengo, the reputation of which they placed on a firm foundation. The elder brother, Sir A. R. Cook, C.M.G., was there in time for the Uganda Mutiny of 1897-8, when he played a notable part in the medical care of the casualties: the younger brother joined him not long afterwards, and for many years they were undoubtedly the leading medical men in the infant colony, where sooner or later (and usually sooner) practically every white man passed through their hands as a patient. All the early writers—for instance, Sir Harry Johnston in his standard work on the Uganda Protectorate (1900) and Major H. H. Austin in his account of the Mutiny (1903), to quote only two—bore testimony to the selfless labours of these two medical missionaries, whose work contributed nobly to the prestige of European civilization in those troublous times. John Howard Cook, the younger brother, studied medicine at University College Hospital, whence he qualified as M.R.C.S., L.R.C.P. in 1895; in the same year he took a gold medal and scholarship at the London M.B., and in 1897 proceeded to the M.S. and the F.R.C.S.Eng. After working some years at Mengo he obtained the Diploma in Tropical Medicine of Cambridge University. Besides general surgery, he took an especial interest in ophthalmology, and he also played a prominent part in the investigation of and fight against African sleeping sickness. He was honorary consulting ophthalmic surgeon to the Church Missionary Society, having also been their physician and secretary to the medical committee. He was Harford lecturer in ophthalmology, and consultant for tropical diseases to the Ministry of Pensions. He left Uganda in 1920, and after 20 years more work for the C.M.S. in London he was then for 5 years medical superintendent of the London Medical Mission, Covent Garden. In 1899 he married Susannah Ethel Maddox. Their second son, Dr. Norman Cook, died in 1933 in West Africa, where he was a C.M.S. medical missionary, and the third son, Major A. Bickersteth Cook, M.B.E., M.B., B.S., is in the East. Mrs. Cook survives her husband; Sir Albert Cook has recently published a volume of *Uganda Memories*.

The death, on Sept. 18, of Dr. LEO POLLAK is a great loss, not only to White Lodge Hospital, Newmarket, but to the world of medicine. Before he came to this country, in consequence of the Nazi invasion of Austria, Dr. Pollak was Extraordinary Professor of Medicine in Vienna. About his work in this capacity he was very reticent, but among his personal friends he numbered some whose names are known to the world over, and it is probable that in more normal circumstances the name of Leo Pollak would have become equally well known. At the beginning of the war he was interned as an enemy alien, but was released from internment and became a member of the medical staff of White Lodge Hospital. There his circle of contacts was limited, but those who were privileged to know him recognized in him a great man. His professional knowledge was vast; he could give a learned answer to any question. Nevertheless, his erudition was associated with common sense and experience, so that his advice was very highly valued by all his colleagues. As a man, he was modest and extremely likeable. He earned the real affection of all with whom he came into contact, to such a degree that nobody can recall a single disparaging remark made about him. He had a lively sense of humour, which remained with him until his death, although he was fully aware of the hopelessness of his condition. All who were associated with him mourn the passing of a beloved friend and of a great character. It is one of the minor tragedies of the war that such a man should have ended his days in comparative obscurity, far from his native land, even though among friends.—J. S. H.

The Services

The Efficiency Decoration of the Territorial Army has been conferred upon the following officers: Col. C. H. Carlton, M.C., Lieut.-Col. (Hon. Col.) R. M. Savey, O.B.E., M.C., Majors (Hon. Lieut.-Cols.) R. B. Brew, W. S. Harvey, and F. R. Langmaid, Majors (Temp. Lieut.-Cols.) E. G. Gerstenberg, and B. M. Nicol, Majors T. A. Danby, J. D. A. Gray, and H. R. R. Mavor, Capt. (Hon. Major) L. P. Clarke, and Capt. (Temp. Major) T. H. Coan, M.M., R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Killed.—Temp. Lieut.-Col. Andrew Robert Fausset Clarke, M.C., Temp. Major Clifford Longden Lewis, and War Subs. Capt. Roylance Lynton Parkinson, R.A.M.C.

Previously reported missing, now reported killed.—War Subs. Capt. John Varley Schofield, R.A.M.C.

Died.—Lieut.-Col. Edward Alexander Strachan, Major Murdo Buchanan, Temp. Major Ewen Arthur Elson Palmer, War Subs. Major Hamish Barrowman, and War Subs. Capt. James Lavington Ashley, Archibald David Morrison King, Wilfred Kendrick Lloyd, Margaret Mary Loughnan, and Alan Ross Sheriff, R.A.M.C.

Died as Prisoner of War.—War Subs. Capt. William Service Aird, R.A.M.C.

Previously reported Prisoner of War, now reported Died as Prisoner of War.—Lieut.-Col. Cyril Armstrong, M.B.E., and War Subs. Capt. Alfred Kenneth Eastwood, Basil Frederick Benhow Gulliver, M.C., and Arthur Wemyss Gordon Sutherland, R.A.M.C.

Wounded.—Temp. Lieut.-Col. A. G. Fergusson, Major Hilda Roberts, and War Subs. Capt. J. K. A. Burn, R.A.M.C.

Medical News

Dr. D. Evan Bedford will deliver the Bradshaw Lecture on Thursday, Nov. 7, at 5 p.m., at the Royal College of Physicians, on "Hypertensive Heart Disease."

The inaugural address at the opening of the 210th session of the Royal Medical Society of Edinburgh will be given by Sir Henry Wade at 7, Melbourne Place, on Friday, Oct. 11, at 8 p.m. He will speak on "The Life of an Edinburgh Medical Student 300 Years Ago." The provisional programme for the session includes addresses by Mr. P. H. Mitchiner on Oct. 25, "The Aftermath of War in Medicine"; by Dr. J. R. Rees, on Nov. 8, "Social Psychiatry and Medical Progress"; by Dr. John McMichael, Nov. 22, "Heart Failure"; Col. L. W. Harrison, Dec. 6, "Half a Lifetime in V.D.: from Chaos to Order"; Prof. Charles Cameron, Jan. 10, "Tuberculosis as a Problem in Diagnosis"; Mr. A. H. McIndoe, Jan. 24, "The Surgery of Congenital Defects"; and Dr. R. W. Durand, Feb. 14, "The Doctor, the Patient, and the Law."

The annual general meeting of the Heberden Society has been arranged for Friday and Saturday, Oct. 25 and 26, at 11, Chandos Street, Cavendish Square, W. After the business meeting at 4.30 p.m. on Friday a discussion on future trends of research in rheumatoid arthritis will be opened by Dr. G. M. Findlay with a paper on arthritis in rats and mice due to pleuropneumonia-like organisms, followed by Dr. D. H. Collins, on erysipelotheix polyarthritis of swine. The annual dinner will be held at the Euston Hotel that evening at 7.45. On Saturday at 11 a.m. Prof. J. Axel Höjer, chief medical officer, Royal Swedish Ministry of Health, will give an address on the organization and work of a rheumatic service in Sweden.

Dr. Ludo van Bogaert of Antwerp will give a lecture at the National Hospital, Queen Square, Medical School, on Wednesday, Oct. 9, at 4 p.m., on "Progressive Atrophies of the Globus Pallidus, their Clinical and Pathological Characters." All those interested are invited.

The British Institute of Philosophy has arranged a course of lectures on "Contemporary World-Outlooks" beginning on Friday, Oct. 11, at 5.15 p.m. Particulars may be had from the Director of Studies, University Hall, 14, Gordon Square, London, W.C.1.

The British Red Cross Society, working in close co-operation with the Ministry of Health, held a blood transfusion conference at Gas Industry House (opposite St. George's Hospital) on Sept. 24.

According to the *Manchester Guardian* of Oct. 1 almost the entire medical staff of two of Stockholm's hospitals decided to strike at midnight to-night against a Government decision forbidding them to charge for health certificates. The two hospitals have a daily average of nearly 3,000 in-patients and out-patients. The doctors say they will treat patients already in the hospital, but they will accept no new patients, nor will they treat out-patients.

At a meeting of the Lausanne Medical Graduates' Association held in London on Sept. 25 Dr. Cyril T. Gasking, of Harrogate, was elected president for 1946-8, and Lieut.-Col. Colin McIver, of Bexhill, president-elect for 1948-50. The following officers were re-elected: vice-president, Dr. Robert Fleming, of Harrow; hon. secretary and treasurer, Dr. Charles A. H. Franklyn, Wickham Hill House, Hassocks, Sussex, to whom all inquiries should be sent.

The permanent headquarters and address of the United Nations Educational, Scientific, and Cultural Organization are now UNESCO House, 19, Avenue Kléber, Paris, 16^e, France.

Before the war a blind one-armed Englishman was a teacher of English in Holland. During the Arnheim fighting his home and all his effects were destroyed, and for seven weeks he wandered homeless about the countryside. But misfortunes failed to break his spirit, and his cheerfulness impressed all who met him. He has now started afresh, and the British Wireless for the Blind Fund has sent him a new wireless set to replace the one he lost in the war.

Mr. A. E. Porritt, C.B.E., is by invitation shortly taking over the duties of Professor of Surgery at Harvard University for a few weeks.

Mr. W. A. Macleod, of 17, Gayton Road, Harrow-on-the-Hill, who died on May 7 last, with net personalty of £19,720 9s. 8d. bequeathed six-twentieths of the residue of the property to the Lister Institute of Preventive Medicine, London, or to the University of Edinburgh if the former is no longer functioning or no longer carrying out research, upon trust to found a scholarship or scholarships or other form of award in memory of his daughter Morna, which shall be known as "The Morna Macleod" scholarship or award, and be "tenable by students of Scottish birth or descent on at least one side of their family."

Dr. Ernest Chittenden Bridges, of 67, Harcourt Terrace, London, S.W.10, died on April 17 last, leaving £59,113 14s. 4d. gross, with net personalty £58,982 6s. He left £500, wearing apparel, and suitcases to the Royal Medical Benevolent Fund; £25 to the St. Alban's Medical Club, of which he had been president; and £25 to the Medical Society of London.

EPIDEMIOLOGICAL NOTES

Paratyphoid

At Coatbridge, in Lanarkshire, there have been a further 11 cases of paratyphoid B. In the preceding fortnight 113 cases were reported in this town.

Halifax C.B. has had another 7 cases of paratyphoid in the week under review, as against 14 cases in the preceding week.

Discussion of Table

In *England and Wales* infectious diseases were less prevalent. There were fewer cases of measles 108, whooping-cough 80, diphtheria 29, and dysentery 18. The only exception to the general trend was a rise of 123 in the notifications of scarlet fever.

A slight rise in the incidence of scarlet fever was general throughout the country; the largest local increase was London 24. Changes in the returns for measles were a decrease in Lancashire 51 and a rise in Yorkshire West Riding 33. Very little alteration was recorded in the incidence of whooping-cough, and the only variations of note were decreases in Warwickshire 44 and Lancashire 44. The largest of the local fluctuations in diphtheria was a decrease of 11 in Durham. One-quarter of the total of 68 cases of dysentery were notified in London.

In *Scotland* rises were reported in the incidence of scarlet fever 13 and diphtheria 5, and a fall of 20 in the notifications of whooping-cough. The largest returns of dysentery were Glasgow 11, Edinburgh 9, and Aberdeen 9.

In *Eire* an increase of 4 was recorded in the notifications of diphtheria, but Dublin C.B. had a rise of 12. Diarrhoea and enteritis was less prevalent; there were 15 fewer cases than in the preceding week. Of the 55 cases of diarrhoea and enteritis 46 were notified in Dublin C.B.

In *Northern Ireland* little change occurred in the trends of infectious diseases. The chief feature of the returns was an outbreak of diphtheria involving 6 persons in Londonderry R.D.

Week Ending September 21

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 853, whooping-cough 1,610, diphtheria 240, measles 1,208, acute pneumonia 312, cerebrospinal fever 36, dysentery 66, acute poliomyelitis 28, paratyphoid 17, typhoid 13.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 1

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	28	4	19	1	—	39	6	20	3	—
Deaths ..	—	—	2	—	—	—	—	1	—	—
Diphtheria ..	285	22	82	35	21	495	28	141	86	—
Deaths ..	5	—	2	2	—	7	—	2	—	—
Dysentery ..	68	17	42	1	—	292	57	102	6	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	1	—	—	—	—	3	—	1	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Erysipelas ..	—	—	38	6	5	—	—	58	11	—
Deaths ..	1	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	—	—	—	55	—	—	—	—	147	—
Deaths ..	54	3	10	11	5	77	4	16	19	—
Measles* ..	1,213	78	75	19	6	551	46	66	17	—
Deaths ..	3	1	—	1	—	—	—	—	—	—
Ophthalmia neonatorum ..	75	7	10	—	—	80	5	8	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	33	—	14 (B)	—	—	15	13 (B)	2 (B)	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	284	21	3	2	1	326	14	6	1	—
Deaths (from influenza)† ..	2	—	—	—	—	11	2	1	—	—
Pneumonia, primary ..	—	22	136	15	5	—	17	158	5	—
Deaths ..	—	—	3	3	—	—	—	3	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	2	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	22	3	—	3	2	31	2	1	9	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal fever ..	—	2	10	—	—	—	2	16	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡ ..	100	12	6	1	—	140	4	13	1	—
Deaths ..	—	1	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	791	68	157	34	25	1,381	92	293	22	—
Deaths ..	—	—	—	—	—	1	—	—	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	17	2	6	3	2	17	—	1	12	—
Deaths ..	1	—	—	—	—	1	—	—	—	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	1,744	142	119	30	30	1,159	70	57	21	—
Deaths ..	10	1	2	—	1	51	1	1	1	—
Deaths (0-1 year) ..	359	43	53	27	12	337	35	43	42	—
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	3,793	603	561	151	99	4,021	595	540	157	—
Annual death rate (per 1,000 persons living) ..	—	—	12.3	9.7	—	—	—	12.3	10.1	—
Live births ..	8,953	1,339	1,026	437	276	6,494	903	774	456	—
Annual rate per 1,000 persons living ..	—	—	20.7	23.0	—	—	—	15.6	24.4	—
Stillbirths ..	243	37	36	—	—	203	21	23	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	34	—	—	—	—	35	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the figures are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Prostigmin Test for Pregnancy

Q.—*What is the rationale of the prostigmin test for pregnancy? Is it considered to be of any practical value, particularly in the early days of pregnancy?*

A.—Prostigmin is a synthetic parasympathetic stimulant with a similar action to that of physostigmine or eserine. It acts in the body by inhibiting acetylcholine esterase and thus facilitating the action of acetylcholine on the tissues. Soskin, Wachtel, and Hechter (*J. Amer. med. Ass.*, 1940, 114, 2,090) first introduced the use of prostigmin for the treatment of delayed menstruation and claimed that a menstrual flow was induced in most cases, provided the patient was not pregnant. Haig Carapetyan (*J. Amer. med. Ass.*, 1943, 122, 81) has suggested as explanation for this effect of prostigmin in delayed menstruation that it increased the amount of acetylcholine in the uterine tissues and thus promoted the hyperaemia which normally precedes menstruation and is believed to be brought about by oestrogenic hormone.

L. B. Winkelstein (*Amer. J. Obstet. Gynec.*, 1942, 44, 231) found that injection of prostigmin successfully differentiated early pregnancy from temporary amenorrhoea by inducing menstruation in eighty-seven out of ninety cases. The number of daily injections of one to two ml. of a 1:2,000 solution of prostigmin methyl sulphate required was, on average, 2.4. He found, however, that some patients, who were subsequently found to be pregnant, bled following the injections and that other patients who were not pregnant did not respond. There is therefore a definite danger of causing early abortion. Winkelstein considers that as a *diagnostic* procedure administration of prostigmin is of little value, though he suggests it may be of use in the treatment of temporary amenorrhoea in cases where pregnancy has been definitely excluded and there is no obvious endocrine disorder.

Simple Haemoglobin Estimation

Q.—*Would you please describe a method of haemoglobin estimation which could be used in a country district without any laboratory facilities.*

A.—A number of methods are available for the simple estimation of haemoglobin in a country district, each one having its advantages and disadvantages. Taking all factors into consideration Sahli's method is still probably the best available. The principle of this method is the conversion of the haemoglobin in a known quantity of blood to acid haematin by adding the blood to hydrochloric acid and comparing the mixture with a standard colour tube.

Materials.—(1) Sahli's haemometer, consisting of a comparator frame, a standard colour tube (preferably of solid glass), and a graduated tube of the same bore, obtainable from Hawksley and Son, New Cavendish Street, London, W.1. (2) Decinormal hydrochloric acid (approx. 1% conc. HCl), obtainable from any chemist.

Method.—The HCl is placed in the graduated tube up to the mark 10. The pipette is filled to the 20 c.mm. mark with blood; the contents are gently blown into the acid and the pipette washed out by alternately sucking up and expelling the acid. The complete conversion of the haemoglobin to the brown acid haematin takes approximately thirty minutes, but

as the great bulk of the change is complete in ten minutes this latter time can be taken as accurate enough for clinical purposes in general practice. Distilled water is now added drop by drop to the graduated tube, and the contents mixed between each addition by placing the thumb over the end of the tube and inverting. When the colour of the contents of the graduated tube exactly matches the standard tube the figure on the graduated tube gives the haemoglobin content of the blood.

Meaning of Allergy

Q.—*Will you kindly tell me what is the origin or derivation of allergy and allergic?*

A.—The word allergy is derived from the Greek words *allos* (different or changed) and *ergon* (energy or activity), and thus means a changed or altered activity. It was coined by von Pirquet, a Viennese physician, in 1906, who implied an antigen-antibody reaction as its basis. It did not come into clinical use until after its adoption and modification in 1912 by Doerr, who worked with von Pirquet. Doerr included in his definition all forms of altered reactive capacity irrespective of the presence or absence of an antigen-antibody reaction, that is, all abnormal and specific reactions of the body to foreign, ordinarily innocuous, substances. American workers have contributed very largely to our knowledge of the part played by allergic reactions in clinical medicine, and their publications are responsible for its present fairly general acceptance as a term denoting all forms of hypersensitivity occurring naturally, particularly in man.

The clinical manifestation varies according to its location and may result in asthma, hay fever, urticaria, eczema, migraine, gastro-intestinal disturbances, etc.

Treatment of Tongue-tie

Q.—*Please describe the operation for "tongue-tie" in children.*

A.—Before operating for tongue-tie one must make quite sure that the operation is necessary. Gone are the days (we hope) when mother, midwife, or even doctor too easily diagnosed such a condition and too readily snipped the short fraenum of the tongue. It is still a common mistaken diagnosis to attribute defective speech or difficulty in suckling to a tongue-tie. Nevertheless there are occasional cases in which the fraenum linguae binds down the tip of the tongue so that it cannot be protruded beyond the teeth or lips and thus may interfere with proper suckling. Only in these cases is it necessary or wise to divide the fraenum.

The operation of division of the contracted fraenum should be done by snipping it with a pair of blunt-pointed scissors directed downwards and towards the symphysis menti; the fraenum is made evident by elevating the tip of the tongue by two fingers of the left hand while the scissors are held in the right hand. If a common director is at hand one may utilize the slit in its splayed end to steady the fraenum while it is being divided. The cut should not be more than sufficient to divide the double fold of mucosa, but the tip of the tongue may further be freed by pressure with the forefinger. Indeed, Fitzwilliams states: "all that is necessary if the fraenum is tight is to make pressure on the fraenum immediately behind the jaw and it will be felt to give from the gum." Whichever method be employed one must ligate any bleeding point, and some prefer to put a transverse catgut suture to draw the raw surfaces together. In infants no anaesthetic is necessary; in older children one may infiltrate with a dilute solution of novocain.

Marriage and Syphilis

Q.—*A young woman of 23 wishes to get married. In 1943 she was found to have syphilis (acquired), and was treated by a single intensive course of N.A.B. and bismuth. Since then she has had quarterly blood examinations—all negative. What is one to advise her about marriage and pregnancy? Will anti-luetic treatment be required during her future pregnancies?*

A.—There is no reason why this girl should not marry, but it is usual to advise deferment of marriage till five years have elapsed since the date of infection. The amount of treatment seems to have been small, but seeing that blood tests have

been consistently negative for approximately three years the chances of her being "cured" seem to be good. If she marries soon she should avoid "unprotected" sexual intercourse till 1948. If and when she does become pregnant she should receive antisyphilitic treatment throughout *each* pregnancy—in any case before the fifth month—and carry it on right up to term. The risk of conveying infection to the husband is negligible after five years, while that of producing a congenitally syphilitic child lasts indefinitely; but adequate treatment of the mother during pregnancy should ensure the birth of a healthy child in more than 90% of cases.

Workmen's Compensation Act

Q.—*The principal, Dr. A., employs two assistants, Dr. X. and Dr. Y. Doctors X. and Y., while driving a motor-car together to visit a patient, are involved in a road accident. Dr. X. is killed instantly. Dr. Y. loses the sight of one eye, but is able to resume his duties under physical handicap after a period of three months. What compensation claims are representatives of both parties entitled to lodge against Dr. A. under the Workmen's Compensation Act?*

A.—To qualify for workman's compensation the applicant must be engaged in a contract of service, and his remuneration must not exceed £420. The minimum compensation awarded in respect of a death is £300; if the man was married with children it may rise to £700 according to the degree of dependency. Compensation for injury depends on degree of impairment of earning capacity, and if the parties cannot agree the issue is tried by a county court judge (or sheriff in Scotland) sitting as an arbitrator. The maximum award for a single man is 40s. a week; this also is increased if the applicant has dependants.

Pelvic Cellulitis

Q.—*A patient had a pelvic cellulitis after child-birth fourteen years ago. This was treated conservatively. Since then she has had periodical "flare-ups" of the infection. What is the value of penicillin in such cases, and what dosage is suggested?*

A.—On the data given it would certainly seem reasonable to try penicillin in this case, while giving a guarded prognosis. It has been found that chronic cases of gonorrhoea and of other types of pelvic infection may clear up on penicillin therapy when other means have failed. The reason why penicillin may fail in such a case as that described is that the infecting organism—if indeed any can be demonstrated after so long a lapse of time—is likely to be a coliform organism, and these are generally insensitive to penicillin. The local physical signs should be carefully assessed before commencing treatment, and any cervicitis should be treated first with the electric cautery. Large doses are recommended for cases of this type—two or three million units—and this would be best given by intramuscular injection of the saline solution, 30,000–40,000 units every three hours, day and night, for seven or eight days. A course of pelvic diathermy often brings relief in cases of chronic pelvic infection and might be tried if other treatment is unsuccessful. If this fails and the attacks persist, patient would almost certainly benefit by a total hysterectomy with removal of both tubes, but conserving some ovarian function if the patient has not reached menopausal age.

Secondary and Latent Syphilis

Q.—*(a) Is the blood Wassermann reaction invariably positive in secondary syphilis? (b) Is a "provocative" dose of N.A.B. justified in a case clinically resembling secondary syphilis, but with a negative Wassermann reaction? (c) What is latent syphilis? (d) What is the minimum amount of penicillin that can convert a positive Wassermann to a negative one?*

A.—*(a)* The blood Wassermann reaction is positive in well over 99% of cases of untreated secondary syphilis; it is so consistently positive that a negative report demands a repeated test and raises the suspicion of a technical error.

(b) "Provocative" injections of neoarsphenamine are nowadays considered by most authorities to be valueless. In a case of florid secondary syphilis which has received no treatment it should be possible to demonstrate *Spirochaeta pallida* in some of the surface lesions or, failing this, by gland puncture.

Blood tests should be repeated and include both complement fixation and flocculation tests.

(c) Latent syphilis is, essentially, syphilis without physical signs: Stokes defines it as "seropositive, otherwise asymptomatic, syphilis," but adds that latency may "best be described not as an asymptomatic lull preparatory to destructive late manifestations but as a period of high resistance and low virulence, with an undercurrent of chronic mild inflammatory change in vital structures and an upper stratum of alternating relapse and recovery."

(d) It is not known what is the *minimum* amount of penicillin which will convert a positive Wassermann to negative: as little as 60,000 Oxford units have been reported as accomplishing this. Much, however, depends on three factors: (1) the strength of the serum reaction; (2) the age of the disease; and (3) the type of penicillin employed. In general, the stronger the serum reaction and the longer the disease has existed the greater the amount of penicillin required; quite small amounts will often reverse a reaction in primary syphilis, whereas amounts up to ten million units or more frequently fail in late or latent syphilis. Many of the most recently manufactured samples of penicillin seem to be less spirochaetocidal and less effective in reversing serum reactions than those produced before the middle of 1944.

INCOME TAX

Car Transactions

F.F.'s pre-war car was "blitzed" in 1943. He bought a new car in November, 1945, for £397, and as from January 1, 1946, took an appointment (residing on the premises) which allowed him to do a certain amount of private work. What deduction can he claim in respect of the car?

* No allowance can be claimed against the salary from the appointment. As regards the private work a proportion of the car expenses and depreciation, etc., can be claimed, according to the ratio of that use to the total use of the car—e.g., on a mileage basis. The full depreciation allowance for the year to April 5, 1947, would be:

Capital allowance, 20% of £400	..	..	..	..	£80
Wear and tear allowance, 25% of £400	..	..	..	..	100
Total	..	..	..	..	£180

A.H. has had several car transactions over the past four years: those referred to below are relevant to income tax deductions for 1946–7 and the future. Car A was bought in 1940 for £40, and sold on Aug. 17, 1946, for £100. On the same day car C was bought for £650.

* 1946–7.—Depreciation at 25% on the value of Car A as written down by the 1945–6 income tax depreciation will be due. 1947–8.—(a) An initial allowance on car C at 20%, and (b) depreciation on the car at 25% will be due.

New Appointment as Assistant

J.F. is married with two children and is taking an assistantship as from Oct. 1, 1946, at a salary of £700 plus £200 car allowance. (It is understood that he was previously doing postgraduate work and it is assumed that he had no taxable earnings in the six months to Oct. 1.) He asks what deductions will be made under P.A.Y.E. and what car expenses he can claim.

* On the above basis J.F.'s taxable earnings for the year to April 5, 1947, will be £350. Against that he is entitled to the following allowances:

Personal allowance	..	..	..	..	£
Child allowance	..	..	..	..	180
Earned income relief (1/8)	..	..	..	..	47
Total	..	..	..	..	£327

The total tax payable for the year will therefore be £23 at 6s. 1d., i.e. £6 18s. He is advised to put himself in communication with the local Tax Office so that his principal can be enabled to make the correct deductions. The car allowance of £200 is, we consider, unlikely to be questioned by the Tax Office provided that J.F. makes no claim to deductions for depreciation and running costs. Whether it would pay him to accept a smaller allowance with consequent increase in salary and claim depreciation, etc., depends on the cost of the car he buys and the extent to which it is used for non-professional purposes. No deduction is apparently due for the rent of £40 paid for his residence.

LETTERS, NOTES, ETC.

The Development of a "Cottage Hospital"

Dr. J. WALLACE KEMP (Kingston) writes: Twenty-five years ago the Kingston-upon-Thames Victoria Hospital was a cottage hospital, conducted and functioning as such. A constructive policy was instituted by the then members of the medical staff. The wards were rebuilt, a children's ward added and a new operating theatre built. This is now a modern, well-equipped department in daily use for major and minor operations. The x-ray department was extended, a new apparatus installed, and a radiologist appointed. Cases are referred to the department from outlying areas, and the attention given is much appreciated. As the scope of the hospital expanded additions were made to the honorary consulting staff, and weekly attendances are now made by a consulting surgeon, an ophthalmic surgeon, a gynaecologist, an ear, nose and throat surgeon, and a consulting physician to see out-patients referred by members of the staff, or to operate if required. All these consultants are of high standing in the medical and surgical profession. An honorary anaesthetist was also appointed. A pathological laboratory was established some years ago. A block of private wards has been added to the original building. There has been a progressive and consistent transition from the original cottage hospital status to its present high standard of efficiency and utility. Staffed, as it is, by consultants of high standing and general practitioners of wide experience, the reputation of the hospital is a testimonial to the committee who have conducted its administration and to the members, consultant and general, who have applied their knowledge and skill in raising its status to what may be fairly described as a "practitioner general hospital." There appears to be a need for hospitals of this type and the Kingston Victoria might well be adopted as a model for such institutions. The preservation of "follow up" contact between the patient and doctor is of inestimable value in cases requiring operation, always a crisis in the life of the individual and of their families. With their own experience and the advice of consultants the limitations of the hospital are fully recognized, and in certain instances arrangements are made for more expert treatment elsewhere, but this is exceptional.

Pipe versus Cigarette

Dr. S. A. W. RUSHBROOKE (Shebbear, Devon) writes: One other aspect of the problem. Doubtless in every case dilute nicotine vapour is absorbed into the blood stream producing transient and varying effects in every type of individual. Much more nicotine is absorbed in cigar smoking and its effects are usually readily noticeable to the casual smoker of cigars, and, of course, the stronger the cigar the quicker the effects. The smoker of both pipe and cigarette usually prefers the former, and providing the pipe is clean and dry—and this is important—tobacco smoked this way is more enjoyable, and indeed is to be preferred. The cigarette usually contains a finer tobacco, and invariably smaller particles, even dust, capable of being inhaled, thus adding to the irritation and inducing the cough. No matter how good the cigarettes are the main reason why the continued smoking of them results in the familiar smoker's cough and throat is because trouble lies far more in the paper than the tobacco. Even if the best rice paper is used the acrid vapours produced from the continuous smouldering carbohydrate in the paper itself are probably the real underlying cause of the smoker's cough, acting as an irritant in the lungs. Gastric disturbances are further set up by the same cause by absorption in the stomach glands and nerve endings of the mucosa inhibiting the natural flow of gastric juices, thus contributing to at least one common form of dyspepsia. Hence the advice not to smoke immediately before a meal and for half an hour after its consumption is physiologically sound and has proved helpful to many.

Two Kinds of Cold?

Prof. W. BURRIDGE writes from the Department of Physiology, Rangoon: In Lucknow my house was just over a furlong from my laboratory. The latter was on the higher ground, and to reach it I had to traverse a flight of steps arranged in one group of four, three of sixteen, and one of fifteen. They were easy steps since the tread was two bricks broad and one brick on its side high. In the flush of the early morning I was accustomed to take these steps two at a time, and could do so comfortably. But there would come some mornings when after completing the hundred paces or so from the top of the steps to the laboratory entrance I arrived out of breath. In due course I found that this shortness of breath heralded a cold which would arrive three days later. This cold I could not cure. Treatment with aspirin, for example, would bring me nearer to drowning in my own secretions than any form of relief. It started in the nasal cavity and then "went down" to become a sort of "orrid 'acker." It could be well described as a bronchitis that did not incapacitate. The act of coughing, however, was painful enough to induce me to resort to opium. The total duration would be about one month. Recently I found it to be

amenable to sulphonamides. But also during the cold weather there would be other occasions when, except for that preliminary bout of shortness of breath, I found signs that a "cold" was coming. My standby for this was the unguentum A B C of Guy's Hospital plus a throat spray. Such colds could be nipped in the bud, as it were. I have therefore to plead for the recognition of two types of common cold, the one that can be aborted and the one that cannot. The colds that can be cured are of the one type, the colds that must be endured are of the other. Recognition of their existence, however, should make considerable difference to conclusions relative to the prevention of colds. Doubtless there are many other doctors who can make daily test of their physical fitness by climbing quickly enough some flight of stairs which they regularly meet on their daily rounds, and who may be able to report at the end of the "cold" season on colds that can be aborted and colds that cannot.

Village Longevity

Dr. G. R. A. ARMSTRONG (Stourport-on-Severn) writes: I have been much interested in the longevity records of Dr. C. E. S. Harris (May 4, p. 709) and of my fairly near neighbour Dr. A. C. L'Estrange (June 1, p. 864). Until a week ago I had seven patients whose ages totalled 638 years. One aged 90 comes to my surgery weekly very dapper, upright, sprightly, and mentally alert; another aged 91 was in the Birmingham City Police for twenty-six years and has been forty-two years on pension practising vegetable and fruit growing locally, but this year "the rheumatics went to his back" so he has "retired" to Birmingham again. The year 1859 must have been a vintage year as I have eleven patients (two of them attend my surgery) each aged 87 years. There must be some truth in a local saying: "They'm don't die hereabouts, we'm takes 'em to Bewdley and shoots 'em."

The Tobacco Habit

Dr. G. DEERY (Plymouth) writes: Under "Any Questions?" (Aug. 24, p. 284) it is suggested that pipe sucking is resorted to as a substitute for the mother's breast. Is it a reasonable and analogous deduction that when we draw up our knees beneath the blankets on a cold night we are merely reverting to the position *in utero* where presumably we were cosy and warm?

Dr. REGINALD H. LITTLE (Ringwood) writes: The answer given to a question concerning the tobacco habit which was published in the *Journal* (Aug. 24, p. 284) reveals a state of mind which one would hardly credit even in a psychologist. For absolute and utter rubbish and jargon it would take a lot of beating. To carry this nonsense further we shall soon be told by the experts that human milk can be had in brands like Players or Gold Flake. That smoking should be regarded as a "solace for loss of love" must shake some of us when cigarettes and tobacco are in short supply. Surely the answer is very simple, and I venture to suggest that smokers carry on their vice because they like it and for no deeply veiled oral erotic tendency.

Painless Labour

Dr. L. G. HIGGINS (Woking) writes: Will you allow me to add a further note to the answer given to your correspondent who seeks confirmation of the benefit of Dr. Grantly Dick Read's procedures for the conduct of pregnancy and labour (Sept. 14, p. 407)? I have known Dr. Dick Read for many years, and can claim to be familiar with the principles of his teaching. Painless labour may possibly occur as a great rarity, but to claim that any method of delivery can "ensure painless childbirth" sounds too much like witchcraft. It is more correct to say, as I can truly affirm, that a girl, properly prepared and with a favourable presentation, should achieve a normal delivery with some effort of concentration, some discomfort, and often some pain at the end of the first stage of labour. But the pain or discomfort will be cheerfully borne and the patient should remain calm and composed, without anxiety or distress. The labour loses altogether the character of an ordeal of physical endurance, and the whole experience becomes interesting and enjoyable. In a successful case, the simplicity of the actual delivery is striking, bringing to the mother feelings of satisfying achievement and gratitude which are moving to witness.

A Rowlandson Print

Dr. HUBERT H. DU BOULAY (Chandlers Ford, Hants) writes: Can anyone give the names of a group of doctors, probably surgeons, one of whom is amputating a leg with an ordinary carpenter's hand-saw, figured by T. Rowlandson in a coloured caricature print dated 1785? The British Museum, the Wellcome Historical Museum, and the Royal College of Surgeons are unable to help.

Correction

In a letter on the early treatment of ocular defects by Mr. Sydney Tibbles (Sept. 28, p. 475) a reference to "the 1914-18 war" should have read "1939-45 war."

Association Notices

AREAS OF SWINDON AND TROWBRIDGE
DIVISIONS

Notice is hereby given by the Council of the British Medical Association to all concerned that it is proposed to transfer the municipal borough of Malmesbury from the area of the Swindon Division to that of the Trowbridge Division.

Any member affected by this proposal and objecting thereto is requested to write to the Secretary of the Association by Oct. 19, 1946, stating the objection and the ground therefor.

CHARLES HILL,
Secretary.

Sept. 21, 1946.

Ophthalmic Group Committee: Correction

A correction is necessary in the list of members of Committees published on Sept. 7 (p. 77). We have been informed by the Faculty of Ophthalmologists that the names of the six members of the Ophthalmic Group Committee appointed by the Council of the Faculty of Ophthalmologists should be:

Mr. J. D. M. Cardell, London.
Mr. J. H. Doggart, London.
Mr. R. Affleck Greaves, London.
Mr. E. F. King, London.
Mr. F. W. Law, London.
Mr. J. N. Tennent, Glasgow.

Hospitals Committee: Correction

Add: "One member to be appointed by the Association of Municipal Specialists."

Diary of Central Meetings

OCTOBER

17. Thurs. Publishing Subcommittee, 11 a.m.
Journal Committee, 2 p.m.

Branch and Division Meetings to be Held

COVENTRY DIVISION.—At Coventry and Warwickshire Hospital, Tuesday, Oct. 8, 8.30 p.m. Discussion on the Relationship between the Industrial Medical Officer and the General Practitioner, with reference to the case of open tuberculosis, to be opened by Dr. A. D. Macdonald.

EAST KENT DIVISION.—At St. George's Hotel, Cliftonville, Thursday, Oct. 10, 8.30 p.m. Address by Dr. I. B. Morris.

EAST YORKSHIRE BRANCH.—At "Quern House," Park Street, Hull, Tuesday, Oct. 8, 8.30 p.m. Lecture by Prof. Alan Moncrieff: Child Health.

RICHMOND DIVISION.—At Richmond Royal Hospital, Friday, Oct. 11, 9 p.m. Dr. Gerald Slot, "Recent Advances in Medical Therapeutics."

Meetings of Branches and Divisions

BATH DIVISION

A meeting of the Bath Division was held on Sept. 25, with Dr. G. D. Steven in the chair, when the following resolution was passed unanimously:

That this meeting strongly recommends to the Council that, in implementing the resolution of the Representative Body (carried on July 24, 1946) to take a referendum of the whole profession on the simple issue of whether negotiations with the Minister should take place or not, the referendum should take the following form:

Three separate forms of different colours should be sent to each member of the profession. One form would be headed "Public Services Section," the second "Consultant and/or Specialist Service," and the third "General Practitioner Service." Each form should ask the simple question—"Do you agree to negotiations on regulations on this Section being carried out with the Minister?" Every member of the profession should be asked to return only the form which refers to the Section to which he or she predominantly belongs.

MALAYA BRANCH

A clinical meeting of the Southern Division, Malaya Branch, was held on July 31, 1946. The subject under discussion was penicillin, and Dr. E. C. Davies, Lieut.-Col. French, and Lieut.-Col. Harris spoke. The attendance was 84.

All general practitioners in Singapore will be able to obtain a text book from the Controller of Supplies provided they are sponsored by the Association. The hon. secretary of the Southern Division has undertaken to compile a list of those anxious to receive such text books and when complete will arrange for supply to be made.

POSTGRADUATE NEWS

The Fellowship of Medicine announces: (1) Obstetrics and gynaecology, for general practitioners, daily, Oct. 14 to 19, at Queen Charlotte's Maternity Hospital, and Chelsea Hospital for Women. (2) Week-end course in rheumatism, all day Saturday and Sunday, Oct. 26 and 27, at St. Stephen's Hospital, Fulham Road, S.W.

The University of Leeds Postgraduate Subcommittee announces that it is proposed to hold a two-weeks general refresher course for Class II demobilized medical officers and insurance practitioners, beginning on Monday, Nov. 25. Applications and inquiries should be addressed to the Senior Administrative Officer, School of Medicine, Leeds.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m., Dr. Cross: Radiotherapy in Gynaecology.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—Wed., 8 p.m., Dr. Michaelson: Proptosis and Exophthalmos.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—Tues., 5 p.m. Dr. A. C. Roxburgh, Cutaneous Syphilis. Thurs., 5 p.m. Dr. H. MacCormac, Industrial Dermatitis.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Experimental Medicine and Therapeutics.—Tues., 5.30 p.m. Presidential Address by Prof. H. P. Himsworth: Protein Metabolism in Relation to Disease.

Section of Psychiatry.—Tues., 5.30 p.m. Presidential Address by Prof. Aubrey Lewis: The Education of Psychiatrists.

Section of Physical Medicine.—Wed., 4.30 p.m. Presidential Address by Dr. F. S. Cooksey: The Planning and Organization of Physical Medicine Departments.

Section of Ophthalmology.—Thurs., 5 p.m. (Cases at 4.30 p.m.) Presidential Address by Mr. A. H. Levy: The Aesthetics of Vision. Paper by Mr. John Foster: An Ophthalmic Tour in France and Switzerland.

Clinical Section.—Fri., 5 p.m. (Cases at 4 p.m.)

CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, Queen's Gate Terrace, Tues., 7 p.m. Dinner meeting. Dr. R. Jarman: Modern Anaesthesia.

APPOINTMENTS

ADDENBROOK'S HOSPITAL, CAMBRIDGE.—Honorary staff appointments: Radiologist, F. R. Berridge, M.B., D.M.R., Surgeon to the Gynaecological and Obstetrical Departments, Oswald Lloyd, M.D., F.R.C.S. Physician, Laurence Martin, M.D., M.R.C.P., Surgeon, B. M. Truscott, M.B.E., M.B., F.R.C.S. Ophthalmic Surgeon, G. F. Wright, M.B., D.O.M.S.

BOLTON ROYAL INFIRMARY.—Honorary Physicians, A. Ingham, M.B., and H. Philip Goldman, M.B., M.R.C.P.

DAY, F. M., M.R.C.S., D.P.H., Medical Officer of Health, Metropolitan Borough of Hammersmith.

EDINBURGH UNIVERSITY.—D. M. Douglas, Ch.M., F.R.C.S., lecturer in experimental surgery, University of Edinburgh, deputy director, Wilkie Surgical Research Laboratory, and associate assistant surgeon, Royal Infirmary, Edinburgh.

ROYAL LIVERPOOL UNITED HOSPITAL.—Appointments to Honorary Medical and Surgical Staff at Liverpool Royal Infirmary: Dental Surgeon, G. Graham Macphree, M.D., L.D.S., Assistant Physician for Tropical Diseases, D. R. Seaton, M.B., D.T.M., D.P.H., Radiologist, P. H. Whitaker, M.D., D.M.R.E. Dermatologist, G. W. Bamber, M.D., F.R.C.P.

ST. THOMAS' HOSPITAL, S.E.—Honorary appointments. Obstetric Physician, R. K. Bowes, M.D., M.S., F.R.C.S. Orthopaedic Surgeon, G. Perkins, M.Ch., F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

CAIRNS.—On July 12, 1946, at Kingston-on-Thames, to Theresa, wife of Dr. R. J. Cairns, a son—Andrew John.

EARDLEY.—On September 21, 1946, at 23, Keishley Road, Colne, Lancs., to Catherine Vera, wife of A. W. R. Eardley, M.B., Ch.B. (Sheff., 1931), twin—Alan Christopher Stenton and Catherine Rosalind.

JACOBS.—On September 22, 1946, at Hammersmith Hospital, to the wife of Dr. A. L. Jacobs (Dr. Lucia Frank), a daughter.

ORTON.—On September 26, 1946, to Drs. Richard and Betty Orton, 30, Cornwallis Crescent, Clifton, Bristol, a daughter.

MARRIAGE

EDWARDS—ADAMS.—On September 17, 1946, at Stenhouse Church, East Fife, Edwards, A.D. Corps, of "Invervar," Laureb, Stirlingshire, to Capt. G. Adams, R.A.M.C., of Blackstone House, Broughane, Ballymena, N. Ireland.

DEATHS

ELLIOT.—On September 7, 1946, Henry P. Elliot, born 1871, M.B., Ch.B. 1904, Queensland ad eum grad. Practised mostly in Australia for 51 years.

EVANS.—On September 26, 1946, at Oxford, Brenda, wife of Gordon Evans, M.B., B.S.

LONDON SATURDAY OCTOBER 12 1946

BEFORE AND AFTER MORTON

A HISTORICAL SURVEY OF ANAESTHESIA

BY

E. ASHWORTH UNDERWOOD, M.A., B.Sc., M.D., D.P.H.

Director of the Wellcome Historical Medical Museum

On October 16, 1946, the world will celebrate the centenary of the advent of surgical anaesthesia as a practical measure. The man was W. T. G. Morton; the country, the United States of America. As in the case of most great practical discoveries, there had been forerunners who, with little success themselves, laid the stepping-stones without which the stream dividing the impracticable from the practicable could not have been crossed. Many of these forerunners were British, and it is a happy coincidence that the city in which Morton's courage enabled him to succeed in the supreme test was Boston, Massachusetts—named after its spiritual parent in East Anglia. But Morton's success was not due to a lucky accident. His immediate predecessors were all American. Leake (1945) has recently suggested that it was not by chance that the problem happened to be solved on the other side of the Atlantic, since in 1846 the American nation was still partly in the pioneering state; and since the chief problems in medical practice were surgical, surgeons were always on the watch for something to relieve the pain which hampered their operations. It is perhaps more probable, however, that America succeeded because her surgeons were not so fettered by the long tradition of necessarily painful operations which was the heritage of the Old World.

The occasion is fitting for a brief review of man's efforts to prevent—or at least obtund—the pain of surgical procedures.

History of the Term "Anaesthesia"

The *New English Dictionary* (Oxford) indicates that the word was first used by Bailey in 1721 as meaning "a Defect of Sensation as in Paralytic and Blasted Persons." In 1829 it was used by Reid as synonymous with "loss of sensation." The same authority gives the earliest use of the word "anaesthetic" as by J. Y. Simpson in 1847. But five weeks after Morton's famous operation Oliver Wendell Holmes (1847) wrote to Morton to suggest that the state should be called "anaesthesia," from which the adjective would be "anaesthetic." O. W. Holmes appears therefore to be responsible for the birth of the latter word.

Sir James Young Simpson (1871), in quoting from Theocritus, notes that the poet used the word "nodynia" (νόδυνη) for

"insensibility to pain." Simpson stated that he thought this was a better word than "anaesthesia," and that he had often regretted that he had not adopted it. He was therefore probably under the impression even years later that he had been the first to suggest the word "anaesthetic."

Early Attempts to Produce Anaesthesia

Prehistoric Times.—Since there were no written records in prehistoric times, it is natural that our knowledge is entirely speculative. On the analogy of certain primitive races existing in modern times, it has been suggested by some that relief from pain was sought by the agency of magic and witchcraft. The operation of trephination was, however, quite common locally in the neolithic period. It is strange if some degree of anaesthesia was not produced for this operation, either by induced mild concussion or by the use of some drug. A skull of a native of New Ireland in the Wellcome Historical Museum proves that the individual had been successfully trephined eight times during life, and it seems difficult to believe that even a hardy native would have consented to undergo the operation so often unless some anaesthetic had been employed.

The Early Civilizations.—The Assyrians and Egyptians were supposed to use pressure on the carotid arteries to secure temporary loss of consciousness. Prosper Alpinus (1591) stated that the Egyptians used the fumes of Indian hemp to stupefy the patient before operations, but this statement has been contested. The "nepenthe" of Homer (*Odyssey*) was thought by Simpson to have been Indian hemp, and indeed this drug was widely

used as a soporific in ancient times. Pliny mentions it—but not in a medical context. Celsus refers to the use of mandragora, and Spencer considers that he possibly means *Atropa belladonna*. However, it is also admitted that the mandrake may have been indicated.

Of all plants used in the practice of medicine none has a more picturesque history than the mandrake. Still found in the Mediterranean basin, the plant may be said in some ways to resemble a human figure. The ever-recurring legend has it that the plant shrieked when uprooted, and that the uprooter

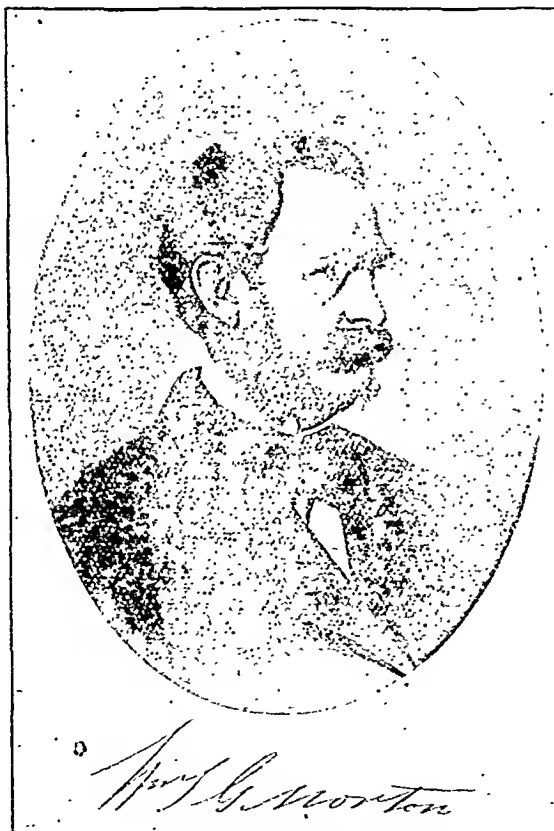


FIG. 1.—W. T. G. Morton (1819–63).



FIG. 2.—Hickman (1800-1830), the first experimenter in anaesthetics. (From the water-colour painting in the Wellcome Historical Medical Museum.)

fell dead. Hence arose the practice of hitching a dog to the mandrake and letting it suffer extinction. Dioscorides, the famous physician of the first century A.D., wrote much on the mandrake. In the quaint words of his first translator, John Goodyer (Dioscorides, 1934), Dioscorides says: "And some do seeth the roots in wine to thirds, & straining it set it up. Using a Cyathus of it for such as cannot sleep, or are grievously pained, & upon whom being cut, or canterized they wish to make a not-feeling pain." Or, speaking of another sort of mandrake: "For a man sleeps in ye same fashion, as when he ate it, sensible of nothing for 3 or 4 hours, from the time that it is brought to him. And Physitians also, use this, when they are about to cut, or canterize." Randolph studied about 150 passages in Greek and Latin literature which bore on surgery, and he concluded that "the mandragora was the principal and almost the only anaesthetic of antiquity, that the use of anaesthetics never became general." Despite the frequency with which mandragora was mentioned later by lay writers in many countries—compare, for example, *Othello*—it would appear from Oppenheimer's work (1928) that it was not mentioned by any of the Latin poets.

In the second century the Chinese physician Hun T'ao used a wine of unknown composition—*ma-yao*—as an anaesthetic (Sarton).

The Arabian practitioners of the healing art undoubtedly used certain plant infusions as supposed anaesthetics. For example, Avicenna says that if it is desirable to procure a deeply unconscious state so that a painful application to the body can be tolerated, dandelion-water should be given in wine; or fumitory, opium, hyoseyamus, nutmeg, or crude aloe should be administered (Gruner, 1930).

The Middle Ages.—It should be noted that up to this period all the narcotics or would-be anaesthetics which were used were administered by mouth. Before the advent of Salernitan medicine in the Middle Ages, however, a new method makes its appearance—that of the *spongia somnifera*, or soporific sponge—though narcotic beverages, mostly containing mandragora, continued to be used. The earliest known recipe for a soporific sponge is the *Antidotary of Bamberg*, dating from the ninth century. It contains opium, mandragora, cicuta, and hyoseyamus (Sigerist, 1923). The interesting point about these sponges

[10]

taught more suddenly brought on by the agency of sulphuric acid and carbonate of lime. The results in this case were not so satisfactory; some blood escaped from the wounds, and a slight degree of inflammation followed, and the wounds did not heal so rapidly as the first experiment.

EXPERIMENT 4th. Mice, having been confined in a glass tube of a foot long, were rendered insensible by carbonate of soda slowly introduced in small quantities, and one foot from each was taken off; no hemorrhage took place upon the return of sensibility, and the wounds appeared quite healed on the third day, without the animals having apparently suffered pain, when they were given their liberty.

EXPERIMENT 5th. An adult dog was rendered insensible by means similar to the preceding, and the muscles and blood-vessels of one of its legs were divided. There was no hemorrhage from the smaller vessels; a ligature which secured the main artery came away on the fourth day, and the ani-

is that the drugs were haled from the sponge to the nostrils. Baur (18) made a thorough examination of these medicinal recipes, and carried out experimental investigation on animals of the use of various soporific sponges made according to the method. She concluded that the effect produced would be sufficiently marked to warrant their use as anaesthetics in surgery. However, it must be remembered, as she admits, that there was something of the secret; about the surgery of the centuries, and that if a surgeon stumbled on a good narcotic he would tend to keep it to himself.

Later Centuries.—In the sixteenth and seventeenth centuries knowledge of narcotics was largely bound with the trials of witch and the torture of malefactors. It was believed that the swallowing of cer-

types of soap produced narcosis sufficient to dull the pain of torture. Opium was largely used by surgeons, but in 1784 Moreau stated that the strongest dose a surgeon dared give before an operation had little or no effect in mitigating the pain of the procedure. Velpeau, as late as 1832, thought that it was impossible to prevent pain during operations. Alcohol had been employed for centuries, but it was generally admitted that, though success might be achieved by chance in certain cases, there could be no guarantee that this method would be in the least effective.

Mesmerism and Hypnotism

Franz Anton Mesmer (1734-1815) published his book on animal magnetism in 1779, but he was generally derided as a quack and it was not until James Braid became interested in the subject over sixty years later that the possibility of using hypnotic sleep for curative purposes was realized. His book on this subject (1843) was published contemporaneously with the work of the early pioneers of ether anaesthesia. Two entirely different methods of preventing pain during operations were therefore developing at the same time.

Hypnotism was first actually used for this purpose by John Elliotson (1843), of University College Hospital, London. His reaction was so violent that he had to resign from his official posts. Two years later James Esdaile, a Scot resident in Calcutta, found by chance that he had the power to induce in an Indian native a state of hypnosis in which painful stimuli were not felt. He started to use the method for surgical operations, and by 1846—the year in which Morton made ether anaesthesia practicable—Esdaile was able to report 261 painless operations with a mortality of only 5.5%. However, on his return to Scotland Esdaile found the inhabitants of his native country too hard-headed to be susceptible to his influences. Meanwhile "etherization" had started on the path from which it has not since diverged.

Early Pioneers of Inhalation Anaesthesia

The starting-point in the history of inhalation anaesthesia is the fact that Sir Humphry Davy (1800) breathed nitrous oxide in the pure state in 1799. He observed the sensations produced in himself by both low and high concentrations of the gas. He also noted that a headache and the pain associated with the cutting of a wisdom tooth were both relieved at the time of breathing the gas. He suggested that the gas might "probably be used with advantage during surgical operations in which no great effusion of blood takes place." Despite this hint Davy's influence on the development of anaesthesia was only indirect. At the time his suggestion was not followed up, but the practice which he introduced at the Pneumatic Institute at Clifton

inviting visitors to inhale nitrous oxide and note their sensations had important social and medical consequences. Demonstrations of the effects of nitrous oxide were frequently given, and at a later date nitrous oxide parties and "ether frolics" were very popular.

As an example of such a demonstration of the effects of nitrous oxide it is interesting to quote a passage from a little book published in 1839—exactly forty years after Davy had popularized the method. The work is *Chemistry No Mystery* (1839), by John Scoffern, a surgeon and hospital chemist. He professes to report the words of a lecturer who is speaking to a popular audience: "Having proceeded thus far in his Lecture, the old gentleman handed round a great number of bladders filled with the gas (nitrous oxide); and here our shorthand writer ceased from his work. Anxious to enjoy the fun as well as the rest, his office of scribe did not hinder him from seizing a bladder too: for my part I determined to have some amusement of another kind, in witnessing the effects produced by the gas upon others, without breathing any myself; and, perhaps, I laughed more than either of the breathers. Oh, how shall I describe the scene which followed? For one instant, the silence of our Lecture-room was only broken by the deep-drawn inspirations of those who were breathing the gas: all seemed to be enjoying the extreme happiness, they puffed and pulled as if they could not get enough. It was, indeed, irresistibly ridiculous to see a large room filled with persons, each of whom was sucking from a bladder, and this alone made me laugh right well; but in another instant began their ecstasies, some cast their bladders from them with a jerk, and, forgetting the ridiculous figure they made, kept breathing laboriously; their mouths thrown wide open, and their noses still tightly clenched: some jumped over the tables and chairs; some were bent on making speeches; some were very much inclined to fight; and one young gentleman persisted in attempting to kiss the ladies. I have heard it insinuated that he breathed very little of the gas, and that he knew very well what he was doing; but this statement I consider to be untrue. As to the laughing, I think it was chiefly confined to the lookers-on.

"A few minutes served to restore those maniacs to their senses, and they felt as if nothing had occurred; for it is a peculiarity of this gas, that it does not act like intoxicating liquors in producing depression of spirits, disorder of the stomach, or indeed any other unpleasant effects.

"As our instructor had predicted, we did not after this exhibition feel very much inclined to study philosophy, and

FIG. 4.—Crawford W. Long (1815-78).

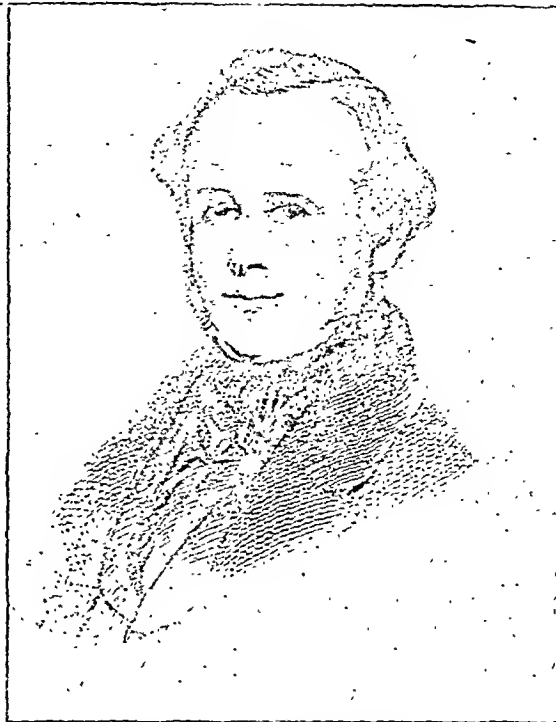


FIG. 5.—Horace Wells (1815-48).

therefore the Lecture, although short, was brought to a conclusion."

This scene is freely illustrated by George Cruikshank in a frontispiece to the book, which is here reproduced as Fig. 6. An article, attributed to Michael Faraday and pointing out the change of these practices, appeared in the official organ of the Royal Institution (1818). I shall return shortly to the result of one of these strange demonstrations.

Hickman and Suspended Animation

It would be difficult for anyone associated with the Wellcome Historical Museum not to have a tender spot in his heart for Henry Hill Hickman—the Rupert Brooke of anaesthesia—since that Museum possesses practically all his extant manuscripts in addition to a copy of his very rare published work and a number of relics. The Museum also possesses a fine water-colour painting of Hickman carrying out his experiments (Fig. 2). (Owing to an error in the Souvenir Volume (1930) this picture is often wrongly stated to be in oils.) With a view to writing these few lines I have re-studied his writings, which were published in facsimile by the late Sir Henry Wellcome (1930).

Hickman, a "Shropshire Lad," was born in 1800, and before he had attained his majority he had become a member both of the Royal College of Surgeons of London and of the Royal Medical Society of Edinburgh. During his short life of thirty years he practised in Ludlow, in Shifnal, and in Tenbury. Hickman was of a gentle disposition, and he was obviously much affected by the pain which he had to cause while operating. From manuscript notes in this Museum it is proved that his experiments on animals dated from at least the spring of 1823, and on Feb. 21, 1824, he addressed a letter to T. A. Knight, of Downton Castle, near Ludlow, in which he pleads for the use of "suspended animation" in surgical operations, and as an appendix gives details of seven experiments on animals. In the same year Hickman (1824) published an amended version of this letter in pamphlet form, printed by W. Smith of Ironbridge. An important page of this letter is reproduced here (Fig. 3). Knight was a friend of Sir Humphry Davy and a Fellow of the Royal Society—though interested mainly in trees. Hickman obviously hoped that his animal experiments would receive the sympathetic consideration of the great scientists of the day, so that some eminent surgeon might be induced to try his methods on the human subject. His hopes were disappointed. During the next three years he probably continued his experiments, and in 1828 he repaired



FIG. 6.—"Laughing Gas." Cartoon by George Cruikshank, from *Chemistry No Mystery*, by John Scofield, London, 1839.

to Paris, where he addressed a memorial to Charles X. As a result, Hickman's case for a trial of suspended animation was submitted to the Académie de Médecine, which appointed Dubois, Richcrand, Merat, Segallas, and Ribot to constitute a commission and to report. Unfortunately, no evidence has been found of any action taken by the commission. Sick at heart, Hickman returned home, and shortly afterwards died at the age of thirty years:

Hickman believed that suspended animation could be induced without too great risk to life, and in his experimental work he confined animals individually in a bell-jar over water and induced the "torpid state" either by allowing them to rebreathe their own exhaled air or by passing carbon dioxide, produced by the action of sulphuric acid on calcium carbonate, into the bell-jar. While the animal was in the state of torpor he performed a surgical operation on it. In his early experiments he used a puppy, a mouse, a dog, a rabbit, and a kitten. It should be noted that Hickman's object was not only to produce a state in which an operation could be carried out painlessly, but also to ascertain whether the wounds would heal more or less quickly under these conditions. He pointed out that "carbon has a most powerful antiputrescent quality," and believed that a wound made on an animal in a torpid state heals more quickly than one made on a "sensible" animal. It should be noted that in his early experiments Hickman was apparently wedded to carbon dioxide, and that it is only in the memoir of 1828 that the possibility of using other gases is mentioned.

The following appears to me to be a fair estimate of Hickman's importance. (a) In the first place he was one of the earliest, if not the earliest, to carry out planned experiments on animals in connexion with anaesthesia. (b) His adoption of the term "suspended animation" seems to have been fundamental to his system. Insensibility to pain was to be effected by the production of total suspension of most of the functions of animation—the heart being probably the only exception. That he recognized the grave risk is obvious. He said: "I used inflating instruments in one experiment only, and therefore am not prepared to say to what extent such may be used with advantage; but I think it probable that those and the Galvanic fluid would operate in restoring animation in some cases." (c) This being the case, even if Hickman experimented with other gases, which is doubtful, he probably did not conceive of them as acting in such a way that the "state of torpor" was unaccompanied by any serious effect upon a function such

as the respiration. (d) The question arises whether the whole of the effects which were produced in Hickman's experiments were due to asphyxia, or whether any part was a result of the anaesthetic effect of carbon dioxide gas. Chauncey Leake and

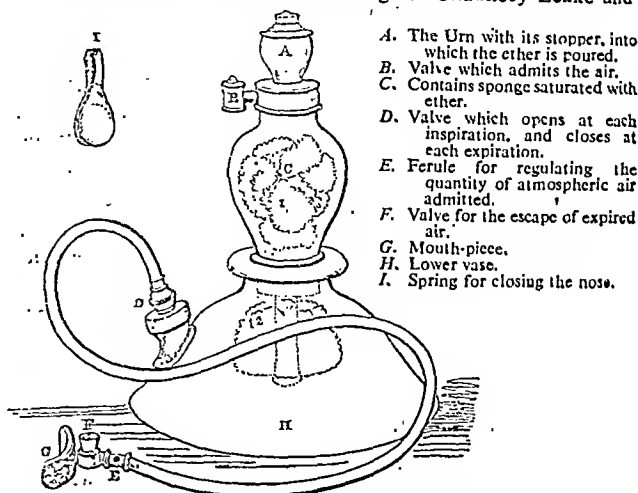


FIG. 7.—The ether inhaler designed by Peter Squire and used by him at Liston's operations on Dec. 12, 1846.

Waters (1928) did some work on this problem, and found that carbon dioxide did indeed have in itself a certain anaesthetic effect.

Hickman's position may be summarized finally by saying that he was among the first to carry out planned operations on animals in this connexion, and that he was certainly the first to set out deliberately to obtund the pain of a surgical operation by the inhalation of a gas. In 1847 Dr. Thomas Dudley espoused the cause of his priority, and the resulting correspondence is given in the Wellcome volume.

Founders of Inhalation Anaesthesia

The stage was now set for the men who used effective gases or vapours to produce unconsciousness during surgical operations.

According to Lyman (Keys, 1945) William E. Clarke, a young doctor in Rochester, U.S.A., administered ether on a towel to a Miss Hobbie in January, 1842, and one of her teeth was then extracted painlessly by a dentist, Dr. Elijah Pope. The

FIG. 8.—Sir James Young Simpson (1811-70).



periment arose out of Clarke's knowledge of ether acquired by frequent attendance at "ether frolics." This was apparently the first use of ether for a dental or surgical operation. Clarke did not follow up his discovery, and presumably considered it of no importance.

Crawford W. Long, 1815-78 (Fig. 4), a practitioner of Jefferson, Georgia, had also had experience of "ether frolics," and on March 30, 1842, he used ether, given on a towel, as a general anaesthetic. The patient was a young man called James M. 'enable, and the operation was removal of a tumour on the back of the neck. The operation was successful and painless. During the next four years Long gave ether four or five times. Claims have been made for him as the discoverer of anaesthesia, and statues have been erected in his honour. But Long published nothing at the time, and it was not until 1849 that he issued a statement of the reasons which prevented him from pressing the use of ether by others. None of his reasons is very convincing. In any case, if mere priority of personal use is alone considered, it would appear that Long's claims must now be surrendered in favour of those of Clarke.

Horace Wells, 1815-48 (Fig. 5), was a dentist in Hartford, Connecticut, and on Dec. 10, 1844, he attended a public demonstration of the effects of nitrous oxide, given by "Professor" Colton, a noted lecturer on popular science. As a result of the fact that a friend of Wells who, while under the influence of the gas, did not feel the pain of mild injuries which he had received at that demonstration, Wells determined to try the effect of nitrous oxide for tooth extraction. On Dec. 11, 1844, Wells had one of his own teeth extracted by his colleague, Dr. John M. Rigg, in the presence of Colton, Cooley, and another person. Wells exclaimed afterwards: "I didn't feel it so much as the prick of a pin." Wells was convinced that his discovery was of use to mankind, and determined that it should be made widely known.

After giving nitrous oxide in about fifteen further cases Wells accordingly went to Boston, Mass., where he called on W. T. G. Morton and C. T. Jackson, the well-known geologist and chemist. As a result of his statements John Collins Warren asked Wells to give a demonstration before the class of surgery at the Harvard School. Towards the end of January, 1845, Wells gave this demonstration, but unfortunately the boy whose tooth was being extracted groaned during the operation—although he later stated that he had felt no pain. Wells said later that he had removed the gas-bag too soon. The critical audience laughed and considered the whole thing as a hoax. Wells returned to Hartford and continued to use nitrous oxide and to experiment on certain vapours, but for the world at large surgical anaesthesia remained an unattainable goal—if it was even thought of as a goal at all, except by a few visionaries.

William Thomas Preen Morton, 1819-68 (Fig. 1), a dentist of Boston, had been a pupil of both Wells and Jackson. He had been at the unsuccessful demonstration given by Wells. For some months he appears to have done nothing, although in the subsequent controversies he wrote and said that he had been experimenting on animals and on two assistants with ether



FIG. 11.—Joseph Thomas Clover (1825-82).

during this period. On Sept. 30, 1846, Morton appears to have called on Jackson and asked him to give him some nitrous oxide. Jackson told him his gas-bags were empty and suggested that Morton should try sulphuric ether, which he would find just as efficacious. The same evening Morton used the ether in the extraction of a tooth; the patient was Eben H. Frost. Without delay Morton took his first steps to patent "etherization," and he also called on J. C. Warren and asked permission to give ether as an anaesthetic at the Massachusetts General Hospital. On Oct. 14 Dr. C. F. Heywood, house-surgeon to the hospital, wrote to Morton at Warren's request, inviting him to be present at 10 a.m. on Friday, Oct. 16 (Keys, 1945).

The events which preceded this historic operation, and the operation itself, have often been described (see especially Keys, 1945; Raper, 1945; Duncum, 1946). Morton, in the short time at his disposal, went to considerable trouble to provide himself with a suitable inhaler—a glass globe with two necks. The globe contained "the prepared vapour with sponges to enlarge the evaporating surface." Air entered through the upper neck, and after passing through the vapour, was inspired through the side neck. The side neck or mouthpiece contained a valve which prevented the expired air from passing back into the globe (Bigelow, 1847). This inhaler is still preserved in the Massachusetts General Hospital. The patient was a young printer, Gilbert Abbot (for Abbott); the condition a tumour of the neck; the surgeon, J. C. Warren; and the anaesthetist, W. T. G. Morton. The patient was strapped to an operating chair. The demonstration was completely successful. Warren (1846) published his own account of it. At the end of the operation Warren is reported to have said to the audience: "Gentlemen, this is no humbug." Poor Wells!

On the following day, Oct. 17, Morton gave his second demonstration, in the case of a tumour of the shoulder. This too was successful. In his next case, one of amputation of the breast on Nov. 4, he was unable to anaesthetize the patient after trying for an hour and a half (Raper, 1945). On Nov. 7 he had his most spectacular success. The patient was Alice Mohan and the operation was for amputation of a leg.

The subsequent history of Morton and his discovery is too complicated to be told here. He was a man of affairs, not a scientist. From the first he had been determined to make a fortune out of his method. Even at the Boston operation he

Figs. 9 and 10 are photographs of busts specially made (1946) for the Wellcome Historical Medical Museum by Ruth Poynter.)

FIG. 9.—Robert Liston
(1794-1847).

FIG. 10.—John Snow
(1813-58)



had added colouring matter and other substances to his liquid ether, and the result he called a "compound." It was not until Nov. 6 that he admitted in a confidential letter to the hospital authorities that his medium was simply sulphuric ether. Almost immediately Morton applied for a patent; but Jackson, who had a reputation for trying to steal inventions, had brought pressure to bear on him, and when the patent was issued on Nov. 12, 1846, it bore the joint names of Jackson and Morton, with Jackson assignor to Morton. A photostat copy of this Letters Patent, No. 4848, lies before me as I write. Morton spent the rest of his life trying to establish his claims, and he made no further contribution to the history of anaesthesia.

First Operation under Ether in Europe

Up to the present it has always been recognized that the first major operation under general anaesthesia in the old world was that carried out by Liston at University College Hospital, London, on Dec. 21, 1846. From research on which I am engaged at the time of writing it is evident that some weeks previous to this date ether was used as a general anaesthetic in a case of amputation of a limb at the Dumfries and Galloway Royal Infirmary. There was a direct link between the Boston operation and that carried out at Dumfries. Scotland can therefore justifiably claim the first use of general anaesthesia in Europe. An extended account of this operation will be published at an early date.*

Practical Application of General Anaesthesia in England

On Nov. 28, 1846, Prof. Jacob Bigelow, of Harvard, wrote to his friend, Dr. Francis Boott, of Gower Street, London, a letter acquainting him of Morton's achievement. Boott was an American, a Harvard man. Bigelow enclosed a newspaper article by his son which related to the discovery. The letter was three weeks in transit, and was probably received by Boott about Dec. 17. On Saturday, Dec. 19, Boott gave ether as an anaesthetic to a Miss Lonsdale while a tooth was extracted by his dentist friend, James Robinson. Meanwhile Boott had written to Robert Liston (Fig. 9) of University College Hospital, and on Monday, Dec. 21, the latter wrote to Boott the historic letter (Liston, 1847) in which he said that he had that day carried out two operations under ether, one being a case of amputation of the thigh, and the other evulsion of both sides of the great toe-nail. Joseph Lister was present at these operations. The anaesthetic was given by Peter Squire, who improvised an inhaler for the occasion (Forbes, 1847) (Fig. 7).

The practice of "etherization" was thus safely launched in this country, and its use on the Continent of Europe followed in the early weeks of 1847.

Simpson and Chloroform

On Jan. 19, 1847, James Young Simpson, of Edinburgh (Fig. 8), was the first to use ether as an anaesthetic in obstetric practice. The ether was given at the time when the labour pains were strongest. Prof. Jacob Bigelow, of Boston, in 1870 claimed that this honour belonged to America, and in his reply Simpson (1871) not only discredited this assertion but gave an illuminating discussion of the whole position. Simpson soon found that his patients objected to the smell of ether, and in an endeavour to discover a more suitable volatile anaesthetic he experimented with various substances on himself and his friends.

The use of chloroform was suggested to him in October, 1847, by David Wallic, Chemist to the Apothecaries' Company of Liverpool. Simpson (1847) began to use chloroform as an anaesthetic in obstetrics early in November, 1847, and he employed it in three cases of operation in the Edinburgh Royal Infirmary on Nov. 15 of that year. Within a matter of weeks it had almost displaced ether as a general anaesthetic.

A word should be said about the heated and prolonged controversy which hinged on religious objections to the use of anaesthetics in childbirth. The objections were on various grounds, but a very strong one depended upon the translation of the Authorized Version of Genesis iii. 16: "In sorrow [etzebb] thou shalt bring forth thy children." Simpson quoted Genesis ii. 21 to show that God was the first Anaesthetist, and he asserted that the Hebrew word 'etzebb' does not imply the sorrow associated with physical pain but rather the muscular effort involved in labour. The controversy did not really abate

until Queen Victoria had chloroform during the birth of Prince Leopold in 1853. It is interesting to note that De Quincey's son, Francis, was a medical student at Edinburgh when chloroform was first used, and he immediately wrote to his father regarding the religious scruples. De Quincey replied, and his arguments against the religious scruples are printed in his collected works (1890). They no doubt helped to get Francis M.D. in 1849.

Snow, Clover, and Late Developments

It is often overlooked that John Snow (Fig. 10), one of the greatest of epidemiologists, was the same John Snow who became the first professional anaesthetist, the first research worker on anaesthetics, and the greatest of all the early workers in the field of practical anaesthetics. A Yorkshireman, Snow was born in 1813, qualified in London in 1838, and by 1841 was working on the scientific aspects of asphyxia. Snow very soon became Liston's anaesthetist, and in November, 1847, he adopted chloroform as a better anaesthetic than ether. Snow devised various types of inhalers and other pieces of apparatus, and the influence of his writings on the later developments of anaesthetic practice was of the greatest importance. He twice gave chloroform to Queen Victoria. Snow was an amateur epidemiologist and he it was who was responsible for terminating the terrible cholera outbreak of 1854, which is known in history as the episode of the Broad Street pump. Snow died in 1858.

Snow's leading place in the anaesthetic field was taken by J. T. Clover (Fig. 11). In 1862 he devised a new inhaler which permitted the accurate regulation of chloroform and air mixtures. This inhaler necessitated the use of a large reservoir by which was slung on the back of the anaesthetist. In 1874 he advocated a supplemental bag which allowed of the rebreathing of a portion of the anaesthetic, and two years later he introduced the gas-ether sequence. In 1877 he devised a portable inhaler for the regulation of the ether flow.

The later developments of the technique of anaesthesia—the controversy over ether versus chloroform, the re-introduction of nitrous oxide in 1862, the Hyderabad Commission, the introduction of new methods, new anaesthetics, and a plethora of new inhalers—are all far too complicated and too recent for warrant discussion here. The trail had been blazed, religious objection had been overcome, and thanks to the greatest of the early anaesthetists the subject had become not only a profession but a science.

Epilogue: The "Discoverer" of Anaesthesia

In this paper I have set out a few of the facts which are known about those who may have some claim to be named the "discoverer" of anaesthesia. On this subject there has been a wealth of writing, not to mention all the arguments which have passed through the United States Courts and Congress over many years. Let each choose according to his judgment. After some considerable study of the evidence I venture to give here my own views.

The five possible contestants are Clarke, Long, Wells, Jackson, and Morton. If by "discovery" we mean a "discovery" to satisfy the discoverer, the palm goes to Clarke by a short head, and then to Long. But Clarke had only one case, which was unpublished. Long had a number of cases over years, but he never expressed the slightest interest in promulgating his discovery. It was apparently only when Farr seemed to be looking for a head on which to bestow the laurels that Long woke up and saw what he had missed. If therefore by "discoverer" we mean one who "uncovers" for the world to see, to use, and to emulate, then both these men are out of the running. Wells is in a different position. He set out consciously to discover an anaesthetic agent which would be effective in major surgery, and he intended that the world should use it. Chance turned him to nitrous oxide. Had not been for the unfortunate circumstances attending his failure and only public demonstration he might have been hailed as the discoverer of general anaesthesia, though not of ether anaesthesia. Jackson, even if he did have the idea that sulphuric ether was the substance to try in the human, took any steps in the matter until jealousy of Morton got him into action. Had Morton not used sulphuric ether, he would have succeeded—at least fairly well—with nitrous oxide. Further, whether or not he had been experimenting with ether

* This operation will be described at a meeting of the History of Medicine Section of the Royal Society of Medicine on Oct. 16.

fore he consulted Jackson, it seems certain that he would be lighted on that substance himself. Discoverers are usually children of preceding events. If one man can be called the discoverer of general anaesthesia, then that man is Morton. On the centenary of his discovery, we salute him for his good fortune, his perseverance, and for the inestimable boon which he conferred on humanity.

On the centenary day, Wednesday, Oct. 16, at 4.30 p.m., an exhibition at the Wellcome Historical Medical Museum, illustrating the whole history of anaesthesia, will be officially opened by Lord Moran.

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unpleasantness and tedium of starting with open ether and, on the other, the dangers of a chloroform induction.

Continuous nitrous oxide and oxygen was used to a limited extent with the original Boyle apparatus with bubble sight-feeds, which was based on Gwathmey's American machine. The value of gas and oxygen in shocked battle casualties had been recognized towards the end of the war of 1914-18, and a portable machine designed by Geoffrey Marshall on the same principle as Boyle's apparatus had been used in France. Children were usually given the open ethyl chloride-ether sequence. Inhalation with a face-piece was the predominant technique, although the insufflation endotracheal method had been developed for the plastic repair of facial wounds. For this purpose a stiff gum-elastic catheter was passed into the trachea by direct laryngoscopy. Excision of malignant growths of the tongue and adjacent structures was dealt with by chloroform dropped on to a Hahn cone connected by rubber tubing to a laryngotomy tube. Leakage of blood into the trachea was prevented by a large marine sponge in the oro-pharynx.

Pharyngeal insufflation of chloroform and air from a Junker bottle was used for dissection tonsillectomy and for other operations about the mouth. Occasional alternatives to inhalation were rectal oil-ether and intravenous ether in saline. Local analgesia was practised very considerably, particularly on the Continent. Cocaine was used as a surface analgesic and procaine for injection purposes. These drugs permitted an operating time of only about three-quarters of an hour. Spinal analgesia was confined to hyperbaric solutions, usually of stovaine or tropacocaine, and little was known as to controllability.

Having passed briefly in review the position as it was at the end of the last war, we are now able to assess the advances made in the quarter of a century which has since elapsed.

Preparation of the Patient and Premedication

The preparation of the patient is directed towards putting him in the best possible condition immediately before operation. It may include the administration of extra glucose or possibly a blood transfusion, but there should be an absolute minimum of purging and abstinence from food and drink. Premedication is no longer a mere routine, but is calculated for each individual patient. Sedation is often adequate, usually with a morphine derivative and scopolamine or with an oral barbiturate; but complete basal narcosis may be indicated for the highly strung nervous patient, particularly if suffering from thyrotoxicosis. For this purpose rectal paraldehyde is often used for children and bromethol (avertin) for adults.

If the patient is conscious when he arrives in the anaesthetic room he can then be anaesthetized in a few seconds by an intravenous injection if he dislikes the application of a face-piece. There is no doubt that the introduction of the rapidly acting barbiturates constituted a major advance in anaesthesia between the wars, and although they possess disadvantages (chiefly in producing respiratory depression and a tendency towards laryngeal spasm) they have proved extremely safe in the hands of experienced anaesthetists. For prolonged operations, however, continuous intravenous anaesthesia is not quite so satisfactory as was originally predicted.

New Volatile Anaesthetics

Various new volatile anaesthetics have been introduced since the end of the last war. The hydrocarbon gases were investigated—particularly ethylene, acetylene, propylene, and cyclopropane. Ethylene attained much popularity in America, but never came into extensive use in Great Britain owing to its smell and inflammability. Acetylene had some vogue in Germany. Propylene was found to have too great a tendency to cause cardiac arrhythmias and was soon abandoned. Cyclopropane alone of the series has gained a permanent place in anaesthesia in this country. It possesses the valuable properties of being non-irritating and potent, so that a high proportion of oxygen can be used with it. These properties have encouraged its employment in thoracic surgery in practically all cases in which it is not essential to use the diathermic cautery inside the chest. Owing to its high cost, cyclopropane is always used in a closed circuit.

Certain ethers besides the usual diethyl variety have been investigated, but the only one to attain any popularity has been

RECENT ADVANCES IN ANAESTHESIA

BY

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in putting together any account of recent advances the first question to be decided is the meaning to be attached to "recent." The science and art of anaesthesia is now one hundred years old, but it is convenient and also useful to compare the state of the specialty as it was just after the war of 1914-18 with that at the present time.

To deal first with the preparation of the patient: at the beginning of the period selected pre-operative starvation and purging were all too common, and the unhappy victim was often in a very poor condition before the anaesthetic was administered at all. Premedication was practically confined to subcutaneous morphine and atropine administration, basal narcosis being unknown. The anaesthetics in common use were nitrous oxide, chloroform, ether, and ethyl chloride. Short procedures such as dental extractions were usually performed under a "straight" gas, although it must be remembered that Hewitt's two-bag nitrous-oxide-and-oxygen apparatus had been in use since 1892. For minor operations in children the usual anaesthetic was ethyl chloride. For major surgery the two commonest standard techniques were the nitrous oxide-ether-chloroform sequence and nitrous oxide-ether-open ether. In either case anaesthesia was induced with an original or modified Clover's inhaler, thereby obviating, on the one hand, the

divinyl ether. This resembles ethyl chloride, but causes less nausea and vomiting. A tendency towards liver damage necessitates care and the admixture of oxygen for long cases if the drug is used in the pure state; but it can be employed to reinforce diethyl ether in the proportion of 25% ("vinesthene" anaesthetic mixture).

The other new volatile agent which is now in general use is trichlorethylene ("trilene"). This drug has proved extremely useful for producing general analgesia, particularly in midwifery and dentistry, and for the induction and maintenance of a light plane of general anaesthesia (usually with nitrous oxide and oxygen). Trichlorethylene, however, should never be "pushed" to produce relaxation, as tachypnoea is very likely to develop.

Curare in Anaesthetic Practice

At this point curare must be mentioned, as the introduction of this drug into anaesthesia seems likely to mark the greatest advance in recent years. The isolation of the pure alkaloid *d*-tubocurarine chloride by H. King in 1935 has enabled a preparation to be used which is free from undesirable side-actions such as bronchospasm. The main effect of curarine is exerted at the myoneural junction, where it prevents the normal action of acetylcholine from producing muscular contractions; in other words, it is a muscle relaxant, and in normal dosage is neither an anaesthetic nor an analgesic. Curarine has proved extremely useful in upper abdominal surgery, where it is given in divided doses by the intravenous route, the patient being rendered unconscious by very light inhalation or intravenous anaesthesia.

Techniques and Apparatus

Turning now to techniques and apparatus, anaesthetic machines have developed very considerably since the original "Boyle" was introduced in this country. Continuous-flow machines are now provided with accurate dry flowmeters, while the intermittent-flow variety, which will always be associated with the name of the late E. I. McKesson, has proved invaluable where positive pressure is desired, as in continuous nasal gas-and-oxygen for dentistry.

The closed circuit with carbon dioxide absorption by means of a soda-lime canister has resulted in undreamed-of economy in gas consumption and has diminished the risk of explosion when inflammable vapours are being used, besides affording other important advantages to patients. The closed circuit is applicable to most types of inhalation anaesthesia except when paraldehyde has been used for basal narcosis or when trichlorethylene is being employed.

If no gases are available the "Oxford vaporizer" can be used for giving ether and air on the draw-over principle. This is a considerable advance over open ether, as a known percentage of vapour can be used and very fine control is possible. This is accomplished by maintaining the liquid at a constant temperature by means of a chemical thermostat.

The endotracheal technique has changed radically during the period with which we are dealing. The insufflation method with a small catheter is now obsolete and has been replaced by the wide-bore inhalation technique introduced by I. W. Magill. Tight and watertight seal can be provided either by packing or by an inflatable cuff on the tube. It might be mentioned in passing that the introduction of the Davis gag into this country by the late H. E. G. Boyle revolutionized the technique of dissection tonsillectomy, although the original insufflation of anaesthetic vapour through the tube on the tongue depressor is now often replaced by naso-tracheal anaesthesia in adults. This allows a gauze pack to be used, and the surgeon need not inhale any of the anaesthetic vapour through the patient's open mouth.

The "blind" method of nasal intubation, also sponsored by Magill, has proved of great value in many cases. The introduction of tubes into the bronchi and the provision for tracheal and bronchial suction are modifications of the endotracheal technique which the various types of new thoracic operations have necessitated.

The technique of controlled respiration has been developed comparatively recently. In this procedure natural respiration

is abolished, usually by a combination of depressant drugs and hyperventilation with carbon dioxide absorption causing apnoea. Thereafter, intermittent positive-pressure provides for the necessary interchange of gases. The method has proved of very considerable value in thoracic and abdomino-thoracic operations, but it is one which calls for a high degree of skill in use.

New Drugs and Methods in Local Analgesia

Local analgesic techniques have advanced to cover a great variety of field and nerve blocks, perhaps the most popular now being brachial plexus block. It would appear, however, that for abdominal surgery local analgesia will largely be replaced by the combination of intravenous curare with very light general anaesthesia.

The usual syringe employed is still Labat's original pattern although various types of self-filling syringes are used for extensive infiltrations. The pressure infiltrator has been developed to a high degree of perfection, but its weight and bulk have prevented its general adoption.

Very many new drugs have been tried as local analgesics but, apart from the original cocaine and procaine, nupercaine and amethocaine alone have attained any real popularity in Great Britain. Both have a good surface action and a prolonged effect. A modern tendency is to use infiltration, not to produce analgesia, but to aid the surgeon by separating tissue planes and by causing ischaemia. For this purpose a 1:500,000 adrenalline solution in normal saline is excellent.

The refrigeration of limbs has proved useful for amputation in patients in very poor condition. It should be noted that the tissues are not frozen in the same way as when using an ethyl chloride spray, but are simply cooled to about 5°C.

Spinal analgesia has undergone many changes. The introduction of nupercaine has enabled a truly hypobaric solution to be used for the first time, and this has some advantages for high blocks. The mechanism of distribution of injectable drugs is now more fully understood, and this has enabled blocks which are mainly unilateral to be achieved. Probably less use is made of spinal analgesia than formerly, however, owing to the large number of serious complications that have been recorded, some of which appear to be unavoidable even with a theoretically perfect technique. It seems likely that curare will replace high spinal blocks to a large extent in the future. Extradural spinal block has become rather more popular since it was shown that with the spine flexed there is normally negative pressure in the extradural space. The use of the "hanging-drop" technique or a special indicator has resulted in the positioning of the needle being less problematical.

Care of the Patient's General Condition

The care of the patient's general condition during operation is one of the duties of the anaesthetist, and in this connexion fresh progress has been made in the determination of blood pressure such as the use of the sphygmoscope devised by Evans and Mendelssohn. If restorative measures are necessary the anaesthetist must be prepared to set up an intravenous drip of saline, plasma, or blood, while sudden collapse may make the administration of an analeptic advisable. A very large number of these drugs have been introduced since 1918, two of the most popular and reliable being nikethamide and methedrine.

The advance of anaesthesia has been assisted by the adoption of better records than had previously been available. In this country the combined blood-pressure/pulse chart and record card, adapted to an extremely ingenious card index system by M. D. Nosworthy, is making possible the comparison of different techniques from the study of many thousands of cases.

In conclusion, it must not be forgotten that the skill of the man behind the rifle is more important than the design of the weapon or the type of ammunition used; in other words, the ability of the individual anaesthetist is more important than new introductions of drugs or techniques. More than ever before must the anaesthetist possess the knowledge and skill to select and use the best method for anaesthetizing any particular patient for any given operation.

THEORIES OF ANAESTHETIC ACTION

BY

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This vast subject has been studied by so many that it is impossible to do more than indicate briefly a few of the most important observations and the theories based upon them. But it is always safe to begin with Claude Bernard (1875), who defined narcosis as a depression of the activity of lower forms of life which disappeared when the substance causing the depression was removed; he thus distinguished a narcotic from a substance producing an irreversible change. The depression might be a depression of motility, a loss of irritability, a cessation of mitosis, or a slowing of metabolic processes. Anaesthesia is a term first proposed by Oliver Wendell Holmes in a letter to Morton in 1846; it is used when narcotics are given to a more highly developed organism such as man. The essential feature remains that the depression, the loss of consciousness, and other effects must be reversible.

The stages of anaesthesia are marks of a progressive depression beginning in the cortex and proceeding lower. The cortex itself is affected at certain points more than at others, for the sensory area is depressed when the motor cortex is still active; when finally the depression has travelled to the spinal cord there is muscular relaxation. The fortunate exception to this progressive paralysis is the medulla, in which the respiratory and vasomotor centres still function when the musculature is relaxed, so far as most anaesthetics are concerned. But this is not true of all. If attempts are made to obtain muscular relaxation with nitrous oxide the respiratory centre fails owing to oxygen lack first. With cyclopropane, again, the margin between muscular relaxation and respiratory failure is narrow. The differences in the sensitiveness of various parts of the brain are, however, small compared with the difference between the sensitiveness of the brain and that of other tissues.

Sensitivity of the Brain to Anaesthetics

During the time taken by operations, anaesthetics accumulate in the brain more than in other tissues such as muscle, and the greater sensitiveness of the brain is thus accompanied by a greater affinity for anaesthetics. It was at one time thought that the accumulation of an anaesthetic in the brain was due to the greater blood supply of that organ; after long-continued anaesthesia, however, some accumulation is observed at a time when the differences due to blood supply must have disappeared (Nicloux and Yovanovitch, 1924). The greater affinity of brain tissue for anaesthetics may have its explanation in the tissue composition. So long ago as 1847 von Bibra and Harless based their theory of narcosis on the high lipid content of the brain, which they suggested was dissolved out of that organ by the anaesthetic and deposited in the liver! Fifty years later the well-known theory of Meyer (1899) and Overton (1899, 1901) was also based on the high lipid content of the brain.

A third difference between the brain and other tissues is its great susceptibility to the effects of oxygen lack: there are indeed very great differences between brain and other nervous tissue. Thus the small pyramidal cell area of the cerebrum and the Purkinje cell area of the cerebellum, when deprived of oxygen, die in about 10 minutes. On the other hand, the spinal cord survives for 50 minutes and the sympathetic ganglia for 200 minutes. An explanation for the great sensitiveness of the brain to anaesthetics would therefore be provided if it could be shown that anaesthetics interfere with processes of oxidation, as some have suggested. Such evidence would also account for the steps in which the different portions of the central nervous system are influenced by the narcotic agent. Owing to the differences in the sensitiveness of the different parts of the central nervous system, workers since Claude Bernard have in the main studied the action of narcotics in lower organisms. Even among these Meyer and Overton found that a small increase in the extent of organization and functional differentiation was accompanied by an increased sensitiveness to narcotics.

Primary Action of Narcotics

Two very obvious features of narcotics are the great variation in their chemical structure and that most of them enter and leave the tissues unchanged; these facts suggest that the primary action of narcotics cannot be chemical, but must rather be due to the production of physical changes such as in solubility, adsorption, etc. Among the many changes which narcotics have been said to produce, those about which there is a balance of agreement are a decrease in the permeability of the cell to water and water-soluble substances, and also a diminution in the state of hydration. Lucké (1932), for example, observed that in the unfertilized egg of the sea-urchin water exchange through the surface is reduced by narcotics. Anselmino (1928), too, has confirmed earlier observations that narcotics delay the haemolysis of red cells by hypotonic solutions, and that the length of the delay is in linear proportion to the concentration of the narcotic. Gerstner (1940) has shown that the permeability of the skin covering the frog's abdomen for ions is diminished in the presence of various alcohols. Turning to evidence for a diminution in the state of hydration, we find that Lapique (1930) observed in nervous tissue that, in a concentration which reduces conduction, narcotics cause dehydration. Kochmann (1923a) observed a similar effect in frog muscle immersed in 0.75% saline: when the narcotic was applied the weight of the muscle diminished; when the narcotic was removed the weight returned to its former value.

TABLE I.—(Kochmann, 1923a)

	Chloroform	Chloral Hydrate	Ether	Ethyl Alcohol
Molar concentration	0.004	0.006	0.19	1.0
Weight loss %	2	10	2.5	5.0

The figures in Table I show the wide variation between the concentrations of different narcotics necessary to produce a certain degree of anaesthesia. They also show that, in narcosis, dehydration occurs and the percentage loss of weight in the tissue is not correlated with the concentration of the narcotic in the surrounding fluid; the weight loss therefore cannot be due to osmosis, which is in any case unlikely, since the narcotic enters the cell. Actual water loss is observed when medium concentrations of chloral hydrate act on fibrin flakes (Jurisic, 1937). Heilbrunn (1920) observed that the cytoplasm of sea-urchin eggs becomes more fluid under the influence of narcotics, indicating that water is set free.

Narcotics not only produce dehydration in living cells but exert effects on colloidal solutions which can also be interpreted as dehydration. Labes (1921) observed that alcohols affected albumin solutions so that they were more easily precipitated by other agents, and the effect increased with the number of carbon atoms in the alcohol used. Now since the stability of hydrophilic (water-attracting) protein colloids depends on the degree of hydration, it seems very likely that the effect of the alcohols was to produce dehydration. It is worth noting that Claude Bernard, and later Bancroft and Richter (1931), have based their "coagulation" theory of narcosis on the reduction of the stability of colloids and their precipitation. Unfortunately for their theory there are substances which reduce this stability but have no narcotic action; the experimental evidence supporting this theory is still meagre.

In all these experiments it is important to note that the changes were reversible provided that the concentrations of the narcotics used were not excessive. Moreover, the effect of any one narcotic was in linear relation to its concentration in all experiments in which different concentrations were studied.

While narcotics produce narcosis when applied in most concentrations, in very low concentrations they appear to cause excitation. Even in anaesthesia of human subjects there may be an element of actual excitation, though the usual explanation which is given of the stage of excitement is that it is due to the release of lower centres from the control of higher centres, the real effect of the anaesthetic being to depress these higher centres. If narcosis is actually due to diminished permeability, and if the early stage of excitation is considered to be the opposite, it should be accompanied by increased

permeability. Gerstner found such an increase in the frog's skin, and then, after the application of higher concentrations, the permeability was diminished. Lapicque also observed that with low concentrations of narcotics there was an increase in nerve conduction and also an increase in hydration. Beecher (1938) quotes several observations showing that very low concentrations of narcotics always increase the normal functions of small organisms. These effects of low concentrations, however, have not been very extensively studied, and relatively little is known about them. Nevertheless, since they occur, any theory of narcosis which is to be satisfactory must explain them.

Before discussing a theory which considers dehydration as the primary effect of a narcotic, it should be pointed out that the process is not merely a withdrawal of water such as occurs in osmosis. The withdrawal of water by osmosis causes no change in the force of attraction between a "hydrophilic" colloid and water, whereas the dehydration we are now considering involves a diminution of this attraction (Seelich, 1941). It is therefore evident that only certain kinds of water withdrawal will have a narcotic effect. A further point is that the dehydration and the decreased permeability due to narcotics are not independent. In experiments with artificial membranes it has been found that dehydration leads to diminished permeability (Gurewitsch, 1934).

The Dehydration Theory

Traube (1904, 1935) introduced a theory of narcosis which was later greatly extended by Lillie (1909) and Warburg (1920). This theory depended on the parallelism between the potency of a narcotic and the degree to which the narcotic reduced the "surface energy" of a water-air boundary.

The surface energy of pure water is measured by the work which must be done to enlarge the surface by 1 sq. cm. The molecules inside are held there by the attraction of other molecules, and in order to move molecules to the surface this attraction must be overcome. The surface energy of water is much greater than that of organic fluids like oil. Small amounts of certain substances dissolved in water (or other liquids) diminish its surface energy, and their activity is measured by the reduction in surface energy which a given concentration produces. Owing to the force of attraction which they exert being less than the force exerted by water molecules, these substances are less attracted to the interior, and therefore displace water from the surface. These substances are termed "surface-active." If an attempt is made to increase the surface the molecules of the substance will require less work to put them there, so that the surface energy is reduced. Accumulation of a substance in a surface, or adsorption, is inseparable from a reduction in surface energy. If we consider a water-oil boundary, the interface energy is less than that of a water-air boundary, because the oil molecules exert an attraction on water molecules in the interface which the air does not, and thereby reduce the pull from the bulk of the water. Certain substances which dissolve in oil lower this interface energy still further; they do this by a similar process to that just described at a water-air boundary, and they accumulate in the interface.

If we come to an interface between protein colloids or lipids and water, their attraction for water is usually so strong that the interface energy is very small. These colloids are said to be "strongly hydrated." If we add to such a system a third substance which would cause great reduction of surface energy at a water-air boundary it will have very little effect, because the surface energy is already so low. The slight reduction which might be caused by adding a "surface-active" substance would, however, lead to increase in hydration of the protein or lipid.

If now we consider narcotics, some of which are strongly surface-active at a water-air boundary, we know from the experimental observations discussed that at medium concentrations they do not cause hydration, but on the contrary dehydration. This fact excludes any hypothesis of their action which involves adsorption on the cell membrane surface as the primary mechanism. Simple models of cell membranes can be made, however, in which surface-active narcotics cause dehydration and an increase in surface energy. The basis for these models is the idea that the lipid content of a cell mem-

brane is a mixture, some components being strongly surface-active or hydrophilic, and accumulating (that is to say, being adsorbed) on the surface. Other components, being the greater part of cell-membrane lipids, are less hydrophilic. Seelich (1940) suggests that the narcotics dissolve in the lipids of the cell membrane and thereby alter the distribution of the surface-active lipids between the surface and the interior of the membrane; the surface-active lipids come inside, and their place is taken on the surface by less hydrophilic lipids. Dehydration therefore occurs, the interface energy rises, and permeability diminishes.

One of the models chosen by Seelich consists of a layer of liquid paraffin in contact with water. This system has an interface energy of 51. The surface-active lipid component represented by 0.05% ergosterol in the liquid paraffin. This reduces the water/paraffin interface energy to 4—a value in the same order as that of the interface energy between lipid and water. When a strong surface-active narcotic, *n*-propyl alcohol, is added in a concentration of 0.3 mol/litre, the interface energy does not decrease, but rises from 4 to 8. We know that the narcotic effect of homologous alcohols rises with the number of carbon atoms in the chain, and when the above experiment is done with butyl alcohol the same rise of interface energy is obtained with only 0.05 mol/litre. If so much ergosterol is put in the paraffin that some of it is undissolved and present as visible droplets, it can be observed that the addition of narcotics to the water results in the solution of these droplets in the paraffin. It is of further interest that for very low narcotic concentrations—e.g., 0.01 mol/litre propyl alcohol—a decrease of interface energy, indicating increased hydration and permeability, occurs in the model; this bears out what has been observed in actual cells.

Other Theories of Narcosis

We can now consider how far other theories of narcosis can be harmonized with this. Traube correlated narcotic activity with lowering of the surface energy of a water-air boundary, such a boundary constitutes a bad model for the cell membrane plasma boundary, and, as already pointed out, lowering of surface energy is accompanied by hydration, not by the dehydration which actually occurs.

Warburg has extended Traube's rules to form a comprehensive theory. Like Traube, he assumes an accumulation of narcotics on the surface of cell membranes; this is supposed to lead to a displacement of enzymes from positions on the surface in which they catalyse oxidations; at the same time the adsorption of narcotics is supposed to "block the pores" of the membrane, leading to a decrease of permeability. Some of the evidence for this theory is that amino-acids, adsorbed on activated charcoal, are displaced when narcotics are added. It is unlikely that the water-repellent surface of charcoal is a good model for the water-attracting colloids of the cell membrane. Moreover, the arguments valid against Traube's theory apply here also.

The earlier theory of Meyer and Overton is really a rule and not a theory, since it does not explain narcotic action. It points out that there is a close relation between narcotic activity and the distribution coefficient of narcotics in a lipid/water system. (If oil is in contact with water and a narcotic is added, the narcotic distributes itself in a fixed ratio between the oil and the water. This ratio is the distribution coefficient.) The coefficient rises as the narcotic increasingly prefers the oil. The son of Hans Horst Meyer—namely, K. H. Meyer (1937)—has recently re-examined the distribution coefficients and has used oleic alcohol instead of the classical olive oil to represent the lipid phase. He compared the distribution coefficients with the concentrations of narcotics in water necessary to paralyse tadpoles. The figures he got are given in the first two columns of Table II, and it can be seen that the narcotizing concentration for tadpoles diminishes as the distribution coefficient rises. In the last column is given the concentration which would have been present in oleic alcohol in contact with water containing the narcotizing concentration in the first column. The figures in the last column are very close together, and Meyer concludes that to obtain narcosis the same concentration of any narcotic in certain lipids is required.

TABLE II

	Narcotic Conc. for Tadpoles (mol/litre H ₂ O)	Distribution Coefficient Oleic Alcohol-Water	Narcotic Conc. mol/litre of Lipoid Model
yl alcohol ..	0.33	0.10	0.033
yl alcohol ..	0.11	0.35	0.038
yl alcohol ..	0.03	0.65	0.020
et ..	0.024	2.10	0.050
ninal ..	0.008	5.90	0.048
loroform ..	0.00008	325.00	0.026

The Meyer-Overton theory appears to fit easily into the framework of the dehydration theories of Kochmann (1923b) and Seelich (1940). A high distribution coefficient means that when there is a low concentration of the narcotic in the water there is enough narcotic in the lipid to alter the distribution of the surface-active lipid components, with consequent hydration and decreased permeability. Warburg's conception of the displacement of enzymes may also be useful, even if the sorption of the narcotics on membrane surfaces is rejected. The surface-active lipids which are displaced may indeed be enzymes, and their removal may be responsible for the diminished oxidation which is observed (Quastel and Wheatley, 1934). The decrease in permeability may hamper the transport of carbohydrate to the enzymes, and so reduce metabolism in another way. Since, too, the transmission of stimuli is accompanied by the passage of ions through the cell membrane, the reduction of permeability (Winterstein, 1926; Hoeber, 1926) will interfere with this transmission, and cells will become unresponsive.

In conclusion, certain modern electrical theories of narcosis could also be mentioned which are based on the idea that the anisotropic state of negativity arising when a nerve is stimulated is interfered with by narcotics. It is thought that a narcotic first produces a state of negativity on the cell surface as does a normal stimulus; the subsequent paralysing effect is seen in the persistence of the negative state, which would have disappeared immediately after a normal stimulus. No further stimuli which normally cause a state of negativity to travel along a nerve can now be transmitted, since the cell membranes are maintained in maximum negativity by the action of the narcotic (Beutner, 1931). These theories infer the stages of excitement and paralysis to be of the same kind, while the experimental evidence discussed above seems to point to a difference between the two; moreover they do not attempt to provide evidence that the electrical state of the narcotized cells is correlated with the potency of narcotics in a homologous series. Until this has been done their value is uncertain.

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JOHN SNOW—ANAESTHETIST AND
EPIDEMIOLOGIST

In the senior common room of a college mention of the name Poincaré would ring a bell, or rather it would ring bells. The modern historians would suppose the French Premier and President in question: the mathematicians that his cousin was intended. In medical circles the name Snow excites memories not of two men but of the different activities of one man. Probably in a mixed company more would remember Raymond Poincaré the statesman than Henri Poincaré the mathematician: certainly in a medical company more would recollect Snow as the English pioneer of scientific anaesthesia than as an epidemiologist. But Snow's classical papers on the epidemiology of cholera have been reprinted in America with an excellent introduction.¹

John Snow (1813-58), the son of a Yorkshire farmer, was educated for general medical practice and, as an apprentice, had experience of the 1831-2 epidemic of cholera in Newcastle. He "walked" the Westminster Hospital in 1837-8, qualified in 1838, and graduated M.B.Lond. in 1843, M.D. 1844. His first paper, "Asphyxia and the Resuscitation of New-born Children," was published in 1841. In 1846 the first inhalations of ether in this country did not greatly impress surgeons. "The distrust arose," wrote Benjamin Ward Richardson, "from the manner in which the agent was administered." Snow remedied the mistakes and soon became known as an anaesthetist. He published a short treatise on ether anaesthesia in 1847. After the introduction into medical practice of chloroform by Simpson, Snow carried out a number of researches and satisfied himself of the practical advantages of the drug. He soon became one of the most successful and respected anaesthetists in London.

The cholera epidemic of 1848 perhaps recalled memories of his experience in general practice, and he published a brochure of 31 pages "On the Mode of Communication of Cholera" in 1849. The second edition (139 pages) published in 1854 is a classic of epidemiology. Snow's incrimination of a pump in Broad Street, Golden Square, is as dramatic as any detective story, but the statistical evidence by means of which he established a high correlation between the consumption of dirty water and mortality from cholera in South London is a model of research. Private enterprise and free competition in the sale of water had the result that in one and the same street families might buy water from different companies. Snow was supplied by the General Register Office with the names and addresses of persons dying of cholera in the epidemic of 1854; he and another medical man made a house-to-house visitation, and from the data the collection of which "was necessarily attended with a good deal of trouble," he was able to draw up an unanswerable case against dirty water. William Farr, who gave him every encouragement, was able to produce in the epidemic of 1866 equally cogent statistical evidence. Where Snow was in advance even of Farr and Simon was in his firm conviction that the ingestion of water polluted with a presumably living contagium was the only method of epidemic dissemination. Farr to some extent, and Simon to a greater extent, still hankered after that variant of miasmatic epidemiology which found a possible cause of epidemics in air contaminated by the products of putrefaction.

English science has owed much to amateurs, and it may be that Snow will be longer remembered by his researches in epidemiology—undertaken because the subject interested him—than by his professional work, valuable as that was.

¹ *Snow on Cholera . . . with an Introduction by Wade Hampton Frost*. New York: The Commonwealth Fund, 1936.

The Bristol Council for Rehabilitation was inaugurated on Oct. 4, 1945, at a meeting attended by members of the Bristol and District Divisional Hospitals Council, and representatives of the Ministries of Health, Labour and National Service, hospitals, medical institutions, and industry. Its constitution is modelled on that of the British Council for Rehabilitation, with which it is affiliated. A report of the first year's work has been issued from Royal London House, Queen Charlotte Street, Bristol, 1.

THE HISTORY AND DEVELOPMENT OF ANAESTHETIC APPARATUS

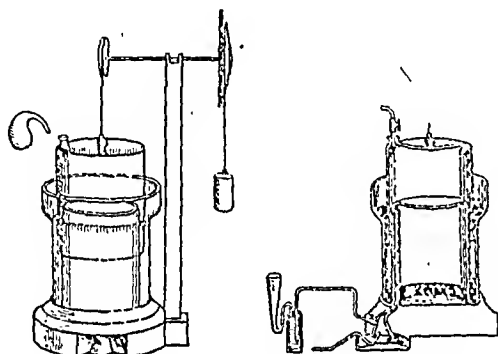
BY

A. CHARLES KING, F.I.B.S.T.

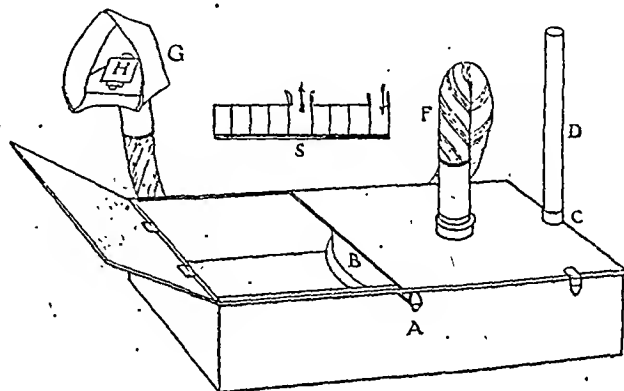
Perhaps the first modern gas inhaler was the one which James Watt, renowned engineer, constructed for Humphry Davy in 1799; this was a gasometer to which was attached an almost impermeable silken bag from which he inhaled the gas. It is probable that William Allen, lecturer on chemistry, used this at Guy's Hospital in 1800 when, before Astley Cooper and others, he demonstrated the results of inhalation of nitrous oxide, noting especially the loss of sensation of pain.

ment. It must be wider than the trachea, to compensate for a resistance arising from friction of the air against the interior of the tube. It is therefore $\frac{3}{4}$ in. (1.9 cm.) in internal diameter. The pipe for the admission of air to the ether is but $\frac{5}{8}$ in. (1.6 cm.) in diameter, but that is amply sufficient, since it has to give passage to a much smaller volume of fluid than the elastic tube; for the air expands to nearly twice its bulk, in passing over the ether, the vapour it takes up.

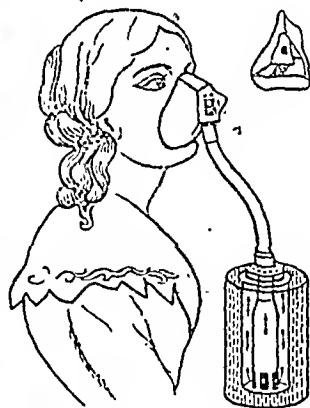
"The method of obliging a person to get all the air he breathes through tubes and valves, which is essential to success in the inhalation of ether, is perfectly new, and, in such a process, greater facilities for respiration are required than would generally have been supposed. On this account, many of the apparatuses at first invented did not allow of easy respiration, but offered obstructions to it by sponges, by the ether itself, by valves of insufficient size, but more particularly by tubes of too narrow calibre; and there is reason to believe that, in many instances, this was the cause



1799.—Humphry Davy's nitrous oxide gasometer.



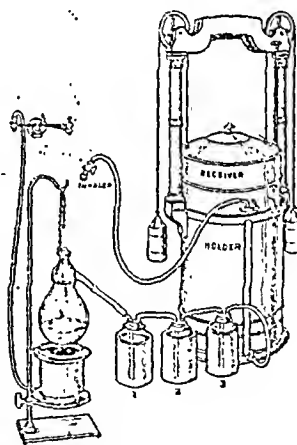
1847.—Snow's ether apparatus.



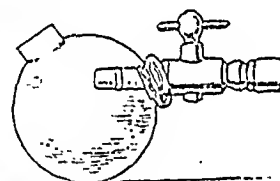
1853.—Snow's portable chloroform inhaler.



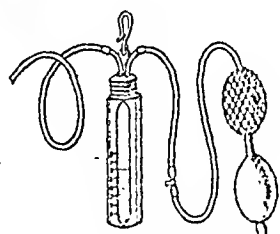
1862.—Clover's chloroform bag.



1860.—Colton's nitrous oxide machine.



1846.—Morton's ether inhaler.



1867.—Junker's inhaler.

In 1846 William T. G. Morton demonstrated the practicability of ether anaesthesia in an operation performed by Dr. J. C. Warren in the Massachusetts General Hospital, Boston. His inhaler was perhaps the first piece of apparatus proper, in so far as it had a definite tube for the patient to inhale from. In England the first administration of ether took place in the house of Dr. Boott, 24, Gower Street, London, close to the University College Hospital, on Dec. 19, 1846. Two days later Robert Liston performed an amputation through the thigh, the patient being anaesthetized by Mr. Peter Squire. John Snow, the first physician-anaesthetist, began administering ether at St. George's Hospital, and in his book, published in 1847, describes an apparatus he had used for three months. It may not be generally realized how profound were many of Snow's views, as this quotation from his book on ether will show:

"The breathing-tube ought to be so capacious as to offer no impediment to the most rapid inspiration; and to meet this require-

ment, failure and that in others the insensibility, when produced, was partly due to asphyxia."

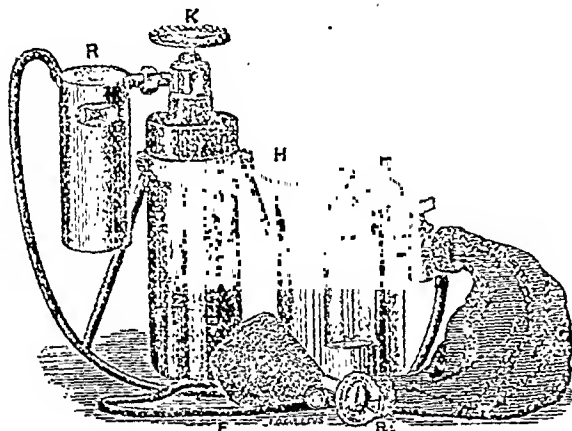
In 1853 Snow successfully administered chloroform to Her Majesty Queen Victoria at the birth of Prince Leopold, most probably using his portable inhaler, which was made of metal and consisted of a double cylinder, the outer space of which contained cold water, the inner serving for the evaporation of the chloroform. This inner frame had numerous openings for the admission of air; two coils of stout bibulous paper absorbed the chloroform. Slots were cut in this paper to permit of an air passage, only sufficient chloroform being poured into the container as would leave a clear passage. This period cannot be passed without mention of the fact that in 1858 Snow used endotracheal apparatus on animals.

In 1862 Clover put into practice Snow's principle of a measured quantity of chloroform in a bag of known capacity which he suspended from his shoulders. This contained

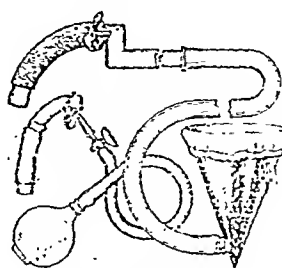
efficient air and vapour for several administrations. The face-piece incorporated valves to allow the patient to inspire air or a mixture of air and chloroform, together with a simple expiratory valve.

The original Junker's inhaler was described in the *Medical Times and Gazette* of Nov. 30, 1867. Junker may have attended an exhibition of obstetric and other instruments held in London the previous year where Richardson's anaesthetic spray was exhibited, and in consequence conceived the idea.

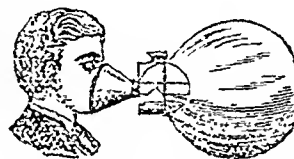
members of the Odontological Society and the Dental Hospital of London. The report was generally in favour of the anaesthetic, but noted the bulkiness of the apparatus required. At this time nitrous oxide was generally made by the dentist in his own surgery and was heated in a retort, the issuing gases passing through a series of wash-bottles, where some impurities were removed, thence to a gas-holder, when it would be ready for administration to the patient. A suggestion that nitrous oxide be compressed into liquid form was made in the *British*



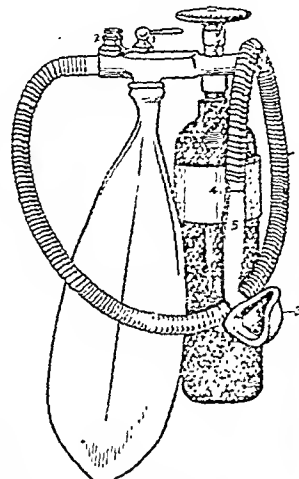
1876.—Clover's gas-ether apparatus.



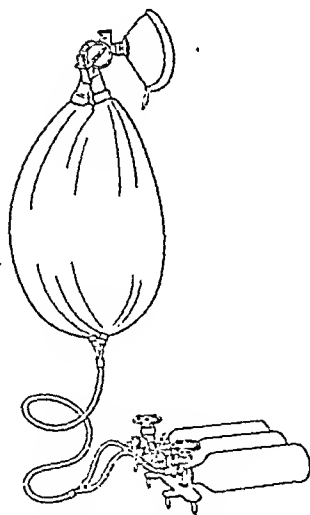
1871.—Trendelenburg's endo-tracheal tube.



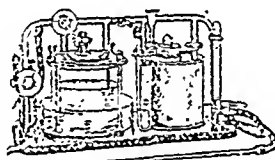
1877.—Clover's ether inhaler.



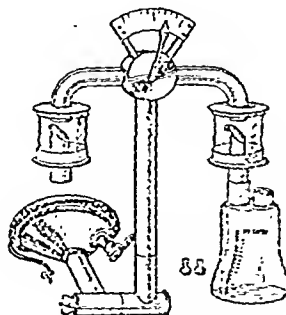
1909.—Guedel's gas-air apparatus.



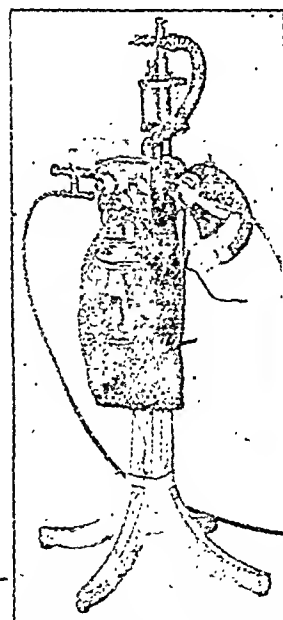
1892.—Hewitt's gas-oxygen apparatus.



1912.—Kelly's intratracheal tube.



1903.—Vernon Harcourt's chloroform-regulator.



1910.—McKesson's intermittent flow gas-and-oxygen apparatus.

In 1867 C. Q. Colton, who had popularized the use of nitrous oxide, visited Paris and demonstrated before T. W. Evans, an English dentist practising there. Evans came to England in 1868, bringing with him a record of hundreds of cases. He gave a demonstration at the Dental Hospital, using as an apparatus a bladder or rubber bag with the patient rebreathing through a tube of large calibre held in the mouth. The success of this and other demonstrations was so great that a committee of investigation into nitrous oxide was formed composed of

Medical Journal, and Messrs. Coxeter and Messrs. Barth made cylinders devised by T. W. Evans; these were of copper and were brass-bound, but were bulky. Cylinders measuring approximately 10 by 6 in. (25 by 15 cm.) held only about 30 gallons at from 10 to 15 atmospheres (present cylinders of 100 gallons capacity measure 13 by 3½ in. (33 by 9 cm.)).

In July, 1876, Clover described in the *British Medical Journal* his apparatus for administering nitrous oxide gas and ether, singly or combined, and at the time of writing had used his

apparatus successfully in 2,000 cases. The gas supply from a cylinder led through a water-heated coil traversing a rubber tube within the large gas-bag to the inhaler, the apparatus being so arranged that gas could be given alone or with air, or, if ether were needed, a tap could be turned, causing the gas to enter the receiver containing ether, pass over the surface of the ether and thence to the facepiece. The amount of gas or ether was regulated by the tap on top of the receiver, whilst the amount of air was regulated by the valve near the facepiece. In January, 1877, Clover described in the *British Medical Journal* his "portable regulating inhaler." Many modifications were made in subsequent years, the most important being the enlargement of the inner bore first suggested by Wilson-Smith and carried into practice by Hewitt. In 1892 Hewitt introduced the first practical nitrous-oxide-and-oxygen apparatus, of which the principle was to maintain by foot-key control equal pressures of nitrous oxide and oxygen, whilst hand manipulation of a regulating stopcock and mixing chamber governed the amount of oxygen added to the nitrous oxide administered.

In 1898 Alfred Coleman, H. J. Paterson, and Harvey Hilliard all described different methods of nasal gas inhalation. Coleman's was the one that was brought to the notice of the Society of Anaesthetists. It was Harvey Hilliard who suggested the use of nasal tubes, his plan consisting of introducing a catheter through the nostril so that its free end hung over the opening in the larynx. In 1899 the S. S. White Dental Manufacturing Company produced the first American gas-oxygen apparatus following the plan devised by Hewitt. Vernon Harcourt, in 1903, produced a chloroform-regulating apparatus for measuring accurately the strength of chloroform in air. Two indicating gravity beads, floating at different levels, enabled the operator to regulate the temperature to between 13 and 15° C. The stopcock was so made that when the pointer was at the end of the arc nearest the chloroform the maximum quantity being administered was 2%. The first gas-air apparatus was devised in 1909 by Arthur E. Guedel.

This was misnamed a self-administering apparatus as it was not automatically controlled, for the bag could be kept inflated by constant adjustment of the cylinder key.

In 1910 McKesson perfected the first "intermittent" flow gas-and-oxygen apparatus, with an accurate percentage control, and in 1911 he introduced the principle of fractional rebreathing. In 1926 the fractional rebreathing bag was arranged under the ether vaporizer, but by 1930 the whole apparatus had become more compact; the supply bags were reduced and enclosed in metal drums, whilst the rebreathing bag was fitted at the rear of the apparatus. The Walton apparatus was designed in 1925, the gas and oxygen bags being fitted with automatic cut-off controls and an accurate mixing valve. The present-day model embodies all the features of the original, but is improved mechanically and encased in metal.

In 1910 Boothby and Cotton introduced their water-sight-fee'd apparatus, which was later modified by Gwathmey. Boyle brought one to England in 1916, and the following year saw the introduction of the portable Boyle apparatus. A chloroform bottle was added in 1920, and in 1926 by-pass controls,

on Clover's principle, were incorporated. Four years later the plunger device was designed for the better control of anaesthetic vapour. Dry flowmeters were adopted in 1931, and in 1937 the rotameter pattern superseded these.

Endotracheal Apparatus

Snow, in 1858, described a wide-bore tube which he inserted into the trachea of an animal, respirations passing in and out of a bag filled with chloroform vapour. It was not, however, until 1871 that Trendelenburg used this method in man; he performed preliminary tracheotomy and inserted a wide-bore tube carrying an inflatable cuff connected to a funnel covered with gauze, maintaining anaesthesia by chloroform drop. Kuhn, at the turn of the century, eliminated the need for tracheotomy by designing a flexible metal tube that was introduced orally.

The forerunner of all modern endotracheal apparatus was designed in 1912 by Kelly, who adopted the principles laid down by Elsborg two years earlier. Kelly confirmed that warm moist air, charged with definite proportions of ether vapour, could be blown through a gum-elastic catheter reaching down to within an inch (2.5 cm.) of the bifurcation of the trachea. Magill, Rowbotham, Hower, and Shipway, in the early 'twenties, developed the method and produced their individual apparatuses.

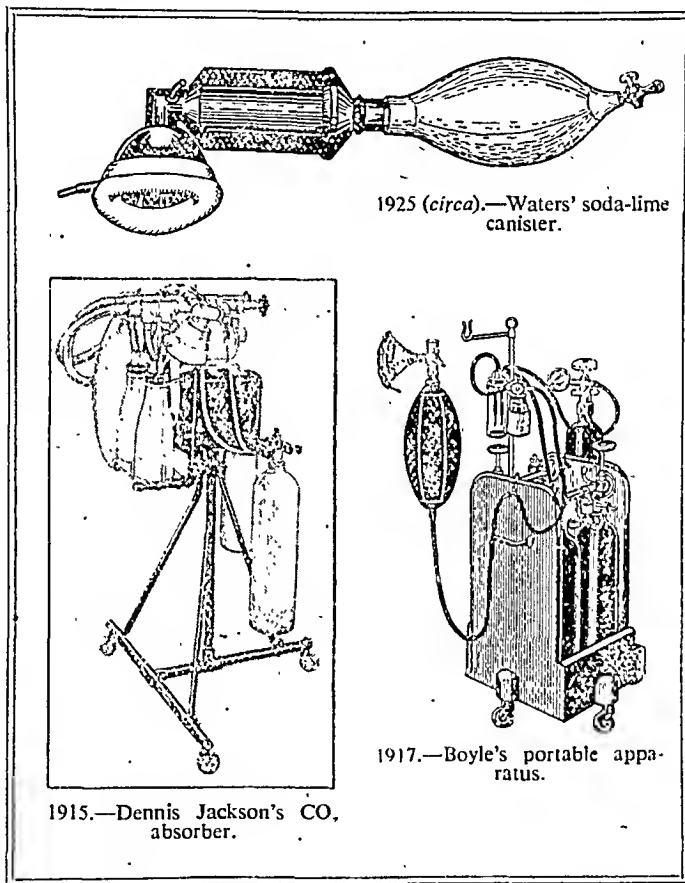
Carbon Dioxide Absorption

The idea of the carbon dioxide technique had entered the fertile brain of John Snow, but it was not until 1915 that the first apparatus was made by Dennis Jackson, who, though he did not have the opportunity of trying out his experiments on man, suggested that human patients could be anaesthetized by his methods. His early experimental work was successfully demonstrated, clinically, by Ralph Waters in 1920. Waters' apparatus consists of a rubber face-mask and breathing-bag, connected by a metal canister containing soda-lime, and is capable of being used with any standard gas apparatus.

Several years later, Sword, Heidbrink, and Foregger made circuits of the "circle" type as opposed to the Waters "to-and-fro" canister, as some anaesthetists preferred a minimum amount of apparatus near the field of operation. In 1932 the first apparatus proper in this country was made for Frankis Evans, and this was followed by alternatives designed by Shipway, Harris, Halton, Primrose, Gillies, and others. The most compact apparatus devised in recent years is that suggested by Gillies in 1938, wherein use is made of wide-bore perforated tubes to overcome the disadvantage of the moisture of the patient's expirations tending to waterlog the wick of the ether vaporizer. The Coxeter-Mushin absorber was introduced in 1941, its main features being a two-way soda-lime circuit, a wickless ether vaporizer, and an arrangement for assisting respirations manually.

Analgesic Apparatus

Minnitt's intermittent apparatus was designed in 1933 for the self-administration of gas and air in midwifery. The apparatus was entirely automatic, allowing a maximum of 45% gas with



1915.—Dennis Jackson's CO₂ absorber.

1925 (circa).—Waters' soda-lime canister.

1917.—Boyle's portable apparatus.

to flow only as and when the patient inhaled. Other models allowed, but the principle remains the same to-day.

The Mennell bottle, designed in 1933 for chloroform anaesthesia, utilized principles that were later adopted by Freedman for the self-administration of trichlorethylene. Where Mennell used hand bellows as the motive power, Freedman, by enlarging the bore, used the patient's inhalations for the same purpose.

This précis of my lecture on the development of anaesthetic apparatus cannot be concluded without paying tribute to the work of the pioneers of old. To them is owing a great debt for many of the mechanical principles that have been followed in the last twenty-five years—a period during which greater advances have been made than in the previous seventy-five years.

ANAESTHESIA THROUGH THE EYES OF A POET

BY

GUNILLA LIDDLE

The thick, sweet mystery of chloroform" has been the subject of scientific papers and of popular histories of anaesthesia, but it is not so generally known that a poet has made chloroform its theme. Just thirty years after the discovery of the anaesthetic properties of chloroform William Ernest Henley recorded, in what at that time was a bold experiment in verse, his sensations when chloroform was administered. To the literary historian *Hospital Verses* is of considerable interest for Henley's complete break with the subject matter and forms of Victorian poetry: to the doctor in this centenary year of the discovery of anaesthesia *Hospital Verses* has a certain historical significance as well.

William Ernest Henley (1849–1903) was the son of an erratic Gloucester printer. He went to the Crypt School in Gloucester, where the head master in Henley's day was T. E. Brown, the minor poet. From the time when he was a schoolboy or even earlier there is evidence that Henley had some form of tuberculous infection, and it was always despite ill health that he carried on his work as a journalist. As well as producing a great deal of original work Henley held several editorial appointments and gathered round him always the most brilliant of the writers of the day. This article, however, is concerned only with the years 1873–75, which Henley spent in the Old Infirmary, Edinburgh, where he was attended by Lister.

Before Henley came under Lister's care the doctors had tried all the remedies then in favour. One horrible treatment is described by Henley's youngest brother, Joseph, who went with him to the butcher's slaughter-house in search of a cure. "We both went next day. I was very sad, but he hopped along plithe and gay on his two crutches. . . . He and I both went into the slaughter-house, and saw a poor beast not long down and the butcher at work cutting open its inside. I was a bit scared, but my brother sat down on an old bench and I removed the covering from his bad foot. Then I saw the butcher drag a great mass from the beast's interior and pull it across the stone floor to where my brother was sitting, make a large slit in it with his big knife, and into this my brother put his bad foot, keeping it there for ever such a time."

Such treatment was unsuccessful, however, and the foot had to be amputated. For a time this sufficed, but when Henley was 24 the doctors decided that the other foot must come off too. It was at this point that Henley rebelled and determined to seek the help of Lister, then becoming known for his use of antiseptics in surgery. So Henley set out alone for Edinburgh, arriving at the Old Infirmary on Midsummer Day, 1873.

"The morning mists still haunt the stony street;
The northern summer air is shrill and cold;
And lo, the Hospital, gray, quiet, old,
Where Life and Death like friendly chaffers meet.

.....

"A tragic meanness seems so to environ
These corridors and stairs of stone and iron,
Cold, naked, clean—half-workhouse and half-jail."

Thus Henley describes his coming to a "gruesome world" which was to be his for twenty months. As he lay and waited for the "Chief" to operate he knew that now at least he had the consolation of chloroform. "Before" describes the hours of taut anticipation.

"Behold me waiting—waiting for the knife.
A little while, and at a leap I storm
The thick, sweet mystery of chloroform,
The drunken dark, the little death-in-life."

This poem and the three that follow—"Operation," "After," and "Vigil"—form a sequence describing in disturbingly new verse patterns and with a grim but completely sure choice of epithet the mental and physical phantasmagoria of the hours before and after Lister operated. Here is "Operation."

"You are carried in a basket,
Like a carcass from the shambles,
To the theatre, a cockpit
Where they stretch you on a table.

"Then they bid you close your eyelids,
And they mask you with a napkin,
And the anaesthetic reaches
Hot and subtle through your heing.

"And you gasp and reel and shudder
In a rushing, swaying rapture,
While the voices at your elbow
Fade—receding—fainter—farther.

"Lights about you shower and tumble,
And your blood seems crystallizing—
Edged and vibrant, yet within you
Racked and hurried back and forward.

"Then the lights grow fast and furious,
And you hear a noise of waters,
And you wrestle, blind and dizzy,
In an agony of effort,

"Till a sudden lull accepts you,
And you sound an utter darkness . . .
And awaken . . . with a struggle . . .
On a hushed, attentive audience."

The half-world between consciousness and unconsciousness is described in "After," when his life appeared to Henley as a flickering flame round which the fumes of anaesthetic swirl.

"Like as a flamelit blanketed in smoke,
So through the anaesthetic shows my life;
So flashes and so fades my thought, at strife
With the strong stupor that I heave and choke
And sicken at, it is so foully sweet.
Faces look strange from space—and disappear.
Far voices, sudden loud, offend my ear—
And hush as sudden. Then my senses fleet . . ."

In the months that followed, Henley, lying in that "transformed back kitchen" with a home-made desk fixed to his bed, learnt languages and read and recorded the scenes and people who filled his hospital world. Lister, the most important person in that world, is portrayed as "The Chief."

"His brow spreads large and placid, and his eye
Is deep and bright, with steady looks that still
Soft lines of tranquil thought his face fulfill—
His face at once benign and proud and shy.
If envy scout, if ignorance deny,
His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill,
Innumerable gratiitudes reply.
His wise, rare smile is sweet with certainties,
And seems in all his patients to compel
Such love and faith as failure cannot quell.
We hold him for another Herakles,
Battling with custom, prejudice, disease,
As once the son of Zeus with Death and Hell."

And Lister on his rounds: the students much the same, the rites of approach unchanged. The familiar scene—only really seen by the patient—is sketched by Henley in rapid, angular verse unsmoothed by rhyme, in "Clinical."

"Husles the Class! And they ring themselves
Round the first bed, where the Chief
(His dressers and clerks at attention),
Bends in inspection already.

PROVINCIAL MEDICAL & SURGICAL
JOURNAL, 1847

We reprint below three articles of interest in the early days of anaesthesia which appeared in the *cursor* of the BRITISH MEDICAL JOURNAL. The account of amputation under ether anaesthesia is the first reference in the PROVINCIAL MEDICAL & SURGICAL JOURNAL to the new discovery. The leading article is of interest because of the use of the short-lived words "letheon" and "letheon". J. Y. Simpson's account of the use of chloroform as an anaesthetic was first given in a lecture and subsequently published at about the same time in LANCET, the LONDON MEDICAL GAZETTE, and the PROVINCIAL MEDICAL & SURGICAL JOURNAL—in the issue of Dec. 1 of the last periodical. The case of amputation of the thigh was published in the issue of Jan. 13.

CASE OF AMPUTATION OF THE THIGH UNDER THE INFLUENCE OF ÆTHER

TO THE EDITOR OF THE PROVINCIAL MEDICAL AND SURGICAL JOURNAL.

SIR,

As the medical profession at this moment must feel interested in the late discovery, made by our Transatlantic friends, of the inhalation of æther producing that state of narcotism which renders persons insensible to the pain of surgical operations, I offer no apology for sending you the following brief account of an experiment as to its efficacy which came under my own observation yesterday. My patient, Mr. Coleman, having occasion to perform amputation of the thigh upon a young woman of a highly nervous temperament and who dreaded the pain of the operation exceedingly, deemed it a favourable opportunity to test the efficacy of the new discovery. By the kind assistance of Mr. Julion, a talented young chemist, we prepared the necessary apparatus for conducting the experiment. The patient being brought to the edge of the bed, the tourniquet applied, and everything prepared to commence amputation, she began to inhale the æther, which produced a good deal of coughing, and it was with some difficulty we prevailed upon her to persevere, which she at length did not, however, in a very satisfactory manner, drawing only slight inspirations, and then removing the tube from her mouth. After using it for the space of three or four minutes, her teeth became fixed, her eyes closed, and she sank back into the arms of the attendant, as if in a state of complete intoxication. Mr. Coleman now seized this favourable moment, and very adroitly and expeditiously performed the flap operation. The patient struggled with her hands, and cried out for her mother, (who had been dead some years.) The sound limb was not held, nor did she move it, but frequently said "she would not have her leg cut off then;" indeed it was quite evident she was not aware of the operation being performed; for after the stump was dressed, and she was comfortably placed in bed, she said "I was not off, for her foot was asleep," and begged of some one to rub it. On enquiring of her, some hours after the operation, what she had felt, she said "she thought she had been in a dream, and that we had hurt her leg, to see if she could bear the operation, which was to be performed the next day." She had no recollection of any cutting pain, nor could she tell the kind of pain she had suffered, but thought she remembered "hearing the bone sawed."

The narcotic effect of the æther soon subsided; for in putting in some sutures to bring the edges of the stump together, the passing of the needle through the skin, produced cries of the most agonizing pain, though her mind was not sufficiently restored to consciousness, to be aware of what was going on.

The result of this trial I cannot but think highly encouraging, and fully believe, that if the inhalation had been more per-

So shows the ring
Seen from behind round a conjuror
Doing his pitch in the street.
High shoulders, low shoulders, broad shoulders, narrow ones,
Round, square and angular, serry and shove;
While from within a voice,
Gravely and weightily fluent,
Sounds; and then ceases; and suddenly
(Look at the stress of the shoulders!)
Out of a quiver of silence,
Over the hiss of the spray,
Comes a low cry, and the sound
Of breath quick intaken through teeth
Clenched in resolve. And the Master
Breaks from the crowd, and goes . . ."

This is the rhythm of pain and of tragedy, but a different rhythm—a jiggy little tune—is chosen in "Interlude" for an eerie ballet danced to a penny whistle when

"Kate the scrubber (forty summers,
Stout and sportive) treads a measure . . .

Of their mattress-life oblivious,
All the patients, brisk and cheerful,
Are encouraging the dancer,
And applauding the musician.

Dim the gas-lights in the output
Of so many ardent smokers,
Full of shadows lurch the corners . . ."

The daily pattern of mood is blacker and whiter in hospital than in the outside world, but in *Hospital Verses* there is little complaint save in the bitter, hopeless last lines of "Pastoral." Henley glimpses spring through his hospital window, and

"A sprightliness feeble and squalid
Wakes in the ward, and I sicken,
Impotent, winter at heart."

Despair passes, and in "Music" Henley reveals one of those moments in which peace is made more peaceful by the heightened sensibility of illness. So at the sound of a distant barrel organ "piping foolish ditties"

"Books, beds, bottles, floor, and ceiling
Fade and vanish,
And I'm well once more . . .

O the sight and scent,
Wistful eye and perfumed pavement;
In the distance pipes an organ . . .
The sensation

Comes to me anew
And my spirit for a moment
Thro the music breathes the blessed
Airs of London."

It is interesting to see how in this nostalgic mood Henley returns to the echoes of older verse forms and to the evocative diction and rhythms so markedly different from the rest of *Hospital Verses*.

At last in 1875 Henley was discharged from the Old Infirmary, and for every man in every time he cried:

"Carry me out
Into the wind and sunshine,
Into the beautiful world . . .

These are the streets;
Each is an avenue leading
Whither I will.

Free . . .
Dizzy, hysterical, faint,
I sit, and the carriage rolls on
Into the wonderful world."

[Acknowledgment: *Poems*, by W. E. Henley (Macmillan)]

Two bottles of agar, supplied by the Southern Group Laboratory of the London County Council to the War Office late in 1940 or early in 1941, were found in Singapore when it was recaptured last year. They had formed part of the equipment of an advanced medical stores depot in Malaya and had been captured by the Japanese forces in 1942. They were found on examination to be in perfect condition—a good testimonial to the efficacy of the bottled media system.

fectly accomplished, the state of insensibility would have been most complete. So satisfied am I, that we now possess a means of narcotizing pain, that I shall not hesitate to adopt it in any case where a painful surgical operation has to be undergone, taking care in future to render my patient thoroughly conversant with the mechanical process of inhalation, previously to the use of the æther.

I remain, Sir,

Your obedient servant,

GEORGE EDWARDS.

Wolverhampton, Jan. 2, 1847.

P.S. January 3rd. Our patient is going on very favourably, and still persists she had a dream during the operation.

PROVINCIAL

Medical & Surgical Journal.

WEDNESDAY, MARCH 10, 1847.

The process of inhaling æther for the avoidance of pain during surgical operations, has taken so fast hold of almost every professional man in this country, that it behoves the journalist to look to the subject, and from his focus of information scatter a few useful remarks and cautions on the employment of this new process.

How often has accusation been made by enthusiasts of various descriptions against members of our profession generally, for their incredulity and prejudices in respect to the several delusions with which this age of quackery teems. Yet was censure never less justly applied. The profession are commonly eager enough to embrace any new proposal, and give a laudatory report of its application; too often indeed, at first, without due regard to its effects, or rather perhaps its defects, whenever there is reason and probability in its favour. In the instance of this novel plan for diminishing human suffering, whatever may have been stated on other occasions, sufficient has occurred to redeem the character of the profession, and to prove the readiness of its members to adopt any new suggestion, when supported by facts, and by the slightest colouring of reason.

Whatever hints may previously have been given upon this new application of æthereal inhalation, we are undoubtedly indebted to our Transatlantic brethren for effectively starting it in practice, "*Palmas qui meruit ferat*." Not he who tamely offers a suggestion, but he who with energy and spirit forces his ideas upon the public, and starts them into practical life and activity, deserves the credit of an invention. In the short space of a few weeks the æthereal inhalation has been tried in our own country in many hundreds of instances; in all parts of the provinces, as well as in the great centres, the metropolis of each division of the kingdom; employed for avoiding pain, not only in the slighter matter of teeth-extraction, but in all cases of the great amputations and other capital operations, and even to strangulated hernia, extirpation of the eyes, ovariectomy, the Cæsarean section, &c.

In a small proportion only of these cases, of whatever description, has the process failed to take effect; and although to a few patients it has proved inconvenient, to none is it reported to have proved fatal, and very little has yet been written upon the cases to which the new measure is inapplicable. Such is the usual course of a novel plan launched upon the wide ocean of practice under popular favour. All appears fair for a prosperous voyage; but it is a voyage of discovery; the quick-sands and dangers are at a distance, and we must wait the navigator's return ere we can learn the whole issue of the undertaking.

The inhaling for the production of narcotic or intoxicating effects is not new, but the extensive adoption of it, in the manner we are considering, may still render a new term convenient, and even necessary. The instrument employed, of whatever construction, has received the appellation of "the Lethæon," and from this root is readily to be derived all the terms required. The phenomena which a *lethæonized* patient

presents, are very similar to those of intoxication, varying in degree from hilarity to half consciousness, complete narcotism, total insensibility to external impressions, failure of pulse, syncope,—may we not add death.* The most striking, if not the peculiar circumstance, is the rapidity with which the effect is produced, the shortness of its duration, and its equally rapid subsidence. The brain is the organ acted upon, and in proportion as external impressions are shut out, internal ideas seem to be generated. A *lethæonized* patient is a sort of Ryp Van Winkle; he dreams away twenty years of his past life in a minute, but with equal surprise, and unlike his predecessor, on awaking to the world again, finds it much as he left it. These psychological phenomena will doubtless furnish a fine study for the physiologist and the metaphysician.

Nothing is more remarkable than what every one who sees half-a-dozen *lethæonized* patients will be sure to witness,—a state of half-consciousness, with eyelids open, a congested countenance, a frightened stare. The patient is sensible of persons present, and talking, and because he is still in a degree sensible, protests against the operation, whilst it is actually being performed; and on the *lethæonic* influence subsiding, which it does in two or three minutes, he reports the trial a failure, and waits the operation, which is already completed without his being conscious of it. How are such opposite states of the sensorium compatible? May we conjecture that the succession of ideas is so rapid, that they seem coincident or synchronous, though really successive and alternating?

But we pass to the less speculative part of the subject, as more immediately applicable to our purpose, and we urge our provincial brethren to emulate those of the metropolis in helping to elucidate the use of the Lethæon, and particularly to giving us an account of any unfavourable result of the trial,—any cases that may seem unsuited to it. We can scarcely persuade ourselves that the pain naturally attendant upon all mutilating operations upon the human frame, is to be quite annihilated by this discovery, although nothing could be more congenial to the wishes of both the patient and the operator. It will probably turn out that there are cases to which the measure is wholly unsuited, wholly improper. When next "we dip pen" in æthereal fluid, we shall endeavour to write a few cautions, and give a guarded prognosis, as to past or prospective events; meantime, let the incautious Lethæonizer beware, remembering that "all is not gold that glitters."

DISCOVERY OF A NEW ANÆSTHETIC AGENT MORE EFFICIENT THAN SULPHURIC ÆTHER

By J. Y. SIMPSON, M.D.,

Professor of Midwifery in the University of Edinburgh,
Physician Accoucheur to Her Majesty in Scotland, &c.

At the first Winter Meeting of the Medico-Chirurgical Society of Edinburgh, held on the 10th of November last, I had an opportunity of directing the attention of the members to a new agent which I had been using for some time previously, for the purpose of producing insensibility to pain in surgical and obstetric practice.

This new anæsthetic agent is chloroform, chloroformyle, or perchloride of formyle.† Its composition is expressed by the chemical formula, C_2HCl_3 . It can be procured by various processes, as by making milk of lime or an aqueous solution of caustic alkali act upon chloral; by distilling alcohol, pyroxylic spirit, or acetone with chloride of lime; by leading a stream of chlorine gas into a solution of caustic potash in spirit of wine, &c. The resulting chloroform obtained by these processes is

* Since the preceding observations were written, a notice of the occurrence of a fatal case, which will be found narrated in another column, has been received.

† In making a variety of experiments upon the inhalation of different volatile chemical liquids, I have, in addition to perchloride of formyle, breathed chloride of hydrocarbon, acetone, nitric oxide of ethyle, benzine, the vapour of iodoform, &c. I may probably take another opportunity of describing the results. It is perhaps worthy of remark, that in performing his experiments upon inhalation, Sir Humphry Davy confined his attention to the inspiration of gasses, and does not seem to have breathed the vapour of any volatile liquids.

a heavy, clear, transparent liquid, with a specific gravity as high as 1.480. It is not inflammable. It evaporates readily and boils at 141°. It possesses an agreeable, fragrant, fruit-like odour, and a saccharine pleasant taste.

As an inhaled anæsthetic agent it possesses, I believe, all the advantages of sulphuric æther, without its principal disadvantages:—

1. A greatly less quantity of chloroform than of æther is requisite to produce the anæsthetic effect; usually from a hundred to a hundred and twenty drops of chloroform only, being sufficient, and with some patients much less. I have seen a strong person rendered completely insensible by six or seven inspirations of thirty drops only of the liquid.

2. Its action is much more rapid and complete, and generally more persistent. I have almost always seen from ten to twenty inspirations suffice; sometimes fewer. Hence the time of the surgeon is saved; and that preliminary stage of excitement, which pertains to all narcotizing agents, being curtailed or indeed practically abolished, the patient has not the same degree of tendency to exhilaration and talking.

3. Most of those who know from previous experience the sensations produced by æther-inhalation, and who have subsequently breathed the chloroform, have strongly declared the inhalation and influence of chloroform to be far more agreeable and pleasant than those of æther.

4. I believe that, considering the small quantity requisite, as compared with æther, the use of chloroform will be less expensive than that of æther, more especially as there is every prospect that the means of forming it may be simplified and cheapened.

5. Its perfume is not unpleasant, but the reverse; and the odour of it does not remain for any length of time obstinately attached to the clothes of the attendant, or exhaling in a disagreeable form from the lungs of the patient, as so generally happens with sulphuric æther.

6. Being required in much less quantity, it is much more portable and transmissible than sulphuric æther.

7. No special kind of inhaler or instrument is necessary for its exhibition. A little of the liquid diffused upon the interior of a hollow-shaped sponge, or a pocket handkerchief, or a piece of linen or paper, and held over the mouth and nostrils, so as to be fully inhaled, generally suffices in about a minute or two to produce the desired effect.

I have had an opportunity of exhibiting chloroform with perfect success in various severe surgical operations, (removal of tumours, of necrosed bone, amputations, &c., &c.) and in tooth-drawing,* opening abscesses, &c., &c.; for annulling the pain of dysmenorrhœa and of neuralgia; in two or three cases where I was using deep and otherwise very painful galvanopuncture for the treatment of ovarian dropsy; and in removing a very large fibrous tumour from the posterior wall of the uterus by enucleation, &c.†

I have employed it also in obstetric practice with entire success. The lady to whom it was first exhibited during parturition, had been previously delivered in the country by perforation of the head of the infant, after a labour of three days' duration. In this, her second confinement, pains supervened a fortnight before the full time. Three hours and a half

* A young dentist, who has himself had two teeth extracted lately, one under the influence of æther, and the other under the influence of chloroform, writes me the following statement of the results:—"About six months ago I had an upper molar tooth extracted whilst under the influence of æther, by Mr. Imlach. The inhalation was continued for several minutes before I presented the usual appearance of complete ætherization. The tooth was then extracted; and although I did not feel the least pain, yet I was conscious of the operation being performed, and was quite aware when the crash took place. Some days ago I required another molar extracted on account of tooth-ache, and this operation was again performed by the same gentleman. I inhaled the vapour of chloroform, half a drachm being poured upon a handkerchief for that purpose, and held to my nose and mouth. Insensibility took place in a few seconds; but I was so completely dead this time, that I was not in the very slightest degree aware of anything that took place; the subsequent stupefying effects of the chloroform went off more rapidly than those of the æther; and I was perfectly well and able again for my work in a few minutes."

† I have now exhibited the chloroform to a large number of individuals, and in not one has the slightest bad effect of any kind resulted

after they commenced, and ere the dilatation of the os uteri was completed, I placed her under the influence of the chloroform, by moistening, with half a teaspoonful of the liquid, a pocket-handkerchief, rolled up into a funnel-shape, and with the broad or open end of the funnel placed over her mouth and nostrils. In consequence of the evaporation of the fluid, it was once more renewed in about ten or twelve minutes. The child was expelled in about twenty-five minutes after the inhalation was begun; the mother subsequently remained longer soporose than commonly happens after æther. The squalling of the child did not, as usual, rouse her, and some minutes elapsed after the placenta was expelled, and after the child was removed by the nurse into another room, before the patient awoke. She then turned round and observed to me that she had "enjoyed a very comfortable sleep, and indeed required it, as she was so tired,* but would now be more able for the work before her." I evaded entering into conversation with her, believing, as I do, that the most complete possible quietude forms one of the principal secrets for the successful employment of either æther or chloroform. In a little time she again remarked that she was afraid her "sleep had stopped the pains." Shortly afterwards her infant was brought in by the nurse from the adjoining room, and it was a matter of no small difficulty to convince the astonished mother that the labour was entirely over, and that the child presented to her was really her "own living baby."

Perhaps I may be excused from adding, that since publishing on the subject of æther-inhalation in midwifery, seven or eight months ago,† and then for the first time directing the attention of the medical profession to its great use and importance in natural and morbid parturition, I have employed it, with few and rare exceptions, in every case of labour that I have attended and with the most delightful results, and I have no doubt whatever that some years hence the practice will be general. Obstetricians may oppose it, but I believe our patients themselves will force the use of it upon the profession.‡ I have never had the pleasure of watching over a series of better and more rapid recoveries, nor once witnessed any disagreeable result follow to either mother or child, whilst I have now seen an immense amount of maternal pain and agony saved by its employment; and I most conscientiously believe, that the proud mission of the physician is distinctly twofold—namely, to alleviate human suffering, as well as preserve human life.

In some remarks which I published in the *Monthly Journal of Medical Science*, for September, 1847, relative to the conditions for insuring successful ætherization in surgery, I took occasion to insist upon the three following leading points:—"First, the patient ought to be left, as far as possible, in a state of absolute quietude and freedom from mental excitement, both during the induction of ætherization and during his recovery from it. All talking and all questioning should be strictly prohibited. In this way any tendency to excitement is eschewed, and the proper effect of the æther-inhalation more speedily and certainly induced. Secondly, with the same view, the primary stage of exhilaration should be entirely avoided, or at least reduced to the shortest possible limit, by impregnating the respired air as fully with the æther-vapour as the patient can bear, and by allowing it to pass into the lungs both by the mouth and nostrils, so as rapidly and at once to induce its complete and anæsthetic effect, * * * a very common but certainly a very unpardonable error being to exhibit an imperfect and exciting, instead of a perfect and narcotizing, dose of the vapour. Many of the alleged failures and misadventures are doubtless entirely attributable to the neglect of this simple rule,—not the principle of ætherization, but the mode of putting it in practice being altogether to blame. But, thirdly, whatever means or mode of ætherization is adopted, the most important of the conditions required for procuring a satisfactory and successful result from its employment in surgery, consists in

* In consequence of extreme anxiety at the unfortunate result of her previous confinement, she had slept little or none for one or two nights preceding the commencement of her present accouchement."

† See "*Monthly Journal of Medical Science*," for Febr., p. 617, for March, p. 718, and 721, &c.

‡ I am told that the London physicians, with two or three exceptions only, have never yet employed æther-inhalation in midwifery practice. Three weeks ago I was informed in a letter from Professor Montgomery, of Dublin, that he believed that in that city up to that date, it had not been used in a single case of labour.

ostinately determining to avoid the commencement of the operation itself, and never venturing to apply the knife until the patient is under the full influence of the æther-vapour, and *roughly and indubitably soporized by it.*"

In fulfilling all these indications, the employment of chloroform evidently offers great and decided advantages in rapidity, facility, and efficiency over the employment of æther. When used for surgical purposes, I would advise it to be given upon a handkerchief, gathered up into a cup-like form in the hand of the exhibitor, and the open end of the cup placed over the nose and mouth of the patient; for the first inspiration or two should be held at the distance of half an inch or so from the face, and then more and more closely applied to it. To insure a full and perfect anæsthetic effect,—more especially when the operation is to be severe,—a teaspoonful or two of the chloroform should at once be placed upon the hollow of the handkerchief, and immediately held to the face of the patient. Generally a state of snoring sleep very speedily supervenes, and when it does so, it is a perfect test of the superinduction of complete insensibility. But many patients are perfectly anæsthetic without this symptom.

As illustrations of the influence of this new anæsthetic agent, I will select and append notes of two operations performed with it on Friday last by Professor Miller, the first in the Royal Infirmary,* the other in private practice. The notes and remarks are in Mr. Miller's own words.

CASE I.

"A boy, four or five years old, with necrosis of one of the bones of the fore-arm. Could speak nothing but Gaelic. No means, consequently, of explaining to him what he was required to do. On holding a handkerchief, on which some chloroform had been sprinkled, to his face, he became frightened, and wrestled to be away. He was held gently, however, by Dr. Simpson, and obliged to inhale. After a few inspirations he ceased to cry or move, and fell into a sound snoring sleep. A deep incision was now made down to the diseased bone; and, by the use of the forceps, nearly the whole of the radius, in the state of sequestrum, was extracted. During this operation, and the subsequent examination of the wound by the finger, not the slightest evidence of the suffering of pain was given. He till slept on soundly, and was carried back to his ward in that state. Half an hour afterwards he was found in bed, like a child newly awakened from a refreshing sleep, with a clear merry eye, and placid expression of countenance, wholly unlike what is found to obtain after ordinary etherization. On being questioned by a Gaelic interpreter, (who was found among the students,) he stated that he had never felt any pain, and that he felt none now. On being shown his wounded arm, he looked much surprised, but neither cried nor otherwise expressed the slightest alarm."

CASE II.

"A young lady wished to have a tumour (encysted,) dissected out from beneath the angle of the jaw. The chloroform was used in small quantity, sprinkled upon a common operation sponge. In considerably less than a minute she was sound asleep, sitting easily in a chair, with her eyes shut, and with her ordinary expression of countenance. The tumour was extirpated, and a stitch inserted, without any pain having been either shown or felt. Her sensations, throughout, as she subsequently stated, had been of the most pleasing nature; and her manageableness during the operation was as perfect as if she had been a wax doll or a lay figure.

"No sickness, vomiting, headache, salivation, uneasiness of chest, in either of the cases. Once or twice a tickling cough took place in the first breathings."

My assistant, Dr. Duncan, who exhibited the chloroform to this last patient, informs me that about a drachm of the liquid was used.

Edinburgh, November 15, 1847.

* Professor Dumas, of Paris, Mr. Milne Edwards, Dr. Christison, Sir George Ballingall, and a large collection of professional gentlemen and students witnessed this operation, and two others performed with similar success, by Professor Miller and Dr. Duncan.

Medical Memoranda

Insanity with Epilepsy following Infestation by *Cysticercus cellulosae*

In the case of insanity with epilepsy associated with cysticercosis reported below, the patient demonstrated the fact that this type of epilepsy carries with it the concomitants of the ordinary idiopathic type—i.e., mental deterioration, as shown by the intelligence test. The aura depends on the site of the cyst in the brain, and focal symptoms are also present. The prognosis in this case is unfavourable.

CASE REPORT

A man aged 32 was admitted to the Central Hospital, near Warwick, on Dec. 11, 1944, as a certified patient. He had entered the hospital some five months earlier, but as a voluntary patient. On this occasion he was suffering from an amnesia for recent events; and could not give a full account of himself. He had suffered from convulsive attacks and had been operated on before admission; there were two trephine holes in his occipital bone. Since this operation he noticed that the onset of the fits was different from what it had been before, but he could not tell the difference. His intelligence, estimated by the Terman Merrill revision of the Stanford-Binet test, gave an I.Q. of 83, a vocabulary age of 274 months, and a mental age without vocabulary age of 128 months, showing a loss of 53%. He made an uneventful recovery, having had only two major fits, and left hospital against advice after 14 days, only to return certified in December, 1944.

On readmission he was violent, aggressive, confused, threatening, and untidy. He quickly settled down, and on the following day he was apologetic, friendly, and co-operative. He showed appropriate activity during examination and answered questions put to him sensibly but slowly. There was some evidence of memory defect. He expressed no delusions or hallucinations, and he was not suicidal. Later he was dull, apathetic, and in a state of confusion, answering questions slowly and irrelevantly. He had contracted cysticercosis while in the Army, and for the last six years had been subject to attacks of fits, followed on many occasions by threats of violence by knife or other weapons, especially after taking alcohol. His actions were irresponsible and his mental condition showed degeneration.

History.—One day, while serving with the Army in India in 1936-7, he ate wild bear which had been shot in a hunt. Two days later he noticed elements of worms in his stools. He reported this, and was treated in hospital; more elements came away with the head. Later he developed difficulty in passing water and had to be catheterized frequently, his urine being blood-stained. After 12 weeks he was discharged from hospital as fit for duty. He left India for home on leave, and while on the boat felt a strange sensation of tension in his right arm, and then lost consciousness. This unpleasant sensation repeated itself several times at home, and in 1943 an operation was performed on his brain, following which the sensation of tension in his right arm disappeared. During his fits he sustained two major injuries—a bad laceration over his right eyebrow, and a serious concussion following a bicycle accident.

Clinical Picture.—He was a well-built man 6 ft. 3 in. (1.9 m.) in height, weighing 11 st. 3 lb. (71.21 kg.). His blood pressure was 120/75; the heart sounds were faint but regular. The respiratory system showed nothing abnormal. He had glycosuria, which cleared up in a week. There was some asymmetry of his mouth, with weakness of the left lower lip, and weakness of the left buccinator muscle, demonstrated by filling his cheek with air. This was associated with a partial closure of the left eye. His tongue deviated slightly to the right on protrusion. There was some dulling to pin-prick over the left side of his face. Reflexes in his upper limbs were diminished, with no impairment of sensation, joint sense, or power. There was some diminution of sensation on the left lower limb, with an absent plantar reflex. The pupils were equal, and reacted to light and accommodation; blurred vision in left eye. Ophthalmoscopic examination revealed a honeycomb type of choroiditis at both macular regions, more pronounced in the left eye. There was no evidence of cysticercosis in the fundi or media. Blood picture showed no gross abnormality except an eosinophilia of 1%. There was no evidence of worm elements in the faeces. Skiagrams revealed two areas of calcification in the skull, one in the right axilla, and three in the left thigh. Since readmission the patient has had only one *grand mal* attack; this was controlled by 1 gr. (65 mg.) of luminal twice daily.

Mental State.—He was childish, dull, simple, and irritable, and he suffered from violent outbursts of temper, particularly following alcohol (before admission). He showed pronounced memory deterioration and had ability for stereotyped work only.

I thank Dr. Edward S. Stern, medical superintendent, Central Hospital, for helpful criticism and for permission to publish this case, also Miss E. A. Estell, psychologist, and Mr. Howell-Jones, visiting ophthalmic surgeon, for special examinations.

EDWARD B. FORSTER, M.B., Ch.B., B.A.O.,
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Central Hospital, near Warwick.

Reviews

GYNAECOLOGICAL ENDOCRINOLOGY

Gynaecological Endocrinology for the Practitioner. By P. M. F. Bishop, D.M. (Pp. 124. 7s. 6d., plus 3d. postage.) Edinburgh: E. and S. Livingstone. 1946.

In his introduction to *Gynaecological Endocrinology for the Practitioner*, Dr. Bishop says that he set out to write "a short book which will explain as far as possible the mechanism of the various disorders of endocrine activity occurring in their women patients; a book which will tell them [general practitioners] which hormones to use in treatment, when, how, and in what doses; a book which will try to dispel the chaos which has been created in their minds by the predilection of pharmaceutical business houses to give proprietary names to endocrine preparations." This statement adequately describes the scope of this work and it only remains to be added that Dr. Bishop has been singularly successful in achieving his objects. Here is a simple, up-to-date, and accurate account of the physiology of menstruation with an explanation of the cause and treatment of the common disorders of menstruation, puberty, climacteric, conception, and pregnancy; this and more, all within the compass of 81 pages of text. There are no conflicting views and references, but clear and reasonably dogmatic statements based on a fair assessment of the evidence at present available and on the experience of an acknowledged authority in this field. An important contribution to the practical value of this book is a 30-page appendix listing the proprietary products marketed in this country, the form in which they are available, their hormone content, and current price.

Dr. Bishop says he is not aware of any other book on this subject written primarily for general practitioners. We know of others, but none so good. It is scientifically sound and eminently practical, easy to read and to understand. It should prove most useful to the busy practitioner and to the final-year medical student.

GASTRO-ENTEROLOGY

Gastro-Enterology. By Henry L. Bockus, M.D. Volume I—The Esophagus and the Stomach. Volume II—The Small and Large Intestine and Peritoneum. Volume III—The Liver, Biliary Tract and Pancreas, and Secondary Gastro-Intestinal Disorders. With General Index. (Pp. 2998; 758 illustrations, 54 in colour. £9 12s. 6d.) London: W. B. Saunders. 1946.

Many clinicians must have waited with something like excitement for the third volume of Prof. Bockus's book on gastro-enterology and they will have breathed a sigh of relief now that it has been brought to a conclusion. The three volumes constitute one of the outstanding publications in the last decade of medical literature. Prof. Bockus was responsible for the whole of the first volume, on oesophagus and stomach, but in the second and third volumes he has called increasingly on the help of collaborators. Nevertheless, the book bears throughout the impress of his personality and literary style, and it reads as a unity and not a series of disconnected episodes. It is a tribute to the vigorous school of gastro-enterology which was built up in Philadelphia between the two wars.

Each volume is about a thousand pages in length, and there is a separate desk index for the three volumes. The book is printed on glossy paper and there are numerous illustrations, including a few colour plates; x-ray reproductions are commendably clear. The individual volumes are not too heavy to be handled and read in comfort. With all this it is not surprising that the price is on the high side. Vol. I deals first with history-taking, interpretation of symptoms, and methods of examination. Then follow sections on the oesophagus and stomach, in the course of which peptic ulcer is considered in detail. Vol. II begins with the applied anatomy and physiology of the small intestine and the clinical approach; the remainder of the volume deals systematically with the diseases of the small and large intestine and the peritoneum. Vol. III opens with the study of the anatomy and physiology of the liver, the various diagnostic tests and the pathogenesis of jaundice. Diseases of the liver, biliary system, and pancreas are then considered, and finally a rather heterogeneous collection of leftovers. This is one of the few textbooks that give an adequate account of modern views on jaundice and hepatitis.

We have used this work for reference ever since the first volume appeared, and it comes triumphantly through that most stringent of all tests, though we were a little surprised to find no mention of aspirin as a cause of haematemesis. The bias is medical, with a recurrent emphasis on the psychiatric and constitutional factors in gastro-intestinal disorders, but most gastro-enterologists will feel that this is as it should be. This is not to deny that Bockus is often dogmatic and that many of his views will not be generally acceptable. He is ultra-conservative in the treatment of peptic ulcer and he pours a cold douche on the concept of gall-bladder dyspepsia. Nevertheless we are bold enough to assert that medicine, like history, is best presented with a bias so long as the bias is consistent and recognizable. It is probably true to say that there is no book comparable with this in any other department of medicine. It is both compendious and generally useful. That is because gastro-intestinal disorders are extremely common. In no other system are there so many acute and chronic disturbances of function, in no other system must the student more frequently be reminded that the whole is greater than the part and that local symptoms are often due to some general constitutional or mental disorder. At times many of us have lamented the excessive concentration on gastro-intestinal disease in the teaching hospitals, but if the patients are studied on the lines laid down by Bockus, the student will find that he has had a valuable discipline in history-taking, applied physiology, and psychology which will profit him over the whole field of medicine.

LEPROSY

Leprosy. By Sir Leonard Rogers, M.D., F.R.C.P., F.R.C.S., F.R.S., and Ernest Muir, M.D., F.R.C.S. Ed. Third edition. (Pp. 280; illustrated. 25s.) Bristol: John Wright and Sons. 1946.

Only six years have elapsed since the appearance of the second edition of this, the classical British treatise on leprosy, but we regret to add that this comparatively short incubation period principally due to enemy action which destroyed a large part of the existing stock. However, Sir Leonard Rogers and Dr. Muir have made good use of the opportunity afforded them of bringing the whole work up to date. It is slightly enlarged and the number of illustrations is now 88.

In these happy isles few people realize the enormous and serious burden of the leprosy problem upon humanity, for a study of the authors' chapter on the distribution of the disease shows that apparently the British Isles and parts of Western Europe are the only areas in which the disease never originates, though cases may be accidentally imported from time to time. In every other part of the world leprosy takes its toll of life and health, and in some countries the leper population numbers many thousands. The pre-eminently bad areas are essentially characterized by low altitude and high rainfall. Nevertheless, owing to the introduction of modern methods of dealing with the disease, which are almost entirely the fruit of Sir Leonard Rogers's work, the problem has taken on a much more hopeful aspect during the last quarter of a century. For the most part compulsory segregation of lepers in prison-like institutions has been abandoned and reliance is placed on a combination of out-patient clinics for non-infective cases and voluntary isolation of those in the infectious stages. The recovery, or at least the improvement, of the patients becomes the best possible advertisement for the treatment offered, and there is now little difficulty in getting the sufferers to apply for admission in the earliest stages of the disease. The results that can now be obtained by skilful management are well exemplified by the history of the island of Nauru in Oceania. The disease was introduced in 1912 and by 1925 a systematic examination of the population showed that 30% of the islanders were infected. Fortunately, however, 90% of the patients were in the early stage of the neural type and could be treated as out-patients. The infective lepromatous sufferers, numbering 193, were isolated. By the year 1933 (there are no later figures) the infective cases had been reduced to 66 and hardly any of the early uninfected cases had gone on to the infective stage without treatment. Nevertheless the control of leprosy remains one of the great tasks to be undertaken by public health authorities both in the Tropics and elsewhere.

All who are interested in the subject, whether from the clinical or the administrative side, should study this volume with the greatest care.

ANAESTHESIA FOR BEGINNERS

Anaesthesia in General Practice. By Stuart C. Cullen, M.D. (Pp. 260; illustrated. \$3.50 or 21s.) Chicago: Year Book Publishers; London: H. K. Lewis and Co.

Too many part-time anaesthetists base their practice of anaesthetics on miscellaneous scraps picked up in student years or on odd visits to colleagues. When the beginner turns to publications he easily falls between the cram books for the D.A. on the one hand, only to be digested with midnight oil, and a vast literature in innumerable journals on the other, delectable though they may be to the specialist. It is therefore a pleasure to find in Dr. Cullen's book a patently honest attempt to help and guide the serious beginner in anaesthetics. The language may be a little stilted and the value of the cartoons doubtful, but the book on the whole is a brave effort. The author rightly remarks in the preface that the main emphasis is "placed on establishing a basis for a rational approach to the problems of using depressive drugs, alleviating respiratory depression and treating shock."

To enumerate the many excellent features of text and illustrations would be an easy task were space available. That there is a chapter of 28 pages headed "Airway" should be sufficient evidence that the title of the book does indicate its contents. Not only the G.P. but the specialist, too, will benefit from its perusal. After all, there is but one important kind of anaesthesia—safe anaesthesia. The beautiful binding and clear type, no less than the text, will grace the bookshelves of any anaesthetist.

Notes on Books

Anatomical Eponyms, by JESSIE DOBSON, M.Sc., of Manchester, is an important book of reference, which has been published at a period when such an historical record will be of special value as an accurate register of the names of those distinguished anatomists, surgeons, and anthropologists who are still fresh in the memory of the older type of anatomical teacher, many of whom have been able to combine scientific work with the practical business of teaching or general surgery. In the preparation of this work there has been recorded, with each name that has been listed, the place and date of birth and death, and a selection of important posts held by the individual; finally the reference to its description in the author's works is given. An excellent portrait of Andreas Vesalius appears as a frontispiece, and the book is sponsored by a foreword written by Prof. Wood Jones, who comments on the danger which exists at the present time of the science of anatomy being deprived of that interest which the association of particular organs or parts of the body with the name of a distinguished anatomist formerly provided. Fortunately a few standard works on anatomy still retain the names of some well-known classical celebrities such as Achilles or Julius Caesar, and of some distinguished surgeon-anatomists. Thus the science of anatomy is not yet entirely bereft of the practical interest inherent in the individual description of such a structure as the perineal (not "peroneal") fascia of Colles, which is of such importance in the limitation of the spread of extravasated urine. The book is published by Baillière, Tindall and Cox at 30s.

A Practical Handbook of Midwifery and Gynaecology, by W. F. T. HAULTAIN and CLIFFORD KENNEDY, needs no re-introduction. The fact that it has reached a third edition, the publication of which was delayed only because of the war, is sufficient testimony to its worth. New features include a chapter on the infant, and sections on the use of drugs in labour, the therapeutic use of hormones, and the use of x rays in obstetrics and gynaecology. It is good to see the incorporation of a note on contraception. This, then, is the ideal revision book for the final-year student. All the answers are here, listed in logical sequence. It is the "ready reckoner" for the busy general practitioner who desires to look up points with a minimum of inconvenience and delay. It should prove to be what the returning Service medical officer is looking for as regards his theoretical rehabilitation in midwifery and gynaecology. The publishers are E. and S. Livingstone, and the price is 20s.

A book that has been in active use—and under constant revision—for nearly thirty years has little need of introduction, and a warm welcome can once again be assured for Dr. H. C. CAMERON'S *The Nervous Child*, now in a fifth edition. When it first appeared it was necessary to remind the profession that the child had a mind as well as a body. Now, as the author wisely remarks, it is almost necessary to remind the psychiatrist in his dealings with children how often the nervous disturbance is erected upon a physical basis. There have been certain small additions and revisions, but essentially Dr. Cameron's classic remains what it always was—a commonsense approach to a very common series of problems in child medicine. It is published by the Oxford University Press at 10s. 6d.

The third edition of *Sternal Puncture*, by Drs. A. PINEY and J. L. HAMILTON-PATERSON (William Heinemann Medical Books; 15s.), shows evidence of considerable revision of the text. Dr. Piney still makes the collector's approach and is unduly interested in rarities. Few, if any, pathologists will ever see a marrow smear of an erythroblastoma, and few would agree that dimorphic anaemia is distinguished from achrestic anaemia by the absence of free acid in the gastric juice. Nevertheless the book has the pre-eminent quality of readability, and the popularity of this third edition seems assured.

A monograph on *Unequal Ventilation of Different Parts of the Lung and the Determination of Cardiac Output* by Dr. P. E. RAUWERDA, of Groningen, lieutenant in the Royal Netherlands Army Medical Corps, has been issued as a cyclostyled volume of over 150 typed pages, with many reproductions of tables and graphs. A copy can be consulted in the library of the British Medical Association, and the work is obtainable from Messrs. H. K. Lewis and Co., 136, Gower Street, at the price of 35s., plus 7d. postage.

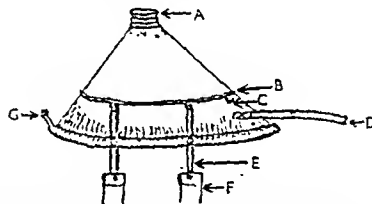
Preparations and Appliances

REPLACING THE IRVING BOX: A NEW SUGGESTION

Capt. H. LEVON, S.A.M.C., writes from Capetown:

I have been prompted to write the following note because of the frequency with which the traditional Irving box used in suprapubic drainage proves unsatisfactory. The following apparatus is in use at 110 Military Hospital, Roberts Heights (Major Lorandos, surgeon specialist, S.A.M.C.). Practical experience necessitated a few alterations to the first "model" and we finally arrived at the apparatus described below.

An old anaesthetic mask of the "closed" variety forms the basis of the box—preferably a mask with an inflated rubber-cushion face-piece. An oval wire ring is made to fit circumferentially about a third to halfway down the mask, and four wire hooks are soldered to the wire—i.e., two on either side. (For thin patients it may be necessary to have two additional hooks soldered at the lower portion of the ring.) A 1/4 in. diameter rubber catheter with an extra



A=Tight-fitting cork. B=Metal ring, with hooks. C=Optional hook. D=Catheter. E=Elastic. F="Elastoplast." G=Inflation tube.

hole cut alongside the end (so as not to destroy the tip, which provides necessary rigidity) is then introduced through a corresponding hole cut or burnt into the most dependent part of the mask—i.e., the part nearest the pubis. This hole can be reinforced internally and externally if necessary, to prevent the catheter slipping out, by the use of rubber solution over linen-thread binding. A cork, fitting into the metal top of the mask, completes the apparatus.

To keep the apparatus in place, four strips of "elastoplast" about 1 1/2 in. wide are strapped on either side of the patient's abdomen, passing from either side of the spine to halfway round the flank. Holes are made in the doubled-over ends, and from these pieces of 1/4 in. garter-elastic are stretched to the hooks on the mask. The edge of the box and the skin around the wound are smeared lightly with zinc and castor oil and inel. benz. co. cream to seal the box and to protect the skin. By removing the cork, the wound can easily be inspected and/or swabbed. The additional lower hooks on the wire ring, mentioned above, can be used to keep the box firmly over the pubis (a necessity in thin patients with protuberant pubes) by using a T-bandage between the legs and two further elastic strips.

The advantages of the box are: (1) Water-tightness around the wound, preventing any leak. (2) The apparatus can be adjusted to prevent pouting of the wound, which delays healing. (3) The cushioning effect of the mask is important for the patient's comfort. (4) Little attention is required once the simple apparatus is correctly adjusted. This type of "box" could form the basis for a commercial production.

Thanks are due to the O.C., 110 Military Hospital, and to the D.G.M.S., for permission to publish this note.

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MEDICINE'S GREATEST GIFT

It was Sir William Osler who referred to surgical anaesthesia as medicine's greatest single gift to suffering humanity. The centenary of the first practical application of the method falls on Oct. 16, 1946. The centenary is being celebrated by exhibitions at the Royal College of Surgeons and at the Wellcome Historical Medical Museum illustrating the history of anaesthesia throughout the ages; by celebrations organized by the Society of Anaesthetists; and by special meetings at the Royal Society of Medicine and elsewhere. In the present issue we have tried to blend the old news with the new in a small symposium in the opening pages of the *Journal*. A recent number of the *British Medical Bulletin* worthily commemorated the event whose birthday falls due next week.

The history of anaesthesia provides a good example of the necessity for advances being made in certain sciences before any steps can be taken in others. Medical men had always sought some agent to deaden the pain of surgical operations, and it is understandable that for centuries the drugs used were nearly always taken by mouth. Whether the essential constituent of the substance administered was opium, or atropine, or hyoscyamus, it is obvious that there could not have been any true anaesthesia. The best that could be hoped for was some dulling of the sense of pain. In the Middle Ages there arose the practice of "inhaling" so-called anaesthetic substances, as, for example, those contained in the "soporific sponge." But most of these substances were non-volatile, and there could be no true inhalation anaesthesia. Medicine had to await the development of chemistry before any true anaesthesia could even be conceived. Until about 1754, when Joseph Black announced his discovery of carbon dioxide, the existence of "airs" which were not ordinary air was not recognized. The discovery of many new gases by Joseph Priestley in the period 1770-80 at once made possible the conception of an anaesthetic agent administered in the form of a true inhalation. Nearly seventy years were to pass before the logical outcome of these discoveries was the successful use of a gas or vapour for anaesthetic purposes.

At this time we do honour to all those who made possible the use of the new method in surgery. Despite the statues erected to his memory, Crawford W. Long had no influence on the development of the method, although he himself used ether as a general anaesthetic in quite a number of cases from 1842 onwards. To Horace Wells and W. T. G. Morton goes most of the credit. These men were totally different in character and mental make-up. They were both dentists, but there similarity ceased. Had not Wells been something of a dreamer he might never have demonstrated

the anaesthetic properties of nitrous oxide. But, on the other hand, had he been a practical and ambitious man like Morton, he might have established for some time the use of nitrous oxide. Ether and chloroform would naturally have taken their proper places later, but from many aspects it was perhaps better that Wells failed and Morton succeeded. It was a pity that Morton tarnished the brightness of his great practical achievement by subsequent action. Had he not been linked with jealous and unscrupulous Jackson his commercial attitude to the question might have been modified.

The subsequent history of anaesthesia in the 'fifties and 'sixties was dominated by the ether-chloroform controversy. It is strange that nitrous oxide, the first inhalation anaesthetic, should have been neglected for nearly sixteen years. The emphasis on ether and chloroform did more; it delayed the adoption or discovery of new anaesthetics which the present century have done so much to widen the horizon. However, the advent of professional anaesthetists and the whole-hearted co-operation of instrument manufacturers enabled progress to be made in the design of apparatus. Such men as Snow and Clover, starting as they did with considerable experience in other fields, gave this branch of the medical art something of the dignity of an exact science. The work of the French physiologists Magendie, Flourens, and Claude Bernard among others lent the final polish. Paul Bert, another great French worker, did much to clarify the position regarding the pressures of anaesthetic vapours, and, though his conception of a "pressurized" operating chamber receded into the background after being used for some time in France, the laws which he taught bore fruit later. The numerous inhalers which were invented during the second half of the nineteenth century constitute a maze out of which only an expert can find his way. In this issue an illustrated summary of the most important types of apparatus is given.

It is a curious reflection that, while from the period of its real beginning in 1846 until about the period of the war of 1914-18 anaesthesia was largely inhalational, during recent years there has been an increasing tendency to employ drugs given by other routes. It will be recalled that when Morton gave ether in his fourth case at the Massachusetts General Hospital—that is, his first really major operation, the amputation of the leg of Alice Mohan—the surgeon was so sceptical of the value of the anaesthetic that he had given the patient 100 drops of laudanum before the operation. This was premedication with a vengeance. Since then premedication has made many advances, and the field has widened to include the practical use of anaesthetics administered by non-inhalation methods. Such methods depend upon those pioneers who devised methods of introducing drugs into the body via the subcutaneous tissues or the circulation. Lafargue injected morphia paste subcutaneously in 1836, and in 1839 Taylor and Washington of New York introduced hypodermic injections for the relief of pain. In 1853 Wood of Edinburgh invented the hollow needle, and in the same year Pravaz used this needle in conjunction with a special syringe of his own design. Twenty years later Bennett showed that cocaine had anaesthetic properties, and the whole prospect of local anaesthesia was opened up. In 1875 the

appeared the first monograph on intravenous anaesthesia, P. C. Oré's *Études cliniques sur l'anesthésie chirurgicale* . . . which described the use of chloral hydrate by this method. Shortly afterwards various investigators tackled the problem of introducing anaesthetic substances directly into the cerebrospinal fluid. In 1899 Rudolph Matas was one of the first to make satisfactory use of the method in the human subject. Rectal anaesthesia was attempted by Pirogoff as far back as 1847, and this method first achieved practical possibilities in the hands of Mollière in 1884. A word should be said about the development of endotracheal administration. In 1869 Trendelenburg administered chloroform by this route, but only after performing tracheotomy on the patient. Sir William Macewen of Glasgow was the pioneer of endotracheal anaesthesia without preliminary tracheotomy, since in 1880 he passed a metal tube into the trachea through the mouth, and administered chloroform by this route in a case of malignant disease of the base of the tongue. This led ultimately to the methods of Magill and Rowbotham, which were inaugurated during the first world war.

Many drugs have been tried for anaesthetic purposes. One of the earliest was ethylene. This was first tried in 1849 by Thomas Nunneley of Leeds. His results with ethylene were unsatisfactory, but much better with ethylene dichloride. It was Nunneley who first described the A.C.E. mixture. The period from 1918 to 1922 was marked by the researches of Luckhardt and Thompson, which established ethylene as a practical possibility. Cyclopropane was first discovered by August Freund in 1882, and its utility as an anaesthetic was established by Lucas and Henderson in 1928. The most recent experimental work prompts repetition of the words of the prophet that there is no new thing under the sun. Baron Larrey, Napoleon's military surgeon, had observed the anaesthetic effect of extreme cold after the battle of Eylau, and he recalled this observation in a discussion at the French Academy on Hickman's Memorial to Charles X. It is now recognized that amputation of a limb can be performed with no other anaesthetic than efficient refrigeration of the affected member. In this number recent advances in anaesthesia are discussed in a special article. In the past there was difficulty in securing satisfactory statistics for anaesthetic purposes; but in recent years advances have also been made in keeping records.

Efficient anaesthesia has long been an established practice. While anaesthetics have become increasingly safe in the hands of experts, something still remains to be done. The work of the pioneers which we recall to-day should be an inspiration to the pioneers of to-morrow.

JUDICIOUS ENDOWMENT

The trustees of the Nuffield Foundation, which was established by Lord Nuffield three years ago as a charitable trust with an endowment of ten millions, have published their first report. The Foundation has three main objects: the advancement of health and prevention and relief of sickness, in particular by medical research and teaching and by the organization of medical and health services;

the advancement of social wellbeing; and the care and comfort of the aged poor. The board of trustees includes two members of the medical profession—Sir John Stopford and Dr. Janet Vaughan.

The Foundation welcomed the opportunity of co-operating in London University's plans for the creation of the Institute of Child Health, and it endowed the professorship with a sum of £100,000, payable in equal instalments over ten years. It has assisted the Universities of Durham, Glasgow, and Manchester in their plans for the development of teaching and research in the field of industrial health; the former two have accepted grants totalling to £40,000, and Manchester to £70,000. The Foundation has also offered a number of medical fellowships in industrial medicine, social medicine, psychology, and child health, of an annual value of between £500 and £800 each and tenable for from one to three years. A different and less academic project designed to advance industrial health has also been aided. This is a combined industrial health, rehabilitation, and research service to be established at Slough. The provisional plans include an industrial health centre giving expert advice on conditions in factories and workshops, a casualty clinic, an out-patient rehabilitation department, a remedial workshop, and a research department studying causation and incidence of disease in light industry. The Foundation has promised a grant of £3,000 a year for five years towards the research side of the scheme. Large benefactions have been made for the furtherance of dental health: a sum of £150,000 has been assigned for the whole programme, which includes a scheme of fellowships and scholarships to encourage persons of suitable ability to prepare themselves for an academic career in dentistry, and also assistance to certain dental schools to improve the quality of dental teaching and the facilities for research. The schools assisted are the Sutherland Dental School of the University of Durham, Guy's Hospital Dental School, the School of Dentistry of the University of Leeds, and the Turner Dental School of the University of Manchester. Other projects aided are research in ophthalmology, in rhinology, and in radiology. A grant of £3,000 a year for three years has been made to the University of Oxford in aid of the Nuffield Laboratory of Ophthalmology, and a grant of £3,700 has been allocated to the University of Manchester and the Manchester Royal Infirmary for research on the causation of catarrhal infection in the nasal passages. The grant for radiological research is to finance certain investigations proposed to be carried out at the Nuffield Institute of Medical Research at Oxford into the normal structure and functions of the human body as revealed by radiography and x-ray cinematography.

Apart from medicine, the Nuffield Foundation has made large grants to stimulate research in the fields of nuclear physics, agriculture, and metallurgy. Among the allocations for the furtherance of the social sciences is a grant of £5,000 a year for five years to the Population Investigation Committee towards the cost of its programme of research. The programme includes a survey of population trends, an inquiry into certain aspects of child-bearing and of the maternity services of Great Britain, a study of the factors influencing age at marriage, and inquiries into the relation between fertility and intelligence. The subsequent

appointment of the Royal Commission on Population has not restricted the work of this committee, which was originally set up in 1936, but on the contrary has widened the possibilities of its useful work. Finally, in pursuit of its third aim, the Foundation has initiated a survey of the problems of ageing and of the care of aged people. Grants have been made in support of two projects of research into the process of ageing, one by the Department of Psychology of the University of Cambridge, into the characteristics and changes of human function associated with different age-groups, and the other a series of clinical trials carried out at Tooting Bec (L.C.C.) Hospital by the Club for Research on Ageing.

The total amount expended by the Nuffield Foundation during the first three years of its existence has been little short of a million pounds, but the policy behind the allocations has been as wise and discerning as the allocations themselves have been princely—a thing which cannot be said of all large-scale philanthropy.

ACCELERATION OF WOUND HEALING

During the recent war, and more particularly in the semi-tropical and tropical campaigns, wounds, burns, and ulcers often showed an indolence not commonly observed in civil life. Frequently the wound or ulcer, though affecting an apparently healthy and well-nourished soldier and though entirely or almost free from infection, remained for weeks or months without decreasing in size and with little evidence of an ingrowing epithelial edge. The patient and his medical attendants became impatient of this indolence, and for the stimulation of healing every practicable measure was employed which theory could justify or ingenuity devise. Kerr and Werner,^{1,2} for example, using a heart-extract powder which had been prepared by Doljanski³ and which had shown a remarkable capacity for promoting the growth of fibroblasts and epithelial cells in tissue culture, applied their preparation to eighty indolent wounds, burns, or ulcers; and a conspicuous acceleration of healing was observed in all but seven cases. This remarkable success demanded further investigation, not only because of its clinical importance but because of the far wider biological implication that heart-extract powder promotes the healing of indolent wounds by virtue of its capacity to stimulate the growth of fibroblasts and other cells *in vitro*.

Young, Cruickshank, and Martin⁴ have made a detailed, carefully controlled, and statistically complete study of the effect on wound healing of heart-extract powder prepared after the method of Doljanski. They followed the progress of healing in four hundred and sixty-two experimental wounds of rabbits and guinea-pigs. The heart-extract powder (prepared from the adult sheep heart) and embryo-extract powder (from the whole sheep embryo), applied directly to the surface of healthy wounds in these experiments, consistently *retarded* the healing process; and they conclude that there is no direct correlation between growth-promoting capacity *in vitro* and that *in vivo* in so far as the healing of healthy wounds can be accepted as a criterion. The heart-extract powder exercised no general or constitutional effect on the healing of distant wounds and was not anaphylactogenic, as Werner has suggested. Applied directly to the surface of a wound, heart-extract powder evokes a non-

specific, foreign-body, giant-cell reaction similar to that evoked by Scharlach R and Sudan III, which enjoyed vogue some thirty years ago as stimulants to healing indolent wounds. Young, Cruickshank, and Martin suggest that in the series published by Kerr and Werner at least sixty-three of the patients (and possibly more) had been treated more or less intensively with sulphanilamide for prolonged but variable periods up to 270 days, and suspect that one at least suffered from sulphonamide poisoning the time when sulphanilamide was stopped and treatment with heart-extract powder begun. They think it regrettable that Kerr and Werner were unable to employ a series of "sulphonamide controls" in their clinical experiments.

The work of Young and his colleagues is of great importance in demonstrating clearly the negative but fundamental axiom that a substance cannot be assumed to stimulate in the human body the growth of those tissues whose growth it accelerates in tissue culture.

PERIODICITY OF INFLUENZA EPIDEMICS

The possible appearance of a major influenza epidemic has been the subject of much speculation during the past few years. Early in the war a large outbreak was due if the previous cycle of appearance was used as a basis of prediction. Yet despite this and the apparently favourable circumstances of overcrowded shelters, exposure to cold and damp, lack of sleep, and so forth, influenza did not assume the proportions of a major epidemic.

There is an apparent underlying law of periodicity governing the occurrence of large outbreaks, and much work has been done in an attempt to determine the influenza cycle. So far, however, no method has been able to predict future outbreaks except for relatively short periods. Up to 1939 influenza epidemics in this country had a two- to four-year cycle, and the years when the disease reached epidemic proportions were 1922, 1924, 1927, 1929, 1933, and 1937. Although there has been no large outbreak since 1937, a fairly sharp rise in mortality was recorded in 1940 and again in 1943. Various attempts to describe the periodicity of influenza have generally failed because of the non-appearance of an outbreak. Brownlee demonstrated a 33-week cycle but excepted those years when the prediction fell in summer and autumn, since the outbreak failed to appear in these months. Other workers have tried to forecast a future outbreak from the period of the year when the last epidemic occurred. This procedure gave a good description of the major outbreaks over past experience. Influenza seems to have been more variable in the time of its appearance than has been the case in recent years. During the last decade the seasonal rise in incidence has always been recorded in the first few weeks of the year, except in 1943 when it began about ten weeks earlier than usual. With a constant period of maximum incidence the prediction of epidemics should have been relatively certain if the hypothesis was true, but the forecasting of major outbreaks remains unsolved.

The epidemiology of influenza in America is similar to that in England, although sharp differences exist between the trends in these and in other countries. Climate and other environmental factors influence the course, severity, and frequency of influenza epidemics. The latest contribution to the study of periodicity is by the Commission of Acute Respiratory Diseases, at Fort Bragg in North Carolina.¹ These workers have approached the problem from a new standpoint. They consider that major outbreaks of influenza follow not a simple curve but a

¹ *Brit. J. Surg.*, 1944-5, 32, 231.

² *Ibid.*, 1944-5, 32, 518.

³ *Nature*, 1942, 150, 660.

⁴ *J. Path. Bact.*, 1946, 53, 63.

¹ *Amer. J. Hyg.*, 1946, 43, 29.

mplex one with at least two main factors. Since the discovery of viruses A and B, epidemics in the United States have since 1932 been associated with one or the other of these types. That two serologically distinct viruses may cause epidemics was unknown to earlier epidemiologists, and any suggestion that the periodic curve of influenza showed two different components would probably have been derided, as were Brownlee's different measles periodicities for North and South London. Examination of recent American outbreaks indicates that virus A may have a variable interval of two to three years and virus B a cycle of four to six years, and the Fort Bragg team applied this theory to epidemics preceding 1932. They found that their hypothesis did not give an exact method of prediction but showed the probability of occurrence within rather wide time limits. The limits of prediction by this method do not appear to be any smaller than those of the older methods. It was forecast "that influenza A will reappear during the winter of 1945-6. If it fails to occur in this season, the probability is much greater that it will appear in the following winter." This finding is similar to that postulated here last autumn, and so far as Britain is concerned the longer the interval since a large outbreak the greater the probability that the next seasonal season will reach epidemic proportions. No evidence was found in the mortality trends that hypothetical viruses, influenza Y or type C, have caused widespread outbreaks in the past twenty-five years. This finding does not, of course, exclude the possibility that a type of influenza exists that appears at long intervals and produces pandemics such as that of 1918. It is quite possible, too, that mortality shows a large variation between different outbreaks and that a widespread outbreak may occur without a rise in mortality, which might account for some of the apparent irregularities in the influenza cycle. The Commission have examined this point and can find no evidence to support such a hypothesis.

INEQUALITY OF THE PUPILS

Pupillary inequality is a common clinical finding which may or may not have diagnostic significance. The fact that affections of both the sympathetic and the parasympathetic systems cause anisocoria adds to the difficulties of the clinician; and the problem may be complicated by the possibility of local abnormalities in the iris itself, the innervation being intact. Accurate clinical testing requires standard conditions of illumination and measurement—far from simple provisions.

The problem of pupillary inequality can be studied by the method of collyria—the use of eye-drops—whereby the duplex nerve supply of the iris can be either stimulated or inhibited. This line of investigation, first suggested by Coppez in 1903 and described by him many years later in collaboration with Danis,¹ has been pursued recently by E. A. Turner² with promising results. Turner used a solution of 4% cocaine in 1:1,000 adrenaline. Four drops are instilled into each eye at half-minute intervals. Then every fifteen minutes the size and equality of the pupils are noted as well as their reactions to light and accommodation. Five readings are taken. His series was made up of 50 normal controls and 66 heterogeneous cases of anisocoria. It was considered that this test was of assistance not only in bringing out latent inequalities of pupil but also in determining their morbid anatomical nature. A partial third nerve paresis without external ophthalmoplegia was found to be the commonest cause of anisocoria after a recent head injury.

¹ *Rev. Ocul-Neuro-Otol.*, 1926, 4, 51.
² *Brain*, 1945, 68, 93.

The test proves to be of help to the clinician in three sets of circumstances: (1) where the side of the lesion is known the cause of the pupillary inequality can be determined; (2) where the side of the lesion is obscure but the system involved is known the nature of the lesion can be ascertained; and (3) where neither the affected side nor the system involved is known the nature of the lesion can be determined with confidence in cases of well-marked oculomotor palsy, and of long-standing oculosympathetic affection. In both these conditions the difference in size of the pupils is increased, but in the former the pupils remain circular and respond by dilatation, while in the latter the affected pupil becomes small and irregular.

EXPERIMENTAL GONORRHOEA

The scientific investigation of gonorrhoea has always been handicapped by the fact that no animal naturally susceptible to infection has been available. Mahoney, Van Slyke, Cutler, and Blum¹ described recently an attempt to discover a satisfactory method of infecting human volunteers. Since this attempt failed, they could not go on, as they intended, to investigate the effectiveness of various prophylactics. Nevertheless, their account of the various methods employed is instructive. Certain facts which emerged may be recapitulated briefly. Cultured strains of gonococci failed to cause clinical disease with any consistency, and the older the strain the less likely it was to prove effective. The most successful method of conveying infection was by transferring pus from an acute case directly to the urethra of a volunteer, but even this method sometimes failed to infect. A heavy inoculum, deep insertion into the urethra, and the use of mucin or peptone solution rather than saline—which was shown to be toxic to the gonococcus—increased the chances of success. Patients infected with sulphonamide-resistant strains did not respond to sulphonamide therapy but were cured by penicillin. Those with a positive seemed less liable to infection than those with a negative complement-fixation test, and the same applied to volunteers with a previous history of gonorrhoea. The incubation period of experimental gonorrhoea averaged 3 to 5 days, with extremes of 1 and 31 days. When originally examined 1% of the volunteers harboured typical gonococci without showing clinical signs, and were therefore carriers.

This article contains a wealth of information and will well repay study by all who have to do with the management of gonorrhoea. The experiments and their results are set out clearly; five tables summarize the findings; and three appendices give, respectively, details of the bacteriological technique, the colony morphology, and the history of the strains of organisms employed. Altogether, this may be regarded as one of the most valuable contributions to the subject of experimental gonorrhoea which has been published.

Dr. D. Evan Bedford will deliver the Bradshaw Lecture before the Royal College of Physicians of London on Thursday, Nov. 7, at 5 p.m. at the College, Pall Mall East. His subject is "Hypertensive Heart Disease."

Amer. J. Syphil., 1946, 30, 1.

The Committee of Privy Council for Medical Research has appointed C. A. B. Wilcock, M.P., C. A. Lovatt Evans, D.Sc., F.R.C.P., F.R.S. (Jodrell Professor of Physiology in the University of London), and R. A. Peters, M.D., F.R.S. (Whitley Professor of Biochemistry in the University of Oxford), to be members of the Medical Research Council.

ROYAL COLLEGE OF OBSTETRICIANS AND
GYNAECOLOGISTS

Lord Woolton was the principal guest at a dinner held by the Royal College of Obstetricians and Gynaecologists on Sept. 27—the first since 1938. Mr. Eardley Holland, who presided, introduced Lord Woolton as someone who had always been interested in the maternity service of the country. As Minister of Food he had early turned his attention to the diet of the expectant mother. Lady Woolton had started the first infant welfare clinic in this country.

In proposing the toast of the College Lord Woolton recalled his close friendship with the late William Blair Bell—"an extraordinary man he was." He remembered Blair Bell at the time when he was made President of the College—"a great dynamic force searching out for new things." Lord Woolton was associated with him in his search for a cure for cancer—"we found out the negative." He recalled Blair Bell telling him in his study his dreams for the College; and the dreams had now come true. Lord Woolton said that one of the first maternity clinics in the North had been started by his wife and himself. When he took on the job of Minister of Food in the early days of the war he determined to do something for the infant-life of the country, and the success he attained was made possible by the excellence of his advisers—Lord Horder as his medical adviser and Prof. J. C. Drummond as his scientific adviser. There was, he concluded, no wiser expenditure of money than that devoted to the health and welfare of the infant life of the country. Mr. Eardley Holland, responding to the toast, said that this was the 17th birthday of the College. This year the Queen had done them the honour of becoming Patron of the College and he hoped that this year the King would present it with a Royal Charter. In 1938 the membership was 580, and this year it was 775. They were an Empire College, no less than 1/4 of the fellows and 1/3 of the members working in the Dominions. Mr. Holland referred to the work of the special committees of the College on various aspects of obstetrics and their investigations on behalf of the Royal Commission on Population.

Antenatal Clinics: Message from the Minister

The President read the following letter from the Minister of Health:

Dear Mr. Holland,—Thank you for your letter of Sept. 20, and for your kind remarks about my speech at the lunch the other day. I hope the following information is what you want for the 27th.

We have always envisaged that in staffing their antenatal clinics, local authorities must enlist the co-operation of the Regional Board, and that this will be done by appointing one of the hospital obstetricians as officer-in-charge of each of the local antenatal clinics. This would enable the obstetrician to determine whether the mother will ultimately require admission to hospital (and to take the necessary steps accordingly) or whether she can be left to the care of the midwife, with the facilities of the hospital or the services of an obstetrician or experienced general practitioner always available in the background. This arrangement would ensure also that the social services of the local authority in the shape of the health visitors would be at the disposal of the obstetrician in the clinic, and similar service will, of course, be at his disposal by arrangement with the local authority in the hospital. But above all we must remember that the general practitioner is one of the chief co-ordinators of the service. He is the manager who produces for the benefit of his patient all the facilities which the National Health Service can offer. He will have contacts with all the working parts of the machine—the hospital, the clinic, the health centre, and the services of the local authority, and will personally know the men and women who staff them.

We have still a good deal to do in planning out the precise details of the organization, but these are the main lines along which it will be developed.—Yours sincerely,

ANEURIN BEVAN.

Mr. Eardley Holland concluded with a note of welcome to the succeeding President, Mr. William Gilliatt, C.V.O., F.R.C.S. Mr. A. A. Gemmell gave a pleasant speech of welcome to the guests. In response Sir Hugh Lett praised the work of the College and stressed the need for a united profession if its voice was to be effective in dealing with those in authority. He pleaded for a closer unity between the B.M.A. and the Royal Colleges, whose work was primarily academic.

RETIREMENT OF THE SCOTTISH SECRETARY

Dr. R. W. Craig retires from the position of Scottish Secretary of the B.M.A. after holding that responsible post for 15 years. On Friday evening last week a reception and dance were given in the Scottish Office of the B.M.A. in Edinburgh in his honour. During the course of a very enjoyable evening Dr. J. B. M. Chairman of the Representative Body, presented Dr. Craig with a cheque as a token of esteem from a wide circle of friends and colleagues. Others who spoke in appreciation of Dr. Craig (and of Mrs. Craig) were Dr. A. F. Wilkie, Mr. Dr. Charles Hill, and Dr. J. F. Lambie. Among those present on this occasion was Dr. T. C. Routley, Secretary of the Canadian Medical Association.

In acknowledging the presentation and the many kind things that had been said about him, Dr. Craig gave an interesting review of the work of his Office and ended by extending a warm welcome to his successor, Dr. E. R. C. Walker. Some interesting comments on the future of the National Health Service in Scotland, Dr. Craig observed that the Scottish Bill would be submitted to the House of Commons before many weeks had passed. It was idle to pretend, he observed, that there was complete agreement between the Minister of Health and the medical profession as a whole. There was general agreement on the part of the Government and the medical profession as to the aims of the Act. The differences arose as to the methods adopted by the Government to put the scheme into operation. The opportunity at the present time of effecting a much-needed improvement in the health service of the country was great. It was his fervent prayer that the satisfactory solution of the present difficulties would be found. The Government must allow the doctors to remain "captains of their souls."

Those who met together last week to say hail and farewell to Dr. Craig must have felt much indebted to the Scottish Committee, which, under the chairmanship of Dr. A. F. W. Millar, blended formality and friendliness in an evening well proved once again that the Scots are the most hospitable people in the world.

MIDDLESEX HOSPITAL MEDICAL SCHOOL DINNER

The annual dinner of the Middlesex Hospital Medical School, held at the Savoy Hotel on Oct. 4, Dr. G. E. Beaumont presided. In proposing the toast of the "Middlesex Hospital and Medical School" Dr. Beaumont ranged with unerring wit from osteopaths to plastic belts. Replying, the Dean of the Medical School, Dr. H. E. A. Boldero, mentioned that the Hon. J. J. Astor, chairman of the Board of the hospital, had also become chairman of the School Council. The two posts had never previously been occupied by one person. He welcomed back demobilized officers and students but regretted that for the first time the Middlesex had been unable to keep its promise to parents to admit boys direct from school. He felt strongly that men embarking on a professional career should in future be allowed to complete their studies and undertake military service after qualifying. It was intended to increase the annual entry to the school from 80 to 100, and he hoped that the possibility with regard to the admission of students would improve. A senior Broderip scholar, Dr. J. Marks, also replied. Sir Gordon Gordon-Taylor proposed the health of the chairman, and in responding Dr. Beaumont was able to announce that his earlier reference to the difficulties of the rowing club had not fallen upon stony ground. Sir Alfred Webb-Johnson, President of the Royal College of Surgeons, had in the course of the dinner agreed to present the club with a new boat.

The Diagnosis Section of the Faculty of Radiologists will meet on Friday, Oct. 18, at 2.30 p.m., at the Royal College of Surgeons, Lincoln's Inn Fields, when Dr. Solve Welin, of Stockholm, will speak on "The x-ray diagnosis of cholelithiasis in the tempo bone," followed by Dr. H. Graham Hodgson. The following radiological meetings will also be held in London: British Institute of Radiology, 32, Welbeck Street, W., Oct. 17, 8 p.m. Dr. R. Spiegler: "The radiograph from the physicist's view point." Radiological Section, Royal Society of Medicine, 1, Wimpole Street, Oct. 18, 5.30 p.m. Presidential address. Dr. S. Whately Davidson: "A basis for staffing a radiological department." Reports from the *British Journal of Radiology* of the discussion on "Melanomatous" by Prof. P. J. Moir, etc., are now available (10s. each) from the secretary of the Faculty of Radiologists, Lincoln's Inn Fields, W.C.1.

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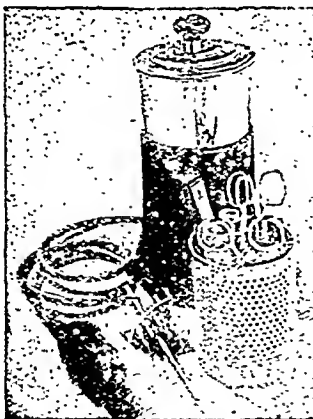
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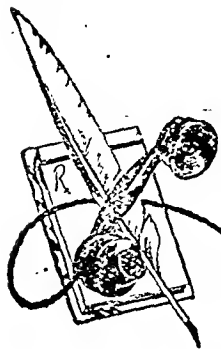
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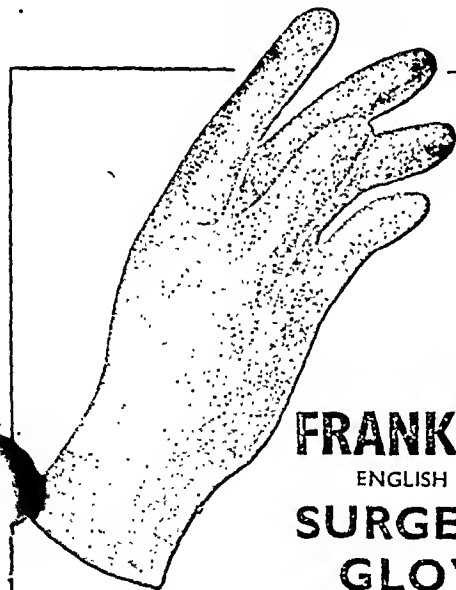
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Correspondence

Some Vulgar Errors in Regard to Goitre

SIR,—May I express whole-hearted agreement with the conclusions of the authors of the excellent and timely paper under the above heading. A long time ago I asked in a letter to you for great caution in the use of thiouracil, and since that time I have been increasingly alarmed at the apparently light-hearted way in which the authors of many recent papers have advocated its use.

I am convinced that for the thyrotoxic patient thiouracil holds out neither so good a prospect of cure of symptoms nor such a margin of safety as does surgery in the hands of a competent thyroid surgeon, and I feel strongly that its use should be confined within the limits of pre-operative preparation and the occasional case where surgery is contraindicated or carries exceptional hazard. Finally, the authors of this article ask the question: "Should not every nodular goitre be removed surgically without undue delay?" The answer, I am as convinced as I am sure they are, is Yes.—I am, etc.,

London, W.1.

E. G. SLESINGER.

SIR,—In their article (Sept. 28, p. 449) Dr. J. W. Linnell, Mr. Geoffrey Keynes, and Mr. J. E. Piercy enunciate as Vulgar Error Number IV in regard to goitre "That no goitre should be considered toxic unless the basal metabolic rate is found to be above normal." It is clear from reading the section of which this quotation forms the heading that the words "found to be" are important and that in the experience of the authors the methods of estimating the B.M.R. show too wide a margin of error to allow them to regard this as an accurate test. This may partly be due to the use of single estimations rather than the duplicate or triplicate methods employed nowadays by most careful workers in this field. Nevertheless it does also appear to be the opinion of the authors that the effect of the thyroid on metabolism may not necessarily be fundamental. For example, in discussing the results of toxic goitre they say: "... the toxic process may miss, or almost miss, the metabolic system..." and elsewhere: "There is little doubt that the cardiovascular, nervous, and metabolic systems are all affected to some degree by toxic goitre, but sometimes, for an unknown reason, only one, or it may be two, of these systems are affected to any marked degree." And again: "The point, however, which we especially wish to make is that in the very large and important group of goitres to which we have drawn attention, where the toxicosis is minimal and yet the danger of eventual auricular fibrillation is real, so little is the general metabolism affected as a rule that it is rare to find the basal metabolic rate significantly raised."

It goes without saying that in the hands of such acknowledged experts as the authors the diagnosis of thyrotoxicosis and toxic goitre is safe even if they do not call the B.M.R. to their aid, but I doubt very much whether this would apply to the vast majority of the medical profession. For instance, referring to the symptoms of mild thyrotoxicosis, the authors say: "These symptoms, it may be said, often can only be detected by careful observation, for they may amount to no more than some of the following: lassitude, minor or occasional palpitations, slight irritability or emotional instability, loss of weight, irregular sweatings or feelings of heat, a small rise of the resting or, better, sleeping pulse rate, a fine digital tremor, the suspicion of a starc due to retraction of the upper lids, and an almost imperceptible difference in the size of the palpebral fissures." Is it good teaching, I wonder, to permit the diagnosis of thyrotoxicosis on such findings in the absence of a raised B.M.R.? If so it obviously requires a highly developed degree of diagnostic skill to distinguish between this condition and an anxiety state or, say, the menopause, if there is no obvious enlargement of the thyroid; and if there is enlargement of the gland, to distinguish between non-toxic and toxic goitre. The physiologist, I suppose, still seeks to explain all the symptoms and signs of hyperthyroidism (and he would probably prefer this term to "thyrotoxicosis") as being the result of increased metabolic rate, and would want to be provided with evidence of this in the form of a careful and repeated estimation of

oxygen consumption in comparison with standard figures before he would be inclined to accept the diagnosis.

In the section on thiouracil I find it difficult to follow the arguments of the authors. It is quite clear that one of their principal reasons for not advocating the use of this drug as an alternative to subtotal thyroidectomy is on account of the possible complications, of which they compile the following formidable list. "Headache, nausea, and vomiting—usually transient, but occasionally so severe or prolonged as to cause discontinuance of the treatment—pyrexia, splenic enlargement, various rashes, adenitis, enlargement of the salivary glands, diarrhoea, jaundice, oedema, pains in the joints, leucopenia, thrombocytopenia, agranulocytosis, and myxoedema are some though not all of those which have been described." To this they add the following sinister quotation: "'the thiouracil goitre is more of a cellular hyperplasia with mitosis very much in evidence and so, therefore, more comparable to a carcinoma.'" Now it is the present experience that the complications of thiouracil more commonly present themselves early than late in the treatment. How can the authors therefore justify their advocacy of the use of thiouracil as a pre-operative measure?—I am, etc.,

London, W.1.

P. M. F. BISHOP.

Homologous Serum Jaundice

SIR,—In the *Journal* of Sept. 21 (p. 409), Spurling, Shone, and Vaughan record a follow-up, establishing the conclusion that blood transfusion with pooled serum or plasma is associated with a much higher risk of serum-hepatitis than is transfusion with whole blood from individual donors. This conclusion tallies with the results of a follow-up of Army cases recorded by the writers in a paper now in proof (*Brit. J. soc. Med.*) and in a restricted report prepared by us early in the year and circulated last May. In our smaller sample of about 250 in either group the rates for homologous serum jaundice in those who received pooled plasma and whole blood from individual donors were respectively 5.14 ± 2.28 and $0.81 \pm 0.32\%$.—We are, etc.,

War Office, AMD.5.

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LANCETOT HOGGEN.

Sir Almroth Wright and Anti-typhoid Inoculation

SIR,—I am indebted to Dr. Leonard Colebrook and to Prof. Lyle Cummins for the letters (Sept. 14 and 28) in which they draw attention to what might appear to be a misleading account of the rise of anti-typhoid inoculation in my *History of Medicine* (p. 348).

Although it has seemed to your distinguished correspondents, and possibly to other readers, that I have discussed the relative merits of Sir William Leishman and Sir Almroth Wright in regard to this great discovery, nothing was farther from my intention, and I should be extremely sorry to initiate any controversy in the matter. Indeed I yield to no one in my admiration of the magnificent pioneer work of Sir Almroth Wright in the field of preventive inoculation. My statement that Leishman was responsible for the adoption by the British Army of anti-typhoid inoculation, prior to the Great War, does not in any way detract from the credit due to his distinguished predecessor who originated the method. The researches of Sir Almroth Wright, who is still so happily with us, continue to deserve the highest praise, and I shall endeavour, in any future edition of my book, to state the facts more explicitly so that there may be no risk of misunderstanding in regard to the position of one of our greatest geniuses in bacteriology.—I am, etc.,

Edinburgh.

DOUGLAS GUTHRIE.

The Milk Ration

SIR,—In view of the present drastic reduction in the milk ration I feel sure that many practitioners will join me in protesting against the continuation of the milk priority scheme without modification. If prevention be the basis of modern medicine, we are wandering away from this path to the detriment of the healthy, while in my opinion many of the sick are assured an over-lavish supply.

The continuous supply of two pints of milk a day for persons suffering from gastric or duodenal ulcer can only be justified if

these patients are willing to forfeit the whole or part of the meat ration. It would in fact be reasonable if two pints were allowed during the acute stage with forfeit of the whole meat ration and one pint a day after this period with forfeit of half a meat ration. This same adjustment should be made for all cases of dyspepsia and inability to swallow, etc. Exception should be made in the case of children and expectant mothers and in cases of tuberculosis during the active stage. It will be found that nearly all cases of tuberculosis expect and are in fact allowed an extra milk ration after the disease is quiescent, and this allowance should be reduced to not more than one pint daily.

It is logical to assume that if the quantities of milk are needed in the treatment of these diseases, its presence in adequate amounts is necessary as a preventive measure in the healthy. In my opinion the general effect of such arrangements would be a reduction in the priority claims by a substantial amount. The general practitioner would be materially assisted in assessing the value of patients' sudden inclination to develop symptoms requiring priority milk immediately the standard milk supply falls.—I am, etc.,

Watford,

A. STAVELEY GOUGH.

Smallpox in the Vaccinated

SIR,—Dr. F. K. Beaumont (Sept. 21, p. 437) attributes the frequent failure of vaccination and revaccination to protect personnel in the Forces to the one-mark vaccination advocated by the Government prior to 1944. Possibly three- or four-mark vaccination does give rather more protection than one-mark, though the evidence is not very conclusive, but there is another aspect to be considered. This is that the severity of the reaction is also greater. This question of reaction is very important. Dr. Beaumont quotes from his own recent experience the case of a sailor (who bore good marks from infant vaccination) who had such a severe reaction that he had a temperature of 104° F. (40° C.) for three days, and his arm took six weeks to heal, leaving a scar the size of a half-a-crown. One hopes that such cases are very exceptional, but they can hardly popularize vaccination. They make one sympathize with those who in order to minimize the reaction go in for "minimum-of-trauma" methods.

In the light of recent reports as to the failure of comparatively recent vaccination to protect, one can quite agree with Dr. Beaumont that the old idea that vaccination would protect for seven years should be frankly abandoned. My own preference, at least for persons in this country, is "little and often," and for medical practitioners or anyone who may have to deal with smallpox—i.e., hospital and sanitary staffs—it would probably be a good plan to make revaccination an annual event. There would then be practically no reaction and we should see an end to doctors, sanitary inspectors, and nurses contracting the disease and sometimes even dying from it. The general population could very well be left unvaccinated unless they were actual contacts. The great danger of outbreaks of virulent smallpox due to "missed" cases in vaccinated subjects would then largely cease to exist.—I am, etc.,

Leicester.

C. KILLICK MILLARD.

Epidemic Gastroenteritis Successfully Treated with Mepacrine

SIR.—Your annotation entitled "The Miasm of Marasmus" in the issue of Oct. 5, in which you draw attention to "epidemics of gastroenteritis of obscure origin," prompts me to record my own experience in this field.

An epidemic of gastroenteritis occurred in the midwifery department of this hospital and affected the majority of the staff and a large proportion of the patients. As unexplained epidemics of gastroenteritis have occurred at many hospitals recently, particularly in the midwifery departments (in some of which it has almost become endemic), the successful treatment with mepacrine of cases in this epidemic and the ultimate stoppage of the epidemic by this means is here described, with the suggestion that this drug may be tried in similar epidemics elsewhere when other means have failed. A remarkable feature was that it was almost entirely confined to the staff and patients of the midwifery block.

The first case occurred on June 6, 1946, and the incident followed the usual epidemic rise and fall during the subsequent 5 weeks, except that instead of falling to zero, as would have occurred in a closed community, a steady trickle of fresh cases continued as new patients were admitted and as additions were made to the staff. In the midwifery block 24 of a total of 27 nurses were affected, and the total number affected, including also medical officers, domestic staff, and patients, was 52. On the general side of the hospital only 3 nurses of a total of 125 were affected.

Clinically the onset was abrupt. The stools were water often containing comparatively little faecal matter at first, 1 to 25 being passed in the first 24 hours. There was never an mucus or blood. Vomiting occurred in two-thirds of the case. Colicky pains occurred in all cases, especially before defaecation. Only two cases were pyrexial, but several were prostrated by the continual stomach and bowel activity and consequent dehydration. A peculiar feature of most cases was apparent recovery lasting 24–36 hours followed by relapse. Recovery lasting 48 hours was maintained. No patient was seriously ill with the exception of two nurses and two undersized new born infants. Frequent liquid stools were passed for 5–7 days regardless of treatment, until mepacrine was tried. The interval between admission to the wards and onset of symptoms varied from 2 to 11 days, and averaged 8 days. Examination of stools disclosed no pathogenic bacteria.

Drugs administered were sulphaguanidine or succinyl sulphathiazole 12 g. daily, 10 min. (0.6 ml.) each of tinct. bella donnae and tinct. opii t.d.s., and kaolin. These were quite without effect. No *Giardia lamblia* were seen during the main epidemic, but one specimen contained what may have been degenerate cysts. On the strength of this, but also because the treatment had hitherto been ineffective, all subsequent cases were given mepacrine 0.1 g. t.d.s. for five days. On this treatment there was prompt recovery, normal stools being passed within 18 hours. Vomiting did not appear to interfere with its action, and this symptom ceased with the treatment. The success achieved with this drug supported the theory of a protozoal origin, although no protozoa were for certain seen.

While an effective form of treatment had been found, fresh cases continued to occur at the rate of about four per week. In particular new additions to the staff of the midwifery block fell victims. The number of nurses off sick at any one time numbered two to four. In the stools of one solitary case after the main epidemic *Giardia lamblia* and its cysts were found. In view of the occasional presence of this organism in diarrhoeic stools, to which it is not causally related, one would not be justified in attributing to it the cause of the epidemic. This unsatisfactory state continued for a further four weeks.

Owing to shortage of staff, nurses were reluctant to report sick and in fact usually did not do so for 1–2 days after the onset of symptoms, as they hoped that the latter would subside spontaneously. It was believed that the epidemic was being maintained by the presence of these ambulant cases. It was also suspected that the failure to grow a causal organism was in part due to a certain amount of self-medication with sulphonamides before reporting sick. Instructions were therefore issued to all staff (1) to report immediately any gastrointestinal symptoms, (2) to send as fresh a specimen as possible to the laboratory, (3) to take no drugs until ordered to do so by a medical officer. These instructions were followed, I believe, conscientiously without any drop in the incidence of cases. As stated, cases continued to occur for a further 4 weeks, and their number included some breast-fed infants.

All persons concerned took the usual hygienic measures to avoid cross-infection. This raises speculation on the possibility of air-borne transference of the infective agent. Feeling sure that one or more carriers were responsible, mepacrine (0.1 g.) once a day for five days was issued to all staff visiting the department regularly (nurses, domestics, and medical officers) and to all the mothers. Since then there have been no further cases.

The information given above can be summarized thus: an epidemic of gastroenteritis affecting staff and patients of the maternity wards of a general hospital is described. Features were: (1) The epidemic was practically confined to the maternity block, although the staff mixed freely with staff from other parts of the hospital; (2) onset was sudden, stools

ere watery and contained no blood or mucus, and vomiting occurred in two-thirds of the cases; (3) no causal organism as for certain isolated; (4) there was no response to sulphuanidine or succinyl sulphathiazole; (5) prompt cure occurred with mepacrine; (6) the epidemic continued in spite of the usual precautionary measures until prophylactic mepacrine was issued to all persons in the midwifery block, when it promptly ceased.—I am, etc.,

St. Giles's Hospital (L.C.C.).
London, S.E.5.

B. J. FREEDMAN, M.B., M.R.C.P.

Haemolytic Icterus due to Rh Factor

SIR,—I append brief notes of a case of haemolytic icterus due to Rh factor. The unusual family history makes it a case of some interest and one which may be useful to record.

Mrs. B., P.P. 7, aged 33.

Obstetric History.

1929. Girl.	Birth weight	9½ lb. (4.2 kg.)
1932. Boy.	" "	8½ " (3.8 kg.)
1935. Boy.	" "	8½ " (3.8 kg.)
1938. Boy.	" "	6 " (2.7 kg.)
1940. Boy.	Twins {	6 " (2.7 kg.)
Girl.		5½ " (2.4 kg.)
1943. Boy.	" "	6 " (2.7 kg.)
1944. Girl.	" "	5 " (2.2 kg.)

There have been no miscarriages or stillbirths. No child has had jaundice at birth. All are alive and well except the girl twin, who died at 4 days; she was not jaundiced, but cause of death unknown.

In 1945 she became pregnant again. Antenatal period normal. On Sept. 4, 1946, she was delivered by a midwife at home of a normal full-term female child, weight 7½ lb. (3.3 kg.). Labour normal and lasted 72 hours. The child breathed and cried spontaneously. It was noticed to be a little yellow. On Sept. 8 I was called to see the child as jaundice was not subsiding. On examination the child cried and sucked vigorously. The skin was a pale lemon yellow. Mucous membranes pale. No signs of infection. Liver easily palpable. Spleen not felt.

The case looked like a haemolytic icterus, but the history seemed to make it unlikely that Rh factor was concerned (all children are by the same father). However, blood samples were sent for examination. *Result*.—Mother, Group A, Rh-negative, weak Rhesus agglutinins and incomplete antibodies present; Father, Group O, Rh-positive.

Family history, as far as can be ascertained, shows that one sister of the mother has given birth to a child that died at the age of four days with jaundice.—I am, etc.,

London, E.13.

P. G. S. KENNEDY.

New Blood

SIR,—I enjoyed your amusing little annotation entitled "New Blood." I had always been told that the British moved slowly, but had not realized that it might take one of their editors exactly nine months to deliver good wishes to an aspiring editor of a new journal. Nevertheless, I appreciate these thoughts however belated and have taken to heart the advice which is so freely given. Let us hope that the readers of *Blood* will not always have to eat caviare as the editorial writer fears, but will occasionally have the opportunity to participate in a more solid and nutritious diet. As a matter of fact, had the anonymous editor taken the trouble to inspect, even casually, the March, April, and July issues, he might have seen some good "solid meat." For example, there was an article by C. J. Watson dealing with haemoglobin and its derivatives, some observations by Carl Moore on the use of intravenous iron, notes on the presence of erythroblastosis foetalis in the first-born by Philip Levine, three articles and an editorial dealing with certain abnormal splenic effects, three articles on problems of blood coagulation, and three articles dealing with some rather serious complications of infectious mononucleosis. The editorial goes on to say that "the most important causes of anaemia are malnutrition, malaria, and hookworm disease, none of which is likely to be adequately considered in a journal of haematology. . . ." The July issue has a 38-page review of the present status of folic acid by L. J. Berry and Tom D. Spies; I think this will be a classic article on the subject for a long time. A 60-page monograph on the dietary factors concerned in haematopoiesis from Wintrobe's clinic is shortly to appear. Relative to malaria and hookworm disease, the July issue contained

an interesting article from Palestine by de Vries on the excretion of urobilinogen in the stools and urine during malarial infection, and the December issue will have an article from the Philippines on hookworm anaemia, with particular reference to aplastic anaemia. The rather startling statement is made that "The great advances in haematology have not been made by professed haematologists, and future advances would be unlikely to be published in a journal of haematology. . . ." The first part of this sentence hardly deserves comment, but the second phrase is subject to critical appraisal. *Blood* has already had between its covers some real advances dealing with hypersplenic effects, with the use of penicillin in agranulocytosis, the use of anti-haemophilic plasma globulin in haemophilia, the use of radioactive phosphorus in polycythaemia and the use of thymine as an anti-anaemic substance.

Another remarkable and rather "precious" statement is that "Haematology is not a unified subject or discipline in the same sense as neurology and cardiology, and it is too limited and depressing a section of clinical medicine and pathology to constitute a whole-time specialty. . . ." It is possible that once a specialty becomes "unified" like cardiology or neurology, there can be no further advance in it. Haematology has many facets making it a field of exceeding interest, and there is no reason why the haematologist should not concern himself with the nutritional aspects of anaemia, the sarcomatous aspects of leukaemia and the immunologic aspects of haemolytic anaemia. One doesn't have to be an immunologist to know something about haemolysins and agglutinins. The chief fascination of clinical investigation is that it leads one from the patient into any and all kinds of interesting by-ways whether of chemistry, immunology, or pharmacology. We read that haematology is first, "not unified," again it is "too limited," and finally it is "depressing." It is true that acute leukaemia is a depressing disease, but it is certainly exciting to see the dramatic results of splenectomy in idiopathic thrombocytopenic purpura, and in many cases of haemolytic anaemia and splenic neutropenia. It is by no means depressing to see the startling effects of a few milligrams of folic acid in pernicious anaemia and sprue, nor is it saddening to note the complete relief of symptoms in polycythaemia by use of systematic venesections and the cure of erythroblastosis foetalis by an appropriate transfusion technique. I think we should also feel a little encouraged by the recent advances in the treatment of haemophilia, to say nothing of the remarkable results obtained in shock with transfusions of blood and blood substitutes. I think, however, that it is depressing to note such limited knowledge by at least one of our British cousins as to what is haematology and what it is accomplishing. We didn't think it was a limited field when we started the journal *Blood*. I must admit that the word "haematology" might seem to connote a rather narrow field, perhaps excluding such things as immune bodies, plasma fractions, and nutritional disturbances. It was for this reason that Dr. George R. Minot, our consulting editor, insisted on the use of the simple word *Blood*; in line with the titles of the British Journals *Brain* and *Heart*.

Perhaps I have spent too much time and space in reply to a minor editorial dealing with the launching of a new specialty journal. It has given me an opportunity, however, to air my views and for this I am grateful. May "New Blood" constantly permeate even our older journals, for which we have such outstanding affection and respect.—I am, etc.,

Boston, U.S.A.

WILLIAM DANESHEK.

SIR,—I would agree with the writer of "New Blood" (Sept. 7, p. 335) that specialized journals devoted to haematology are likely to be "caviare," not "good solid meat"; but I would assert that the same is true of neurological, cardiological, and all other special periodicals. But what matter if it be so? The specialist is interested in the minutiae of his subject and looks to the general medical press, not to his special journals, for the occasional publication of great advances which have a significance far transcending his specialty. The real interest, at least to me, of the article "New Blood" was the picture it presented of haematology as being "too limited and too depressing a section of clinical medicine and pathology to constitute a whole-time specialty." The statement would probably be true if it read "clinical medicine or pathology," but, if it implies that there is not enough in the clinical and pathological aspects of

haematology to constitute a whole-time specialty, I would join issue with the writer.

Glancing through my notes of the past three months, I see that the following cases (among others) have been referred to me by practitioners: patients with symptoms of anaemia, generalized pruritus, enlarged glands, splenomegaly, erythrodermia. In the first group there have been examples of pernicious anaemia, idiopathic hypochromic anaemia, carcinoma of the stomach, aortic incompetence, chronic plumbism, various types of leukaemia, and other maladies. The cases of glandular enlargement have included leukaemia, Hodgkin's disease, tuberculosis, secondary syphilis, pediculosis, and secondary carcinoma, while the splenomegalies have varied from chronic myeloid leukaemia to kala-azar. That the purely laboratory aspect of these diseases would be limited and depressing is true; that the purely clinical investigation of them might be so is probable; but who can assert that a specialty which enables one to deal with the clinical, laboratory, and therapeutic aspects of so varied a collection of maladies is limited and depressing? Your writer says that "haematology is not a unified subject," and, although he was intending disrespect to the subject, I would assert that it is this very fact that makes haematology one of the widest and most interesting of specialties. Equally, his indisputably true statement that scientists investigating different aspects of haematology do not speak the same language is one of the strongest reasons for the existence of physicians whose main interest is in haematology, and who can act as liaison officers between the academically minded scientist and the patient who needs skilled attention. I would, of course, agree with the writer that the proper exponent of haematology is the clinician, though the pathologist, the geneticist, and the transfusion officer may be the best exponents of small branches of the vast subject.—I am, etc.,

London, W.1.

A. PINEY.

History of the Hogben Test

SIR,—In describing (*B.M.J.*, Sept. 7, p. 328) his improved method of concentrating urine for pregnancy diagnosis by recourse to *Xenopus* as a test animal, Mr. Milton's brief account of the history of the test might well convey an erroneous impression of the part played directly and indirectly by the writer in its discovery. He states: "Hogben (1930) demonstrated that if the animal was injected with anterior pituitary preparations ovulation and oviposition could be induced. This fact was subsequently made use of by Bellerby (1934) and by Shapiro and Zwarenstein who independently suggested that the phenomenon could be utilized as a pregnancy test" (italics inserted).

In 1929 I completed experiments which showed that *Xenopus* responds by ovulation at any time of the year to the gonadotrophic hormone of the anterior lobe of the pituitary, and that the ovary undergoes involution after hypophysectomy. As stated by Mr. Milton, a preliminary note (*Trans. roy. Soc., S. Afr.*) recorded this discovery in 1930. A later publication (Hogben, Charles, and Slome, 1931) based on more extensively planned experiments of the same sort, also including a record of others dealing with the effect of hypophysectomy on the blood calcium level and the relation of light to the pituitary control of the ovary, appeared in the *Journal of Experimental Biology*. At that time, the identity of the gonadotrophic substance in the urine of pregnant women and the anterior lobe hormone with the same action was generally accepted. I therefore made arrangements with a South African obstetrician to use *Xenopus* in order to probe its relation to the pituitary autacoids from a new angle. Dr. Zwarenstein was then taking a course of postgraduate study in my department, in which he learned my technique (Hogben, *Quart. J. exp. Physiol.*, 1923) of hypophysectomy, and with my encouragement undertook further work on the relation of pituitary and ovarian function to blood Ca and K levels, when I relinquished my chair in South Africa.

On my return to England in 1930 I made contact with Prof. Crew, who had started a pregnancy diagnosis unit, pointed out the advantages of a test animal which ovulates visibly, and can be used repeatedly, intimated that it might be long before I should have a laboratory fully equipped to resume such work, expressed the hope that he would follow it up, and sent him loads from the small stock I had brought back. By 1932, when

Dr. Bellerby and Dr. Landgrebe had joined my staff in London, Zwarenstein reported to me the virtual impossibility of maintaining ovarian activity of *Xenopus* under laboratory conditions; and subsequently published in the *Journal of Experimental Biology* (Shapiro and Zwarenstein, 1933) account of what he called the captivity effect, implicitly overturning my expressed view that *Xenopus* is peculiarly fit for gonadotrophic assay. At first Crew's colleagues themselves experienced similar difficulties; and, since a test based on use of freshly caught animals whose natural habitat is highly localized could have no international value for medicine recognized that extensive use of *Xenopus* for gonadotrophic assay must await fuller elucidation of conditions for maintaining its reproductive activity in the laboratory.


Working with me in London, Bellerby and Landgrebe therefore undertook at my suggestion a series of investigations (Bellerby, 1933; Alexander and Bellerby, 1935; Bellerby and Hogben, 1938; Bellerby, 1938; Landgrebe, 1939), severally published in the *Biochemical Journal* and *Journal of Experimental Biology*, to vindicate the use of an amphibian test animal studying: (a) the effect of diet, overcrowding, light, etc., the fertility of *Xenopus*; (b) the possibility of breeding *Xenopus* in the laboratory without recourse to importing new stock; (c) the action of pituitary extracts on the British common frog. *Pari passu* Bellerby (1932-3) carried out a series of tests showing that *Xenopus* responds to the gonadotrophic substance in the urine of pregnant women. For the reason stated above I discouraged early publication of our results as of mere academic interest until we could also announce a fool-proof regimen of animal husbandry. Meanwhile I had privately communicated to Zwarenstein and to his junior colleague Shapiro both about to visit Britain, the fact that my regimen did in fact ensure persistent ovarian activity of imported stocks, and that their so-called captivity effect was due to defective care of their animals. I also invited them to see my new set-up. Accordingly, Zwarenstein and Shapiro enjoyed the hospitality of my laboratory during their visit to London in 1933. We then demonstrated to them both the results of our pregnancy tests and the success of our own method of maintaining ovarian function of *Xenopus* over an indefinite period of time in an artificial habitat.

On returning to South Africa, Zwarenstein and Shapiro made similar tests on *Xenopus* freshly caught from local ponds, and issued a note (*Trans. roy. Soc., S. Afr.*) recording their successful outcome shortly before a preliminary announcement of work in my laboratory (Bellerby, 1934) appeared in *Nature*. For sufficient reason I made no unfavourable comment on this. At that time Zwarenstein and Shapiro had not yet withdrawn their previous assertions about the so-called captivity effect, in conflict with my original claims with reference to the peculiar suitability of *Xenopus* for assay of gonadotrophic substances. Indeed, the practicability of the test was not finally vindicated until Landgrebe (1939) completed a long series of experiments under my direction setting forth the conditions which ensure that *Xenopus* will continue to respond to gonadotrophic preparations in a laboratory environment. In fairness to two of my colleagues I must add this. By luck or good management I had equipped my Cape Town laboratory with what proved to be a satisfactory lay-out for prolonged survival experiments for earlier work (Hogben and Slome) on the pituitary *vis à vis* the chromatic function. Though publication of the captivity effect of Zwarenstein and Shapiro materially delayed preliminary announcement of pregnancy tests, it had a salutary result. Certainly other workers would have experienced difficulties which eluded my own system of laboratory care; and the test itself could vindicate its credentials only after explicit clarification of the essential conditions of artificial culture in the hands of others who did not start with the advantage of my own intensive experience of work on *Xenopus*.



Presumably it was for reasons here given that Crew, himself acquainted from the start with the inside history of difficulties besetting the final accomplishment of a project I nursed from the date of the parent discovery in 1929, suggested the association of my own name with the *Xenopus* method of pregnancy diagnosis as those of Zondek and Aschheim and of Friedmann were already associated respectively with methods relying on the mouse and the rabbit as test animals.—I am, etc.,

LANCELOT HOGBEN.

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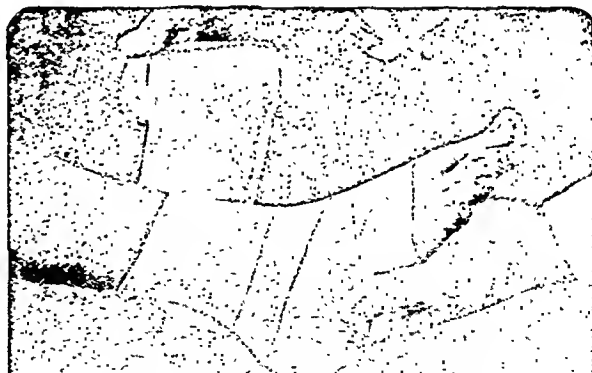
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Reiter's Disease

SIR,—Nearly all the previous writers on this syndrome agree that the condition described by Fl.-Lieut. W. P. U. Jackson Aug. 10, p. 197) and Dr. F. Wrigley (p. 199), is not of gonococcal origin, but a complication of bacillary dysentery. That here are other aetiological factors responsible for this syndrome I have not the slightest doubt. In the autumn of 1943 many Service personnel were admitted to a military hospital in the south of England with haematuria accompanied by pyrexia and toxæmia. The haematuria occurred at the end of micturition. None of those affected had been in the Tropics, and there was no history of dysentery or venereal infection. The urine contained many pus cells, but was sterile to ordinary methods of culture. Cystoscopy revealed an oedematous and hyperæmic trigone. The condition was labelled "basal cystitis." The macroscopic terminal haematuria lasted for three or four days, and was followed in 30 to 40% of cases by a polyarthritis and sterile conjunctivitis at about the tenth day of the disease. The joints involved were chiefly the knees, and occasionally the ankles and elbows. Culture of the aspirated fluid was sterile. The condition was thought to be due to a virus.

Again, during my stay in northern Nigeria from 1944-6, this syndrome of polyarthritis and sterile conjunctivitis was very commonly encountered among native troops in the acute stages of gonococcal urethritis. In no instance did it appear during the first attack of gonorrhoea and invariably a history of four or five previous attacks obtained. Its appearance coincided with the onset of the urethritis, which was shown to be gonococcal in origin. Sometimes one would see a sterile conjunctivitis without polyarthritis in the acute stage. Further attacks of gonorrhoea in the patients who had previously exhibited this syndrome resulted in an even more intense associated polyarthritis and conjunctivitis during the acute stage of the urethritis. In view of the appearance of this syndrome after many known attacks of gonorrhoea, and the increase in its severity during subsequent attacks, it was considered to be an allergic manifestation of the gonococcal organism. Obviously then many conditions can give rise to this combination of sterile conjunctivitis and polyarthritis. It occurs as a complication of bacillary dysentery, non-specific urethritis, "basal cystitis" (to which I have referred), and gonococcal urethritis. It is interesting to note that in the last three conditions there is an infection of the lower urinary tract.—I am, etc.,

Watford.

JOSEPH DENFIELD.

Ascariasis and Pulmonary Infiltrations

SIR,—Dr. D. Landsborough in the comments on his case of "Ascariasis Causing Acute Intestinal Obstruction" (Sept. 28, p. 461) remarks: "With such a heavy infestation with roundworms it is curious that there was no history suggesting 'ascaris pneumonia,' nor of toxic manifestations such as urticaria."

Of individuals with ascariasis it is surely only those who are hypersensitive (allergic) towards ascariasis who develop pulmonary infiltrations of the Loeffler type (or other allergic manifestations), and most persons are not hypersensitive (see the discussion on the subject by Spühler and Kartagener (1944), *Schweiz. med. Wschr.*, 74, 1145).—I am, etc.,

London, W.I.

F. PARKES WEBER.

Health Service Bill

SIR,—I do not agree with Dr. R. W. Graham-Campbell's statement (Sept. 28, p. 474) that I treated Dr. Dain unfairly in regard to his statement that "the right of entry of every doctor into the Service is not conceded as it was in the case of the N.H.I." The Health Bill says that every practitioner, if he wishes, shall be entitled to be included in the list. The N.H.I. regulations state that every practitioner can join the Service under the terms of service offered by the Committee, and approved by the Minister, subject to such alterations as may from time to time be made by the Minister. There can be no such thing as an absolute right to join either Service: it must in practice always be conditional. Every citizen has a right to enter a railway carriage and travel, but only if he accepts the rules and regulations of the railway company.

I feel sure that if the much abused "direction of doctors" is considered without prejudice it will be realized to be an ingenious scheme for the rational distribution of medical man-

power for the convenience of doctors, especially the younger men, and the benefit of the public. A general practitioner told me lately he wanted particularly to practise in a seaside town on the south coast, but could not get there on reasonable terms and had to go where "he jolly well could." Probably in actual practice the choice of locality will be much the same whatever the method adopted.—I am, etc.,

Westbury.

CHAS. E. S. FLEMING.

SIR,—We will shortly be asked to say whether or not we desire the B.M.A. to "attempt" to negotiate with the Ministry on the proposed Bill. Before answering an enthusiastic "yes" to this it would be well for everyone to consider that when once we do so we shall have more or less committed ourselves to an Act which many doctors object to for the following reasons.

(a) *Abolition of the right to buy or sell practices.*—It is ridiculous to say that when we buy practices we buy patients. It is simply the goodwill that is purchased, and the patient need not consult the doctor who buys the practice if he does not like him. It is up to the new doctor by his own skill and endeavour to attract and retain the patients, otherwise they will leave him in favour of another doctor. Are we to be paid for these practices on our death or retirement; or are we to continue to be able to retire when we wish and to sell to our successor? We shall certainly want the right of sale of practices under the new scheme.

The Minister states that the sale of practices is abhorrent to him, as it loads the young doctor with debt. Surely any young doctor with ordinary grit and determination to make good and an appreciation of things worked for and achieved would be willing, as we have been, to undertake the task, and if energetic and ordinarily careful should be able to clear off his debt within a reasonable time. I admit there is a tendency nowadays for the ordinary young doctor (and young people generally) to want things handed to them on a plate.

(b) *Negative direction.*—This I fear would soon become positive. It is an unpleasant prospect for many, to whom the right to choose the district in which they will work means much, if they are to be happy and do their best for their patients. Now that the war is over are we doctors to be singled out for this type of treatment?

(c) *Dismissal, if convicted of misdemeanour under the Service, without right of appeal to Court.*—Surely this savours of Nazism and dictatorship in its worst form and is intolerable to every doctor. A Government official has said, "Those who do not join the new Service can emigrate or retire"; and, "A doctor may be a good doctor, but if he does anything which causes him to come under the displeasure of the Minister he will be expelled even if he is a good doctor."

I consider that the terms offered may be attractive at first but will probably come down with a bang inside a year or two, leaving us helpless to protest should we have signed on the dotted line. What is the alternative if we don't join? The public has already given us a lead by their insistence (and I am speaking of insured persons particularly) in five cases out of ten on consulting a specialist and entering a hospital privately, and I do not think that we need be unduly apprehensive about their willingness to co-operate as private patients if the scheme is not worked.

Let us be united in our determination, as a great profession, to refuse to be the first guinea-pigs in the laboratory of this present Government. Let us remember that only as free men and women can either doctors or patients maintain not only our national life but our Empire in the important tasks which the stabilization of a lasting peace will require them to undertake in the years to come.—I am, etc.,

Burton-on-Trent.

J. R. SALMOND.

Legal and Medical "Insanity"

SIR,—Is it not time somebody turned the cold spray on the so-called McNaghten Rules, which have already received a cold douche from the medical point of view in the textbook of Henderson and Gillespie? In the first place, what is meant nowadays by the words *right* and *wrong*? These words may have been fairly well defined a hundred years ago, but to-day cover such overlapping fields as to be purposeless unless evidence is led as to their meaning. Secondly, is evidence that

an accused person of doubtful sanity is aware that the community at large knows his behaviour is wrong or unacceptable to them real evidence that he himself considers it to be wrong? Many an insane person wages war on the community with the most cunning deception while in the private world of their unconscious they are intensely imbued with the righteousness of their causes. Thirdly, is the patient's capacity to develop insight not a more important test? But even if it is, is insight an item which can become a court exhibit directly or even indirectly through expert witnesses? I doubt it. The diagnosis of its absence depends on *rapport* or that blending of mental relationship between examiner and examinee, which can be ruined by even a slight degree of hostility, real or imagined, on the part of the examiner. Is this not too highly technical a factor to be left to a jury even to decide a point of law?

The late Prof. L. Susan Stebbing in her book *Philosophy and the Physicists* has a chapter on "Human Freedom and Responsibility." In this she states: "The problem of free will does not present itself to plain men" (presumably of the type who become jurymen) "as a problem of analysis. Rather it presents itself as a problem of reconciliation. The reconciliation required is between (1) the fact of our intuition of freedom; (2) our beliefs with regard to the correct analysis of that intuition; (3) our beliefs concerning the nature of the conditions of moral responsibility; and (4) our beliefs with regard to the nature of the conditions of the physical world within which our actions have consequences." She then goes on to distinguish between "responsibility for" and "responsibility to." Now, it is obvious that few jurymen will embark on a process of elucidation such as this in forming their opinion. It is equally obvious that for most cases such an elucidation is not required. But an elucidation along a similar plan is required in diagnosing insanity. Later she states: "The justification of punishing lies in the conditions of the welfare of society. Sometimes it is expedient that one man should die for the people. This is the rule of expediency. Social authorities can adopt no other standard since they cannot know *what I am*; they can judge only of what they observe me do. That which I can be observed to do is a partial indication of what I am and of what I am becoming. But it is a partial indication only. It is dangerous to attribute to the powers that be—to the State—an insight into my nature."

Does this not contraindicate a rule-of-thumb method even if it is a good one?—I am, etc.,

Westell.

JOHN A. MCCLUSKIE.

SIR,—While it is impossible to dispute the correctness of the verdict in the Heath case one may perhaps give expression to a widely felt disquiet as to the moral value of the sentence. That it may be socially desirable that Heath should pay the penalty of his crime is perhaps beyond dispute, but is it right that he should? This man's history shows an almost lifelong inability to appreciate the feelings and interests of others: the trial has brought out his present affective indifference to the welfare of others in a very dramatic manner.

Once again we are brought up against the inadequacy of the McNaghten Rules when applied to cases of severe and prolonged psychopathy, and I personally had hoped that this case would result in some recognition of the need for some new approach to what is now recognized as a common type of psychiatric problem. Is it not foolish to wait until the psychopath has ruined several lives before attempting to deal with him, and then only by hanging? The recognition of the need for some form of indeterminate sentence is now accepted by a large number of those who have to deal with this type of personality. It is to be hoped that this case will bring this much-needed reform of our Penal Code before the public: such a procedure would lessen the chances of occurrence of such a tragedy as the present one.—I am, etc.,

Ryhope, Sunderland.

T. MARTIN CUTHBERT.

Pronunciation of Medical Words

SIR,—Referring to Dr. C. E. S. Harris's letter (Sept. 21, p. 442), may I ask a question? If once we begin to correct our pronunciation where are we to stop? Could we, for instance, hope to induce the whole medical profession to cease talking of the tibia and fibula and to say correctly tibia and fibula? So with the spelling of words: the customary asthenia should be astheneia. It would not be safe in every case to trust the *Oxford Dictionary*; we would have to rely on our Latin and Greek dictionaries.—I am, etc.,

Ventnor.

S. W. SUTTON.

Obituary

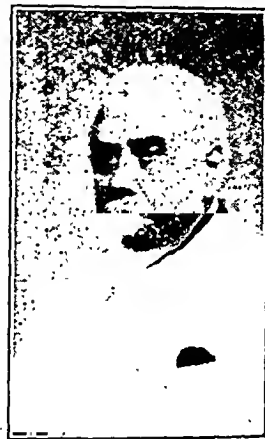
SIR WALTER LANGDON-BROWN, M.D., F.R.C.P.

The world of medicine and philosophy loses a distinguished figure by the death on Oct. 3 of Sir Walter Langdon-Brown, Emeritus Professor of Physic, University of Cambridge, and consulting physician, St. Bartholomew's Hospital. He was a great clinician, teacher, and humanist, a modern example of the scholar-physicians in the succession of Thomas Linacre. Langdon-Brown—he assumed "Langdon" as an additional surname by deed poll in 1935—sprang from Puritan stock, a heritage which he often gratefully acknowledged. The solid qualities of the Puritan character combined with his unusual mental endowments, forwardly directed gaze, and academic experience to make him the outstanding personality that he was. His father, the Rev. John Brown, D.D., a robust and militant Nonconformist, was the sixth direct successor of John Bunyan in the pastorate of Bunyan Meeting, Bedford, and author of the standard biography of Bunyan.

It was at Bedford on Aug. 13, 1870, that Walter Langdon-Brown was born. He went to Bedford School and then to St. John's, Cambridge, where he was Foundation Scholar and Hutchinson Research Student. He soon gave evidence of intellectual distinction, gaining first-class honours in both parts of the Natural Sciences Tripos. His time at Cambridge, to which he returned as Regius Professor more than forty years later, was one of great happiness. In his inaugural lecture as professor he spoke of his joy on returning to a place that had coloured the whole of his subsequent life. "I came here shy, awkward, and diffident, to meet with the most kindly encouragement. What germs of promise my teachers cunningly detected they assiduously cultivated. I return filled with the desire to repay something of the debt I owe to Cambridge." On one occasion he mentioned that while walking through Pump Court in the Temple he suddenly had a feeling of extraordinary happiness. Then he realized that the feeling was associated with the noise of a can being filled at a standpipe, and he knew that it recalled the noise his college servant used to make when filling the water-can for the bath that wakened him when he was a Cambridge undergraduate—"when to waken was to anticipate another delightful day."

His medical training was completed at St. Bartholomew's Hospital, where his name first appears in 1894 as winner of the senior open scholarship in biology and physiology. In the following year he was appointed, with the future Lord Horder, as assistant demonstrator in biology, in which capacity he read to the Abernethian Society at the hospital a critical and well-documented paper on the mechanism of phagocytosis. In 1896 he gave a second paper to the same body on the subject of the plague in England. In 1897 he qualified M.B., B.Ch., and was appointed house-physician to Samuel Gee, and at the same time became the second editor of *St. Bartholomew's Hospital Journal*. In 1901 he took the M.D. of Cambridge, gaining the Raymond Horton-Smith Prize for his thesis.

Some experience of military medicine followed. During the South African war he was appointed senior physician to the Imperial Yeomanry Hospital, Pretoria. Then came many happy and successful years in consulting practice in London. He joined the medical staff of his old hospital, first as assistant physician and then as full physician. His long participation in the teaching at Bart's is appreciated by many generations of students. In the ward round, the class-room, and the lecture theatre he was always lucid, able to present the subject in a manner adapted to the listener, and to communicate to others, especially the young, the subtleties of the art of medicine.



[Elliott and Fry, Ltd.]

ter in his career, when he was accustomed to give formal lectures and addresses to various bodies, those who heard him noted after him, so great was the compression of his talk. Classical allusion, epigrams, satire, and wise and penetrating observations with a side-glance at current events followed one another so quickly that the audience at the end felt they had been witnessing an unusually brilliant pyrotechnic display. Not at all there was anything showy about him: it was the urgency of his thought, clothing itself in eager words. But in his clinical teaching he never left his students bewildered. His benevolence, the range and receptivity of his mind, his appreciation of the student's point of view, his aptness in illustration, his mental vigour and alertness, which contrasted with his massive physical presence—all these things made him a teacher who will be long remembered in that home of great teachers, the school of Abernethy.

Sir Walter Langdon-Brown's interest in medicine extended over two great fields, both of them at the time insufficiently cultivated. The first was therapeutics and pharmacology. At a time when therapeutics was under a cloud he insisted upon the placing of treatment on a sound clinical basis. He once remarked that it was curious that the most materialistic age in history should have been the most sceptical in the use of drugs. When someone asked him how he could imagine that 5 gr. of a drug could have any effect on the whole body he replied that the body itself worked in fractions of a milligram. The second field in which he interested himself more and more in later years was the relation of the new psychology to clinical medicine. This was the subject of his last lecture as a member of the active teaching staff of Bart's in 1930, when he retired on reaching the age limit and became consulting physician to the hospital. He believed the province of medicine to be terminous with life, and that nothing that threw light on life was alien to medicine. No general physician did more to keep the whole patient "ever before the mind of student and practitioner." Langdon-Brown was a prominent member and chairman of the Society of Individual Psychology and made many important contributions to that and other bodies on psychological subjects. He presided over a committee on post-graduate training in psychological medicine whose report appeared in 1943.

Other appointments he held were those of physician and later on consulting physician to the Metropolitan Hospital and principal medical officer to the Provident Mutual Life Assurance Company. At the Royal College of Physicians, of which he became a Fellow in 1908, he had been Croonian Lecturer and Harveian Orator. In 1934 he was appointed Senior Censor. He examined in medicine for the Universities of Cambridge and Sheffield and the National University of Ireland. During the European war, in 1915, he carried out some useful work on war nephritis for the Medical Research Council. From 1932 to 1937 he was a member of the General Medical Council, representing the University of Cambridge. In 1934 when the British Medical Association met at Bournemouth he was President of the Section of Medicine. In the Royal Society of Medicine he was in turn President of the Sections of Urology, of Therapeutics and Pharmacology, and of the History of Medicine. He was an Honorary Fellow of the Hunterian Society and a Corresponding Fellow of the Harveian Society.

In 1932 came his appointment to the Regius Chair at Cambridge. In a letter to a friend, written at that time, he said, in response to congratulations: "I do feel that it is a good thing that the Regius Professorship should still be regarded as a clinical post. I hope that my long experience as a teacher of physiology will enable me to act as a liaison officer as it were between those engaged in the preliminary work at Cambridge and the clinical teachers at the hospitals. There is good work to be done in bridging that gap, and I hope I may be able to do it." His inaugural lecture was on English Medicine and the Cambridge School. He held the chair until 1935, and his long and happy connexion with Cambridge was continued on his election in that year as Fellow of Corpus Christi College.

In literary and scientific circles both inside and outside medicine Langdon-Brown's reputation as a philosophical thinker and writer stood high. In *Thus We Are Men* he discussed in some engaging chapters the problems of life in relation to philosophy and psychology and revealed himself as

a profound student of human nature. In the same volume he also endeavoured to trace the evolution of the religious impulse; probably he satisfied neither the orthodox nor their opposites, but he wrote, he said, in order to clarify his own impressions for himself. He had a happy turn for the telling phrase. Writings and lectures of his bore such titles as "We have reason to think," "Some gods and their makers," "New pains for old," "The style of life," "Just nerves," "On getting the rash out," and "Dr. Jekyll diagnoses Mr. Hyde," which last was the title of his Cavendish lecture to the West London Medico-Chirurgical Society. He was a frequent lecturer to the British Institute of Philosophy and to the Society for Mental Hygiene, and in his discourses he applied the principles of mental hygiene to sociology and to the political situation in an original and characteristically forthright way. His special interest was in seventeenth-century literature, an interest awakened in the first place by his Puritan upbringing. But his studies ranged over the whole field of culture, classical, mediæval, and modern. Some members of the profession will recall how, just before the war in 1939, he was one of a party chiefly of medical men who went on a cruise to the highlands and islands of Greece, including visits to Epidaurus and Cos, and gave a lecture there on Greek influence on medicine. One of the great influences in his mature life was Sir William Osler, the first meeting with whom, he said, he would never forget, so magnetic was the effect of Osler's personality. He wrote a biographical note for the republication of Osler's addresses in 1939. While he had many intellectual interests his first love was always for medicine, and he turned to art and literature only for illustrations and parallels. His medical writings included *Physiological Principles in Treatment*, which ran to seven editions, *The Sympathetic Nervous System in Disease*, and *The Endocrines in General Medicine*. He was also joint editor of the *Practical Encyclopaedia of Medical Treatment*, and contributed many articles and reviews to this *Journal*.

He was knighted in 1934, and among the other honours he received were the Hon. D.Sc. of Oxford, conferred in 1936 when the British Medical Association held its Annual Meeting there, and the Hon. LL.D. of the National University of Ireland and of Dalhousie University, Halifax, Nova Scotia. His marriage in 1931 to Miss Freda Hurry brought him great happiness. Lady Langdon-Brown was his constant companion, a friend to his friends, and (as he often acknowledged) an unfailing source of inspiration.

Dr. S. L. SIMPSON writes: The death of Sir Walter Langdon-Brown is a great loss to medicine, and especially to endocrinology, which owes so much to his creative vision and progressive ideas. Among clinicians he will always be regarded as the founder of modern clinical endocrinology in this country. His breadth of outlook and his capacity for keeping contact with the most recent advances in all departments was an outstanding manifestation of his exceptional intellect and scientific enthusiasm. He was the moving spirit in the initiation of the Section of Endocrinology at the Royal Society of Medicine this year, and his inaugural address on the "Birth of Modern Endocrinology" was characteristically invigorating and creative, although he himself was at the time too ill to be able to read his paper. His knowledge of psychology and of humanity was as fundamental as his knowledge of endocrinology. I had the privilege of knowing the late Sir Walter for some twenty years, during the last ten of which I shared his personal friendship and actively collaborated with him in endocrine literature. To those who knew him well, his great humanity, understanding, and capacity for friendship were outstanding qualities which made him beloved. He will be especially missed by his friends and all workers in the field of endocrinology throughout the world.

STANLEY WYARD, M.D., F.R.C.P.

Dr. Stanley Wyard, physician to the Cancer Hospital, the Victoria Hospital for Children, and the Princess Beatrice Hospital, who died on Sept. 29, was the son of the late Rev. G. L. Wyard, of Bournemouth, and was born in December, 1887. He was educated privately, at University College, Cardiff, and at University College Hospital, London. After qualification in 1909 he was house-surgeon and house-physician at the West London Hospital; he became M.D. Lond. in 1912 and F.R.C.P. in 1941. He served in the 1914-18 war in the R.A.M.C. After demobilization he specialized as a physician, particularly as paediatrician. His hospital appointments included those of physician to the Bolingbroke Hospital, the

Victoria Hospital for Children, the Belgrave Hospital for Children, the Princess Beatrice Hospital, and the Hounslow Hospital. Besides all this activity he was in turn medical registrar, assistant physician, and (on Lord Horder's resignation of that post) physician to the Royal Cancer Hospital; and it was perhaps here that his work and his talents obtained the completest recognition by his colleagues and contemporaries. Stanley Wyard was for a long time a member of the Departmental Committee on Cancer set up at the Ministry of Health. He had a thorough grounding in pathology before attaining distinction as a clinician; and the fruits of this were attested in the *Clinical Atlas of Blood Diseases* which he produced in conjunction with Dr. A. Piney; the sixth edition of this successful work was published in 1945. He also wrote a *Handbook of Diseases of the Stomach*.

The most loyal of colleagues and one of the most unassuming of men, Wyard was highly esteemed by his own profession and his patients; no trouble was too great for him to take on behalf of anyone who wanted his help, and everyone knew that his actions were completely unselfish. He married Constance Enid, daughter of the Rev. W. R. Lloyd, Llandarog, Carmarthenshire, who survives him with their one daughter. Dr. Wyard joined the British Medical Association, but had never taken office in the Marylebone Division or at headquarters.

H. R.

News has been received from Canberra of the death of Dr. FRANK MCCALLUM, Director-General of Health for the Commonwealth of Australia. A native of Melbourne and the son of the Rev. Dr. Alexander McCallum, he was born on May 26, 1890, and from Wesley College entered Melbourne University as a student of medicine. He graduated M.B., B.S. in 1917 and at once joined the Australian Army Medical Corps, serving with the Australian Imperial Forces in France. After the end of the war he became a member of the Commonwealth Quarantine Service and in 1927 was appointed director of the Division of Epidemiology in the Commonwealth Department of Health. Two years later he came to London as chief medical officer at Australia House, and after his return became director of quarantine and senior administrative medical officer. In May, 1945, he was appointed Director-General of Health. Dr. McCallum had been a member of the B.M.A. since 1922 and held the diploma in tropical medicine and hygiene of the English Conjoint Board.

Dr. JOHN HENRY DIXON PHELPS, who died at Great Malvern on Sept. 29, was born at Carlisle on Jan. 4, 1872, son of the Rev. John Phelps. He entered Queen's College, Oxford, in 1891 with an exhibition from Carlisle Grammar School and took his clinical course at St. George's Hospital. He obtained the English Conjoint diplomas in 1899 and held junior appointments at St. George's, graduating B.M., B.Ch. in 1903. After three years as resident medical officer at the British Hospital, Buenos Aires, he started in general practice in Yorkshire and for seventeen years held a number of public medical appointments in and near Richmond. During the 1914-18 war Dr. Phelps served at the Valetta Hospital, Malta, with the temporary rank of captain, R.A.M.C. He moved from Yorkshire in 1920 and became surgeon to the Malvern Hospital. He had been a member of the B.M.A. since 1907 and was also a member of the Medical Officers of Schools Association.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Roland Henry Winfield, M.B., B.Chir., who won the D.F.C. and the A.F.C. as an officer in the Medical Branch of the R.A.F., has been elected into Fellowship of St. John's College.

UNIVERSITY OF LEEDS

The following candidates have been approved at the examinations indicated:

M.D.—S. Cope, F. Debney, H. T. Hardy, T. Hardy, J. Hirst, K. K. Hussain, *E. Hyman, F. A. Lodge, K. G. Marshall, *J. D. Pickup, C. T. Roberts, *P. E. R. Tattersall, L. G. Topham, A. P. B. Waind, C. J. E. Wright.

CH.M.—D. B. Feather.
FINAL M.B., CH.B.—Part II: K. F. Wood (with second-class honours), R. H. P. Fernandez, R. S. Gillinson, Mary J. Hartley, F. Nicholl, J. P. Stuart. Part I: K. A. Exley, Marguerite J. Glover, Joan K. Hardy, R. I. M. Hepworth, A. T. Merson, W. S. Richardson, C. G. W. Sykes, K. H. Sykes, Freda Walton, W. Wintersgill.

* With distinction.

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated:

M.D.—H. B. Stoner.
FINAL M.B., CH.B.—M. Redfern (with first-class honours and distinction in surgery), D. Dexter (with second-class honours).

UNIVERSITY OF ST. ANDREWS

The following appointments in the Medical School have been made by the University Court. *Lecturer in Pathology*: Dr. H. D. Reid. *Lecturer in Pharmacology*: Dr. Sydney A. Smith. *Lecturer in Tuberculosis*: Dr. D. G. McIntosh. *Lecturer in Midwifery and Gynaecology*: Dr. Alexander Buchan. *Assistant in Ophthalmology*: Dr. R. M. Mathers. *Assistants in Pathology*: Drs. J. H. Prain and William Walker.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Prof. Alexander Lipschutz, director of the Department of Experimental Medicine of the National Health Service of Chile, will give three lectures at the College, Lincoln's Inn Fields, on Monday, Oct. 28, Tuesday, Oct. 29, and Friday, Nov. 1, at 3.30 p.m. each day. His subjects are: the tumorigenic action of steroids and implication for the problem of cancer; the antitumorigenic action of steroids; and the steroid balance and the antitumoral autodefence. The lectures are open to medical practitioners and advanced students.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

A special meeting of the Council of the College was held on Sept. 27, and an ordinary meeting on Sept. 28, with the President Mr. Eardley Holland, in the chair.

The Honorary Fellowship of the College was conferred on Mr. Victor Bonney in recognition of his work as a gynaecologist.

The following were formally admitted to the Membership:

H. R. Arthur, S. J. Barr, B. E. Blair, Catherine I. Blyth, Joyce Burt, H. Burt, G. B. W. Fisher (in absentia), R. L. Hartley, D. Jeffries, Iola L. T. Jones, L. Lauste, Margaret Orford, H. C. Perry, D. L. Poddar, Esther M. Pollock, I. Scott-Carmichael, E. W. L. Thompson, T. G. E. White.

At the termination of the meeting on Sept. 28, Mr. William Gillis assumed the office of President, Sir William Fletcher Shaw as Mr. James M. Wyatt the offices of Vice-president, and Mr. Arthur A. Gemmell the office of Honorary Treasurer.

Medical Notes in Parliament

HEALTH SERVICE BILL

DEBATE IN THE HOUSE OF LORDS

The debate in the House of Lords on the Second Reading of the National Health Service Bill began on Tuesday, Oct. 8.

The LORD CHANCELLOR, moving the Second Reading of the National Health Service Bill, said the idea of a comprehensive health service was not new. It was not a product of mere post-war reconstruction and it was not the preserve of any one party. The principle underlying the Bill had been foreshadowed in the 1944 White Paper of the Coalition Government and was, he believed, uncontroversial. However, the present proposals were in many respects radically different from those put forward then.

Everyone was immensely proud of the medical services of this country and of the services that doctors had rendered to the health of the people. He was not an iconoclast, but on the other hand he did not doubt that they would have to alter—to modify and to expand—our existing institutions to make them fit in with the new ideal of a completely integrated medical service.

This was a Bill to introduce an altered, extended, and, in some respects, a new service. It was not a Bill to preserve ancient monuments.

Powers of the Minister

Speaking of the provisions for the mental health service, he said he did not conceal from the House that it was a mere temporary job. When time permitted they had to undertake a complete review of legislation dealing with mental health. The Minister of Health under the Bill had very great powers.

He was in the position of a commander-in-chief planning a campaign against a very dangerous enemy—the forces of disease and ill-health. He was, however, prevented from being what Lord Jowitt might term a "pocket Hitler."

Every single regulation he made must come before Parliament and either it must receive affirmative approval or it could be quashed by resolution of either House. Our hospital services, Lord Jowitt declared, had been developed in a haphazard way. The distribution of those services was quite irregular; they were overlapping in many respects. Our hospital system failed just because it was no system at all. Many hospitals were too small to justify independence. It was not the duty of anyone at the present time to see that the range of hospital services were fairly distributed among the people. That being so, no one, he thought, doubted the importance of rationalizing existing resources. "I don't believe," he continued, "that we can rely any longer on charity for the main hospital expenses. The day when you are going to run the services by dropping a shilling in my little tambourine are gone."

Full Freedom

The scheme involved no bureaucratic control from Whitehall. It did not involve a single additional Civil Servant. No doctor was to be compelled by direct or indirect pressure to join. He was to be in no way interfered with. He believed that by the machinery of the Bill they could achieve their object, which was to give full freedom and full scope and opportunity for professional skill. The technical training of the doctor, the dentist, or the nurse must be free from lay direction.

They must take care to see that the doctor was no worse off, and they must recruit the right type of man, one who would uphold the traditions of a very great profession. With regard to specialists, the Minister of Health was prepared to set up a committee to deal with the remuneration of specialists, and he thought that was the right course to pursue.

Referring to the shortage of dentists, he said that when people became better educated they would realize the tremendously important part which dentistry played in the health of the people and would insist on having a sufficient number of dentists. More people must be attracted into this great profession. At the moment, with the hopelessly inadequate number of dentists, all that could be done was to give some priority to those who should have dental care—for example, young children and expectant and nursing mothers.

The success of the scheme would depend on the day-to-day co-operation which the various people concerned showed in serving a great idea. He did not doubt that when they had thrashed this Bill out all sections and classes of the community would sink their differences in trying to press forward a great ideal for the betterment of the health of the people of this country.

Agreements Laid Aside

The EARL OF MUNSTER said he had hoped they would be able to discuss the Bill free from acute political controversy and in agreement so far as possible with every branch of the medical and health services. Unfortunately, agreements reached had been laid aside and certain provisions which they believed to be wholly detrimental to the future of the Service had been inserted in the Bill. There were wide differences and divergences between the proposals in the Bill and the scheme of the Coalition White Paper.

He asked the Government whether it was merely for political and doctrinaire reasons that the whole medical profession was to be saddled with a scheme they disliked and institutions which the public had generously supported for centuries were to be removed from their control. He felt that the removal of the hospital authorities from the London County Council—the largest hospital authority in the world—and other local authorities, and the encroachment by the Government on local affairs must tend to breed further apathy among the electors in local government. Under the Bill every citizen in the country would receive the same standard of service. A levelling process would be undertaken, and they all knew from experience that a levelling process must be downward.

With regard to the confiscation and use for other purposes of endowments, he said that for the Lord Chancellor to support

such a proposal must be unique in the law of trusteeship. It was the intention of the Opposition to move an amendment on the next stage of the Bill that between the passing of the Act and the appointed day any endowments which were received by any hospital should remain the property of that hospital and should not be transferred to the Hospital Endowment Fund. In that way they would ensure the co-operation of the British people for that unique organization.

So far as the medical service itself was concerned he could imagine nothing that would prejudice the working of the whole scheme more than imposing on the doctors a plan to which they were practically wholly opposed. It had never been made clear whether the scheme embodied in the Bill was the thin end of the wedge of State control. If the medical profession knew what the Government's intentions were their feelings towards the Bill might be better than they were. He could not help feeling how much better it would have been if the Minister had not ridden roughshod over all the institutions and persons who had to be brought into active partnership to make the scheme flourish and prosper.

Hospital Funds

The MARQUIS OF READING considered that the Bill moved a considerable step in the direction of increasing the general happiness of the people of this country. But he did not believe, however dynamic and superhuman a Minister of Health might be, that he could properly discharge the functions of housing and health at the same time. There should be separate Ministers. They should be closely in touch with each other's policy and should walk hand in hand. He confessed that the somewhat rapacious engulfing of the funds of hospitals was a considerable mouthful to swallow.

Only recently there came to his notice a case where a hospital was endowed by the local inhabitants as a memorial to one of their airmen killed in the war. Was it, he asked, the intention that that money should remain for the purpose for which it was subscribed or was it going to be swept into the omnivorous till of the Ministry of Health?

Health centres were an experiment and it was doubtful whether from the psychological point of view they would appeal to the public. He hoped, therefore, that the Government would proceed very slowly with their establishment. The Bill was a great conception but would need considerable amendment in Committee.

The ARCHBISHOP OF YORK, supporting the Bill with reservations, said the number of people who died from preventable causes showed that there was a call for a health campaign on a very large scale. He was afraid, however, that the scheme might to some extent undermine the independence of the medical profession.

He was anxious about the position of the voluntary hospitals and the effect of the scheme on local enthusiasm for these hospitals. He hoped that the local committees which had devoted so much time to the hospitals would not become mere vague shadows but would have real practical powers. He hoped also that the spiritual and religious ministrations which had been a feature of the voluntary hospitals would continue under the new scheme.

The Bill and the General Practitioner

Lord MORAN said with regard to the control of the hospitals there was no difference in the medical profession that if faced with the choice they would rather be under the Minister than the local authority. It was important he said to see that in the new scheme nothing was done to prevent the best men entering the medical profession.

He referred to an unfortunate dispute that had arisen at the eleventh hour between the Minister of Health and the general practitioners. He was perfectly certain that the Minister would meet their claims. It would be an absolute disaster if they began the Service and launched it with a very large section of the profession convinced that they had had a raw deal. If the Bill was going to work they had got to do something unusual. The Minister should put into the Service a small number of very experienced men who were leaders of the profession and persuade them to give their time to making the regions work. The Bill was a measure designed for the betterment of

the people in health and happiness. It was not the product of one party but of all parties over a number of years, and he hoped that when it became law the whole medical profession would unite to try to make it work.

Lord TEVIOR said they were faced with the fact that the state of the teeth of the people of this country was deplorable. There was no adequate service of inspection in the schools. At the present time there were about 15,000 dentists in the country, but quite a number were due to retire.

They must somehow or other encourage more to go into the profession. They must endeavour to raise the prestige and status of the dentist. It seemed to him that the Bill took away the patient-dentist relationship. The dental profession wished to make the scheme a success, but unless some of their objections were removed there would be a further decrease in recruitment for the profession and dentists would carry on outside the scheme. He hoped therefore the Government would do all they could to make the conditions of service under the Bill as attractive as possible. The position of dentists was far worse than that of doctors.

The debate continued.

Medical News

The prize distribution at Charing Cross Hospital Medical School will be made by Viscountess Addison to-day, Friday, Oct. 11, at 3.45 p.m., and Viscount Addison, M.D., F.R.C.S., will give the inaugural address in the Council Room of the Hospital.

The first dinner-meeting of the Hunterian Society will be held at Pym's, 3, Poultry, London, E.C., on Monday, Oct. 14, at 7.15 p.m. After dinner Dr. J. B. Cook will give his presidential address on the evolution of municipal medicine.

At a meeting of the Society for the Study of Addiction on Tuesday, Oct. 15, at 4 p.m., at 11, Chandos Street, W., Dr. W. R. Bett will read a paper entitled: "Poppies, Dawamesk, and the Green Goddess: an Exotic Study of Literary Genius."

At a meeting of the Royal Anthropological Institute at 21, Bedford Square, W.C., on Tuesday, Oct. 15, at 5.30 p.m., Sir Cyril Burt, D.Sc., will discuss some anthropological problems arising out of work for the Services.

At a meeting of the Royal Microscopical Society in the Hastings Hall of B.M.A. House, Tavistock Square, W.C., on Wednesday, Oct. 16, at 5 for 5.30 p.m., Mr. E. Wilfred Taylor will give a communication on improved image illumination and contrast with the metallurgical microscope. The Biological Section will meet in the Hastings Hall on Nov. 6.

Sir Allen Daley, Medical Officer of Health and School Medical Officer, London County Council, will be installed as President of the Society of Medical Officers of Health for the session 1946-7 and will give his presidential address at a meeting to be held at Tavistock House, Tavistock Square, W.C., on Thursday, Oct. 17, at 5.30 p.m.

The annual meeting of the British Orthopaedic Association will be held in London on Friday and Saturday, Oct. 18 and 19, under the presidency of Mr. George Perkins. On the first day at 1, Wimpole Street, a discussion on fractures of the os calcis will begin at 9.30 followed by the presidential address on "Rest versus Activity in the treatment of a fracture." In the afternoon there will be papers followed by short discussions, and in the evening a dinner at Grosvenor House Hotel. On Saturday, at 9.30 a.m., annual general meeting will be held at St. Thomas's Hospital, followed by a demonstration of cases.

A dinner-meeting of the West London Medico-Chirurgical Society will be held at the South Kensington Hotel, Queen's Gate Terrace, on Friday, Oct. 18, at 7.30 p.m. At 8.15 p.m., the president, Dr. G. S. Hovenden, will give his presidential address on "Fifty Years of General Practice."

The annual general meeting of the Research Defence Society will be held at 26, Portland Place, London, W., on Wednesday, Oct. 23, at 3.15 p.m., when Prof. N. Hamilton Fairley, M.D., F.R.S., will give the fifteenth Stephen Paget Memorial Lecture entitled "War-time research in malaria and other tropical diseases of military significance."

The London Jewish Hospital Medical Society will hold a buffet dance at the Royal Hotel, Woburn Place, W.C., on Saturday, Oct. 26, from 7 to 11 p.m. Any member of the profession interested in this Society can obtain particulars from Mr. J. A. Brodie, 86, Lyncroft Gardens, N.W.6.

On Monday, Oct. 28, at 3 p.m., the Lloyd Roberts Lecture will be delivered at the house of the Royal Society of Medicine by Field-Marshal Viscount Montgomery of Alamein, the title being "Morale with particular reference to the British Soldier." As accommodation is limited only Fellows, Members, and Associates of the R.S.M. may attend and admission will be by ticket.

An exhibition of Swiss planning and building will be open at the Royal Institute of British Architects, 66, Portland Place, W., until Oct. 26. In the section devoted to the health of the community, mountain and ski huts, open-air baths, sports grounds, holiday houses, and restaurants are included, as well as the most modern experiments in hospital buildings. Lack of building materials during the war affected Switzerland badly. Steel, coal, cement, and bricks were scarce. The municipal hospital at Basle, however, the largest hospital in the country, was built entirely during the war years (see *Journal*, Oct. 5, p. 500). This is a fine modern teaching hospital; similar buildings are planned for Zurich and Geneva.

Under the auspices of the Central Council for Health Education a Conference on "Education for Family Life" took place on Sept. 30, at B.M.A. House. The main purpose of the conference was to encourage the free interchange of ideas and experience in open discussion; 54 delegates were present; 57 organizations having been invited to send representatives. Under the chairmanship of Sir Allen Daley (Vice-president), the morning session was devoted to a discussion on "Family Life To-day" and the afternoon session was concerned with the subject, "Educational Possibilities," the chair being occupied by Dr. Charles Hill (Vice-president of the Central Council for Health Education). A very varied, interesting and valuable day was summed up by Prof. H. R. Hamley.

Sir Percival Hartley, F.R.S., Director of Biological Standards at the National Institute of Medical Research, opening the 105th session of the College of the Pharmaceutical Society on Oct. 2, spoke of the remarkable success of the Ministry of Health's campaign against diphtheria. Incidence and death rates had fallen and almost every month some new record was achieved. What would appear to be the last final assault in the present stage of the campaign had now been launched; but, once having attained the goal of immunizing the greatest possible number of children, the percentage must be maintained at the highest possible level. With regard to international co-operation in the field of health he said that those who had used the League of Nations for such purposes had found that the principles were sound and that it could be made to work. The League's Health Organization had been of the greatest value to governments, ports, and ships at sea in matters concerning quarantine. Its work for the international control of certain infectious diseases like typhus, malaria, rabies, and plague represented other important phases of its activities; its concern for the world stocks of quinine and other antimalarial drugs, and for the control of dangerous drugs and drugs of addiction, yet another. Through its activities a valuable and practical step forward had been taken towards the establishment of an international pharmacopoeia, a project which had been under discussion for over half a century. Following a new endeavour, which only got under way in 1937, matters had so progressed that this year a report had been published which could fairly be claimed to be the beginnings and the nucleus of an international pharmacopoeia; rules for its production had been drawn up, a most valuable statement concerning doses compiled, and some fifty monographs presented for adoption.

The Association of Anaesthetists of Great Britain and Ireland will celebrate the centenary of anaesthesia by a dinner in the Great Hall of Lincoln's Inn on Thursday, Oct. 31.

On Oct. 3 the general headquarters of the British Legion were moved from Cardean House, Richmond, to Pall Mall, London, S.W.1: telephone Whitehall 5731. The appeals department and the women's section remain at Richmond.

The *Scotsman* announces that Sir John Boyd Orr, M.D., F.R.S., has informed his election agent in Glasgow that he intends to resign his seat as M.P. for the Scottish Universities. Sir John accepted the office of Director-General of the International Food and Agricultural Organization on the understanding that it would be of a temporary nature and therefore decided to retain his seat in Parliament. Since it is now clear that it will be at least a year before the World Food Board is definitely established he has decided with the utmost reluctance to resign.

The Tuberculosis Educational Institute announces a Refresher Course, at the Literary and Philosophical Library, Westgate Road, Newcastle-upon-Tyne, for medical practitioners and tuberculosis officers, on the treatment of tuberculosis, Nov. 4 to 9; fee, four guineas. Programmes can be had from Dr. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1.

The College of Midwives is founding a research scholarship to enable a midwife to assist a doctor in hospital research into the use of analgesia in childbirth.

The Services

DEATHS IN THE SERVICES

Lieut.-Col. JAMES MORWOOD, I.M.S. (ret.), has died at the age of 84. Born in Castledawson, Co. Derry, Ireland, he qualified M.D., M.Ch., M.A.O. with honours at the Royal University of Ireland in 1884. He joined the Indian Medical Service in 1886, and after preliminary studies at the Royal Victoria Hospital, Netley, proceeded to India. He took part in the Hazara Expedition of 1888, for which he obtained the India medal with Hazara clasp, and he also took part in the Tirab Expedition of 1897-8, for which he received the India medal with Punjab Frontier and Tirah clasps. After this service on the North-West Frontier he held many civil appointments, finally becoming civil surgeon, Benares, during the period 1914-16, and officer in medical charge of Indian Troops Hospital, Karachi, 1916-18. On his retirement after 32 years of service in India, he returned to settle in Belfast. His main interests throughout his years in Belfast were various philanthropic institutions of a medical nature. He was honorary secretary for many years of the Belfast Branch of the National Society for the Prevention of Cruelty to Children, he was a member of the board of management of Forster Green Hospital for Consumption, and of the board of governors of the Ulster Society for Promoting the Education of the Deaf, Dumb, and Blind. He had been a member of the B.M.A. for 56 years. Col. Morwood married Miss Mary Bell, of California, the daughter of a doctor who served on the Southern side during the American Civil War; she died in 1939. He is survived by two daughters and by three sons, two of whom are in the medical profession.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In England and Wales there were 134 fewer notifications of whooping-cough and an increase of 62 in the returns for scarlet fever.

Half the decline in cases of whooping-cough was contributed by Yorkshire West Riding 38 and London 32. The largest increase in the incidence of scarlet fever was Yorkshire West Riding 38. Only small fluctuations occurred in the local trends of measles except in Lancashire, where an increase of 60 was recorded.

The largest returns for dysentery were London 14, Lancashire 11, Warwickshire 10. Of the 13 notifications of typhoid 6 were from the Port Health District of Liverpool; these cases were imported from West Africa.

The 240 notifications of diphtheria were 3 below the record low level of seven weeks ago. The only change of note in the local trends during the week was an increase of 11 in Suffolk. In this county 8 of the 12 cases were reported from Halesworth U.D. The largest returns during the week were Lancashire 59, Durham 25, and Yorkshire West Riding 21. In some counties the recent incidence of diphtheria has been very low, and there are twelve counties which during the past two months have had an average of less than one notification each week.

In Scotland the chief feature of the returns was a fall of 20 in the notifications of dysentery. Other decreases were acute primary pneumonia 19, measles 14, whooping-cough 14.

A serious outbreak of ringworm has been reported from Bathgate, West Lothian. Altogether 200 children have been infected in nine schools with a population of 4,000.

In Eire a decline in incidence was recorded for diphtheria 11 and scarlet fever 18, while measles increased by 10 cases. In Dublin C.B. 50 cases of diarrhoea and enteritis were notified.

In Northern Ireland the notifications of scarlet fever increased by 15.

Quarterly Returns for Eire

During the June quarter a birth rate of 24.1 per 1,000 was recorded; this was 0.1 higher than the rate for the two preceding second quarters. The infant mortality was 57 per 1,000 registered births, 2 below the rate for the preceding June quarter. The general death rate was 14.1 per 1,000, an improvement of 0.3 on the June quarter of 1945. Of the deaths under 2 years 184 were attributed to diarrhoea and enteritis. The 746 deaths from pulmonary tuberculosis and 254 from other forms of tuberculosis were 143 and 21, respectively, below the averages of the five preceding second quarters.

Week Ending September 28

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,001, whooping-cough 1,451, diphtheria 285, measles 1,461, acute pneumonia 373, cerebrospinal fever 32, dysentery 66, acute poliomyelitis 30, paratyphoid 19, typhoid 12.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 21.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	36	3	12	1	1	39	4	15	1	—
Deaths	—	1	—	—	—	—	1	—	—	—
Diphtheria	240	16	78	24	16	496	28	128	71	11
Deaths	3	2	1	—	—	5	1	1	—	—
Dysentery	66	14	22	1	—	270	41	132	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	2	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	43	4	3	—	—	41	7	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	38	3	10	6	8	71	9	26	101	5
Deaths	—	—	—	—	—	—	—	—	22	—
Measles*	1,208	82	61	29	2	397	51	71	17	5
Deaths	1	—	—	—	—	2	—	—	—	—
Ophthalmia neonatorum	69	8	15	—	—	81	7	10	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	17	—	7(B)	1(B)	4(B)	8	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	312	10	1	1	—	347	26	3	—	1
Deaths (from influenza) ..	5	1	2	—	—	4	1	1	—	—
Pneumonia, primary	—	117	12	—	—	—	149	8	—	—
Deaths	—	18	5	2	—	—	17	6	8	—
Polio-encephalitis, acute	3	—	—	—	—	5	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	28	1	2	1	—	45	1	1	9	3
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	18	—	—	—	—	5	16	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	106	6	11	—	1	157	5	14	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	853	71	158	16	4	1,361	105	271	14	36
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	13	1	1	2	—	11	—	2	6	2
Deaths	—	—	—	—	—	—	—	1	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,610	110	105	25	24	1,093	77	41	42	4
Deaths	6	—	2	—	—	6	5	—	4	—
Deaths (0-1 year)	352	40	57	31	1	335	51	58	42	14
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,838	612	491	163	97	3,812	551	537	194	99
Annual death rate (per 1,000 persons living)	—	10.5	10.4	—	—	—	12.2	12.5	—	—
Live births	8,617	1301	1082	428	272	6,463	814	828	369	265
Annual rate per 1,000 persons living	—	21.8	27.4	—	—	—	16.0	23.8	—	—
Stillbirths	266	41	25	—	—	189	23	35	—	—
Rate per 1,000 total births (including stillborn)	—	26	—	—	—	—	41	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Accommodation Asthenopia

Q.—*What are the causes of accommodation asthenopia in a young man? Could it be due to syphilis?*

A.—The usual causes are want of proper correction of focus, debility, reading or writing too close to the paper, convergence deficiency, and poor illumination. Less frequent causes are glare—directly from the source of light or indirectly from a glazed paper—and glaucoma. Among the bodily disorders associated with this condition are cited tuberculosis, intestinal disorders, hypopituitarism, neurasthenia, vascular hypertension, and nasopharyngeal, tonsillar, and dental disease.

Unless syphilis is causing active ocular disease it is not a recognized cause of altered accommodation. Treatment is by accurate refraction under a mydriatic and elimination of the above causes.

Vitamin E in Heart Disease

Q.—*Has vitamin E treatment been tried in this country, as in Canada, and particularly in cases of auricular fibrillation?*

A.—With many of the vitamins our knowledge of the clinical effects of deficiency preceded the identification and isolation of the particular factor in the laboratory. Scurvy, rickets, beriberi, and xerophthalmia were well known before the existence of vitamins was realized. Vitamin E on the other hand was discovered as the result of laboratory experiments on reproduction in rats. Extensive investigations have since shown that it is essential for the nutrition of many other animals, including the rabbit, guinea-pig, and chicken, and that it is required for many functions other than reproduction, but evidence that vitamin E deficiency is of clinical importance in the human subject is inconclusive.

Apart from the Canadian claims on which this question is based reasons for testing vitamin E in the treatment of certain forms of heart disease might have been inferred from the results of animal experiments, since muscular lesions, sometimes accompanied by degeneration of the nerves, are a prominent feature in vitamin E deficiency. While these lesions were first described in skeletal muscles and uterus, it has recently been shown the heart is also affected. We have the further point that in the rat the muscular degeneration of vitamin E deficiency is characterized by the deposition of brown pigment granules, which appear on histological examination to be identical with those found in brown atrophy of the senile human heart. There is as yet, however, no evidence on the treatment of myocardial disease with vitamin E in this country.

The results of treatment of the various forms of atrophy or degeneration of the skeletal muscles have generally been disappointing, although American workers have claimed that failure may be due to the faulty absorption of the vitamin. The use of vitamin E in the clinical treatment of auricular fibrillation, even if it is believed to be of myocardial origin, must therefore be regarded as no more than experimental until a critical appraisal of the Canadian claims has been made. A suitable dose for such a trial would appear to be 90 mg. of tocopherol acetate daily, which has been found to be sufficient to cause a definite increase in the level in the blood plasma. Doses of up to 5 g. daily have been given without ill effects.

Intestinal Carbohydrate Dyspepsia

Q.—*What is the treatment for intestinal dyspepsia? Has sulphaguanidine been tried in these cases?*

A.—Intestinal dyspepsia, or intestinal carbohydrate dyspepsia as described by Hurst, is thought to be due to hurry through the small intestine or to a deficiency of its secretions. As a result starch still in its cellulose jacket reaches the large bowel, where it is acted upon by the diastase of the caecal secretions. The starch is freed and is fermented by the bacteria present, which, finding a medium to their liking, multiply rapidly. The particular bacterial flora found in these cases is, therefore, a secondary and not a causal finding. Provided that starch in its cellulose envelope is prevented from reaching the colon the excess of enterococci will die off and treatment with sulphaguanidine will not be necessary. Sulphonamides can have only a limited use in this disorder—the underlying disturbance of function may persist for a long time, and it is impossible to continue chemotherapy for more than a short while.

Diet should not be difficult, even in these times. Sugar and starch which has been liberated from its envelope (e.g., in bread and flour) are well digested in all but the most severe cases and need not be restricted. The following starch-containing vegetables should be prohibited: potatoes, dried peas and lentils, carrots, artichokes, parsnips, beetroot, onions, and rice.

A few drugs may be of value. Codeine 1/4 gr. (16 mg.) may slow up intestinal movements. Charcoal 1/2 oz. (15 g.) in water each morning may help to absorb the gases formed. Constipation is best treated by mucilaginous aperients which will add bulk and fluid to the faeces. Finally, all these patients should be encouraged to return to a normal diet as soon as they have been symptom free for any length of time. This disorder tends to occur in those who are introspective and who take a morbid interest in their bodily functions. A severe neurosis will replace the original complaint unless the sufferers are handled very firmly.

Potassium Thiocyanate in Essential Hypertension

Q.—*How should thiocyanate be administered in treating essential hypertension?*

A.—Potassium thiocyanate is one of the few drugs which appear to lower the blood pressure. Although thiocyanates do not split off hydrocyanic acid they may produce unpleasant toxic effects if the thiocyanate level in the blood exceeds 12 mg. per 100 ml. The dosage necessary to produce this concentration varies considerably, but the risk of toxic effects is remote if the following course is given: potassium thiocyanate 1 1/2 gr. (0.1 g.) in peppermint water thrice daily after food for a week, twice daily for the next week, and once daily for the next two weeks. If control by blood thiocyanate estimations is possible 3 gr. (0.2 g.) may be given daily and increased by 3 gr. (0.2 g.) each week until either a satisfactory fall in pressure is recorded or the blood level reaches the critical value.

Regular blood pressure measurements under uniform conditions should be made every two or three days. A significant fall of blood pressure is produced in perhaps one-third of the patients treated. Relief from headache is experienced in more than half the cases. If the four-week course produces good results either objectively or subjectively it may be repeated when symptoms recur or when the blood pressure rises again.

Toxic symptoms are as follows: weakness, fatigue, drowsiness, and gastric or intestinal disorders. Dermatitis has been recorded even after moderate dosage.

Action of Ung. Ichthyol

Q.—*What is the action of ung. ichthyol upon inflammation?*

A.—Ichthammol, obtained by treating fossilized fish deposits with sulphuric acid and neutralizing the distillate with ammonia, contains about 10% of sulphur in the form of organic sulphonates. It has to some extent the properties of sulphur—mildly antiseptic and parasitocidal—but is non-irritant and has the reputation of being demulcent. Its use is empirical and is probably related to its black colour and unpleasant smell. Its value is doubtful and many dermatologists find little use for it.

Pneumothorax and Air Travel

Q.—Is it dangerous for a man with a small pneumothorax to fly to the United States? I know there is a theoretical objection to flying at high altitudes, but is there even a moderate risk either of syncope or of lighting up a tuberculous focus?

A.—I think it is most inadvisable for a man with a small pneumothorax to fly to the United States with perhaps twelve hours at 10,000 ft. (3,000 m.) and the possibility that the pilot may go rather higher if the weather necessitates it. Cases tested in the decompression chamber have shown considerable distress with short exposure to 9,000 ft. (2,700 m.). If the man in question can be tested in a decompression chamber he may find that he has no disturbance or pain, in which case there would be little risk in travelling by air, but I think it would be dangerous to travel without such a test.

Intervertebral Disk Lesions

Q.—1. What is the characteristic syndrome by which sciatica due to a lesion of an intervertebral disk can be diagnosed clinically? 2. Can a diagnosis be made with sufficient confidence to justify laminectomy? 3. What is the significance in a case of sciatica of narrowing of the disk between the fifth lumbar and first sacral vertebrae and of a comparatively straight lumbar spine as shown on straight x-ray? 4. Does a negative finding on myelography contraindicate laminectomy? 5. How is the operation performed, and are the results good?

A.—1. *Characteristic Syndrome.*—It is important to realize that disk protrusions occur under variable circumstances. There are two characteristic stories. A person lifting a heavy weight feels something "give" in the back. There is intense lumbago or sciatica, and the individual is unable to straighten up. Or there may be no recent injury. Sometimes there has been an accident some months earlier producing no obvious back pain—e.g., a fall on to the buttocks. Many months later sciatica develops, perhaps precipitated by some minor effort, say a cough or a sneeze. It is probable also that an intervertebral disk can be damaged by the repeated but usually unnoticed strains of an active athletic life.

The typical clinical picture includes: (a) Sudden onset of acute "lumbago" or "sciatica," usually in a young person, markedly aggravated by coughing, sneezing, or straining at stool. (b) Scoliosis which may be towards or away from the leg in which the pain is felt; or reversal of the normal lumbar curve; or deviation of the trunk to one or other side on bending forward. (c) Spasm of the posterior spinal muscles so that flexion and extension are limited and painful but lateral flexion and rotation are relatively normal. (d) Tenderness above or at the level of the posterior superior iliac spine on the side of the sciatica. Sometimes deep pressure at these levels will cause pain referred along the sciatic distribution. There is often marked tenderness along the course of the sciatic nerve. (e) Painful limitation of "straight leg raising"—i.e., active and passive limitation of flexion at the hip with the knee fully extended and the patient recumbent. This restriction is most marked on the affected side but is often present on the opposite side as well. There are several methods of eliciting this test. (f) Loss of tone, wasting, and weakness of the buttock, and the posterior or anterior calf muscles. (g) Anaesthesia or hypoaesthesia of the outer aspect of the calf and the outer or inner borders of the foot. (h) Diminution or absence of the ankle jerk, usually on the affected side but occasionally on the opposite side if the prolapsed disk is centrally placed.

There are wide variations of this clinical picture. For example there may be no sciatic pain at all—indeed it is becoming increasingly clear that recurrent attacks of acute lumbago are due to prolapsed intervertebral disks. The spine becomes temporarily "locked" in the same way as the knee when a torn meniscus is displaced. Again the neurological pattern is variable, so that in some there are sensory changes and no motor or reflex abnormalities, and vice versa. The common sites of disk protrusion are the interspace between the fourth and fifth lumbar vertebrae producing pressure on the fifth lumbar root, and the interspace between the fifth lumbar and first sacral with pressure on the first sacral root. Broadly speaking the fifth root syndrome is weakness of the

anterior tibial group of muscles with hypoaesthesia of the outer aspect of the calf and the inner border of the foot, the ankle jerk being normal. Pressure on the first sacral root causes weakness of the gluteus maximus and posterior calf muscles, hypoaesthesia of the outer aspect of the calf and outer border of the foot, and changes in the ankle jerk.

2. *Diagnosis* can be made by clinical and x-ray examination with confidence. The condition which most closely mimics the disk syndrome is spondylolisthesis. It is obviously important to carry out an examination sufficiently thorough to exclude such lesions as neoplasms in the spinal column, or tuberculous or other inflammatory processes in the lumbar spine or pelvis. In actual fact these conditions rarely cause confusion.

3. *Narrowing* of an intervertebral space as shown in a straight x-ray may mean degeneration of the disk material, but it certainly does not always indicate the disk which is causing the sciatica. Opinion is divided about its significance.

4. *Myelography* is nowadays rarely employed for the diagnosis of a straightforward prolapsed disk. Occasionally when there is doubt about the cause of sciatica or about the location of the root pressure it is valuable. Lipiodol has been discarded in favour of non-irritating contrast media, such as "pantopaque," which can be withdrawn more easily. A negative myelogram is by no means a contraindication to operation.

5. *Treatment.* Most surgeons advise operation if the sciatica or lumbago does not subside after three to six weeks' rest in bed, or after immobilization in a plaster jacket or spica, or if recurrences are frequent. Operation is justified in these circumstances on clinical and straight x-ray examination alone. The operation is performed extrathecally. Most neurological surgeons excise the prolapsed material through an interlaminar approach, removing the ligamentum flavum and a mere nibble of bone; orthopaedic surgeons favour the performance of a modified laminectomy, taking care to avoid damage to the facet articulations. The important thing is for the procedure to be carried out by an expert. In his hands the operation carries no special risk and the results are excellent. In long-standing recurrent cases the quality of recovery is not so good as in recent cases—and the convalescence tends to be longer. This is no doubt due to changes in the nerve root from long-continued and oft-repeated irritation.

Nervous Breakdown

Q.—What is a nervous breakdown?

A.—Biologically speaking, a "nervous breakdown" is the inability of the personality to cope with the problems and difficulties of life. In its adaptation to life the mechanism of response breaks down. It refers to a failure in response of the personality as a whole and not usually to a breakdown due to specific diseases like disseminated sclerosis. It depends on two factors, the severity of the objective stress and the constitutional inability of the individual to stand the strain. In some cases, as in war shock, the objective traumatic factor may be the more important. But according to modern psychological opinion a "nervous breakdown" is rarely caused by objective conditions alone. Even in traumatic conditions like "shell shock" we find there are predisposing causes, which is why one man breaks down under such conditions and another does not. The instability of the individual is the most important factor. This instability may be innate and constitutional or acquired. If the instability is of a constitutional kind the breakdown is usually of the nature of a "psychosis," and is not spoken of as a "nervous breakdown." In the majority of cases the term is used of those conditions in which the instability is the result of subjective causes, such as emotional conflicts and internal stresses, which so weaken the organism that it is rendered incapable of withstanding even the ordinary stresses of life, and so breaks down. That is why a patient so often breaks down for no apparent cause. (Of course even in these cases physical fatigue, toxic conditions, and constitutional sensitivity may be contributory causes, but it is the mental fatigue due to the strain of subjective conflict which is the important factor undermining the personality.) These conflicts may be between strong emotions like fear and aggressiveness or sex; but the most deep-rooted conflict is that between the native impulses of the natural self and the demands made upon him by society, and the demands which he makes upon himself.

the Minister, whose opinion could be challenged in the House of Commons.

The motion, that the Bill cannot produce the best health service for the nation, was put to a show of hands, and declared by the Chairman to be carried by 149 votes to 139.

SALARIES OF WHOLE-TIME MEDICAL OFFICERS AT MENTAL INSTITUTIONS

The interim revision of the Askwith agreement published with Ministry of Health Circular 140 did not cover all appointments held by medical officers in mental hospitals because certain of these appointments have never come within the scope of the Askwith agreement. Negotiations were immediately begun between the British Medical Association and the Mental Hospitals Association and a conference was held at which representatives from both Associations agreed the principles for an interim revision of remuneration for medical superintendents, together with other grades of medical officers, employed at mental hospitals and mental deficiency institutions. Representatives of the L.C.C., who were also present, agreed to consider the application of the recommendations.

The document, drawn up as a result of the discussions, has been approved by the Councils of both Associations and has been issued by the M.H.A. to all authorities responsible for the administration of the mental hospitals and mental deficiency institutions with a request that the recommendations be implemented retrospectively from April 1, 1946. Details of the interim revision are set out below.

AGREED DOCUMENT

Interim revision of remuneration of medical superintendents, and other grades of medical officers employed at mental hospitals and mental deficiency institutions not covered by the interim revision of the Askwith Memorandum, agreed to at a Conference between representatives of the Mental Hospitals Association and British Medical Association.

(1) The salaries of medical officers in mental hospitals and institutions for the mentally defective (other than assistant medical officers already dealt with in the interim revision of the Askwith Memorandum) shall be increased as follows:

(a) if the datum salary does not exceed £700, by 30% of that salary;

(b) if the datum salary exceeds £700, but does not exceed £1,000, by 20% of that salary;

(c) if the datum salary exceeds £1,000, by 10% of that salary;

provided that no officer shall have an automatic entitlement to a total salary greater than that produced by the addition to the maximum of the scale of pay as at Sept. 3, 1939, attached to the position he occupies, of the appropriate percentage increase of the datum salary for the position.

(2) For the purposes of the foregoing paragraph "datum salary" shall—

(a) subject to adjustment as provided in (c) below, be for officers in service on Sept. 3, 1939 (and continuously employed thereafter to the date of issue of this Memorandum), the minimum of the scale of salary attached to the material position at Sept. 3, 1939;

(b) subject to adjustment as provided in (c) below, be for officers appointed after Sept. 3, 1939, the minimum of the scale of salary attached to the material position either at Sept. 3, 1939, or at the date of appointment whichever is the lower;

Note to (a) and (b):

(i) Wartime service shall not be regarded as breaking the continuity of appointment.

(ii) Where there is no scale and the officer has been in office for some years regard should be had to increments, which he has received during the few years preceding 1939, for the purpose of determining a notional scale. If there have been no increments the salary in operation is the commencing salary for the purposes of this agreement.

(c) be assessed on a resident basis and shall be the net cash amount remaining after (A) deduction of the individually

agreed charges for board, lodging, and washing where gross salaries, subject to deductions for residential amenities provided, are payable; and/or (B) exclusion of the value of emoluments provided in kind or services;

(d) not include any payment made in respect of possession of the D.P.M.

(3) Individual cases where there is doubt should be referred for joint consideration by the Mental Hospitals Association (or the employing authority concerned if not a member of the Mental Hospitals Association) and the British Medical Association.

(4) The foregoing arrangements, which are without prejudice to any subsequent negotiations upon scales of remuneration in the National Health Service and are in addition to war bonus are to have effect as from April 1, 1946.

(5) Marginal adjustments shall be made to ensure that a officer to whom a 20% increase applies shall receive a revised salary of not less than £910 per annum, and that an officer to whom a 10% increase applies shall receive a revised salary of not less than £1,200 per annum, and in the case of incremental scales the amount of the increase, as adjusted, be applied throughout the scale.

(6) In cases where present salaries are such as to disqualify their recipients, either in whole or in part, from receipt of the salary increases now agreed, employing authorities clearly have discretion to review existing rates of remuneration.

MEDICAL STUDENTS AND THE HEALTH SERVICE BILL

The British Medical Students' Association has tried to assess the reaction of medical students to the National Health Service Bill by means of a questionnaire which was distributed to the students in every medical school in England, Wales, and Scotland with two exceptions—a total of 10,106. Of these 3,801 replies were received—i.e., 37.6%. Results were obtained separately from England and Wales, and from Scotland, but they are substantially the same, and unless separate mention is made of Scotland, remarks apply to the over-all figures.

Summary of the More Important Findings

Only a small proportion (17%) of students are definitely opposed to the principle of a comprehensive National Health Service—slightly over 80% being in favour. The detailed provisions of the Bill are not so widely approved. Slightly over 40% (43% England and Wales, 41% Scotland) feel that the Bill will improve the medical services of the country, and 40% (41% England and Wales, 40% Scotland) think it will cause a deterioration. Thus opinion on the Bill as a whole is almost evenly divided.

The principle of a general practitioner service is approved by a 3:1 majority, but the transference of the hospitals to the Ministry of Health is not approved, a small majority preferring the hospitals to remain under present administration.

Most of the remaining questions deal with details, based on the assumption that there is to be some form of health service on the lines proposed. Medical student opinion is strongly in favour of the doctor (whether specialist or general practitioner, newly qualified or well established) being allowed simultaneously to conduct private practice along with his work in the Service—as is proposed by the Bill. However, an appreciable minority (26% with reference to newly qualified practitioners, 20% with reference to specialists and established practitioners) oppose this plan. Health Centres are approved (about 50% in favour and about 30% against). The combination of salary and capitation fees is approved (64%)—but 18% favour capitation fees alone and about 12% salary alone. The prohibition on the sale of N.H.S. practices (as proposed by the Bill) is accepted (53% for, 40% against); but, again by a small majority, the power of the Medical Practices Committee to prohibit a doctor from practising in a particular area is not approved (47% for, 50% against). Nearly 60% disagree with the composition of the Executive Councils—almost all those saying why they disagree doing so because they wish to see more professional men on the councils. Free refresher courses for doctors are non-controversial, 98% of students favouring the idea. So far as the hospitals are concerned, students disapprove of the transference of the endowments of voluntary hospitals to a new fund for redistribution, and agree that the teaching hospitals should be administered separately, as is conceded by the Bill.

In spite of disagreement with certain details and an uncertain approval of the Bill as a whole, over 60% of the students who answered the questionnaire expressed a willingness to work in the

the National Health Service if it comes into force or anticipated inevitability of having to work in it. All this is provided that the provisions of the Spens Report (which had not at that time been published) are acceptable, and that such Regulations as the Minister may make under the Bill are also acceptable.

HEARD AT HEADQUARTERS

International Achievement

An assembly of representatives of thirty nations in Tavistock Square, with the British Medical Association as host, was a noteworthy event, and incidentally furnished a good example of international conferences in general. Within 48 hours this conference had achieved what it set out to achieve: it had set up a World Medical Association, had given it a local habitation—or two habitations, one in London and the other in Paris—and a name; it had also decided the subscription and appointed a provisional committee and the secretariat. One of the happy things about the conference was the interpretation service. There were two interpreters, one to translate from the French into English and the other from the English into French. One of them was Dr. Gilder, who has a number of languages at his command; the other was Miss Lagarde, who works for the British Council. Both of them were highly complimented on the skill they showed in removing the language barrier. Many of the delegates, both the English-speaking and the French-speaking, were bilingual, and the Conference would doubtless have come to some conclusion without any interpretation at all, but when it came to the exact phraseology of resolutions and the details which will presently be embodied in by-laws their assistance was of the greatest value.

The Closed Shop

One of the many matters which the Public Health Committee of the B.M.A. will have before it at its next meeting is the issue of the "closed shop," which has now thrust its sulky head into medical affairs. It is stated that certain local authorities have passed resolutions requiring all their employees to become members of their appropriate trade unions. In certain instances it has been intimated that these resolutions are not to be interpreted literally, and that so far as medical officers are concerned membership of the B.M.A. will satisfy the condition. One authority says that that will not be sufficient, but that membership of N.A.L.G.O. will be required; and yet another requires membership of the Medical Practitioners' Union as a condition of appointment. With the repeal of the Trades Disputes Act local authorities have now the legal right to require membership of a trade union as a condition of appointment to their staffs.

The B.M.A. is not a trade union: it is a limited company with the licence of the Board of Trade to omit the word "limited" from its title; but it is the body recognized by the Government and by the various associations of local authorities as the negotiating body on behalf of the profession; moreover it is recognized by the T.U.C., with which it is in liaison. This matter of trade unionism has often been before the B.M.A. Opinion of counsel was sought many years ago, and has been obtained again,¹ and is to the effect that if the Association desired to become a trade union it would have to be completely reconstructed. A new association would have to be formed to which the B.M.A.'s present assets could not be transferred; and, moreover, the objects would have to be drastically revised; for whereas the present objects are to promote the medical and allied sciences and to maintain the honour and interests of the profession, the first object of a trade union is the regulation of relations between workmen and masters. The legal view is that medical men are neither the one nor the other within the meaning of the Trade Union Acts.

As Others See Us

It has been very interesting to discover at the two international medical gatherings of the last fortnight, the one at Basel attended by British and Swiss doctors, and the other in

London attended by doctors from a score of European countries, how well informed the men from other countries were concerning the controversy between the British medical profession and the Government. It was evident that the Swiss had a keen appreciation of the issues involved. One Dutch doctor knew all about the Spens Report and the insurance capitation fee. Many expressions of sympathy with the stand which the Association has made were forthcoming from French and Belgian colleagues, and were all the more valuable for being based on a sound knowledge of the issue. Criticism, however, came from a Belgian delegate. "We Belgians," he said, "know how to speak our minds. We say 'No,' and when we say 'No' we mean 'No,' and when we mean 'No' our Government knows that we mean 'No.' You English, on the other hand, are too fond of mincing your words. You use too many polite phrases. You are too much inclined to compromise." Certain statements made by the Association which seemed to lack nothing in point and directness were quoted to him, but he was not convinced. "We are an obstinate people. We Belgians. The Germans said so."

Correspondence

A Word to Hospital Staffs

SIR,—In a recent circular to hospitals the Minister has stated that he is prepared to consider financial help during the interim period before the commencement of the National Health Service, such financial assistance to include a sum for the honorary medical staff. We understand that some hospital staffs may be inclined to accept such payments on the grounds that if eventually they are to be paid by the State why not begin now. If this be the attitude of any considerable number of consultants they are merely playing into the hands of the Minister, since he would say the consultants only need to be bribed in order to make them work his Bill. What then is the use of hospital staffs passing resolutions deploring the handing over of hospitals to the State if in the next breath they begin to ask for money?

Since a plebiscite is to be taken on the question whether the medical profession will negotiate with the Minister about the regulations he intends to issue, any action of hospital staffs on the above line will only weaken the unity of our profession, and is therefore to be deplored. Let all medical committees, when this subject is discussed by them, see the importance of this principle and fight against any interim payment to them from the Government. If they do not they are accepting this Bill and are adopting a defeatist attitude.—We are, etc.,

T. MEYRICK THOMAS.
W. SMITH.

GEOFFREY PARKER.
COLIN EDWARDS.

London

H. V. MORLOCK.

Resistance to New Capitation Rate

SIR,—In organizing any resistance to the new capitation rate for N.H.I. patients which may be decided on, full consideration must be given to the weakness of human nature. There are two main dangers in the idea of mass resignations: (1) Black-legs—those who promise but do not fulfil. (2) The pool of unemployed doctors. The first danger would largely be prevented by insisting that all resignations be completed and sent under cover to the local Divisional Secretary of the B.M.A. He, poor man, will thus know (a) those who are not resigning; and (b) those who, having resigned via him, cancel it directly and break their promise. The second danger must be assessed by those more familiar with the necessary statistics than I.—I am, etc.,

Cromer.

A. HENRY GREGSON.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. W. Lindesay Neustatter, at 125, Harley Street, W.1 (Welbeck 3656); Mr. D. J. MacRae, F.R.C.S. at 10, Harley Street, W.1.

¹ See Supplement, Sept. 21, 1946, p. 83.

Association Notices

Sir Charles Hastings Clinical Prize

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition. The following are the regulations governing the award:

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money award of the value of fifty guineas.
2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.
3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made. It is to be noted that candidates in their entries should confine their attention to their own observations in practice rather than to comments on previously published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, their interpretations, and their conclusions.
4. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946. The prize will be awarded at the Annual General Meeting of the Association to be held in 1947.
5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work. A prizewinner in any year is not eligible for a second award of the prize.
6. If any question arises in reference to the eligibility of the candidate or the admissibility of his or her essay the decision of the Council on any such point shall be final.
7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.
8. The writer of the essay to whom the prize is awarded may, on the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal*, or for presentation to the appropriate Section of the Annual Meeting of the Association.
9. Inquiries relative to the prize should be addressed to the Secretary.

Diary of Central Meetings

OCTOBER

17. Thurs. Publishing Subcommittee, 11 a.m.
Journal Committee, 2 p.m.
23. Wed. Special Meeting of Council, 12 noon. (Change of time.)

Branch and Division Meetings to be Held

- AYRSHIRE DIVISION.—At Seafield Hospital, Ayr, Sunday, Oct. 20, 7 p.m. Clinical meeting.
- DORSET DIVISION.—At Dorset County Hospital, Dorchester, Thursday, Oct. 24, 3 p.m. B.M.A. Lecture by Mr. D. G. Wilson-Clyne: Breech Presentation. All doctors residing in the district are invited to attend.
- SOUTH BEDFORDSHIRE DIVISION.—At Luton and Dunstable Hospital, Wednesday, Oct. 23, 9 p.m. Dr. H. Guy Dain: The National Health Service.

APPOINTMENTS

- BRADFORD JOINT HOSPITALS COUNCIL.—Visiting Staff. At St. Luke's Hospital and Bradford Royal Infirmary: Physician, J. A. Price, M.D., M.R.C.P. Assistant Physicians, C. L. Davidson, M.D., M.R.C.P., L. W. Smith, M.B., M.R.C.P. Surgeons, J. Dawson, F.R.C.S., G. Whyte Watson, F.R.C.S. Ed. Assistant Surgeons, J. S. Davidson, F.R.C.S. Ed., F. R. Martin, F.R.C.S. Obstetrician and Gynaecologist, G. W. Theobald, M.D., F.R.C.S. Ed., F.R.C.O.G. Orthopaedists, I. A. G. L. Dick, M.D., Ch.M., F.R.C.S. Ed., A. Naylor, Ch.M., F.R.C.S. At St. Luke's Hospital and Bradford Children's Hospital: Paediatrician, R. L. Langley, M.D. At Bradford Royal Eye and Ear Hospital: Ear, Nose, and Throat Surgeon, J. H. Outy, F.R.C.S. Ed. Ophthalmologists, J. Benson, F.R.C.S. Ed., R. I. T. Lloyd, F.R.C.S. Full-time Staff. At Bradford Royal Infirmary: Pathologist, H. S. Kellith, M.B., B.Chir. Radiologists, R. J. C. Campbell, M.B., Ch.B., R. J. Carr, M.D., R. L. Lewis, M.D. Each appointment carries consulting duties at all the four hospitals concerned.
- GILLIES, I. HUNTER, M.D., D.P.M., Deputy Medical Superintendent, Crichton Royal, Dumfries.
- LYOYD, J. P. F., F.R.C.S., Senior Surgeon, Oxford Eye Hospital, Walton Street, Oxford.
- MORFEL, M. P., F.R.C.S., Honorary Surgeon, North Devon Infirmary, Barnstaple.
- NATIONAL HOSPITAL, Queen Square, W.C.—Honorary Assistant Physician, M. J. F. McArdle, M.B., B.S. Assistant Radiologist, J. W. D. Bull, M.B., B.Chir.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Pathology.—Tues., 4.30 p.m. Communications.
General Meeting of Fellows.—Tues., 5.30 p.m. Ballot for election to the Fellowship.

Section of History of Medicine.—Wed., 2.30 p.m. Special meeting to commemorate the centenary of the practical introduction of anaesthesia. Prof. Charles Singer: Anaesthesia in the pre-anaesthetic period (before 1846). Dr. Barbara Duncum: The development of inhalation anaesthesia in the second half of the 19th century. Dr. Joseph Bloomfield: The modern development of anaesthesia (1900–1935). Dr. E. Ashworth Underwood: A contribution to the early history of anaesthesia in this country.

Members of the Sections of Anaesthetics and Surgery are specially invited to attend.

After the meeting those present are invited to the exhibition of anaesthetic apparatus and literature at the Wellcome Historical Medical Museum, 183, Euston Road, N.W., which will be open at approximately 4.15 p.m. by Lord Moran, P.R.C.P.

Section of Comparative Medicine.—Wed., 5 p.m. Presidential address by Prof. G. R. Cameron: Shift of body fluids.

Section of Dermatology.—Thurs., 5 p.m. Cases will be shown.
Section of Radiology.—Fri., 5.30 p.m. Presidential address by Dr. Whately Davidson: A basis for staffing a radiological department.

Section of Obstetrics and Gynaecology.—Fri., 8 p.m. Presidential address by Mr. James Wyatt: The future teaching of the undergraduate.

HUNTERIAN SOCIETY.—At Pimm's, 3, Poultry, E.C., Mon., 7.15 p.m. Dinner meeting. Presidential address by Dr. J. B. Cook: Evolution of Municipal Medicine.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, W.C.—Fri., 5 p.m. Dr. I. Muende, Fungus Infections of the Skin.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.—Mon., 8 p.m. Annual General Meeting. 8.30 p.m., presidential address by Philip Manson-Bahr: Biological Basis of Tropical Medicine.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Fri., 3 p.m. Harveian Oration by Sir Maurice Cassidy: Cora Disease.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At Portland Place, W., Thurs., 8 p.m. Dr. C. J. Hackett: Clinical Course of Yaws in Uganda. Film: Yaws in Uganda.

POSTGRADUATE NEWS

The University of Leeds Postgraduate Subcommittee announces that it is proposed to hold a two-weeks general refresher course. Class II demobilized medical officers and insurance practitioners beginning on Monday, Nov. 25. Applications and inquiries should be addressed to the Senior Administrative Officer, School of Medicine, Leeds.

The Fellowship of Postgraduate Medicine announces the following courses: (1) Obstetrics and gynaecology, for general practitioners daily, Oct. 14 to 19, at Queen Charlotte's and Chelsea Hospital. (2) Week-end course in rheumatism, all day Saturday and Sunday, Oct. 26 and 27, at Rheumatic Unit, St. Stephen's Hospital, Ful Road, S.W. (3) Course of six lectures on Clinical Aspects of Psychiatry, on Tuesdays and Wednesdays, at West End Hospital, Nervous Diseases, Nov. 5 to 20, afternoons.

WEEKLY POSTGRADUATE DIARY

- BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Dr. Blackledge: Papilloedema.
- EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, Tues., 5 p.m. Prof. F. A. E. Crew: The Pathology of Genetics in Clinical Medicine.
- GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—Fri., 8 p.m. Prof. Loewenstein: Phakomatoses.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or Extra words 3s. 6d. for each six or less. Payment should be forwarded to the notice, authenticated by the name and permanent address of the person should reach the Advertisement Manager not later than first post following.

BIRTHS

- BROWNIDGE.—On Sept. 26, 1946, at the Maternity Home, Aberystwyth, Phyllis (née Peck), wife of Dr. C. E. Brownridge, a daughter.
- HARTNELL.—On Sept. 28, 1946, to Eileen (née Field), wife of Major Roy Hartnell, M.B.E., R.A.M.C., a son.
- JONES.—On Sept. 28, 1946, at Leamington, to Gladys (née Leigh), wife of H. M. Jones, a daughter.
- OXENHAM.—On Sept. 30, 1946, at North Middlesex County Hospital, Marjorie, wife of Dr. L. W. Oxenham, 31, First Lane, N.21, a son.

MARRIAGE

- WAGNER-WILSON.—On Sept. 30, 1946, at Bristol, Major Michael Wagner, M.B.E., to Elizabeth Nan Russell Wilson, M.B., Ch.B.

LONDON SATURDAY OCTOBER 19 1946

TEETH OF 5-YEAR-OLD LONDON SCHOOL-CHILDREN

(SECOND STUDY)

A COMPARISON BETWEEN 1929, 1943, AND 1945

BY

MAY MELLANBY

(Nutrition Building, National Institute for Medical Research, N.W.7)

AND

HELEN COUMOULOS, Ph.D.Camb., D.D.S.Athens

(Girton College, Cambridge)

Between May, 1943, and the end of January, 1944, the mouths of a large number of children aged 5 years and attending L.C.C. schools were examined and charted* and a preliminary report on this survey was made (Mellanby and Coumoulos, 1944). One of the objects of the work was to compare the condition of the deciduous teeth of these children with that of children of the same class and age group examined in 1929, when a survey on similar lines, but with a less elaborate system of charting, was made by one of us (M. M.).

In order to make the two investigations as nearly comparable as possible the same schools were chosen in 1943 as in 1929, any which were no longer available being substituted by others of similar type in the same district. The number of children examined in these schools was 1,604. In addition, examinations of 266 children were made in a few schools in districts not visited in 1929, but these were not included in the main survey as they were not truly comparable.

In the report on the 1929 survey published by the Board of Education (1931), figures were given only in relation to children and not to the individual types of teeth. For the sake of comparison, therefore, the 1943 results were given in the same form, and it was clearly shown that, as regards both structure of the teeth and caries, the general dental condition was much better than in 1929. A summary of the findings in the two surveys is given in the following quotation from the report:

"It is clear that in the 14 years that have elapsed the picture of deciduous tooth structure has changed for the better. Even so, there are very few children with a full complement of perfectly calcified teeth; however, in 1943 18.1% had only slight M-hypoplasia compared with 7.8% in 1929, and there were fewer with much M-hypoplasia—33.3% as against 58.5% respectively. . . . 22.4% of the children in 1943 were 'caries-free,' compared with 4.7% in 1929; and only 29.3% had much caries, as against 62.8% previously."

Since very few of the children were free from caries in 1929 it was decided to include in the caries-free group any who had only one or two teeth which, according to the standards used, were probably carious to a very slight degree. Even so, as is seen from the figures quoted, only 4.7% of the 1,293 children examined came into the so-called caries-free group. (It should be noted here that the standards were much more severe than those adopted at that time in routine inspections by school dental surgeons, which are made for purposes of treatment.)

The 1943 estimate of caries-free children as 22.4%, given in the report (Mellanby and Coumoulos, 1944), was assessed on the same basis as the 1929 figure for purposes of comparison, but in arriving at the assessment a distinction was made between those in whom no caries could be diagnosed by the methods employed and those in whom there were one or two teeth showing very slight caries.

It is intended in the present paper to give the structure of, and the amount of caries in, the individual types of teeth as found in 1943 and to compare them with data obtained in an investigation made in 1945, the object of which was to ascertain whether the great improvement found in 1943 as compared with 1929 was maintained. Sample schools from each district visited in 1943 were taken for this purpose and the mouths of 691 5-year-old children were charted. The length of time that elapsed between the first of the 1943 and the last of the 1945 inspections was 26 months, and the average period between the inspections in the schools visited in both investigations was just over 20½ months.

Methods

All children of the age of 5 years (i.e., up to but not including the sixth birthday) at school on the day of the examination came under survey. This is a useful age group for the study of deciduous teeth, since few have been naturally shed and all have been subject to post-eruptive influences for a considerable period—the anterior teeth for 4 to 5½ years and the posterior for 3 to 4 years. The percentages of teeth present in the mouths at the time of inspection are shown in Table I.

TABLE I.—Percentages of Teeth Present at Time of Inspection

Type of Tooth	1943	1945
Upper:		
Centrals	90.7	92.6
Laterals	96.0	93.3
Canines	99.8	93.6
1st molars	90.5	95.0
2nd molars	92.4	97.5
Lower:		
Centrals	83.2	79.4
Laterals	97.9	93.0
Canines	99.9	93.9
1st molars	85.3	92.4
2nd molars	86.0	91.7
All types	92.2	94.4

In an ordinary room, with the best light available, each child was subjected to as detailed an examination of the individual

* For the sake of brevity this is referred to as the 1943 survey.

* See note at foot of Table III.

Caries

The incidence and extent of caries, expressed as percentages and as average caries figures (ACF)* are shown in Table IV. As in the previous table, data are given for each type of tooth and for all types taken together. The unbracketed figures in the column headed "C₁" include missing canines and molars, which were assumed to have been extracted for caries (see p. 566). The figures in brackets show these teeth as percentages of the total number (see column 2).

In Table IV it is seen that there was less caries in 1945 than in 1943. In the earlier period 69.9% of the teeth were caries-free, while in the later the figure had risen to 73.5%—a difference of $3.6 \pm 0.46\%$, which is significant statistically. Taking the more severe degrees of caries (C₂ and C₃) together, the percentage so graded in 1945 was slightly lower than in

(Dental Disease Committee, Medical Research Council, 1936) that in controlled dietetic investigations on children a striking feature in the groups having a good calcifying diet rich in vitamin D was the relatively high proportion of teeth in which the carious process was no longer active but had become or was becoming arrested. Many of the children concerned in the Sheffield investigations were under observation for a period of several years, and it was found possible in some cases to trace the gradual arresting of the carious process until the final hard, smooth, and polished state was reached. When a tooth showing this "healing" or arrest was sectioned after being shed or extracted it was usually found to contain a large amount of well-calcified secondary dentine. On the basis of animal experiments (Mellanby, 1923, 1930) it seemed feasible to conclude that the deposition of this secondary dentine was

TABLE III.—Comparison of Tooth Structure in 1943 and 1945

Type of Tooth	Total No. of Teeth Examined for Structure		Good: Hy ₁		M-Hy ₁		M-Hy ₂		Very Defective: M-Hy ₃		G-Hy (See p. 566)		Hy Unclassified		AHF*	
	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945
Upper:																
Centrals ..	3,324	1,262	18.2	25.0	33.9	36.2	34.3	26.1	9.4	6.0	3.9	6.6	0.2	0.2	1.37	1.14
Laterals ..	3,465	1,341	27.2	38.6	46.9	39.4	19.0	14.3	4.1	2.2	2.5	5.4	0.3	0.1	1.00	0.79
Canines ..	3,707	1,369	32.5	40.8	50.8	45.7	13.2	10.1	1.5	1.1	1.0	1.1	1.0	1.2	0.83	0.71
1st molars ..	3,268	1,282	3.2	8.7	32.1	39.2	49.9	42.9	7.0	6.4	2.8	2.8	0.0	0.0	1.57	1.48
2nd molars ..	3,427	1,342	6.0	5.2	29.2	39.5	54.0	45.7	9.4	8.6	1.3	1.0	0.1	0.0	1.68	1.58
Lower:																
Centrals ..	3,091	1,097	71.7	85.1	24.2	14.0	3.2	0.4	0.6	0.0	0.2	0.5	0.0	0.0	0.33	0.15
Laterals ..	3,624	1,348	61.5	79.5	33.7	19.2	4.2	0.8	0.4	0.0	0.1	0.3	0.1	0.1	0.43	0.21
Canines ..	3,702	1,370	51.9	69.7	36.9	23.5	5.9	2.3	0.5	0.1	1.4	0.7	3.4	3.8	0.53	0.30
1st molars ..	3,119	1,235	18.4	22.3	38.5	39.6	36.5	32.5	4.0	3.1	2.5	2.6	0.1	0.0	1.27	1.17
2nd molars ..	3,104	1,241	7.5	7.5	34.1	37.5	48.6	45.4	6.3	8.1	3.4	1.5	0.1	0.0	1.56	1.55
Totals ..	33,831	12,887	30.7	38.0	36.3	33.6	26.3	22.0	4.2	3.5	1.9	2.3	0.6	0.6	1.04	0.91

Total hypoplasia figure

* AHF (average hypoplasia figure) = $\frac{\text{Total number of teeth examined for structure (excluding those with G—or unclassified hypoplasia)}}{\text{Total hypoplasia figure}}$

TABLE IV.—Comparison of Caries Incidence and Extent in 1943 and 1945

Type of Tooth	Total No. of Teeth		C ₁		C ₂		C ₃		Total Carious Teeth		ACF*	
	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945
Upper:												
Centrals ..	3,322	1,280	62.4	70.5	9.8	5.0	16.2	17.2	37.6	29.5	0.77	0.61
Laterals ..	3,590	1,358	79.7	85.1	6.8	3.2	9.2	8.6	20.3	14.9	0.38	0.30
Canines ..	3,740	1,381	90.5	92.5	2.9	1.7	4.6	4.2	9.5	7.5	0.18	0.15
1st molars ..	3,740	1,382	58.0	61.1	8.7	8.3	13.3	17.4	42.0	38.9	0.95	0.83
2nd molars ..	3,740	1,382	43.5	48.6	17.2	17.7	18.1	23.6	56.5	51.4	1.17	0.95
Lower:												
Centrals ..	3,112	1,098	95.1	98.3	2.7	0.9	1.5	0.8	4.9	1.7	0.08	0.03
Laterals ..	3,662	1,354	96.3	97.9	2.0	0.6	1.3	1.3	3.7	2.1	0.06	0.04
Canines ..	3,740	1,382	93.1	94.1	2.4	0.7	3.3	4.3	6.9	5.9	0.13	0.12
1st molars ..	3,740	1,382	46.0	61.4	7.9	7.2	17.0	21.1	54.0	48.6	1.29	1.10
2nd molars ..	3,740	1,382	39.0	41.2	12.9	15.1	15.0	19.5	61.0	58.8	1.42	1.27
Totals ..	36,196	13,331	69.9	73.5	7.4	6.2	10.1	12.0	30.1	26.5	0.65	0.55

Total caries figure

* ACF (average caries figure) = $\frac{\text{Total caries figure}}{\text{Total no. of teeth (including extractions)}}$

† See above.

1943 (20.3% compared with 22.7%), and the same trend is apparent, except in the case of the lower canines, when each type of tooth is taken separately. In both investigations the upper incisors, which were of much worse structure than the lower, were also much more carious, the upper centrals being more affected than the laterals. The average caries figures (ACF) tended to be lower in 1945 than in 1943 for all types of teeth together as well as for each individual type.

Arrest of the Carious Process

A point of much interest and, we believe, of great significance is the arrest—or, as Miller called it, the spontaneous "healing"—of the carious process, which represents a measure of the defensive reaction of a tooth to attack by caries. It was shown in investigations in Sheffield (Mellanby, Pattison, and Proud, 1924; Mellanby and Pattison, 1926, 1928) and Birmingham

related to the arrest of caries and to the type of diet eaten at and after the time of the carious attack.

In the surveys here described arrest was recorded only when the carious area had become definitely hard, though not necessarily smooth and polished. It is interesting to note in Table V that in 1943 11.7% of the carious teeth present in the mouths of the children examined showed arrest and that in 1945 the percentage was almost doubled—i.e., 21.5%. Had teeth showing earlier stages of arrest been included the figures for both surveys would undoubtedly have been much higher.

TABLE V.—Teeth Showing Arrest (Spontaneous "Healing") of the Carious Process

	No. of Carious Teeth Present	% Carious Teeth Present Showing Arrest
1943	9,182	11.7
1945	3,293	21.5

* See note at foot of Table IV.

Treatment of Carious Teeth

In Table VI are shown the percentages of carious teeth assumed to have been extracted (that is to say, the missing canines and molars) and the percentages which had been treated by silver nitrate application or had been filled. It will be seen

TABLE VI.—*Carious Teeth Extracted, Treated by Silver Nitrate, or Filled*

	Total No. of Carious Teeth (Including Extractions)	Treatment			Total Percentage of Carious Teeth Treated
		% Extracted	% Silver Nitrate	% Filled	
1943	10,886	15.7	6.7	2.7	25.0
1945	3,545	9.8	2.8	2.4	14.8

TABLE VII.—*Percentage Incidence of Caries in Teeth with Varying Grades of Structure*

Grade of Structure	Incisors				Canines				Molars			
	Total No. Examined		% Carious		Total No. Examined		% Carious		Total No. Examined		% Carious	
	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945	1943	1945
Hy.	5,992	2,837	1.1	1.2	3,126	1,514	1.5	1.1	1,281	550	8.3	7.1
M-Hy.	4,724	1,399	12.0	11.2	3,248	947	7.9	8.0	4,310	1,987	24.5	25.1
M-Hy.	2,053	536	44.9	39.2	707	169	26.7	29.6	6,133	2,127	62.6	66.1
M-Hy.	487	105	80.4	81.0	75	18	61.1	68.9	867	335	87.1	92.4
G-Hy.	226	165	64.2	82.4	90	24	23.3	20.8	319	101	58.9	52.4

NOTE.—This table does not include the few teeth shown under the heading "Hy Unclassified" in Table III.

that there was less treatment of all kinds in 1945 than in 1943. This may, of course, be because there were fewer dental surgeons to cope with the work.

Relationship between Structure of Teeth and their Susceptibility to Caries

Attention has been drawn by one of us (M. M.) and by others using the same criteria (Davies, 1939; Dental Disease Committee, 1936; King, 1940) to the fact that there is a direct relationship between the structure of the deciduous teeth, according to the standards used, and their susceptibility to caries: the less the M-hypoplasia the less, in general, the caries. In the investigations described in this paper the same relationship is evident, as is seen from Table VII.

When the teeth were of good structure (Hy.) only 1.1% of the incisors, 1.5% of the canines, and 8.3% of the molars were carious in 1943, and the corresponding figures for 1945 were 1.2%, 1.1%, and 7.0%. With each degree of M-hypoplasia the percentage of carious teeth increased in both surveys, until with very hypoplastic structure (M-Hy.) there were in 1943 80.4% of incisors, 61.1% of canines, and 87.1% of molars carious, and in 1945 81.0% of incisors, 68.9% of canines, and 92.3% of molars.

The incidence of caries in teeth with gross hypoplasia was not as great as in those with severe M-hypoplasia. This is understandable because, although the enamel of part of a tooth may

TABLE VIII.—*Amount of Caries in Relation to Superficial Staining of Teeth*

Children with	Percentage of Carious Teeth		ACF	
	1943	1945	1943	1945
(a) No stain	30.1	23.1	0.66	0.48
(b) Black and dark-brown stains	19.3	15.4	0.41	0.30
(c) Green stain	33.4	33.0	0.72	0.69

be badly pitted, or even missing, the remaining enamel, laid down at a different period of growth, may be quite well formed. For this reason it was decided, in tabulating the relationship between structure and caries, not to combine teeth showing gross hypoplasia with those affected by severe M-hypoplasia, as was done in some earlier surveys (Mellanby, 1934).

Staining of Surface Enamel or of Films on the Enamel

Very little appears to be known about the superficial staining seen on the teeth of many children. It is often unsightly

and difficult to remove by ordinary brushing, and, if removed, usually returns. In the surveys here recorded the most common stains observed were black, very dark brown, or green. Black and dark brown usually took the form of a border what appeared to be a film on the tooth; though it might be more widespread, and the green often seemed to extend the gingival margin towards the incisal edge or cusps.

The percentages of children whose teeth were all free stain were 51.6 in 1943 and 35.5 in 1945. With black and brown stains on some or all of their teeth there were 11.1 and 11.3% and with green stains 34.9% and 46.5% respectively. The teeth of a few children had yellow or lightish-brown stains or a combination of two or more stains, but figures will not be given for them here, as there were too few in any group to be of significance.

It was noticed that many of the children whose teeth showed the black and dark-brown stains were caries-free, and an attempt was made to discover whether the stains were definitely associated with the incidence of caries. Table VIII indicates that in each survey the percentage of carious teeth and the ACF of children with black and dark-brown stains were lower, with green-stains somewhat higher, than those of the children with no stain. It thus seems from these figures that black and dark-brown stains are associated with a lower incidence of dental caries, whereas green stains may be associated with a higher incidence, but we have no knowledge as to the reasons for these apparent associations.

Discussion

An account is given of two investigations on the condition of the deciduous teeth of 5-year-old children attending L.C. schools in 1943 and 1945, and a comparison is made between these investigations and one of a similar nature made by one of us (M. M.) in 1929. Since, however, no data are now available in regard to the state of the individual teeth in 1929, the comparison is confined to the general dental condition. In 1943 this was much better as regards dental structure and caries than in 1929, and in 1945 it was still further improved.

Though the 1943 and 1945 investigations were not controlled in the way that animal experiments can be regulated, the groups of children examined were comparable in that they were of the same age group and social class and resided in the same district of the L.C.C. area. From the dietary point of view there was a degree of similarity during the war years, because the rationing and "points" system of food distribution gave equal purchasing opportunities to all families. The main point of dissimilarity, so far as could be seen, was that the 1929 group of children had been subjected for a longer period to the war dietary than the 1943 group—a fact to which attention must be drawn.

Data obtained from the classification of individual teeth emphasized the better dental condition of the children seen in 1945 as compared with 1943. For instance, the percentage of teeth of good structure (Hy.) rose from 30.7 in 1943 to 38.0 in 1945, and of caries-free teeth (C.) from 69.9 to 73.5. A statistically significant difference in each case—and the percentage of teeth with the more severe defects of structure (M-Hy.) and more advanced caries (C.) decreased appreciably in the intervening period. The amount of arrest or spontaneous "healing" of the carious process was almost twice as great

1945 as in 1943—an indication that some powerful post-ruptive influence had been at work.

If, as seems certain, this improvement in dental condition is of accidental, but is related to some factor or factors of diet or environment to which the children were subjected, an examination of possible factors may bring to light those responsible for the facts observed.

It is claimed by some that carbohydrates play a prominent part in the initiation of caries. Others say that poor dental hygiene is responsible, and yet others that heredity is an important factor. So far as our knowledge goes, however, there is no sound scientific evidence for any of these contentions. To test the carbohydrate theory, King (1946) investigated the effects of nightly supplements of boiled sweets and chocolate-coated biscuits on the deciduous teeth of a small number of infants living in two institutions. The supplements were given when the children had cleaned their teeth just before going to bed. There was no increase in carious activity in the children over periods of from 6 to 24 months, and at the end of the test previously active caries had become arrested. It must be stated that the children had a good calcifying diet containing cod-liver oil. This result does not support the view that carbohydrates are responsible for the disease. The two recent surveys on L.C.C. school-children also do not uphold the theory. Less active caries and a greater proportion of teeth showing arrest of the disease were seen in 1945 than in 1943, but there is no evidence that the consumption of carbohydrates among young children had diminished in the intervening period.

It cannot be argued, either, that the reduction of caries in 1945 as compared with 1943 was in any way related to better dental hygiene, since as the war progressed civilian dentists became fewer and toothbrushes were more difficult to obtain (Majee, 1946).

If heredity were the potent factor in caries that it is sometimes claimed to be we should not see the deterioration in the dental condition of native races that is so evident when they come in close contact with Western peoples. An outstanding example of this is seen in the American negroes who have become completely Westernized in their habits and dietary. It is well known, too, that both children and adults of the primitive races in Africa who adopt the Western mode of life and diet—those, for instance, living for long periods in the ports and industrial areas—lose that freedom from caries which is so common while they remain in their natural habitat, and the same deterioration is seen in Eskimos attached to trading stations. It would seem, therefore, that some other cause for the observed improvement in dental condition in 1945 as compared with 1943 must be sought.

Previous investigations on children by one of us (M. M.) and by colleagues using the same standards (Deverall, Dental Disease Committee, 1936; Davies, 1939; King, 1940) have shown that resistance to caries is related to dental structure *as diagnosed in these surveys*—that is to say, the better the structure the less the liability to decay. Unfortunately this relationship is not always appreciated by dental surgeons, many of whom recognize only the more gross forms of hypoplasia. It has also been shown that the chief factors required for the production of well-formed teeth include a sufficiency of calcium, phosphorus, and vitamins D and A, and that these same factors in the diet after eruption of the teeth tend to retard the onset of caries and to arrest the disease when present. If vitamin D and calcium supplies are deficient other food factors come into prominence. Certain constituents of cereals, for instance, may under these circumstances be harmful from the point of view of the teeth.

During the early stages of dental development mother and child must be considered as one unit. The pregnant and lactating woman must herself then be made as dentally fit as possible to avoid absorption of toxins and to enable her to masticate her food, and her diet must be such that the developing foetus, and later the infant, is supplied with the food factors necessary for the production of well-formed teeth. After weaning, the child itself must continue to receive a calcifying diet.

There is no doubt that in this country the diet of the majority of people, and especially of the children, is far better to-day in this respect than it was, say, 25 years ago. During recent years,

and particularly during the immediate pre-war and the war years, pregnant and nursing women, infants, and children have been encouraged (a) to consume more milk and eggs and so to obtain larger supplies of calcium and phosphorus, as well as of vitamins D and A; (b) to take vitamin D- and vitamin A-containing substances, either as cod-liver oil or as one of the proprietary products; and (c) to eat more potatoes. Moreover, for a number of years now vitamins D and A have been added to some brands of margarine, and since the early days of the war this has been made compulsory for all brands. Again, calcium was added to some flours before the war, and since 1943 the addition has been a routine measure.

It seems probable that the improvement in dental condition of 5-year-old children during recent years is directly related to the enrichment of their diet in these respects. The children examined in 1943 showed a considerable improvement on the 1929 group, and, as has been indicated in the tables in this paper, the 1945 group, who had received calcifying supplements for longer periods than their predecessors in 1943, showed an even greater improvement. Not only were their teeth better formed and less carious, but a greater percentage that had been attacked by caries had set up a resistance, as a result of which the carious process had been arrested. The advantage of this natural "healing" of carious cavities over treatment by filling or extraction is obvious. Evidence is accumulated to show that in some other countries, among them Norway and Sweden, there has been a progressive decrease in caries incidence during the past few years and that it could be attributed to the increased consumption of cod-liver oil, calcium, and vitamin preparations. It is of interest to learn, in view of the controversy on the effect of carbohydrates on the teeth, that in Sweden the amount of chocolate and sugar consumed is high and continued so throughout the war.

Taking all known facts into consideration, therefore, it would seem that nutritional factors offer the most likely solution to the problem of tooth structure and freedom from caries, and it appears to us that the incidence of the disease could be still further reduced by giving diets rich in calcifying properties to everyone, but especially to all pregnant and nursing women and to infants.

It must be borne in mind, however, that in spite of the improvement in dental condition described here, we in this country have not yet gone very far along the road to perfection. There are even to-day over 70% of L.C.C. school-children between the ages of 5 and 6 years who have some decayed deciduous teeth, and there are other parts of the country where the situation is worse. It is evident, therefore, that we still have a long way to go before we can guarantee that a child will grow up without dental decay.

Summary

The dental condition of comparable groups of 5-year-old children attending L.C.C. schools in 1943 and 1945 respectively is described and discussed, and is compared with that found in 1929.

The general dental health of the children examined in 1943 was much better than that of the 1929 group, and in 1945 there was a further appreciable improvement.

The individual teeth in 1945 were significantly better in structure and had less caries than those in 1943.

A point of special significance is that the percentage of carious teeth showing arrest of the disease was almost twice as large in 1945 as in 1943. The percentage of such teeth extracted, treated by silver nitrate, or filled was considerably smaller in the second survey than in the first.

Superficial black or brown stains, which were observed on many teeth, appeared in both surveys to be associated with a lower incidence of caries, and green stains with a somewhat higher incidence, than the absence of stain.

There was in both surveys a relationship between M-hypoplasia and caries, the more severe the degree of structural defect the higher being the incidence of the disease. Teeth with gross hypoplasia showed a medium amount of caries.

It is suggested that the better condition of the teeth of 5-year-old children in 1943 and 1945 as compared with 1929 was due to the increased calcifying properties of the dietary of this country, and particularly of pregnant women, infants, and young children during recent years, and that the improvement observed in 1945 as compared with 1943 was due in the main to the longer period the teeth examined had been influenced by the type of diet made available immediately before and during the war years.

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A CASE OF ADDISON'S DISEASE SUCCESSFULLY TREATED BY A GRAFT

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This is the story of a young woman in whom, nine months previous to our seeing her, a diagnosis of Addison's disease had been made on clinical and biochemical findings. The diagnosis was confirmed at the time of our examination, and one of us (L. R. B.) subsequently ingrafted an adrenal gland from a patient with the adreno-genital syndrome (hyperplasia). As a result of this operation our patient lost her symptoms and signs of Addison's disease, and sodium chloride withdrawal tests showed that her blood sodium no longer fell below normal. The last test (14 months after operation) showed that this change had been maintained; and she was now able to leave off substitution therapy with sodium chloride without relapse.

Case History

Miss W., aged 33 (Jan., 1945), had not been well for six years, the onset of her illness coinciding with the outbreak of war in 1939. There were four groups of symptoms: (1) Depression and nervous symptoms which had been present since the start. For a time she had thought that these were due to the war. (2) Gastro-intestinal symptoms: during the whole period of her illness she had suffered on and off from what she described as a "nervy tummy." She felt that it was on the move all the time and complained of attacks of diarrhoea lasting for two or three days which alternated with bouts of constipation. No evidence of organic disease had been found by Dr. Wetherell, and it would appear that these attacks did represent an irritable gastro-intestinal neuro-muscular mechanism. In April, 1944, an x-ray examination was carried out, but the only abnormality was a spastic descending colon. In May, 1944, she was sent to Sir Arthur Hurst. He discovered that she had achlorhydria, and as a result of the acid therapy which he instituted the attacks of diarrhoea practically disappeared. (3) Extreme lassitude had been noticeable from 1943 onwards, but it had been difficult to assess the relative significance of psychological and physical factors. Dr. Wetherell, in April, 1943, found her blood pressure to be

110/76, and the same level was found by Sir Arthur Hurst at examination at about this time. It was then that Addison's disease was first suspected by Dr. Wetherell and Sir Arthur Hurst. (Pigmentation: a smoky brown pigmentation was first commented on by Dr. Wetherell and Sir Arthur Hurst in April, 1944, and had become more pronounced by the time we saw her in January 1945.

In April, 1944, she was under Sir Arthur Hurst's care at Oxford, and he notified Dr. Wetherell that he agreed with his opinion and that the probable diagnosis was Addison's disease. Increased pigmentation and general asthenia troubled her most; and a low systolic blood pressure, 110, was the chief physical sign. Her blood sodium at this time was 310 mper 100 ml. (the normal level being 320). Sir Arthur Hurst commented that no fall in blood chloride or rise in blood potassium was found, but that neither was a constant feature in early cases. He advised extra salt to the extent of four teaspoonfuls daily, and the patient commented on an immediate improvement, saying that she felt stronger and fitter. Sir Arthur Hurst felt that this might have been due only to suggestion, but the improvement was so marked that he thought it was the direct result of the increased sodium chloride intake and further evidence in favour of Addison's disease. He advised continuation of this treatment.

In October, 1944, the blood sodium level was 284 mg. per 100 ml. The patient was supposed to be on full substitution therapy with sodium chloride, but Dr. Wetherell thought that her ingestion of sodium chloride had been distinctly "sporadic." He subsequently made arrangements for her to see Mr. Broster and she came into University College Hospital private ward under our care in January, 1945.

Other investigations had been carried out. Her blood count on two occasions was normal. No occult blood had been found in her stools, which contained no excess of fatty residue, no inflammatory material, and no pathogenic bacteria. No tubercle bacilli were found. A test-meal showed complete achlorhydria. Her weight in adult life was normally 8 st. (50.1 kg.), and it remained at 8 st. until the spring of 1944. She then lost weight to 7 st. 4 lb. (46 kg.), and has remained at that since. Her menstrual cycle has been regular throughout—5/28-day type.

On examination in January, 1945, when she came under our observation, she had been under treatment with sodium chloride four teaspoonfuls daily, and injections of cortical hormone, but there was still considerable pigmentation of her entire body. There was a smoky brown discoloration of the nipples and in the axillae, and patches of pigmentation on her buccal mucous membrane. Blood pressure at that time was 120/80. There were no abnormal physical signs in her cardiovascular system. Chest and abdomen were normal, as were her secondary sex characters. She was normally developed. Her weight was 7 st. 4 lb. A radiological examination of the abdomen showed a hazy area of calcification over the upper pole of the left kidney which was interpreted by the radiologist as indicating calcification in the adrenal gland on that side. The Mantoux test was negative.

During the first week of her stay in hospital her temperature chart showed a slight and irregular pyrexia up to 99.6° F (37.55° C.), but it never reached 100° (37.8° C.). Subsequently her temperature was normal except for a slight recrudescence of fever for a few days after operation.

To establish the diagnosis of Addison's disease her substitution therapy of salt and cortical hormone was discontinued for a week. At the end of that time her pigmentation and asthenia had definitely increased. Her blood pressure fell at the end of a week off treatment to 95/80. Serum sodium at this time was 295 mg. per 100 ml., and serum potassium 21 mg. per 100 ml. We considered that these findings established the diagnosis of hypocortical adrenalism.

After this sodium withdrawal test she was put back on sodium chloride treatment, and a week later the grafting operation was carried out by L. R. B.

Description of the Donor

Miss H., aged 21, a robust young lady, was first seen in 1942. Her history was that at the age of 16 she began to

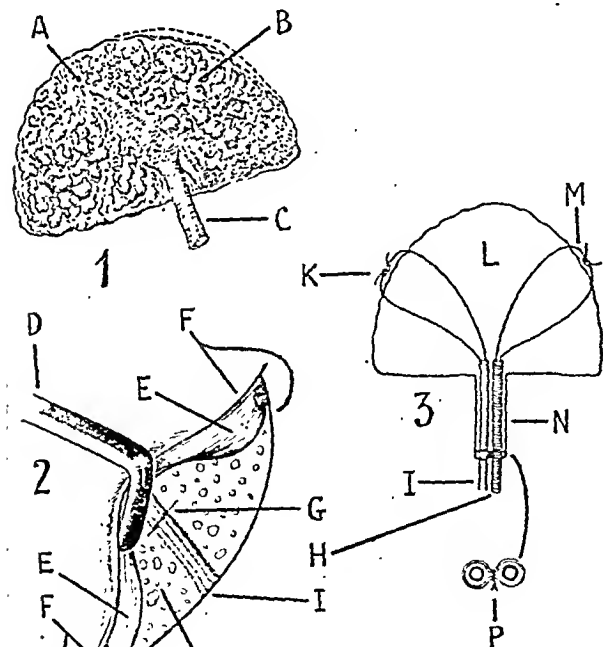
develop hirsuties, but except for a bout of amenorrhoea for three months her periods had been normal. Her ketosteroid excretion was 15 mg. a day, and she was treated medically for adrenal virilism, Group II.

She then joined the A.T.S. and became a P.T. instructress. The hirsuties became worse, and she shaved daily; there was amenorrhoea for three months; she broke off her engagement. She reported again at the end of 1944 and her ketosteroid excretion was now 29.5 mg. a day. During her stay in hospital in February, 1945, she was mildly hallucinated, depressed, and uncooperative, and although a month after the operation described below her ketosteroid excretion dropped to 5 mg. a day, contrary to our previous experience her mental condition deteriorated considerably and remained so longer than usual. The details of her psychosis were observed by Dr. Clifford Allen.

Operative Procedures

Donor.—On Feb. 13, 1945, the left adrenal gland was removed at the Charing Cross Hospital. It was an ideal one—hypertrophied to two to three times the normal size. Its vein, unbranched and large, was cut long so as to leave about 1/2 in. (1.27 cm.) attached to the gland. The vein was perfused with heparin solution, and the graft placed in normal saline in a sterile glass container. This was then put into a second sterile glass container and transferred to a vacuum flask at body heat.

Recipient.—The recipient was prepared in the private wing of University College Hospital. An incision was made along the outer border of the left rectus muscle, the rectus retracted inwards, and 1 in. (2.54 cm.) of the deep epigastric artery and vein was exposed and cut medially. Arterial bleeding was



Figs. 1, 2, and 3. A=Hilum; B=Adrenal gland, lobulated; C=Main adrenal vein; D=Retractor; E=Rectus muscle; F=Rectus sheath; G=Divided rectus; H=Deep epigastric artery; I=Deep epigastric vein; J=Extraperitoneal fat; K=Ligature, with knot pulling up vein; L=Adrenal gland; M=Ligature, with knot pulling up artery; N=Adrenal vein, containing artery and vein; P=Stitch separating artery and vein.

controlled by finger pressure, and the wound was bathed in heparin solution. The artery and vein were each caught up laterally by a stitch of the finest catgut threaded on two straight needles. By this time bleeding had ceased. The artery and then the vein were separately piloted into the

adrenal vein by pushing the two needles up the latter and causing them to emerge at separate points on the surface of the gland. The vessels were anchored in position by tying the stitch across the intervening cortex. To prevent any backflow of blood a stitch was tied across the open end of the adrenal vein, dividing the epigastric artery and vein into two separate compartments (see Figs. 2 and 3). The graft lay snugly in the extraperitoneal fat when placed behind the rectus muscle. Including the journey by car, the whole operation took about three-quarters of an hour. The wound healed by first intention.

Convalescence

On the second day after the operation the recipient menstruated unexpectedly for three days—twenty-four hours before the donor, who started again normally after three months' amenorrhoea. The recipient now took her rhythm from the donor, and the next period came on March 18, 1945, and lasted five days. The day before this period, "she felt the graft enlarged and never felt so well." The day after, she experienced soreness and burning in the left abdomen, and developed a haematoma which subsided normally. It was obvious that the vascular anastomosis of the graft had leaked and could not cope with the extra flow of blood induced by the general pelvic congestion.

It was feared that this unforeseen occurrence due to a normal physiological function had jeopardized the vitality of the graft. However, during subsequent examinations the graft, though smaller, was palpable and tender, more so just before and during a period, and on deep pressure pain was referred towards the left subcostal margin.

She continued on salt treatment during her convalescence, and three weeks after the operation she was discharged from hospital: blood pressure 115/85; serum sodium 333 mg. per 100 ml.; serum potassium 21 mg. per 100 ml. Her pigmentation had definitely decreased. As she was on substitution therapy it was obviously not possible to assess the effects of the graft, and in view of her psychological state we did not think it advisable to perform a sodium withdrawal test at this time. It was agreed that she should return to hospital for this to be carried out.

She returned to her home but had to be readmitted to hospital three and a half weeks later for the above haematoma, which quietly subsided. Her serum sodium at this time was 300 mg. per 100 ml.; serum potassium 33 mg. per 100 ml.

Sodium Withdrawal Tests

(1) Sodium withdrawal test three months after operation.—On admission her general health had improved, but the report from her home was that she had not been doing anything at all and had only been up for an hour or two a day. She had continued on sodium chloride, four teaspoonfuls daily, and it seemed to be her psychological state which prevented her from doing more. She appeared to have a considerable anxiety state, which perhaps was not surprising after her long illness.

On examination, her pigmentation was much less evident; blood pressure 115/75; serum sodium 325 mg. per 100 ml.; serum potassium 23 mg. per 100 ml.

She was left off salt treatment for seven days without any deterioration in her general condition. At the end of seven days her blood pressure was found to be at about the same level—112/70; serum sodium was 340 mg. per 100 ml.; serum potassium 21 mg. per 100 ml. This was obviously a great improvement as compared with the sodium withdrawal test before operation.

It was decided that she should return home and continue with sodium chloride, four teaspoonfuls daily, and get up and about and lead as normal a life as she could.

(2) Second test, nine months after operation (November, 1945).—Her general condition, mental and physical, had much improved. In fact, we noted a particularly striking psychological improvement. Her general pigmentation was very slight, and there was no pigmentation on her buccal mucous membrane. Her blood pressure on admission was 130/95; serum sodium 310 mg. per 100 ml.

Sodium chloride treatment was left off for eight days, and at the end of that time her blood pressure was 120/95. Her serum sodium had risen to 365 mg. per 100 ml. This reading was doubted, so a second serum sodium examination was carried out a few days later to confirm, and a level of 340 mg. per 100 ml. was found. It should be mentioned that a menstrual period coincided with this test, the losses starting two days after salt had been withdrawn.

She was again sent home to lead as normal a life as possible, and this time it was clear that she had developed more confidence.

(3) The third test, thirteen months after operation (February, 1946).—There was a striking improvement in her general physical and mental condition. She was still emotionally unstable, as was shown not only by her subjective complaints but also by the wide variations in the blood pressure readings found on admission. There were pronounced peaks, but the average was 145/80. Her serum sodium on admission was 335 mg. per 100 ml.; serum potassium 20.5 mg. per 100 ml.

This sodium withdrawal test was carried out over seven days, and at the end of this time there was no deterioration in her general condition; blood pressure readings averaged 155/100. Her serum sodium was 330 mg. per 100 ml., her serum potassium 20 mg. per 100 ml. At the end of the test the sodium chloride treatment was restarted and continued for seven days, after which serum sodium was 336 mg. per 100 ml.; serum potassium 23 mg. per 100 ml.

It was then decided that she should leave off substitution therapy with sodium chloride altogether and return to a normal diet. This she did for the remainder of her stay in hospital—nineteen days—and at the end of that time her average blood pressure readings were 155/110, with even more pronounced emotional reaction peaks. In fact, on one occasion a systolic pressure of 180 was registered while she was complaining of sensations of what she described as "whizziness." Serum sodium figure before she left hospital was 335 mg. per 100 ml.; and serum potassium 21 mg. per 100 ml. It should be mentioned that a menstrual period again occurred during the first week of this last stage, when she was off salt treatment altogether. She was discharged home to lead a normal life. Since her discharge she has had no substitution treatment with salt or cortical hormone and has been leading as normal a life as is consistent with her psychological condition. She is obviously much improved, and there can be little doubt that the sodium withdrawal tests show that her cortical deficiency has been controlled by the grafting operation.

Table Summarizing Effects of Treatment

(1) Jan. 25, 1945–March 5, 1945 (5½ weeks):			
On admission	.. ..	B.P.	120/80
Off salt 7 days	.. ..	B.P.	95/80
		Na	295
		K	21
On salt 25 days	.. ..	B.P.	115/85
(Operation after 8 days)		Na	333
		K	21
(2) March 30, 1945–April 5, 1945 (6 days):			
Admitted for haematoma	.. ..	B.P.	—
		Na	300
		K	33
(3) May 11, 1945–May 29, 1945 (18 days):			
On admission	.. ..	B.P.	115/75
		Na	325
		K	23
Off salt 7 days	.. ..	B.P.	112/70
		Na	340
		K	21
(4) Oct. 22, 1945–Nov. 9, 1945 (18 days):			
On admission	.. ..	B.P.	130/95
		Na	310
Off salt 8 days	.. ..	B.P.	120/95
		Na	365 (2nd exam. to confirm = 340 a few days later)
(Menstrual period coincided, starting 2 days after salt withdrawal begun)			
(5) Feb. 25, 1946–April 3, 1946 (5½ weeks):			
On admission	.. ..	B.P.	145/80
		Na	335
		K	20.5
Off salt 7 days	.. ..	B.P.	155/100
		Na	330
		K	20
On salt 7 days	.. ..	Na	340 (duplicate readings)
		K	23
Off salt altogether 19 days	.. ..	B.P.	155/110 (with emotional peaks + + to 180 and feelings of "whizziness")
		Na	335
		K	21
(Menstrual period for first 7 days)			

The Donor.—When seen in June, 1946, she had made satisfactory psychosomatic recovery except for slight hirsuties.

Discussion

The diagnosis of Addison's disease in this girl was based on the classic clinical picture—typical asthenia, pigmentary gastro-intestinal symptoms, and low blood pressure. When originally came under Dr. Wetherell's observation for condition her blood sodium was 310 mg. per 100 ml.; months later it had fallen to 284 mg. per 100 ml. When came under our observation three months later she was taking extra salt and was on substitution therapy; an initial sodium withdrawal test for a week resulted in her blood sodium falling to 295 mg. per 100 ml., and her blood pressure to 95 systolic. We considered that the diagnosis of Addison's disease was established.

The patient's condition changed satisfactorily after operation and, in our opinion, as a result of it. Sodium withdrawal test carried out for a week at a time at intervals as above showed that she no longer reacted to withdrawal of extra salt by a fall in blood sodium or a fall in blood pressure. In the first two sodium withdrawal tests in May and October, four and nine months after the operation, the blood sodium rose rather than fell at the end of the week's extra salt withdrawal, while the blood pressure remained at about the same level. In the final test, just over a year after operation, blood sodium remained at a steady level after extra salt withdrawal, and the blood pressure was slightly higher at the end of this week's test. The results of these tests were obviously entirely different from the results of the tests before operation and we felt it reasonable to assume that the cortical deficiency had been corrected. This was confirmed by the fact that following the final test the patient was able to leave off extra salt and carry on without any treatment at all. The last blood sodium reading, after three weeks off all treatment, was within the normal limits, while her blood pressure at this time was actually showing readings that had never been recorded before. As a result of what we considered to be emotional reaction when her blood pressure was taken, readings as high as 180 systolic were found.

The results, therefore, of the grafting operation appear to have been extremely satisfactory, and if one can accept blood sodium levels in similar salt withdrawal tests before and after operation as an indirect indication of the state of the cortical-deficiency sodium leak it would appear that the leak has been compensated by the adrenal graft. It was unfortunately impossible to get the measure of the leak by urinary sodium and chloride excretion estimations, but it would certainly have been interesting to have noted whether there was a raising of the renal threshold during the tests as an explanation of the high sodium figures noted after the second and third tests.

Further follow-up data will be published in due course, but as it is now over a year from the time of the operation we are hoping that the improvement will be maintained.

It is to be noted that in spite of the fact that this patient was grafted with an adrenal from a patient with the adrenogenital syndrome there is no evidence of that condition developing in her case, and her menstrual cycle remained regular throughout the period of observation following operation. H₁₇-ketosteroids were estimated about two months after the operation and found to be within the normal range—10.3 mg. a day.

Summary

An account of a patient with Addison's disease is given. The grafting into this patient of a hypertrophied adrenal gland derived from a woman suffering from the adrenogenital syndrome (hyperplasia) is described.

Sodium chloride withdrawal tests indicated that the improvement in the patient's condition was due to the operation, and in particular that the blood sodium no longer fell below normal when the patient was taken off sodium chloride substitution therapy.

Cure has been maintained until the present time—fourteen months after operation.

LYMPHOCYTIC CHORIOMENINGITIS

BY

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1910 Laubry and Foy described three cases of this disease, curring in Paris, under the heading of "syndrome méningéal ec lymphocyte fuchidienne d'origine indéterminée," and ist and Rolland (1910) five cases of a similar condition as méningite bénigne d'allure épidémique." In 1925 Wallgren, a paper entitled "A New Infectious Disease of the Central ervous System," reported a Swedish epidemic of 19 cases.

Gibbens (1931) termed it "acute aseptic meningitis," and scribed the following characteristics of the condition: (1) a acute onset, with definite meningeal signs. (2) Meningeal anges in the cerebrospinal fluid; there is an increase of essure and of cells, but the fluid is sterile on culture. (3) uniform clinical symptomatology. (4) A relatively short nign course without secondary complications. (5) No idemiological connexion with any known infectious menin- al disease. (6) There is no local infection such as otitis edia or sinusitis.

Although it has been suggested that some of the cases de- scribed under various headings, such as "benign lymphocytic eningitis," "acute aseptic meningitis," and "lymphocytic oriomeningitis," have been really cases of lethargic enceph- tis or poliomyelitis, it is now generally conceded that there a disease *sui generis*, which is best termed "lymphocytic horiomeningitis."

Clinical Features.—The clinical features of the disease are as ollows. The onset is acute, with fever, headache, and eningeal signs. The cerebrospinal fluid is clear or turbid; nder increased pressure, and shows a pleocytosis varying from 0 to 1,500 per c.mm.; polymorphonuclears may predominate t the onset, but are rapidly replaced by lymphocytes; the total rotein and globulin are increased, the sugar and chlorides usually being unaffected; the fluid is sterile on culture, and irect smears are negative for all organisms, including the ublicle bacillus. The prognosis is good, complete recovery ccurring in two or three weeks as a rule.

Aetiology

Armstrong and Lillie (1934) isolated a virus from a case that appeared clinically to be encephalitis lethargica (St. Louis type). It differed from the virus of encephalitis, however, in the ollowing characteristics:

(a) It was not pathogenic for rabbits.

(b) On intracerebral inoculation into mice the animals developed symptoms which are quite different from those produced by encephalitis. The incubation period was 6 to 7 days and fairly constant. "When lifted up by the tail a series of rapid jerky motions with the front and hind legs results, which conveys a pronounced sensation of tremor to the hand, readily distinguishable from that observed with normal mice. These rapid motions often pass into a convulsion, lasting from some seconds to a minute or more, in which the hind legs and toes are strongly extended and rigid, as is also the tail. The seizure may end in death or gradually relax, when the mouse may run about the cage apparently normal. Practically all the mice, however, ultimately die in convulsions, usually in from 1 to 3 days from the onset of symptoms."

(c) On post-mortem examination the mice showed marked cellular infiltration of the meninges, in which lymphocytes predominated, more pronounced on the base of the cerebrum and in the space between the hippocampus and the brain-stem. Also there is often a lymphocytic infiltration of the choroid plexus. No cellular gliosis is seen around the vessel sheaths as in encephalitis.

(d) In monkeys inoculated intracerebrally with the virus it is found to be present in the blood and cerebrospinal fluid.

(e) Intranasal inoculation has no effect.

(f) Cross-neutralization tests indicate that the two viruses are immunologically distinct.

More recently Findlay, Alcock, and Stern (1936) have isolated a virus from cases that correspond clinically with the picture of lymphocytic choriomeningitis and have shown this virus to

be identical with that obtained by Armstrong and Lillie, thus establishing the aetiology of the disease.

Pathology

Viets and Warren (1937) have given the post-mortem findings in one of their cases. The report is here summarized:

The meninges were oedematous, congested, and infiltrated mainly with lymphocytes and also a few endothelial cells. The cerebrum showed a localized oedema of the cortex just below the surface. Perivascular infiltration with lymphocytes and endothelial cells was present. Other cells resembling microglia and a few large cells four or five times the diameter of the lymphocytes with somewhat acidophilic cytoplasm and eccentric, large, and indefinite nuclei were observed. No inclusion bodies were seen. In the midbrain the changes noted were even more evident; in addition, in numerous swollen ganglion cells cytoplasmic inclusion bodies were seen, some of them being rod-like in shape and others round. In the internal capsule the reaction was less intense and no inclusion bodies were found. In the cerebellum and spinal cord perivascular infiltration and gliosis in the white matter were seen and there were no inclusion bodies.

Case Records

Hughes (1937) states that cases have occurred in Asiatics, but does not describe any. Below are recorded eight fairly typical cases that have been under my care in the third-class male wards of the General Hospital, Singapore. My colleagues and I have seen several other cases at the hospital.

Case 1.—A male Malabari Indian aged 21 was admitted on Oct. 6, 1938, with a history of fever for five days. No further history was obtainable. He was delirious on admission, being quite uncontrollable, and had to be kept under the influence of morphine and hyosine. The neck was not rigid, and Kernig's sign was negative. There was no evidence of involvement of the cranial nerves or paralysis of the limbs. The temperature on admission was 103° F. (39.4° C.); it came down to normal on Oct. 9, but showed an occasional rise up to 100° F. (37.8° C.) from time to time. The ear-nose-and-throat examination was negative, and the fundi were normal. The blood Kahn test was negative (000). The cerebrospinal fluid showed the following changes: pressure increased, naked-eye appearance turbid; cell count, 542 per c.mm. (polymorphonuclears 65%, lymphocytes 35%); total protein, 80 mg. per 100 ml.; globulin + (Ross-Jones); sugar, 51 mg. per 100 ml.; chlorides, 660 mg. per 100 ml.; W.R. negative, Kahn test negative; direct smears negative for organisms (including T.B.); culture sterile; no clot on standing. On Oct. 11 the cerebrospinal fluid was clear; the cell count was 100 (polymorphonuclears 5%, lymphocytes 95%). On Oct. 23 the cerebrospinal fluid was clear, the cell count being 60 (polymorphonuclears 8%, lymphocytes 92%). The patient was discharged cured on Oct. 28.

Case 2.—A male Hokien aged 19 was admitted on Oct. 31, 1938, with a history of fever, headache, and a feeling of chilliness not amounting to a rigor, for one week. The temperature on admission was 101° F. (38.3° C.). On physical examination no abnormality was found except slight stiffness of the neck and a positive Kernig's sign. Examination of the central nervous system was normal. A lumbar puncture was done on Nov. 1, and the cerebrospinal fluid showed the following changes: cell count, 152 per c.mm. (polymorphonuclears 35%, lymphocytes 65%); total protein, 250 mg. per 100 ml.; globulin + (Ross-Jones); sugar, 10 mg. per 100 ml.; chlorides, 627 mg. per 100 ml.; direct smears negative for organisms (including T.B.); culture sterile; no clot on standing; W.R. negative, Kahn test negative. The blood Kahn test was negative (000), the fundi were normal, and the Mantoux test was positive. Lumbar puncture was repeated almost every day for the relief of headache, and a precipitin test done on the cerebrospinal fluid against the meningococcus was negative. On Nov. 7 the cell count was 155 per c.mm. and all the cells were lymphocytes. On Nov. 16 the cell count was 35 per c.mm., all the cells being lymphocytes; total protein, 150 mg. per 100 ml.; and there was no globulin (Ross-Jones). This man was discharged against medical advice, improved but not cured.

Case 3.—A male Tamil aged 22 was admitted on April 6, 1941, with a history of fever, weakness of the legs, and giddiness for two days. On admission the temperature was 101° F. (38.3° C.), there was rigidity of the neck, and Kernig's sign was positive. Examination of the central nervous system revealed no abnormality. A lumbar puncture was done on April 7, the cerebrospinal fluid showing the following changes: cell count, 900 per c.mm. (polymorphonuclears 4%, lymphocytes 96%); globulin + (Ross-Jones); total protein, 125 mg. per 100 ml.; sugar, 47 mg. per 100 ml.; chlorides, 745 mg. per 100 ml.; direct smears negative for T.B. and other organisms; culture sterile; no clot on standing; W.R. negative. On April 16 the cell count was 22 per c.mm., the total protein 50 mg. per 100 ml., and there was only a trace of globulin. The

fundi were normal, and the blood Kahn test was negative (000); the total white count, was 7,500 per c.mm. (polymorphonuclears 60%, lymphocytes 36%, and large hyalines 4%). The patient was treated with repeated lumbar punctures and sulphanilamide 1 g. t.d.s. from April 9 to 15. The temperature came down on April 10 and remained normal. The patient was discharged cured on April 19 and returned to work on May 3.

Case 4.—A male Tamil aged 32 was admitted on April 22, 1941, with a history of fever, headache, and vomiting for one week. The temperature on admission was 103° F. (39.4° C.); the patient was drowsy and difficult to examine. There was neck rigidity, but Kernig's sign was negative. A complete examination of the central nervous system revealed no abnormality. A lumbar puncture was done on the day of admission, when the cerebrospinal fluid showed the following changes: naked-eye appearance, granular-looking; cell count, 206 per c.mm. (polymorphonuclears 18%, lymphocytes 82%); total protein, 70 mg. per 100 ml.; globulin + (Ross-Jones); sugar, 84 mg. per 100 ml.; chlorides, 705 mg. per 100 ml.; direct smears negative for T.B. and other organisms; culture sterile; no clot on standing; W.R. negative, Kahn test negative. The blood picture was as follows: total red cells, 5,700,000 per c.mm.; haemoglobin, 100% (Sahli); total white cells, 15,000 per c.mm. (polymorphonuclears 79%, lymphocytes 17%, large hyalines 3%, eosinophils 1%). The blood Kahn test was negative (000) and the fundi were normal. On April 29 the cell count in the cerebrospinal fluid was 50 per c.mm., 10% being polymorphonuclears and 90% lymphocytes. The patient was treated with sulphanilamide 1 g. t.d.s. from April 22 to 29. The temperature came down to normal on the 26th and remained so. The patient was discharged cured on May 3.

Case 5.—A male Hokien aged 26 was admitted on July 5, 1937, with headache and vomiting for three weeks. He gave a history of exposure to venereal infection on June 5 and had developed a urethral discharge and buboes on both groins on June 14. Clinically the case was one of lymphogranuloma inguinale, and Frei's intradermal reaction was positive. The blood Kahn test was negative. It was at first considered that the headache and vomiting were due to toxæmia resulting from the buboes. On July 12 the patient still complained of headache, and on examination there were stiffness of the neck and generalized hyperæsthesia. Kernig's sign was negative, and examination of the central nervous system revealed no abnormality. Lumbar puncture showed the following changes in the cerebrospinal fluid: pressure, 70 mm.—no change on compression of the neck veins; colour, yellow; cell count, 220 per c.mm., all the cells being lymphocytes; total protein, 550 mg. per 100 ml.; globulin ++ (Ross-Jones); sugar +; no clot on standing; culture sterile; direct smears negative for T.B. and other organisms. On July 13, on cisternal puncture, the cerebrospinal fluid showed the following changes: pressure, 40 mm. (on jugular compression it rose to 100 mm.); naked-eye appearance, slightly turbid, almost milky; cell count, 290 per c.mm.; total protein, 90 mg. per 100 ml.; globulin + (Ross-Jones); sugar +; chlorides, 675 mg. per 100 ml. There was no clot, and direct smears were negative for T.B. and other organisms. On July 15 lumbar puncture was repeated. The pressure was 140 mm., there being no change on jugular compression; the cell count was 680 per c.mm., all the cells being lymphocytes. By this time the general condition was improved and the buboes had subsided. There was a slight rise of temperature (up to 100° F. (37.8° C.)) from July 14 to 19, the course of the disease being otherwise afebrile. On the 21st slight headache and giddiness were still present, but there was no vomiting, the neck was not rigid, and Kernig's sign was negative. Repeated lumbar and cisternal punctures were performed, and on July 29 a block was still found. The total white count was 6,800 per c.mm. (polymorphonuclears 70%, lymphocytes 22%, large hyalines 5% eosinophils 3%). The W.R. of the cerebrospinal fluid was negative, and the colloidal gold test was also negative (0000000000). The patient was discharged against medical advice on Aug. 3, but was examined again on Aug. 10 and found to be free from all symptoms. Inquiries carried out several months later revealed that the patient had continued to be fit and was carrying on a normal life.

Case 6.—A male Cantonese aged 42 was admitted on Oct. 19, 1938, with a history of fever, headache, and pain in the bones for four days. Physical examination, including the central nervous system, revealed no abnormality; there was no rigidity of the neck and Kernig's sign was negative. As several cases of lymphocytic choriomeningitis had been encountered at this time, and as some of them had evinced few or no pointers to meningeal affection, a lumbar puncture was done, though neck rigidity and Kernig's sign were absent on repeated examination. The cerebrospinal fluid showed the following: pressure not increased; naked-eye appearance clear; cell count, 563 per c.mm., practically all the cells being lymphocytes; total protein, 120 mg. per 100 ml.; globulin + (Ross-Jones); direct smears negative to T.B. and other organisms; culture sterile; W.R. negative, Kahn test negative. On Oct. 29 slight congestion of the pharynx was noticed. On the 31st lumbar puncture was repeated, with the following findings in the cerebrospinal fluid: naked-eye appearance clear; chlorides, 643 mg. per 100 ml.; sugar

51 mg. per 100 ml.; direct smears, no T.B. or other organisms; all the cells were lymphocytes; culture sterile; precipitin test for meningococci, negative. The Widal and Weil-Felix reactions were negative, and the blood culture was sterile; examination of the ear, nose, and throat revealed nothing abnormal except a deflected nasal septum; the Kahn test on the blood was positive (444). There was irregular fever between Oct. 19 and Nov. 3, after which date the temperature remained normal. The total white count was 7,600 per c.mm. (polymorphonuclears 60%, lymphocytes 40%). The patient was given sulphanilamide 1 g. t.d.s. from Nov. 2 to 9. He was discharged cured on Nov. 9.

Case 7.—A male Tamil aged 23 was admitted on Oct. 22, 1938, with fever and stiffness of the neck for seven days but no headache. There was rigidity of the neck, but Kernig's sign was negative. Examination of the ear, nose, and throat revealed opacity of the antra on transillumination, but skiagrams showed no abnormality; the ethmoid cells were unusually large and numerous. The central nervous system was normal. The fundi were also normal. The blood Kahn test was positive (444). The temperature was 102° F. (38.9° C.) on admission, and there was irregular fever till Oct. 26, after which date the temperature remained normal. On Oct. 23 the cerebrospinal fluid showed the following changes: pressure increased (on jugular compression there was a definite increase); naked-eye appearance slightly turbid; cell count, 831 per c.mm. (polymorphonuclears 90%, lymphocytes 10%); total protein, 150 mg. per 100 ml.; globulin + (Ross-Jones); sugar, 11 mg. per 100 ml.; chlorides, 643 mg. per 100 ml.; W.R. negative, Kahn test negative; direct smears negative for T.B. and other organisms; culture sterile; no clot on standing. On Oct. 27 the cerebrospinal fluid was sterile on culture; the precipitin test for the meningococcus was negative; the cell count was 576 per c.mm., 6% being polymorphonuclears and 94% lymphocytes. The patient 1 g. t.d.s. from Oct. 24 to Nov. 2, and was 1.9.

Case 8.—A male Tamil aged 30 was admitted on April 17, 1941, with a history of vertigo for two days. There were no other symptoms; the ear, nose, and throat were normal, the neck was not rigid, and Kernig's sign was negative. On standing or walking there was a tendency to fall to either side; this did not increase on closing the eyes. Otherwise, examination of the central nervous system revealed no abnormality. The blood picture was as follows: total red cells, 4,850,000 per c.mm.; haemoglobin, 83% (Sahli); total white cells, 6,800 per c.mm. (polymorphonuclears 60%, lymphocytes 18%, large hyalines 2%, eosinophils 20%). There were acystoma ova in the stools. Blood: April 18—W.R. ±, Kahn test ± (111); April 24—Kahn test + (333); April 30—W.R. +, Kahn test + (344). On April 21 the cerebrospinal fluid showed the following changes: naked-eye appearance slightly turbid; cell count, 280 per c.mm. (polymorphonuclears 94%, lymphocytes 6%); total protein, 75 mg. per 100 ml.; globulin + (Ross-Jones); sugar, 57 mg. per 100 ml.; chlorides, 715 mg. per 100 ml.; direct smears negative for T.B. and other organisms; culture sterile; no clot on standing; W.R. negative. On May 5 the cell count was 20 per c.mm., all the cells being lymphocytes. The patient was given sulphanilamide 1 g. t.d.s. from April 22 to 27, and was discharged cured on May 5.

Remarks

Case 5 was complicated by lymphogranuloma inguinale, and though one case of meningo-encephalitis (Rajam, 1936) has been described in this disease, the features of the present case seem to correspond to lymphocytic choriomeningitis rather than to meningitis of lymphogranulomatous origin. The only case of meningo-encephalitis recorded (referred to above) was accompanied by coma, fits, a temperature of 104.4° F. (40.2° C.), and proved fatal; the cerebrospinal fluid showed 90% of polymorphonuclears.

Cases 6, 7, and 8 had a positive blood Kahn reaction; but in my mind there is no doubt that these were cases of lymphocytic choriomeningitis and not syphilitic meningitis, in view of the following facts: (a) The histories were short; otherwise the clinical picture was typical of lymphocytic choriomeningitis. (b) The cases showed clinical cure without any antisyphilitic treatment. (c) The W.R. was negative in the cerebrospinal fluid in all those three cases; this is a very unusual finding in meningeal syphilis. In fact, I have seen hundreds of cases of meningeal syphilis and have never encountered one with a negative W.R. in the cerebrospinal fluid. (d) In Cases 7 and 8 the cell picture showed 90% and 94% of polymorphonuclears, respectively, on the first examination, and subsequently became predominantly lymphocytic. This is typical of lymphocytic choriomeningitis. A marked preponderance of polymorphonuclears is never found in meningeal syphilis at any time. (e) In Cases 7 and 8 there was a marked drop in the cell count in the cerebrospinal fluid without any antisyphilitic treatment.

Findings

Findings may be briefly summarized as follows:

Duration of illness: 2 to 21 days (average 7).

Age incidence: 5 Indians, 3 Chinese.

Sex incidence: 19 to 42 years (average 27). It must be noted here that only adults, as a rule, were admitted to these

Number of days in hospital: 11 to 29 (average 19).

Fever: present in 6 cases.

Headache: present in 4 cases.

Giddiness: present in 2 cases.

Vomiting: present in 1 case.

Weakness of legs: present in 1 case.

Mental symptoms: present in 2 cases.

Hyperaesthesia: present in 1 case.

Neck rigidity: present in 5 cases.

Kernig's sign: positive in 2 cases.

Cerebrospinal fluid: (a) Cell count varied from 152 to 900 per c.mm. (b) Sugar varied from 10 to 84 mg. per 100 ml. 5 out of 6 cases were between 45 and 60 mg. per 100 ml. (c) Chlorides from 627 to 745 mg. per 100 ml.

Cases not treated with sulphanilamide spent an average of 22 days in hospital, whereas those treated with it stayed there for an average of 16 days. From these figures it is impossible to draw any conclusion as to the therapeutic value of sulphanilamide. The clinical impression was that cases seemed to benefit from it.

Conclusions

Lymphocytic choriomeningitis is a disease that occurs not only in Singapore, and, unless one is on the lookout for it, cases might easily be missed. Headache was complained of in only 4 cases and neck rigidity in but 5 out of 8; only 2 had a positive Kernig's sign. In 5 of the cases was simply a pyrexia of unknown origin, and in 3 was no symptom or sign pointing to the central nervous system; this case would certainly have been missed if a lumbar puncture had not been done. It would therefore be advisable to have this disease in mind when dealing with any obscure fever with fever, headache, giddiness, or vomiting. There was no history of a similar illness occurring in the household or among contacts of these cases; none of them showed any evidence of infection of the ear, nose, or throat; and there were no sequelae.

Summary

A brief account of the literature on lymphocytic choriomeningitis is given, with reference to the clinical picture, aetiology, and the history of the condition.

No cases have so far been actually reported in Asiatics, 8 cases of the disease are described.

All the cases were seen at the General Hospital, Singapore.

All the cases conformed to the characteristics described by Gibbens (1931).

There was no death, and no sequelae occurred.

A warning is given that unless one keeps on the lookout for such cases they might be missed.

I wish to thank the ear-nose-and-throat department of the General Hospital, Singapore, for the examination of these cases, and the pathology department, Singapore, for the reports (cultures, W.R. tests, and precipitin tests). I am greatly indebted to Dr. J. V. Forster, physician, General Hospital, for his invaluable advice, and to the Director of Medical Services, Straits Settlements, for permission to publish.

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PATHOGENICITY OF GROUP C (LANCIEFIELD)
HAEMOLYTIC STREPTOCOCCUS

BY

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Until recently it was believed that Group C (Lancefield) haemolytic streptococci were not frequent in human disease (Evans, 1944), and that when they did occur mild infections only were produced. Harper and Williams (1944), in reviewing the frequency of streptococci in the healthy nose and throat, found them in about 47% of their cultures, and of these only 1.6% belonged to the Lancefield Group C. The Cardiff Public Health Laboratory (1943), analysing the pathogens from acute cases of upper respiratory infection, found Group C streptococci in 7.2%. In a summary of cases of puerperal infection associated with streptococci that were not Group A, Ramsay and Gillespie (1941) reported 12 in which the Lancefield Group C was found. The pyrexia was mild and the infection low-grade. Cases have, however, recently been reported in which these streptococci were associated with severe infections. Thus Portnoy and Reitler (1944) isolated such an organism in an outbreak of acute cellulitis in which 27 people were affected and 4 died. Fatal puerperal infection has also been recorded (Rosenthal and Stone, 1940).

During a period of two years in a very small Public Health Laboratory 105 strains of Group C haemolytic streptococci were isolated. They came from cases of disease and from routine swabbings of maternity staffs and patients and of children in residential nurseries. The comparative frequency of this group compared with the other Lancefield groups isolated during the same period (to a total of 970) was as follows: Group A, 618 cases; Group B, 69; Group C, 105; Group D, 71; Group G, 107. It will therefore be seen that the occurrence is approximately one-sixth of that of the Lancefield Group A streptococcus—frequent enough, if they are pathogenic, to warrant consideration.

Distribution of Group C Streptococci

Of these 105 strains 32 were found in routine swabbings of throats and 4 in routine vaginal swabbings of pregnant women. In these cases they appeared to be saprophytic. The remaining 69 strains originated as follows: Acutely ill cases, 9; mild tonsillitis, 33; suppuration of soft tissues, 12; puerperal genital tract, 12; sputum (chronic bronchitis), 3.

Analysis of Cases.—The most acutely ill case was that of a middle-aged man who developed bronchitis which led within 10 days to a basal pneumonia with pleural effusion. A severe toxæmia, swinging temperature, and tympanites later set in, and suggested a typhoid or other septicaemia. The blood culture yielded a Group C haemolytic streptococcus. Recovery ensued with penicillin therapy. One case of severe cellulitis occurred after a septic soft-tissue lesion. Infection spread down to the bone, and amputation of the terminal phalanx had to be performed. A dental abscess resulting in osteomyelitis of the zygoma also yielded a pure growth of haemolytic streptococci of Group C.

Six of the strains came from septic throats, in which the patient was very ill with a raised temperature, enlarged glands, and sloughing foul necrotic debris on the tonsils. Swabs were sent in for differential diagnosis between Vincent's angina and diphtheria. Neither of these was present, but an almost pure culture of Group C haemolytic streptococci was obtained in each case. It is interesting that the somewhat large number of cases of mild tonsillitis came from widely separated sources from general practitioners who had been consulted with a complaint of sore throat. The presence of a congested red throat and lack of any membrane or debris were always noted. No other pathogenic organisms were present in any of these cases, so that the Group C streptococcus was held to be responsible.

The 12 strains from soft-tissue lesions were from cellulitis, gunshot wounds, abscesses, and ulcers. A Group C streptococcus was the only organism present, except in the case of the gunshot wounds and ulcers of leg. In these a mixed flora of

Staph. aureus (coagulase-positive), coliform bacilli, *Ps. pyocyaneus*, etc., was present. In no case was the patient acutely ill. Three of these 12 cases were associated with purulent discharges. Two were from vaginal swabs from an infant of a few months and a child of about 6 years, respectively. In neither case was any other pathogenic organism isolated, and although the children were not acutely ill they were definitely off colour and the local vaginal area and vulva showed much inflammation. The third case was that of a child with a copious purulent nasal discharge. The patient was suspected of being a chronic diphtheria carrier because of this discharge, but repeated examinations failed to isolate *C. diphtheriae* and always produced the Group C streptococcus.

Of the puerperal cases from which Group C streptococci were isolated from the genital tract, 5 were normal deliveries and the streptococcus was found solely as the result of routine swabbings. They caused no symptoms, and the puerperium was uneventful in each case. In 4 other cases with forceps delivery and extensive lacerations temperatures of from 99.8 to 101.8° F. (37.7 to 38.8° C.) were recorded and sustained for two to three days. Offensive lochia and uterine tenderness were noted. Rapid improvement and complete recovery followed sulphonamide therapy. In one of these the streptococcus was isolated from the throat and vagina before labour started; the other 3 had negative swabs on admission. Two patients after a normal delivery developed a mild pyrexia of a few days' duration (100–101.4° F.: 37.8–38.55° C.). Full recovery occurred. One patient, put into this category for convenience, was a gynaecological case. The trouble was diagnosed as uterine prolapse with cervicitis and erosion; colporrhaphy was performed, and she developed a mild pyrexia for a few days after operation. A pure growth of Group C streptococci was obtained from the cervix both before and after operation. The wound became clean and the patient recovered rapidly after sulphathiazole medication.

One strain was found on the anaesthetic machine of an operating theatre—a surprising finding, that suggests a possible source of hospital epidemic infection.

Significance of Group C Streptococci

It will be seen from the above series that in the majority of cases infection with these organisms does produce only mild lesions. In the genital tract they can exist as saprophytes, and, in spite of the local trauma of parturition, still cause no infection. With extensive lacerations, however, a mild uterine sepsis can be set up, so that the presence of these streptococci in the pregnant woman should always be noted. In the throat also the tendency is for a mild infection, but there is always a possibility of an acute and anginous inflammation. Infection of the soft tissues can be equally troublesome. In one of our cases it led to amputation of the phalanx of one finger, and in another to osteomyelitis of the zygoma.

It is difficult to assess the significance of the Group C streptococcus in the chronic bronchitis cases. Our 3 cases produced sputa with a mixed flora, but the Group C streptococcus very considerably outnumbered the other organisms. If not actually pathogenic, it would seem to be a great potential danger in view of the one case of bronchitis which led on to pneumonia and septicaemia. Here the patient was indeed gravely ill.

Bacteriology

All the strains gave clear-cut serological reactions with the Lancefield Group C serum, and soluble haemolysin tests were all positive. Biochemical investigation of 46 of our strains was carried out to see if there was any correlation between severity of lesion and type of streptococcus. All were inoculated into trehalose, lactose, sorbitol, and salicin-serum-peptone water, into plain broth, grown on 20% bile-blood, and tested for the presence of fibrinolysin. No correlation could be found between the severity of the lesion and the type of streptococcus causing it.

Sixteen of the 46 strains did not ferment sorbitol but fermented trehalose, thus fitting into Evans's (1944) description of *Str. equisimilis*. Of these 16, 4 did not lyse human fibrin and would therefore appear to be of animal origin. Of these 4, one was from a case of mild tonsillitis, one from a severe anginous throat, one from a chronic osteomyelitis, and the

last from a routine vaginal swab. The other 12 which had human fibrin, and would therefore seem to be of human origin, also came from lesions of varying severity, including a case of severe cellulitis, 3 mild puerperal infections, and 1 abscess. The remainder were from routine swabs, presumably from carriers on whom they were saprophytic.

The large group of organisms (30 in number) which did ferment either sorbitol or trehalose were at first suspected of belonging to the *Str. equi* group. Further investigation, however, showed that they differed in other characteristics. All lysed human fibrin and fermented either salicin or lactose or both. All grew rapidly in plain broth. Eighteen of the strains fermented both lactose and salicin, and included the strain isolated from the septicaemia. But as this group also included many of the mild tonsillitis and carrier strains pathogenicity did not seem to be particularly associated with it. Biochemical typing of the Group C streptococcus did not therefore, appear to us at first to be of much practical value but it was noticed that of 3 strains giving the same biochemical reactions (acid in trehalose and salicin, nil in sorbitol; lactose, positive for fibrinolysin, no growth in 20% bile) 2 were from cervical swabs from mild puerperal pyrexial cases where the organisms were not grown from swabs taken on admission. The other was from the throat of a nurse in the same ward thus suggesting the possible source of the infection.

Conclusion

It is suggested that the appearance of a Lancefield Group haemolytic streptococcus in any lesion should be regarded with some degree of the apprehension which at present is bestowed on the Group A organism, and that, particularly in midwife cases, its presence should be the signal for preventive measures to avoid cross- or auto-infection. Biochemical typing might be of value in tracing outbreaks of minor infection with Group C streptococci in maternity and surgical wards.

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CHEMICAL WARFARE EXPERIMENT USING HUMAN SUBJECTS

BY

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Human subjects have been employed for many years to assess the value of certain types of potential chemical warfare agent and the efficacy of suggested defensive measures. All the subjects were volunteers, originally from the staff of the Chemical Defence Experimental Station, Porton, but later from the three armed Services. No one was subjected to a test without first being told the precise nature of the test and the possible consequences to himself. The tests were chiefly routine in nature and hundreds of volunteers have been used in this way. "volunteers from the volunteers" were invited for any test involving risk of injury. The tests for which the subjects were used were roughly of two types—viz., offensive and defensive.

Offensive Tests

The offensive tests included the routine assessments of hundreds of possible lacrimators and sternutators. Volunteers were exposed to these compounds, which were dispersed in low concentration in a gas-chamber, and the times of onset and severity of the typical signs and symptoms of irritation noted. The potency of each compound was determined in this way for comparison with the effects produced by the common standard lacrimators and sternutators. The more promising compounds were further assessed under more realistic conditions. Their trained troops "attacked" over an assault course while they were subjected to heavy concentrations of sternutatory clouds from generators, and their performance was compared with that when under the influence of a cloud of a standard sternutator.

again when no gas cloud impeded them. Simultaneous action of the chemical concentration of the gas clouds ed a more precise assessment to be made. The irritant s from gas weapons were similarly assessed.

the suggestion of Prof. Bartlett, of Cambridge, a constant test based on the rangefinder was used for the quantitative ment of the harassment produced by lacrimators. Harass-concentration curves were produced for the common nators, and an interesting point noted was that for each nator tested there appeared to be a critical concentration e which any further increase in concentration produced, at nost, only a small and militarily insignificant increase in sment. Moreover, it would appear that in each case the al concentration produced an approximately similar sity of harassment—viz., about 50%. (100% harassment ponds to complete blindness for the duration of the test.) intensity of harassment is equivalent to a subject being l for half the time of the test. The subject is, of course, mittently blind, corresponding to the periods of intermittent arospasm which he suffers.

oreover, it was noted that the human eye could become rant," as regards both lacrimation and blepharospasm, to ven lacrimatory atmosphere, no matter what the chemical re of the atmosphere, and whether the concentrations were or low. The time for different subjects to acquire tolerance d enormously—e.g., from 2 to 40 minutes—and this time acquiring tolerance seemed to bear no relation to the oneration or the nature of the lacrimator. This tolerance was iered whether the concentration was slowly falling or slowly g, but a sudden marked increase in the concentration of lacrimatory atmosphere broke down the tolerance. About arter of the subjects showed a definite relapse of tolerance, in about a third of these the relapse was of a "phasic" re—i.e., the lacrimation tended to return and then pass y periodically during the exposure to the lacrimatory osphere.

he effect of harassing agents against armoured fighting icles was also assessed. Trained crews manned the vehicles, ch were then bombarded with projectiles containing harassing nts. A Service medical officer, travelling as "passenger," ssed the effects produced.

he effects of various vesicants on human subjects were also lied. New compounds were compared with the standard icants by placing different weights of the materials under on the skin of volunteers and observing the effects prod-ed. The vesicant power through various types of clothing l equipment and under different atmospheric conditions was ermined. A numerical basis for assessment was introduced that the results could be analysed statistically. This was ed on the finding that the following mean times of exposure (minutes) to mustard-gas vapour saturated at 30° C. are uired to cause the development, in 24 hours, of the various es of burn, under normal English atmospheric conditions.

Description of Burn	Time in Minutes	
	Normal	Hot and Sweaty Skin
1) red	1	0.5
2) and swollen	2	1
3) and swollen, with	3.5	2
4) pinhead blisters	4	—
5) small central blister	4	—
6)	6	3.5

One interesting investigation was the comparison of the sensi-ity of the skin of various regions of the body to vesicant mage. The following increasing order of sensitivity was dis-vered: palms of hands and soles of feet, palmar surface of ingers and back of hand and fingers, lateral surface of fingers d skin of the body generally, skin of the genitalia.

The burning power of vesicant vapours, both in the gas-amber and in the field, was studied and the dosage of vapour make a soldier a casualty determined by direct experiment. his was done under varying atmospheric conditions, too, by e use of a gas-chamber in which the relative humidity and e temperature could be controlled. It had long been known at hot and sweaty skin was more sensitive to vesicant vapour an was cool and dry skin, and by these experiments a more

precise correlation between vapour dosage for casualty produc-tion and atmospheric variables was obtained. The factors involved in producing the increased sensitivity of hot and sweaty skins were also studied. Our experiments seemed to indicate that the amount of moisture on the surface of the skin was the main determining factor, the following order of increasing sensi-tivity to vesicant vapour being found: cold dry skin, hot dry



FIG. 1.—Experimental mustard-gas vapour burns of the scrotum.

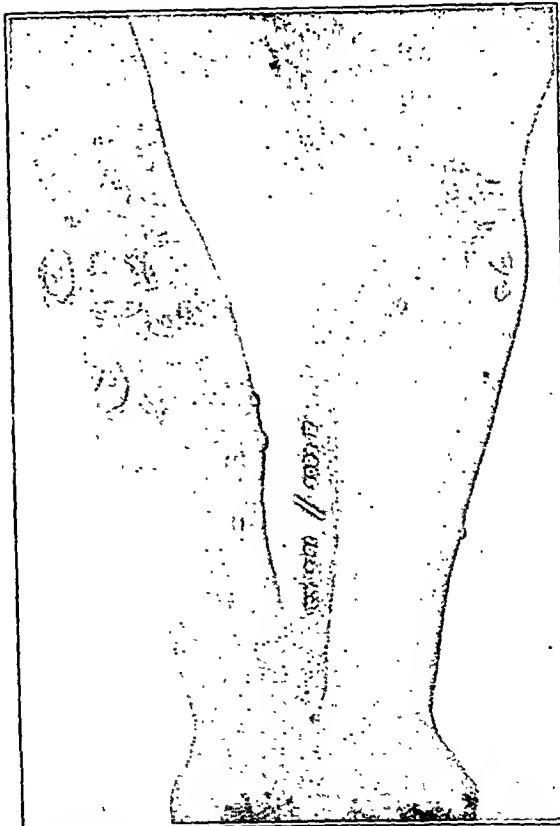


FIG. 2.—Burns caused by mustard-gas spray through clothing (24 hours after contamination).

skin, cold moist skin, normal (temperature) dry skin, normal moist skin, hot moist skin. This also probably accounts for the fact that under normal British climatic conditions the nor-mally moist regions of skin—e.g., genitalia, axillae—react more severely to vesicant vapour than the rest of the skin surface (see Fig. 1).

The penetrative and burning powers of liquid vesicant drops through various types and conditions of clothing were also investigated. Different sizes of drops were used, and they were dropped from a height on to the clothed subject and at a terminal velocity corresponding to that of spray. From the results of these experiments calculations were made to estimate the degree of vesicant contamination required to make a soldier a casualty. The validity of these calculations was checked by direct exposure of soldier volunteers to vesicant spray in the field (see Fig. 2).

A somewhat similar problem was presented by the request to determine the burning power of phosphorus through various types of clothing. Here known quantities of burning phosphorus were dropped from a height on to clothed volunteers. (The phosphorus was supported on a 1-amp. fuse wire which, on passage of an electric current, ignited the phosphorus and allowed it to fall.) Calculations similar to the vesicant calculations were then made. The relation between vesicant-vapour dosage and reversible eye-damage was also determined, chiefly by means of a constant-flow method through an eye-mask.

Defensive Tests

The above offensive tests were a necessary preliminary to experiments designed to evaluate protective measures and equipment; the possible hazards had first to be determined before methods of defence could be formulated. Thus the methods used in assessing the value of protective devices were very similar to those already described. For example, vesicant injuries to the eye were produced and treated with various therapies. Decontaminating ointments, creams, powders, and solutions were tested on the contaminated skin of volunteers. Protective clothing and impregnated clothing were assessed on subjects exposed to vesicant vapour dispersed in the gas-chamber or in the field and in concentrations known to be normally damaging. The hazards presented by traversing or occupying contaminated ground, and methods of reducing them, were also determined, while the effect on military efficiency of wearing various types of respirators was measured by the use of fully trained soldier personnel.

Of course the experience gained by these large-scale experiments on human subjects was often utilized for non-chemical-warfare problems. Thus, to quote a few examples, the problem of facepiece and rubber dermatitis, the question of irritability of garments heavily impregnated with D.D.T., and an attempt to determine the factors involved in the production of khaki or textile dermatitis were typical commitments.

I wish to thank the Chief Scientific Officer, Ministry of Supply, for permission to publish this paper. I must also pay tribute to Surg. Capt. A. Fairley, R.N.(ret.), for long a lone pioneer in this work on human volunteers; to Lieut.-Col. S. Curwen, R.A.M.C.; and to many other colleagues at Porton whose work I have freely quoted. Finally, my sincerest thanks to, and admiration for, the host of volunteers who made all this work possible.

Medical Memoranda

Removal of Large Ovarian Tumour Complicated by Cardiac Failure

The interest in the following case lies in the size of the tumour removed and the remarkably rapid recovery of a failing heart as soon as the pressure thereon was eased.

CASE REPORT

Early in 1946 an African village woman, aged about 50 and of average stature, was admitted to hospital at Winneba. She stated that she had suffered increasing abdominal girth for three years. She was found to be very thin, dyspnoeic, and slightly cyanotic. The cervical veins were full. Cardiac dullness was increased to the right. Cardiac rhythm was regular, rate 90 a minute at rest. The interval between the first and second apical sounds was increased. Both lower limbs were oedematous. The abdomen was grossly distended. Abdominal and pelvic examination revealed the presence of a smooth, firm tumour which appeared to fill the pelvis and abdominal cavity completely. Its upper limit could not be defined. The uterus and rectum were prolapsed. After a week's rest in bed her general condition improved slightly, and operation was decided upon.

Under open anaesthesia (3:2 ether-chloroform mixture) laparotomy was performed through a long right paramedian incision, revealing a smooth, white, glistening tumour, areas of which fluctuant, extending well down into the pelvis, where its pedicle was felt on the right side. Laterally the tumour spread out over the flanks, and above was pressing on the liver. Fortune gut was not adherent to it. With considerable difficulty, on its size, the tumour was withdrawn from within the peritoneal cavity, the pedicle was clamped, the mass removed in one piece, abdomen closed. Camphor in oil had been given intramuscularly an hour before operation and nikethamide during the operation the pulse became feeble and irregular.

Examination of the tumour showed it to be a typical mucinous cystadenoma of the ovary. The proportion cyst to solid was approximately two to three. The tumour weighed (18.6 kg.). After operation the patient made a rapid and uneventful recovery. She left hospital one month later in good health.

I am indebted to the Director of Medical Services, Gold Coast, for permission to publish this report.

Colonial Medical Service, Gold Coast.

A. F. FOWLER
Medical Officer

Helminths Infective to Man in the Syrian Hamster

The Syrian hamster (*Cricetus auratus*), which is susceptible to several human diseases (e.g., leishmaniasis, tuberculosis, etc.), is being increasingly used, both in this country and in America, as a laboratory animal. In a recent Stunkard (1945) recorded the finding of the eggs of the tapeworm, *Hymenolepis nana*, in the faeces of a batch of animals purchased for experimental purposes. Since this species is directly infective to man, requiring no intermediate host, the author stressed the risk of infection being acquired by laboratory workers, animal-house attendants, and others handling the animals. *H. nana* commonly occurs in rats and mice, and several workers (Saeki, 1920; Uchimura, 1922; Kiribayashi, 1933) have succeeded in infecting man with eggs from these sources; hence there is ground for the belief expressed by Chandler (1922) and Faust (1939) that human infection may be acquired from eggs derived from rodents. Once acquired, human infection with *H. nana* may later reach serious proportions by reason of internal auto-infection (Hunninen, 1939).

In recent months a number of hamsters which had been used for experimental infections of kala-azar in these laboratories have been examined post mortem for helminth parasites. Out of a total of 160 animals, 19 (11.9%) were found to harbor *H. nana*, some being fairly heavily infected. One specimen yielded no fewer than 22 adult worms. Since most of the infected individuals belonged to one batch there is a possibility of a much higher incidence in other cases. Further, 83 animals (51.9%) were infected, some very heavily, with the oxyurine nematode *Syphacia obvelata*. This species is also believed to be infective to man, a case of human infection having been reported from an American child in the Philippines (Riley, 1919). Several more recent cases of *S. obvelata* infection have, however, proved to be spurious (Craig and Faust, 1945).

In view of the possibility of human infection with these worms having been acquired by contamination from the faeces of these infected hamsters, it was deemed advisable to make a examination of all personnel involved in handling the animals. Accordingly, two stool samples and seven N.I.H. swabs* at daily intervals were taken from the four individuals in question and examined respectively for the eggs of *H. nana* and *S. obvelata*. All were negative.

Hence, despite the fact that human infection with these helminth species does undoubtedly occur, and in view of the fact that no special precautions were taken in handling the hamsters, the risk of infection to laboratory workers and animal-house attendants does not, in practice, appear to be a serious one.

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* The National Institute of Health "cellophane" swab devised by Hall (1937) for the diagnosis of oxyuriasis.

Reviews

X-RAY THERAPY FOR ACCESSIBLE CANCER

The X-Ray Treatment of Accessible Cancer. By D. Waldron Smithers, M.D., D.M.R. (Pp. 147; illustrated. 40s.) London: Edward Arnold and Co.

This is a monograph describing the experience at the Royal Cancer Hospital, London, in the treatment of cancer, chiefly of the skin. It is profusely illustrated with photographs of apparatus and of patients, and with isodose curves applying specially to the use of contact x-ray therapy in the treatment of skin cancer. The clinical photographs include some striking examples, in colour and in black and white, showing both radiation reactions and clinical results in skin cancer and cancer of the lip. The text is clearly written and the author brings out the essential points of the principles influencing the choice of technique and of apparatus. A chapter is devoted to classification and staging of cancer with a full account of records, including a punch card system for abstracting information from the records, making use of punching, and sorting by hand.

In a clear but somewhat technical account of the mode of action of radiation on malignant cells, the author correlates conclusions reached by several workers in cytological fields and stresses the need for studying the response to radiation of individual tumours. Examples are given of attempts to do this by means of differential cell counts, and a number of such counts, graphically represented, is given. While with most of these the clinical result corresponds with the indications of the cell count, one (Fig. 39) shows an unfavourable cell count, but a good clinical result, 2½ years after treatment. This result calls into question the whole method. The techniques used are clearly described, and full use has obviously been made of isodose data provided by the physicist, together with ingenious devices to ensure accuracy and ease of treatment with protection of structures, such as the eye and mucous membranes, which should not be treated. A test of statistical significance of results is used to show that a fractionated is better than a single-dose method of treatment, but the author is in error in comparing his own figures for fractionated treatment with those of another clinic for a single-dose method.

The book is attractively produced, and interesting to read. The author and publishers are to be congratulated on the project and its fulfilment.

BIOLOGY OF CELLS IN TISSUE CULTURE

Biology of Tissue Cells. Essays. By Albert Fischer, head of the Biological Institute, Carlsberg Foundation, Copenhagen. (Pp. 348; illustrated. 31s. 6d.) Copenhagen: Gyldendalske Boghandel Nordisk Forlag; London: Cambridge University Press, 1946.

Though not indicated in the title, this book actually deals with the biology of cells in tissue culture. It is not a monograph or textbook of tissue culture, but a series of essays based on the author's own experimental data, and on those of other workers, and it considers the subject from the standpoint of the biology of tissue culture cells and their relation to the life of the tissue cells in the whole organism.

The results of tissue culture studies have proved to be a disappointment to histologists of the old school, because in culture the morphological characters of the cells are lost by dedifferentiation, so that finally only three types of cell are morphologically recognizable—viz., reticular tissue cells (fibroblasts), mosaic tissue cells (epithelium), and wandering cells. Thus, chondrioblasts, osteoblasts, muscle fibres, and cardiac muscle cells become morphologically identical as "fibroblasts." But although morphologically indistinguishable, the cells retain certain potentialities characteristic of the embryonic stage from which the explant originates. Thus, the tissue culture provides interesting material for the study of characters, other than morphological, by which the cells differ from one another. In the last analysis no doubt these differences depend on chemical differences, as is already admitted to be the case with morphologically indistinguishable cells from different species of animals.

The author advances evidence in support of the view that the tissue culture represents, not a cell colony in the real sense

of the term, but an organism-like system, or tissue-cutting, presenting signs of organization, of polarity, of regeneration when injured, and of mutual dependence of the cells on one another, involving some elementary division of function. Why it grows only to a certain size, what stimulates its growth and its polarity, and what factors inhibit growth are subjects to which the author has given much thought.

The book is interesting and stimulating, and, on the whole, written in excellent English, on which the translator is to be congratulated. All the same, the language could have been improved by an English editor: the punctuation is at times odd, and the use of such words as "loose" for "lose," "long-time" for "prolonged," "blood coal" for "blood charcoal," etc., give an awkward tang to the reading. This is perhaps captious criticism of a laudable effort: one would be happy to be able to write a foreign language oneself half so well. The print and get-up are excellent.

BILIARY AND ALIMENTARY ANASTOMOSIS

Operative Anastomoses Between Biliary and Gastro-Intestinal Tracts. A Review of Earlier Literature and a Clinical Study of 809 Swedish Cases. By Gunnar Redell. (Pp. 371; illustrated. No price given.) Uppsala: Almqvist and Wiksells Boktryckeri-A.B.

To collect and analyse the details of some 800 cases of any surgical condition is a herculean task, but it has been successfully undertaken by Dr. Gunnar Redell of Uppsala, whose *Operative Anastomoses Between Biliary and Gastro-Intestinal Tracts* first published in Sweden in 1940 has now been translated into English. The main part of the book consists of summarized histories of 809 cases of such anastomoses culled from all the Swedish hospitals in the period 1914-38, but in the first 180 pages the author gives an excellent review of the previous literature and discusses all important aspects of the subject, experimental, pathological, and operative. Fourteen separate indications for these operations are detailed, including cancer of the pancreas, stricture of the bile ducts, accidental and post-operative lesions (which in view of the findings of the previous records we were surprised to see accounted for but 44 of the 809 cases), dyskinesia, stones, and congenital conditions.

We think that the surgeon will not find anywhere a more complete or balanced analysis of the very considerable literature which in the author's bibliography extends to 1,100 articles and papers. We note with commendation that this list is world wide in its embrace and not limited, as is too often the case in monographs, to the literature of one or two countries. For this reason it was all the more surprising to find no reference to E. Horgan's volume on *Reconstruction of the Biliary Tract*, which is the only other extensive monograph we have come across covering much the same territory. However, this small omission in no way detracts from the great value of Dr. Redell's book, which will for long remain the most informative guide to a rather involved subject. That it needed attention is obvious from the high overall mortality which the author quotes from the literature and which his own statistics corroborate, only 146 of his series, many of which of course were cases of irremovable neoplasm, being alive at the time of the investigation. In 89 of these barium meal examinations were done, and at the end of the book a series of half-tone radiographs and of line reproductions, showing the degree to which the contrast medium entered the biliary system via the anastomosis, greatly enhance its practical value.

The book is one we can unhesitatingly recommend to the surgeon who is particularly interested in this important branch of his subject and can procure a copy from Uppsala.

DYNAMIC PSYCHIATRY

Principles of Dynamic Psychiatry. Including an Integrative Approach to Abnormal and Clinical Psychology. By Jules H. Masserman, M.D. (Pp. 322; illustrated. 20s.) London: J. B. Lippincott Company.

In this book the author has tried to integrate various biological and psychological disciplines into a biodynamic theory of behaviour and to check the principles of this theory against animal experiment, clinical observations, and the rationale of various forms of therapy in the behaviour disorders of man. The first part is concerned with definitions of the scope of psychiatry followed by a description of psychological and psychopathological concepts. The psychoanalytic approach is discussed and the psychoneurotic and psychotic reactions are

described. In the second part all this is correlated with experimental work on animals and various criticisms are dealt with. Appendices comprise a full case history of a psychoneurotic with psychosomatic symptoms, the psychoanalytic formulations of the psychoses, a list of films suitable for teaching purposes, and a note on principles of group communications used in propaganda. There is a full bibliography and a glossary of psychiatric terms to complete the book.

As a work of reference this volume is of undoubted value, but it is written in a style which makes consecutive reading difficult, and the use of many technical terms unfamiliar to the general reader makes the glossary essential. Nevertheless the approach to psychiatric problems is a rational one and represents the general trend of modern psychiatry. We shall look forward with interest to the forthcoming volume on the practical application of the theories formulated in the present work.

AN AUSTRALIAN SURGEON'S MEMOIRS

In My Fashion. By Herbert M. Moran. (Pp. 310. 15s.) London: Peter Davies, 1946.

For the friend becoming increasingly restive during a long convalescence, for the retired doctor who finds that the world has been steadily going from bad to worse since the days of his youth, and for anyone who enjoys wit, zest, pugnacity, lost causes, and tilting at windmills this work would be an excellent gift. The author, an Australian surgeon, died of a malignant melanoma just before the book was published, and his account of his disease in the last chapter is a moving example of that form of literary expression at which the British have always excelled: eloquent acceptance of death.

However, Mr. Moran was pre-eminently a skilful raconteur, and most of the book is composed of anecdotes about psychopaths, malingerers, homosexuals, eccentrics, and bemused illiterates that he encountered while serving in the R.A.M.C. during the recent war—the "poor types," as they were called—the "submerged tenth" of our population. The treatment accorded to these men by the Service authorities, and in particular by the psychiatrists, roused the author to criticisms that are always scathing, often unfair, but certainly entertaining; and his observations on the effects of the "dole," medical certification, and incoordination between the medical Services will find an echo in the hearts of many doctors even if their minds consider his judgments rash and biased.

A sympathy with the Italian people (he knew the English colony in Italy well) and with Mussolini, whom he met on several occasions, caused the author to condone the Abyssinian venture to the extent of volunteering to serve with the Italian army in Africa. His adventures there are vividly described, but his sympathetic attitude to the campaign must be repugnant to most Englishmen to-day.

Notes on Books

Bulletin No. 6 of the Industrial Welfare Division of the Australian Department of Labour and National Service deals with *Atmospheric Conditions in Australian Textile Mills*. It describes the temperature, humidity, and air movement experienced in half the textile mills of Australia, which employ four-fifths of the workers in the industry. The observations are presented in the form of charts which show the range of dry-bulb temperature and humidity found to be (a) comfortable for the operative, (b) uncomfortable for them, and (c) harmful, within the endurance limit indicated. Other sections of the Bulletin discuss the frequency of difficult outside atmospheric conditions, the control of radiant heat, and the maintenance of clean air. The Bulletin should prove a useful guide to factory managers, especially those engaged in worsted and cotton spinning. Booklet No. 3 reports on *Industrial Accident Records, their Compilation and Use*. The booklet describes the system used in a number of Australian factories during the past two years, and follows the standard methods recommended in this country by the Royal Society for the Prevention of Accidents. It also embodies schemes which aid the collection and tabulation of accident data, and relate the occurrence of accidents to definite causes. Both publications may be had from the Department of Labour and National Service, Nicholas Building, 37, Swanston Street, Melbourne.

Self. A Study in Ethics and Endocrinology, by MICHAEL DILLON (William Heinemann Medical Books; 6s.), is a plea for the understanding of self, not only of oneself but of other selves, for only thus can there be any advance in charity, in civilization, and in a true ethic. In the compass of 122 pages the treatment of this

subject cannot be anything but superficial, but it is at least provocative of thought. The first part deals with the influence of body, especially of the endocrine system, and this is illustrated by discussion of the vexed subjects of homosexuality and hermaphroditism and the biased and prejudiced attitude of the public to these problems. In the second part the question of the correlates of these bodily processes is dealt with in chapters on personality, the masculine and feminine type of mind, and free will. None of these problems does the author solve, nor does he pretend to, but he approaches them with an open mind and not, as so many professional endocrinologists, psychologists, and other-ologists, exclusively from the standpoint of their own specialties. The chief object of this readable and pleasantly written little book will be to stimulate thought and (we hope) further reading.

The United States are justifiably proud of the memory of William Beaumont. As Dr. John Fulton points out, his physiological observations on Alexis Saint Martin were of the greatest significance. The basis of one well-studied case Beaumont was able to chart the course of medical thought in the sphere of the physiology of digestion. We turned, therefore, with pleasant anticipation to a book with the engaging title *William Beaumont's Formative Years* (New York: Henry Schuman; \$6.00), but we must admit to being rather disappointed. The book merely comprises two Beaumont's early notebooks, 1811 to 1821, with annotations and an introductory essay by Genevieve Miller. These diaries record everything that interested him greatly, whether what he observed himself or what interested him in the writings of others. It is an unclassified collection of his thoughts and might provide the material from which his formative years could be clearly grasped. The book handsomely produced with a number of pleasant contemporary illustrations.

We welcome a second edition of Dr. OTTO SAPHIR's *Auto Diagnosis and Technique* (New York, Paul B. Hoeber, 55). The book remains of reasonable size in spite of revision and enlargement and contains a vast amount of useful information expressed in clear and attractive language. The gross changes in diseases of the biliary system, vitamin deficiencies, and tropical diseases are now included, and investigation of accidental death has been more thoroughly dealt with. The opening chapter, concerning the legal aspects of obtaining permission to perform the necropsy, is of considerable interest. Most of the book is occupied by short pithy descriptions of morbid processes. As the author explains, this part is not designed to replace a textbook of pathology but to serve as a working guide to aid in recognition of demonstrable anatomic lesions. The book will certainly be of assistance to those whose experience of carrying out routine post-mortem examinations is limited.

Dr. WILLIAM BROWN's book entitled *Personality and Religion* (University of London Press; 9s. 6d.) is, in the main, a revised and abbreviated edition of *Mind and Personality*, in which he has incorporated chapters from another of his books, *Science and Personality*, all of which have been out of print for some years. We note that he now lays very little stress on abreaction, of which, in the past, he was the leading exponent. In its present form the book embodies the results of twenty years' further experience in deep mental analysis of psychoneurotic patients as well as of more normal personalities. He also elaborates his helpful conception of the contrast between individuality and personality, which is perhaps the most interesting feature of the book.

It must be said at once that *A Pocket Obstetrics*, by ARTHUR C. BELL (J. and A. Churchill; 7s. 6d.) is an excellent little book. "An attempt to present the fundamental lines of approach to the practice of obstetrics both normal and abnormal" has succeeded. When in conjunction with her practical work the pupil midwife will find all that she requires here. The busy general practitioner and his wife could use this book for rapid reference with benefit, and a harassed medical student during revision will be grateful for the logical presentation of a subject never easy to master. The publishers are to be complimented on the high standard of the production. The attached bookmark may be copied with advantage by themselves and to the reader by many other publishers.

Pending a complete revision of the *Ship Captain's Medical Guide* a new edition has been printed for the Ministry of Transport. The 18th edition, besides new material, contains information which has been issued in the form of Notices to Masters. The medical sections have now been omitted and are published separately. Copies of the *Ship Captain's Medical Guide* (price 3s. 6d.), of the medical sections, and of amendments to each of these publications may be obtained directly from H. M. Stationery Office, or through any bookseller.

The Royal Life Saving Society has published a twenty-first edition of its illustrated *Handbook of Instruction* which sets out the method approved by the Society for release and rescue of the drowning, for resuscitation of the apparently drowned. It is published at 14, Devonshire Street, London, W.1.

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THE FUTURE OF PENICILLIN

We are glad to announce the publication of a full-scale work on penicillin by British writers.¹ Edited by Sir Alexander Fleming, who is himself the author of two chapters, it includes contributions by 27 other workers and covers the whole field of its subject, from chemistry, manufacture, pharmacy, and pharmacology to every form of clinical application. There is necessarily some variety of style and method among so many writers, and even difference of opinion among them on minor points, but such lack of uniformity is more than counterbalanced by the advantage of having contributions from those who have special experience in particular fields. The scope of penicillin treatment is so wide that no one can have had practical experience of all aspects of it: it includes, for example, such specialized spheres as ophthalmology, major chest surgery, venereal disease, and plastic surgery. The obstetrician, the dermatologist, the orthopaedic surgeon, and others have also had the opportunity of discovering what penicillin can do in facilitating their work, and the fruit of all their experience will be found here.

A study of this book will provide almost any reader with new ideas for ways of using penicillin, and, unless the constantly reiterated injunction to determine whether or no the infection is caused by a penicillin-sensitive organism is well observed, it may safely be predicted that a good deal is going to be wasted. Bacteriological investigation, though always advisable unless the clinical diagnosis decides the nature of the infection, would seem to be particularly necessary in peritonitis and other acute abdominal conditions, in which the usefulness of penicillin has yet to be fully determined, and in infections of wounds, of the air passages, and of the urinary tract. Several important applications will probably be new to many readers. One is the treatment of sepsis neonatorum, a term here used to describe many of the possible effects of the "neonate's" first contact with the microbic world, and including umbilical infection, nasopharyngitis and pneumonia, skin infections, and various other forms of sepsis. Of 69 such cases treated at Great Ormond Street 60 could be investigated bacteriologically, and in precisely two-thirds of them the infection was staphylococcal; there is thus more than an even chance in such a case that the organism concerned will be penicillin-sensitive. Since infants need very small doses compared with the adult, there need be no hesitation in giving any doubtful case the benefit of penicillin; indeed, this appears to be a branch of treatment in which the extravagant method of oral administration might well be

exploited fully. Another and much wider application is to "cover" an operation which normally carries a serious risk of sepsis; examples of this vary from dental extraction in rheumatic subjects to Caesarean section in an advanced stage of labour. Penicillin inhalation still requires further study, but it has been shown to be a possible alternative to injection for producing a systemic effect, and has been found to give good results in certain infections of the air passages and lungs, particularly in some cases of acute bronchitis. In this connexion it is interesting that the Swiss authors P. Geiser, K. Schaub, and H. Stauh² have recently claimed good results by this method even in the treatment of pneumonia.

With this up-to-date review of the present achievements of penicillin treatment before us it is tempting to speculate on future lines of development. An unknown factor on which these must largely depend is the supply position. It is true that supplies are understood to be adequate for normal and legitimate use in this country, but no one can foretell what the consumption may be in the first wave of popular demand. Moreover, many other countries still have little or none, and we should presumably export any surplus over normal requirements in the interests both of humanity and of the national exchequer. But to anticipate a day when supplies will really be unlimited and perhaps cheap—what can we do which is not being done now? Quite the most extraordinary property of penicillin is that it is for all practical purposes non-toxic; enormous doses can be given without fear of ill effect if there is anything to be gained by doing so. Perhaps the only contraindication to a large dose is in the treatment of gonorrhoea, when it may unduly mask the subsequent signs of coincident syphilis. There is little doubt that larger doses will be given for the treatment of most conditions, if only in order to prolong the interval between injections. Possibly administration by the mouth, which calls for about five times the intramuscular dose, will come into favour, at least for less serious conditions. Finland³ and others⁴ in America have already shown that this is a perfectly feasible method of treating gonorrhoea and even pneumonia. We shall also doubtless see an enormous extension of prophylactic use, embracing wound treatment, surgical operations of all sorts, obstetrics, and even some of the risks of social intercourse. Animals must not be forgotten: there is a chapter on veterinary use in this book, and the scale of dosage required in a cow is considerable.

Perhaps more important than any of these things is the possibility of extending the scope of penicillin treatment to infection by less sensitive bacteria. It is unfortunate that simplicity of statement should hitherto have demanded the categorization of bacteria into sensitive and resistant species. There is no such clear distinction among many of them, but every gradation from sensitivity to as little as 0.01 unit per ml. to resistance to several hundred units. *H. influenzae* is classed as insensitive in one chapter here, and recognized as reasonably sensitive in another; it is actually quite sensitive enough, as was pointed out originally by P. Forgacs, R. Irene Hutchinson, and R. E. Rewell⁵ and by

² *Schweiz. med. Wschr.*, 1946, 76, 285.³ *J. Amer. med. Ass.*, 1945, 129, 315.⁴ *Ibid.*, 1945, 129, 320.⁵ *Lancet*, 1945, 1, 785.¹ *Penicillin, its Practical Application*, 1946, Butterworth and Co., 30s.

M. Gordon and K. Zinnemann⁶ in this Journal to justify good hopes of benefit from intrathecal injection in *H. influenzae* meningitis. These observations have been confirmed by W. L. Hewitt and Margaret Pittman,⁷ who add the interesting observation that penicillin X is more active against this organism than penicillin G, although streptomycin is rather better than either, both *in vitro* and experimentally *in vivo*. *Proteus* is condemned as insensitive in two clinical chapters of this book; it is in fact usually inhibited by about 8 units per ml., a concentration which is readily far exceeded in the urinary tract, if nowhere else. Almost all authors have agreed in disregarding typhoid bacilli and other *Salmonellas* as hopelessly resistant, in spite of Florey's prophecy made five years ago that with more and better penicillin we should come to the stage of attacking these infections. That prophecy is now fulfilled. Bigger having shown that penicillin and sulphathiazole exert a synergic action on *Salmonella typhi*, C. J. McSweeney⁸ has treated six cases of typhoid fever with full doses of sulphathiazole and large doses of penicillin—2,500,000 units daily—with apparently remarkable results.

These things were better left unsaid if they encourage indiscriminate use. Such adventures as the exploration of new fields of treatment are only for hospitals where the most thorough clinical and laboratory control can be carried out. In private practice disappointment can be avoided only by adhering to accepted lines of treatment, and these may at last be learned from a comprehensive home-produced publication.

EVOLUTION OF JOURNALS ON GENETICS

There are a few men of science of whom it can be said that their work and influence left a branch of knowledge so radically altered that it is difficult to conceive what the course of development would have been without them. Among this company must be included Karl Pearson. If to-day there are flourishing schools of statistics, if what would have seemed but a few years ago to be refined applications are now almost commonplace in hygiene, in medicine generally, and, in fact, in almost every division of experimental science, then we must recognize that it is to Karl Pearson above all that our thanks are due. Those distinguished men who have so ably built upon the foundation he laid would be the first to acknowledge their debt.

The more tangible of the things that Pearson has handed on to another generation, apart from a vast collection of published works, are the Galton Chair of National Eugenics, at University College, of which he was the first incumbent, the Francis Galton Laboratory for National Eugenics, and three journals of which he was the founder—*Biometrika*, the *Annals of Eugenics*, and the *Treasury of Human Inheritance*. *Biometrika* was founded in conjunction with Francis Galton and W. F. R. Weldon in 1901 and continued to be edited by Pearson till his death in 1936, since when the editor has been his son, Prof. Egon Pearson. *Biometrika*, an essential requirement and handbook for every statistician and biometrician, has included much else of outstanding value and, indeed, stamped as it is with the vigorous personality of its founder, much

to interest and entertain the more general reader. There are not many scientific journals that would publish an article extending to a hundred pages, together with more than a hundred pages of plates, on the skull of Oliver Cromwell. Nor would the name *Biometrika* lead the reader to expect the occasional re-writing of history (and who shall say wrongly), just because the editor-author enjoyed doing it. Even he, however, appears to have shrunk from saying of George Buchanan to an audience at the University of Edinburgh: "Chief among these venturers, and perhaps, owing to his great literary gifts, the basest hireling scholar of all the ages, stands George Buchanan," for we find this remark not in the published lecture on Buchanan's skull but in another paper, not read to a Scottish audience.

The *Annals of Eugenics* has a shorter history. The first number appeared in 1925, and five volumes had been completed when, in 1934, the editorship passed, with the Galton Chair, to Prof. R. A. Fisher. In founding the *Annals* Pearson felt that "the time seems fully ripe for the issue of a journal which shall devote its pages wholly to the scientific treatment of racial problems in man." From the beginning papers were included which dealt with human genetics, but the chief emphasis was laid on the national group as the most important unit, a sentiment enshrined in the "National" which precedes the word "Eugenics" in the titles both of the Chair and the Laboratory. While maintaining the high tradition of the *Annals* Prof. Fisher laid more emphasis on the individual aspects of the subject, together with the background of mathematical statistics needed for the solving of genetic and related problems. The change in the subtitle from "A Journal for the Scientific Study of Racial Problems" to "A Journal Devoted to the Genetic Study of Human Populations" sufficiently expresses this alteration. As might have been expected of one of the leading scientific men of our own day, the seven volumes issued under Prof. Fisher's editorship represent a remarkable achievement, and every serious student of human genetics, and of some other subjects too, needs them for constant reference.

Last year the Chair and the editorship of the *Annals* passed to Prof. L. S. Penrose. Prof. Penrose, with his background of mathematics, psychology, and medicine, has made notable contributions in the field of human genetics, psychiatry, and mental deficiency. For a number of years before the war he was Research Medical Officer at the Royal Eastern Counties Institution at Colchester. From 1939 until his recent appointment to the Galton Chair he held a research post in Canada. Among his notable publications may be mentioned a very fine and thorough survey of 1,280 cases of mental deficiency. This monograph, prepared with characteristic care, will remain a valuable storehouse of information for years to come. His work on maternal age in relation to mongolism and his studies on phenylpyruvic amentia may also be singled out as examples from a long list. The first medical holder of the Chair has naturally made some further alteration in the policy of the *Annals*, which will in future be more specifically concerned with medical genetics, and the sub-title now becomes: "A Journal of Human Genetics." Two numbers have appeared under Prof. Penrose's editorship and it is clear that the *Annals*, while maintaining its high standard and without excluding a proportion of highly technical papers, will in future have a more direct appeal to the

⁶ *British Medical Journal*, 1945, 2, 795.

⁷ *Publ. Hlth. Rep., Wash.*, 1946, 61, 763.

⁸ *Lancet*, 1946, 2, 114.

medical man and a most powerful appeal to those medical men with a special interest in genetics.

The third publication, the *Treasury of Human Inheritance*, conceived on the same generous scale as the others, a unique source of genetic data. For some years the sole writer (with collaborators) has been Dr. Julia Bell, whose admirable monographs have been universally praised. It is to be hoped that she will continue to produce them. We are told that in addition the *Treasury* will now be used for the publication of data too extensive for the *Annals* or not in themselves of immediate medical significance. In this way a fine body of material will be built up for future reference.

The Galton Chair has a twin, the Weldon Chair of Biometry, the first and present holder of which is Prof. B. S. Haldane. Amongst his many distinguished activities Prof. Haldane has made contributions of the greatest importance to human genetics. He and Prof. Penrose are certain to do much for the subject in the future, while the *Annals* will be unique as a medium of publication in this field.

HENS' EGGS AND SALMONELLA INFECTIONS

In a previous annotation¹ we discussed eggs as reservoirs of salmonella infections and pointed out that ducks' eggs were definitely implicated as a cause of food poisoning in man, but that the egg of the hen had a much cleaner record. Although this is still true, evidence is slowly accumulating that strains of salmonella of food-poisoning type may be associated with hens' eggs. The increased use of dried eggs in this country makes the subject of great practical importance. A recent paper by F. E. Chase and M. L. Wright² gives particulars of the examination of 2,400 hens' eggs for salmonella strains. Of these eggs 1,000 were laid by fowls which reacted to the *S. pullorum* strain and were therefore from infected flocks; *S. pullorum* was isolated from 61 eggs (6.1%). This strain, however, is harmless to man. No salmonella organisms were obtained from the exterior of 400 eggs in this group. The other 1,000 eggs were from healthy flocks, and no salmonellas were isolated. On the other hand, examinations of dried egg powder made from hens' eggs have been less reassuring. For example, N. E. Gibbons and R. L. Moore,³ examining Canadian egg powder, found salmonella strains in 28 samples (7.4%), and 11 but 5 (*S. pullorum*) were potentially pathogenic to man. There have been outbreaks of food poisoning in man, associated with the use of dried egg powder, during the war in this country.

While outbreaks of food poisoning implicating hens' eggs are excessively rare, J. Watt⁴ described an outbreak of twenty-eight cases of food poisoning on board a merchant vessel due to *S. montevideo* in hens' eggs eaten in a salad. The strain was isolated from several of the unused shell-eggs. M. Crowe⁵ in this country has described a small outbreak of food poisoning very probably caused by a hen's egg. The case against the duck is not only that pathogenic salmonella strains are found but that ducks are liable to infection with these strains, and the organisms are then present in the egg yolk. Certain varieties of duck seem to be especially liable to this infection. So far this chain of evidence seems to be lacking for the hen. The nearest approach to it is contained in an important paper by R. F. Gordon and A. Buxton⁶ dealing with the isolation

of *S. thompson* from outbreaks of disease in chicks. This strain is a fairly frequent cause of food poisoning in man. The authors isolated it during 1943 and 1944, on forty-four occasions from thirty-one outbreaks in chicks and two in ducklings. This organism was isolated from the intestinal tract of two adult fowls but not apparently from the interior of any eggs.

Many more investigations are necessary before any final opinion can be given, but the present position seems to indicate that fowls can harbour salmonella strains which are potentially pathogenic to man. There is no evidence, however, that specific infections with these strains can infect the egg yolk, as in ducks' eggs. Their presence in hen excreta explains how in dried egg mixtures it is possible to find pathogenic salmonella strains. The method of preparation of dried egg powder, if inadequately supervised, may facilitate infection. The health hazard from individual hens' eggs seems to be negligible, while that from dried egg powder is much more considerable. Investigations have shown that the drying during manufacture reduces the risk very much but does not eliminate it entirely, and there is always the possibility of infection after drying. A high standard of cleanliness and care in the factory is necessary, as are measures to exclude unsound eggs. A good deal is being done in this direction.

A COURSE IN CHILD WELFARE

Arguing that there is need for organized training for those holding responsible posts in connexion with the welfare of children of all ages up to 16, the National Council for Maternity and Child Welfare has now issued the second report of its group committee on the whole subject of "Training in Child Welfare."¹ It recommends what is, in effect, an advanced course of training in the care of healthy children for those "who do not want to nurse sick children and do not want to become teachers." The course recommended would, it is hoped, qualify students for higher posts in children's homes and nurseries or as inspectors and supervisors of such establishments, and also produce a supply of "fully qualified teachers and tutors in the welfare of children of all ages." Lest it might be thought that the main object is to create what the report at one stage terms a "new profession of child welfare," it should be stated that what is really essentially contemplated appears to be the training of teachers—a sort of "staff college" in child care and treatment—who can help in the broader and more important task of preparing and helping parents in the job of bringing up their children. Such preparation, it is argued in an introduction, can take place in three stages. The first should form part of general education in schools, and Part II of the present report deals in some detail with the question of instruction in child care in secondary schools and county colleges. The second stage of preparation appears to lie in such colleges and in youth organizations, and the third stage is summed up as making facilities for parentcraft freely available for adults in addition to the advice given to mothers in welfare centres and by health visitors. All this will require more teachers, and it is argued that to secure well-qualified persons it must be done by producing a new group—not by transfer from existing professions (teachers or nurses) with supplementary courses. It proposes that such teachers shall be trained in recognized colleges with a three-years course, and that "child welfare workers"—those wishing to take senior posts in nurseries or children's homes—shall go to the same colleges for a two-years course. It is further proposed

¹ *British Medical Journal* 1944, 2, 760.

² *Canad. J. Res.*, F., 1946, 24, 77.

³ *Ibid.*, F., 1944, 22, 48.

⁴ *Publ. Hlth. Rep., Wash.*, 1945, 60, 835.

⁵ *J. Hyg., Camb.*, 1946, 44, 342.

⁶ *Ibid.*, 1945, 44, 179.

that such colleges shall receive grants on the same basis as teachers' training colleges or domestic science colleges, with similar conditions in regard to inspection, entry, and grant aid for students. The content of the child welfare course is summarized as being based upon "the study of the child at successive stages in relation to the family, including the physical, mental, and emotional development." Special shortened courses of not less than six months are planned for those already trained in some allied profession such as teachers, health visitors, hospital nurses, and certain categories of social workers. It is also suggested that nursery nurses holding the national certificate and with not less than two years' experience of work with children shall have some reduction made in the length of course for the higher "child welfare" qualification.

This new report will be studied with interest by those concerned with the care of the child. The confusion occasioned by the title "child welfare" should be resolved, for "maternity and child welfare" is long established and has a definite meaning in medical and lay circles. There is also the fundamental difficulty to be faced that the supply of girls, whether for nursing or teaching or for this new "profession," is limited; and to talk, as this report does, in terms of "a great many additional teachers," fully qualified to teach child care, is to disregard the realities of educated woman-power in terms of numbers.

THE SANITARY CONTROL OF ICE-CREAM

That freezing kills bacteria is a fairly common misconception. Actually there is no better method of preserving their life for long periods: this is true at least of all those which enter the body by the alimentary route. Ice-cream will therefore contain in the living state the original flora of its ingredients, which may include pathogens if any cream or milk enters into its composition, and—which is more important—those introduced by insanitary methods of handling. Outbreaks of intestinal infection conveyed by ice-cream have been numerous, and regulations have been in existence for some years requiring the registration and inspection of premises used for the preparation of ice-cream. Unfortunately the resumption of its manufacture after the end of the war has been followed by an extensive outbreak of typhoid fever at Aberystwyth due to the contamination of his product by a vendor who is a urinary typhoid carrier. A similar incident has recently been followed by an equally extensive outbreak of paratyphoid B at Coatbridge in Lanarkshire. In view of these occurrences it was evident that further statutory provisions were required, and the Minister of Health has now issued a Draft Order (Draft, dated Oct. 8, 1946, of the Ice-cream (Heat Treatment) Regulations, 1946), the effect of which, in short, is that the mixture of which ice-cream is composed must be pasteurized before freezing. It may be heated either to 150° F. (65.5° C.) for 30 minutes or to 160° F. (71.1° C.) for 10 minutes. Further regulations govern the subsequent cooling process and the maintenance of a sufficiently low temperature thereafter. These requirements do not apply when a "complete cold mix powder" is used, supplied in air-tight containers and manufactured from previously heat-treated material: this may be made up with "wholesome drinking-water," and colouring or flavouring materials, fruit, nuts, or chocolate, may be added without subsequent pasteurization. In a Circular (183/46) of the same date the Ministry of Health calls attention to these draft regulations and points out that local authorities have already considerable powers in connexion with the manufacture and sale of ice-cream under the Food and Drugs Act, 1938, and refers to the possibility

of defining bacteriological standards to which the ice-cream shall conform. Although it has been represented to the Ministry that laboratory tests of cleanliness are desirable, the conclusion reached is that "no test has yet been devised of the safety of ice-cream, and there is no test which would be sufficiently reliable for use as a statutory test of its contamination with non-pathogenic organisms." In the present state of knowledge of the subject it might well be premature to define statutory tests, but a very good idea of the hygienic quality of ice-cream can be obtained by performing a total bacterial count, a coliform count, and the identification of the coliforms of excremental type or otherwise. The performance of some such tests on the future heat-treated product may indicate whether the new regulations afford an adequate safeguard. The neglect of elementary precautions in handling and in ensuring the cleanliness of utensils may still presumably lead to serious contamination, if only on a reduced scale.

THE SPREAD OF POLIOMYELITIS

The mode of transmission of the poliomyelitis virus is a matter that is still unsettled. In the absence of definite knowledge whether the infection is conveyed by something inhaled or something ingested it is difficult to frame regulations for prevention, and the account (Aug. 17, p. 233) we gave recently of precautions to be taken in the event of an outbreak naturally takes each possibility into consideration. One way of studying this question is by seeking to identify the portal of entry by histological methods. Neurotropic viruses are known to reach the central nervous system by way of peripheral nerves, and their pathways can be traced by the lesions, consisting of nerve cell degeneration, leucocytic infiltration, produced both in peripheral ganglia and in the related nuclei in the brain. However, in the case of the latter particularly it is always possible that involvement is the result of spread from a neighbouring area, and such findings have therefore to be interpreted with caution.

An elaborate and painstaking study of this kind was described by H. K. Faber and Rosalie J. Silverberg,¹ who described material consisted of eight fatal cases of poliomyelitis occurring in San Francisco during 1943-4. In no case was there any evidence of involvement of the olfactory system—an interesting result in view of the belief prevailing until about 10 years ago, and of the efforts made in the U.S.A. to prevent ingress by this route by tanning the olfactory mucosa. The sympathetic system in both lower and upper levels and the gustatory system were occasionally involved; the visceral afferent pathways via the ninth and tenth cranial nerves were markedly affected in the cases, as shown by lesions in the petrosal and nodose ganglia and the solitary nucleus; but the most consistently infected pathways were the trigeminal, lesions being found in almost every case in the Gasserian ganglion and their central connexions. This type of evidence therefore suggests strongly that the pharynx is at least a common portal of entry: as the authors point out, it is a receptacle both for nasal secretion and for material ingested. It is therefore as uncertain as before whether the mode of transmission is by ingestion or by inhalation.

The annual general meeting of the Research Defence Society will be held at 26, Portland Place, London, W., on Wednesday, Oct. 23, at 3.15 p.m., when Prof. N. Hamilton, Fairley, M.F.R.S., will give the fifteenth Stephen Paget Memorial Lecture entitled "Wartime research in malaria and other tropical diseases of military significance."

IMPRISONMENT UNDER THE JAPANESE

.BY

A. P. CURTIN, M.R.C.S.

Late Surg. Lieut.-Cmdr., R.N.V.R.

read with interest the article by Capt. A. L. Cochrane (Feb. 23, 1942) on the effects of the psychopathology of imprisonment of ex-prisoners of war from Germany. It may be of interest also to review the main underlying factors, and the background of events that caused them, which contributed to the mental state of prisoners liberated from Japanese camps. All the conditions mentioned by Capt. Cochrane as operating in German camps were present but to a more marked degree in prison camps in the Far East. Only the medical officer who actually had care of these men and shared in the trials, difficulties, and unishments of their daily life in captivity can thoroughly understand them. I write mainly from experience of conditions in work camps in industrial areas of Japan, such as Tokyo. They varied in degree, but in the main the general trend seems to have been the same in all of them. The prisoners included British, Australians, Americans, Dutch, and Eurasians, their ages varying from 15 to 60 years.

On arrival at the Japanese port prisoners were grouped into parties or despatch to different work camps in industrial areas. In most instances the officers originally in charge of the men in the field were separated from them and sent elsewhere, and other officers, very often of entirely different nationality, were appointed. As a result doubt and mistrust were engendered in the minds of the men whether their new officers would, in fact, take any interest in their welfare and would stand, so far as it was possible, between them and the brutalities of the Japanese. The policy of the Japanese was to maintain small camps of not more than 350 prisoners, so that a very close watch could be kept on them by frequent roll-calls and "shake-downs," in the early days even during the night. Escape was out of the question, even had it been possible for a white man to pass unnoticed in the streets in Japan; in fact, no thought of escape occurred to the prisoners in these circumstances.

Food and Clothing

Food was scarce and greatly lacking in essential proteins, fats, and vitamins. The staple diet was rice and root vegetables or soyabeans made into soup, with occasionally fish and seaweed and grass when nothing else could be had. It never averaged more than 1,500 to 2,000 calories a day for the working men. On certain details—e.g., unloading box cars at a railway siding—the men were able to supplement their rations by stealing. This was also practised by the Japanese and seemed a habit in Japan in all branches of industry; indeed it appeared to be necessary for survival. Undoubtedly it was by this means that many prisoners held on to the threads of life, especially during the winter months. The motto was, not to get caught by the Japanese guards, or, failing this, if possible to come to some sort of compromise by giving them a part of the stolen food or loot. Punishment meted out to prisoners who were caught with stolen goods was severe and ruthless.

Many prisoners made small articles such as rings, belt buckles, etc., at the factories for the Japanese bosses, for which they were paid in rice and cigarettes. Red Cross parcels were few. Most camps received only three or four per man throughout the 3½ years. When, however, Red Cross food had been distributed stealing among prisoners themselves greatly increased. The sick had the same fare as those going to work, and it was difficult, at times almost impossible, to coax them to eat the unpalatable diet and to prevent them from giving part at least of their food away to other prisoners, many of whom in their state of hunger befriended the sick only to steal or be given their rations.

It was noticeable that while the men were kept in a state of semi-starvation sex presented a very minor problem and homosexuality was practically non-existent, except possibly in the galley, for the cooks always managed to supplement their rations. Sex talk and homosexuality were always likely to arise with any improvement in the rations.

The lack of clothing, particularly warm clothing, was responsible for a good deal of sickness during the winter months. In the early days men waited to take the garments of the dying for themselves, as they were in rags. In wet weather clothes had to dry on their owners, as each man had but one set. Only in the first winter of 1942-3 was any heating provided in the barracks. Many men were without shoes and had to go to work with sacking tied round their feet or in wooden clogs. Another problem was the struggle to keep clothing reasonably free from lice, which abounded. Bed bugs and fleas were everywhere and bug rats ran riot at night in the camp.

In winter, because of lack of blankets, the men were allowed to sleep in pairs to conserve as much warmth as they were able.

Tradition of Punishment and Work

Although the Japanese record is lightened by deeds of kindness extended to captives by individuals, the military and the police had been following their own vaunted tradition and practices reaching back to the primitive ages. Their motto for prisoners was that good workers have good spirits, and this was based on a continuous tit-for-tat of work and punishment. Fear of the latter was constant among the men and became to them a very real thing. Officers were treated the same as the men; there was very little discrimination. Most of the maltreatment of prisoners seemed to be carried out by the Gunzakus, or so-called civilian division attached to the army, who nevertheless wore military uniform and carried side arms. Punishments, which were inflicted for little or no excuse, included severe beatings, standing to attention in the open in all weathers for long periods, and solitary confinement. The severity of the punishment varied with the mood and particular tantrum of the Jap concerned at the time. Often it would result in black eyes, broken ear-drums, laceration of the scalp, broken ribs, etc. Prisoners' teeth were knocked out, the Japanese using their fists, leather or wooden shoes, belt buckles, and wooden swords.

The type of work varied according to the different working parties, some having relatively light work compared with others. Much of it, however, was particularly unpleasant and detrimental to the prisoners' health—e.g., work on crushing machines in a brick factory; shovelling coal, iron ore, copper ore, etc., in the closed-in holds of a ship where the concentration of dust and particles of the mineral was choking. Despite protests about employing men in this type of work very little notice was taken, and the more unpleasant forms of labour to which even the Japanese coolies objected were inevitably allotted to the prisoners. The average daily hours of work were from 7.30 a.m. to 5.30 or 6 p.m. Some parties had considerable distances to walk to and from work.

The Japanese tried many and varied devices to get as many men as possible out to work. They beat them, making life as unpleasant as possible for the sick in camp so that they wanted to go out to work at any cost to avoid this persecution. Then, by supposed order from Tokyo Army H.Q., all sick men, even the factory injured cases, were ordered to go on half rations, and, as men unable to work, they were not allowed to buy or to receive extra comforts, such as cigarettes or cookies when they were available. The very few Red Cross food parcels were allocated to working men only. Many of these devices, fortunately, were cunningly overcome in one way or another, and so failed to achieve their desired object.

It was a long time before a regular day off (and then only one day a month) could be obtained for the working men in order to give them a chance of a rest and to wash and mend their clothes. Another concession eventually obtained in some camps was that men over 50 years of age were not employed on heavy work, only on cleaning the camp or other light work. There was a vicious competition between commandants of the various work camps in the industrial areas to see who could maintain the highest working percentage. One of my camp commandants during the period he was with us devoted the whole of his time to compiling work graphs of different camps in the area, and the walls of his office were covered with them. Prisoners were made to work as stevedores at night if the company concerned presented the camp commandant with a gift of "saké" or beer so that he could hold a drunken party for the camp staff.

Only a very few sick men were allowed to be left in camp during inspections by Japanese Military Staff from Tokyo. The others were hidden somewhere in the camp compound or, if they couldn't walk, were carried out to work by their friends and hidden in some part of the factory. In this way an entirely false picture of the sickness in the camp was presented. The food improved somewhat on inspection days, but these were not very frequent. Extra clothing was also issued occasionally but had to be turned in again after inspection. Needless to say, no communication was allowed between officers among the prisoners and the Japanese visiting military staff.

Medicines and the Sick

Medicines were most difficult to obtain. The Japanese medicine "black market" was flooded with cheap German products, mostly made up in ampoules to be given by injection. If there happened to be a useful drug in some of these preparations the quantity was so small that the preparation was relatively ineffective in the dosage prescribed on the label. Most of the medicine used in camps was bought with the pay given to the officers by the Japanese and obtained through the "black market." Allocation of medicine and medical supplies by the Japanese Army H.Q. to work camps was totally inadequate, and most of this was stolen or used by the Japanese staff for their own purposes. Much of the surgical gauze appeared to find its way eventually to the geisha house, although for what purpose I was at a loss to determine.

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THE PROBLEM OF DISSEMINATED SCLEROSIS

In his presidential address to the Section of Neurology of the Royal Society of Medicine on Oct. 3 Dr. DOUGLAS McALPINE dealt with the problem of disseminated sclerosis. No neurological disease, he said, had until recently had so much attention from clinicians, pathologists, and bacteriologists, yet its true nature still eluded them. This subject ought to be reviewed once again in the hope of arousing fresh interest in a problem which, on humanitarian grounds alone, deserved the attention of those qualified to take part in its investigation.

Aetiology of the Disease

The term "disseminated sclerosis" was inadequate because it failed to describe either the essential nature of the disease or the type of initial lesion. Dawson, in considering the various possibilities, concluded that disseminated sclerosis was due to a specific morbid agent, probably a soluble toxin, which was conveyed to the nervous system by the blood, and that the occurrence of remissions and relapses compelled the assumption of the morbid agent in the body. No worker had produced evidence to contradict the conclusion that disseminated sclerosis was a form of acute or subacute disseminated encephalomyelitis due to a blood-borne infection. Russell Brain, in a critical review published in 1930, discussed the various attempts made during the first part of this century to isolate a specific organism from the nervous system in fatal cases and to transfer the disease to animals, and he showed that these attempts had either failed or had been inconclusive. Repeated failures to transmit the disease to animals had caused renewed doubt about its infective nature. In America Putnam concluded that venous thrombosis was the essential histological lesion, but it was doubtful whether the results of Putnam's work could be applied to the problem of disseminated sclerosis, and it was difficult to visualize thrombosis as the primary lesion in view of the clinical fact that the duration of symptoms might be exceedingly brief. On the other hand, there were facts which suggested that the vascular mechanism might occasionally come into play.

There remained for discussion, said Dr. McAlpine, two further lines of approach which were interrelated: (1) that allergy might be a factor in disseminated sclerosis, and (2) that the disease might be caused by a bacterial agent or by a filter-passing virus. There were certain features of disseminated sclerosis, notably the relapsing nature of the disease, which could be explained on the basis of allergy, but at present further speculation on this point would serve no useful purpose. Efforts made by the bacteriologist to establish the nature of the causal agent had up to the present failed. While final judgment must be reserved on the possible role of a toxin, these negative findings seemed to point to a filter-passing virus rather than to a bacterial agent. This was perhaps borne out by some recent work in Moscow, not yet published in this country, which claimed the first success in isolating a virus from a human case and the production of the disease in animals. The further results of this work, which was still being pursued, would be awaited with great interest.

If it was assumed that disseminated sclerosis was toxic-infective in origin, there remained for consideration the mode of infection. At the beginning of this century attention was focused on the peripheral nervous system as the probable route. More recently the experimental work on poliomyelitis in monkeys had suggested that in these animals the virus travelled via the axis cylinders. After discussing various theories Dr. McAlpine considered that there was good evidence to support the view that from a focus in the skin bacteria and their toxins or a virus might reach the nervous system either by neural pathways or by the bloodstream.

The Clinical Approach

In discussing the clinical approach to the problem Dr. McAlpine limited himself to those features of the disease which seemed to throw some light on its causation. Unlike the majority of organic nervous diseases, disseminated sclerosis

was distinguished by the remarkable variation in its clinical course. Remissions might last for more than ten years or for less than six months. The degree of recovery might vary within wide limits. For example, the disease might appear in a florid form, but despite the multiplicity of signs, good clinical recovery and lengthy remission might follow. Age modified the course of the disease. The older the patient the more localized were the signs and the more chronic the course. When the disease first attacked an individual in the fifth decade of life the remissions were as a rule inconspicuous, the disease tending to run a slowly progressive course interrupted by short periods of arrest. The florid form of the disease was seldom seen outside the younger age groups.

Despite its protean nature, the disease had been recognized by the clinician and the pathologist as a clinical entity, though the term "disseminated sclerosis" might cover more than one type. The peculiar nature of the disease could be explained in terms of the patient or of the agent. As there was no precise knowledge of the character of the agent, it might for the moment be assumed that the reactions of the individual to the disease were the prime factor in modifying its course. It could be inferred that the clinical features of disseminated sclerosis were in all probability the result of an immunity to infection which varied not only from case to case but also during the course of each patient's illness. In conjunction with the abnormal findings in the cerebrospinal fluid, this view lent support to the theory of a toxic infection. If it was assumed that this infection was due to a virus it would be necessary to broaden their views as to the symptomatology of the disease and to recognize the existence of sub-clinical forms.

A Survey of 124 Cases

Dr. McAlpine showed a table indicating the age of onset and the sex incidence in relation to two common types of disseminated sclerosis as observed in 124 cases during the past year. The number was too small for statistical value, but certain facts seemed to emerge.

Age Group	Relapsing		Chronic Progressive		Percentage
	M.	F.	M.	F.	
10-20	8	10	—	—	14.5
20-30	18	32	—	—	40
30-40	12	19	3	4	31
40-50	1	6	3	6	13
50-60	—	—	—	2	1.5
	39	67	6	12	

In this country it was generally held that the disease was more common in females, and the above series, though small in number, seemed to bear this out, more particularly in regard to cases in the fifth decade. In other European countries and in America either males predominated or there was no significant sex distribution. Occupation appeared to play no part in causation. Both urban and rural dwellers might be affected. There appeared to be no seasonal incidence in this country. The number of authenticated cases of familial disseminated sclerosis was not large, but there could be no doubt that the disease might attack more than one member of a family. Out of a total of 142 cases (124 of which appeared in the above tabulation) there was a familial incidence in 8 (5%); in 6 the disease affected siblings, and in one case the father and in another the mother of the patient had been affected. This familial incidence seemed to indicate an occasional hereditary predisposition to the disease, and in this respect the position might be compared with tuberculosis.

No distinctive type of body build or colouring seemed to be associated with the condition, though obesity appeared to give some protection. Approximately 20% of the patients in the series stated that they felt run down before the illness began. In 71 cases an approximate idea of the diet had been obtained, but only in 10 were meals ascertained to be irregular or deficient in quantity, and in no case was there evidence of malnutrition. The impression obtained was that the individual when first attacked was generally in good health, though in a minority some interference with health or with diet might have lowered the resistance. In only 8 cases was there a history of any fever—usually described as "influenza"—within a month

of onset, and in only 5 other cases a history of "cold and sore throat" without fever. A positive history of peripheral sepsis within one year of the onset was obtained in 18 cases. The known bacteria associated with sepsis might play no direct part in the causation of the disease, but the possibility of secondary virus infection was not excluded.

Conclusions

Dr. McAlpine summarized his conclusions as follows:

Inheritance plays only a minor part in the aetiology of disseminated sclerosis, and therefore the choice seems to lie between biochemical or enzymic abnormality, of which proof is so far lacking, and, on the other hand, a toxi-infective process. Increasing knowledge of the various forms of encephalitis in man and animals and the part played by viruses in certain of them, when viewed against the histological background of disseminated sclerosis, suggests that this disease is also infective in origin. The results of the clinical approach bring to light no facts which are contrary to this view and some which seem to favour it. With the exception of cases in which there are influenza symptoms, the onset of the disease is not generally accompanied or preceded by constitutional symptoms. The possibility then arises that invasion of the nervous system and the appearance of the first sign of the disease may not always coincide in time, but that the former may take place months or years previously, as in rabies or syphilis. At what point in the patient's life history did the nervous system become infected or sensitized? In this inquiry there was no answer to that question.

Attention was next turned to the portal of entry of the hypothetical agent or toxin, and by analogy with other infections of the nervous system it was inferred that the skin and the alimentary tract were the likeliest starting-points of the invader. From our knowledge of the histology of disseminated sclerosis it was necessary to postulate a haematogenous spread from the focus. The evidence in favour of the skin as an occasional portal of entry in disseminated sclerosis is purely circumstantial, but it seems to warrant further exploration in view of the part played by the skin in other infections of the nervous system. The remaining portal of entry is the alimentary tract. Should disseminated sclerosis prove to be of virus origin, then, by analogy with acute poliomyelitis, the alimentary tract becomes a potential source of infection. The fact that a history of intestinal disorder is rarely found in these cases must not be regarded as a reason for dismissing that possibility. The proof of a virus infection, whether by direct or indirect means, would be of the greatest help to future progress in our knowledge of the disease and its treatment, and there is urgent need for carefully planned research work based on the close co-operation of the clinician and the bacteriologist.

Sir CHARLES SYMONDS, in proposing a vote of thanks for the address, congratulated the President on his choice of subject. There could be no problem which so often excited the curiosity of the neurologist and so constantly left him in a state of despair. The vote of thanks was seconded by Dr. ANTHONY FEILING, who said that the President had given a masterly survey of the subject, with some very valuable hints as to the possible future approaches to the aetiological problems.

ELECTROENCEPHALOGRAPHY

The autumn meeting of the Electroencephalographic Society, held at the Maudsley and Runwell Hospitals on Oct. 4-5, was attended by a number of European workers, including Professors Baudouin, Colle, Fessard, Frey, and Monnier.

In opening the meeting, the President, Prof. E. D. ADRIAN, said: "Apart from the value of the contributions which they are able to make to this meeting, the visit of our European colleagues has a more important significance in that it enables us to confer on the standardization and interpretation of results and to agree on the various criteria which we all have to apply in the interpretation of records. If we are to attempt to bring electroencephalography to an exact science, it is essential that we formulate common standards and common terms which will form the basis of an international E.E.G. language."

Among the papers read were: "A New Six-channel Electroencephalograph," W. A. Cobb; "An Electronic Analyser for E.E.G. Recording," W. Grey Walter; "The E.E.G. in Psychopathic States," J. D. N. Hill; "The E.E.G. after Pre-frontal Leucotomy," G. D. Greville and R. Ström-Olsen; "Cortical Correlates of Sensory Stimulation in a Patient with Myoclonus," G. D. Dawson; "La Première Réunion d'E.E.G. de langue française," A. Baudouin. Arrangements are being made for the publication of these papers in appropriate journals where possible.

Correspondence

R.M.B.F. Christmas Appeal

SIR,—Christmas once again draws near and it is time for the hospitality of your columns to launch our Annual Christmas Appeal on behalf of the poor beneficiaries of this Fund. The reasons for this appeal are now well known to all readers and there is no reason to stress them again. I would rather emphasize the point that they are as cogent as ever. It is true that the Old Age Pension which is now in force, making the financial position of old people more bearable, whereas previously it was quite intolerable—still means the actual increase in annual income is only £41 12s. 0d. when bearing in mind the tremendous increase in the cost of living still makes the position of the poor housewife very difficult indeed. Further, very many of our beneficiaries are over 70 years of age and so not able to draw the O.A.P. There is that very real sense of being "not forgotten" at a festive time of Christmas, and the knowledge that our Christmas Gift will ensure the purchase of a few extra luxuries will just make all the difference.

I recall that my appeal last year for £2,000 to enable the Fund to give £4 to every beneficiary—a record sum for which I scarcely dared to hope—actually reached the grand total of £2,127, and I know every generous donor will feel amply repaid by the gratitude and pleasure these gifts evoke. I venture to plead for a similar sum this year? I feel sure that although I well recognize that times are very difficult for everybody just now, the still greater difficulties and anxieties of very poor brethren will not pass unheeded.

—Please forward contributions marked "Christmas Gifts" to the Secretary, Royal Medical Benevolent Fund, 1, Beaufort House, Manor Fields, Putney, London, S.W.15, who will gratefully acknowledge.—I am, etc.,

ARNOLD LAWSON
President, R.M.B.F.

Classification of Psychological Disorders

SIR,—Sir Charles Symonds (Sept. 21, p. 436) has effectively drawn attention to the lack of necessary discrimination between the terms Dr. Dalton Sands employs in his article on "Electroconvulsion Therapy in a General Hospital" (Aug. 31, p. 2). He uses, for example, "anxiety state" and "anxiety neurosis" without definition or a distinguishing description of the conditions referred to. In particular it should be recognized that "anxiety," which enters so frequently into Dr. Sands's title, is not a simple unit factor. It is, as commonly found, a complex reaction which may include elements of guilt and tension from aggressive impulses, for instance, apart from pure anxiety.

The article provides another illustration of the fact that statistical studies on psychiatric disorders, in the present state of knowledge, are very apt to be misleading unless it is made clear that the conclusions drawn merely indicate tendencies and do not constitute a positive addition to knowledge. I am, etc.,

London, W.1.

FREDERICK DILLON

Errors in Regard to Goitre

SIR,—The article entitled "Some Vulgar Errors in Regard to Goitre" by Linnell, Keynes, and Piercy (Sept. 28, p. 4) was indeed refreshing to read, after the recent spate of literature on the medical treatment of thyrotoxicosis with thiouracil. It is not my intention to attempt to enter into a debate as to whether treatment will eventually displace surgery in the treatment of toxic goitre, except to say that at least surgical procedure has stood the test of time. I would wish to comment briefly on some of the points raised in the article. Surgery is the only safeguard and prophylaxis against the later changes which may take place in a goitre, and operation is thus a means of preventing much ill-health and suffering. There is also the cosmetic aspect, as most women are worried about an obvious swelling, the days when "Rossetti" necks were the fashion having passed.

The indiscriminate use of iodine cannot be too strongly condemned. Not only is the patient buoyed up with false hope

but he is ultimately left in a far worse condition for radical surgical treatment or for the administration of thiouracil. The profession should in my opinion avoid using iodine altogether, except as part of the preparation for operation. The late Cecil Joll, whom I assisted for many years, strongly deprecated its all too common and thoughtless use. To embark on thyroid surgery without serving a long apprenticeship is wrong, as the hazards encountered are many. Joll himself often said that he assisted at some thousand-odd operations for goitre before undertaking one himself. Linnell *et al.* rightly consider the importance of good anaesthesia, without which the operation may be one of extreme difficulty in the most capable hands. All would-be thyroid surgeons should not fail to read Rowbotham's book *Anaesthesia in Operations for Goitre* (Blackwell, Oxford, 1945), for therein lies much sound guidance and wisdom. Lastly the co-operation of physician, surgeon, ear, nose, and throat surgeon, and anaesthetist is the ideal before the final decision as to the best form of treatment is made.

Let us not forget that many thousands of sufferers from goitre and its complications have obtained lasting relief from a well-planned and skilfully executed operation.—I am, etc.,

Aylesbury.

RALPH H. GARDINER.

Treatment of Ingrowing Toe-nail

SIR,—The operation for ingrowing toe-nail described by Dr. J. Hume Stewart (Sept. 7, p. 329) is ingenious. And that seems to me to be its fault. It is too complicated and ingenious an operation for a minor disability, involving as it does a minimum of seven days in bed for the patient. Furthermore, the cosmetic result is obviously not perfect.

In my own experience the simplest and most satisfactory procedure is that described by Dr. P. F. Chapman (*British Medical Journal*, 1934, 2, 1073). This consists in paring a groove down the centre of the nail with a piece of broken glass. The groove then forms a hinge on which the affected side of the nail is lifted up so that it comes to lie above the granulation tissue. A small strip of petroleum jelly gauze may be packed under the nail. Since 1938 I have made use of this operation exclusively in all cases of ingrowing toe-nail that have come under my care both in civilian and in military practice. A soldier may be allowed three or four days in hospital, but a civilian, with his wider choice of foot-gear, may be treated as an out-patient and has no need to lie up. Chapman's operation is so simple, so satisfactory, and at the same time so little known—none of my surgical colleagues in the Forces to whom I introduced it had heard of it—that I hope these few words in its favour will not be thought out of place.—I am, etc.,

Southwold.

J. C. LEEDHAM-GREEN.

Is Thiamine the Antineuritic Factor?

SIR,—As one who has followed with deep interest the many reports now available on the deficiency states affecting the prisoner-of-war in the Far East—an interest naturally stimulated by one's own investigations of nutritional retrobulbar neuritis in Nigeria before the last war—I am tempted to ask now how far we are justified in still calling thiamine the antineuritic factor.

In West Africa in 1937, when I returned to Nigeria after my retirement from the Colonial Medical Service, I carried out an extensive series of trials with autoclaved marmite, in high dosage and over a period of months in each case, on this visual condition, with the object of excluding thiamine as a curative factor. I would mention that in all these cases routine ophthalmic tests (excepting scotomata tests) were always done to exclude other disease and gross refractive errors in order that one might be certain one was dealing only with a nutritional defect. The result of these trials convinced me beyond doubt that the curative factor was attributable to the autoclaved marmite or yeast, and not therefore to thiamine.

The opinions of those medical officers sharing captivity with the P.O.W. case has confirmed this in another way, for they have shown that thiamine did not protect these men from this condition. Nor do they accept beriberi clinically as the cause. No one, I think, disputes thiamine as the anti-beriberi factor, and indeed the recorded experiences of these medical officers referred to fully confirms its effect on wet beriberi.

Research references to beriberi in this country, before the war, have appeared simply to accept this disease as the only one which could occur following a rice dietary. Yet, as has been so amply demonstrated by the P.O.W. case, and in Madrid, a multiplicity of B deficiency states can be produced. There have, however, been a number of research nutritionists who disputed whether thiamine is, in fact, a true organic neuritic factor; and most of them agree it is not concerned with central neuritides. Vedder, in 1943, has shown the danger of accepting rice as merely deficient in Vitamin B₁. He has quoted Ackroyd's work as well as his own, and he considers that the clinical picture of dry beriberi as it occurs on a rice-eating diet, with its nerve and cord degeneration, is caused by a complicated vitamin deficiency. It seems obvious that the so-called polynuritis of chicks is hardly a true neuritis, with their sudden recovery when given thiamine. Elvejehm (Eddy and Dalldorf's, *The Avitaminoses*) has suggested it is primarily a condition of disturbed carbohydrate metabolism rather than lesions of the nervous system. It is certain that other vitamins than B₁ play a most important part in these neuritic conditions, and definite proof of this has been forthcoming. To continue to accept thiamine as the antineuritic factor seems, therefore, hardly tenable in the face of such evidence.—I am, etc.,

Cheltenham.

D. FITZGERALD MOORE.

Diagnosis of Intestinal Amoebiasis

SIR,—I have yet to see in recent accounts of amoebiasis a mention of the use of "provocative emetine" as an adjunct to diagnosis. Such a method was generally well known in the Services and in many cases was used as routine in suspect but unproven cases. The method consists of the administration of emetine hydrochloride 1 gr. (65 mg.) intramuscularly—or emetine bismuth iodide 3 gr. (0.2 g.) orally—the night previous to the faeces examination. The following morning a purge is given and the stools examined by the usual methods. The effect of the emetine is provocative or stimulatory to the trophozoite, with the result that a patient suspected of latent amoebiasis and producing a series of negative stools may well produce an immediate positive result.—I am, etc.,

Newcastle-upon-Tyne.

K. R. HILL.

Penicillin Injections

SIR,—I was under the impression until recently that when giving penicillin injections the syringe should be sterilized by boiling or autoclaving, as spirit would inactivate the penicillin. However, Prof. Berry, in Sir Alexander Fleming's book on penicillin (p. 50), says that penicillin is not inactivated by solutions of ethyl alcohol up to 25%. In general practice it wastes a lot of time to boil the syringe each time, and I am now using syringes sterilized in 70% industrial spirit. The solution of penicillin as made up with sterile water or saline would only contain a trace of alcohol—certainly nothing approaching 25%.

Regarding the oily injection of penicillin, I would be interested to know how quickly a trace of water in the ampoule causes deterioration in the bulk of the penicillin left. If this deterioration takes several weeks, one would not need to be so very careful about drying the syringe used to withdraw the separate doses, provided the ampoule was used within a week or two.—I am, etc.,

Bristol.

P. FINCH.

Perforation of the Ileum in Enteric Fever

SIR,—With reference to Dr. G. E. Dunkerley's article on "Perforation of the Ileum in Enteric Fever" (Sept. 28, p. 454), I had the unusual experience of encountering two such cases within two weeks in a small epidemic of six cases seen at a military hospital in M.E.F., and append very brief clinical notes which may be of interest.

This first man had been ill five weeks with typhoid and was in his second relapse and had been complaining of acute abdominal pain for sixteen hours. On examination he was a patient in *extremis* with generally rigid and tender lower abdomen and cold extremities. At operation the pelvis was full of purulent fluid and the ileum, some two feet from the ileo-caecal valve, showed perforated ulcer with protruding

slough. Recovery followed suture with pelvic drainage and careful post-operative treatment including continuous gastric suction, adequate intravenous fluid therapy, and regular morphine.

The second man was in the second week of illness and was seen half an hour after the onset of violent lower abdominal pain. On examination he was writhing in pain with the knees drawn up, tender in both flanks, and showing marked rebound tenderness in both areas. There was no true rigidity, but a somewhat surprising finding was the hearing of vigorous audible peristalsis. Half an hour later he developed definite localized rigidity in the right iliac fossa. Laparotomy was not delayed and suture of a friable perforation one foot from the ilio-caecal junction was undertaken and omental graft brought down. A considerable quantity of clear fluid was sucked from the pelvis, and abdomen was closed without drainage. The lower end of his wound suppurated and a large pelvic abscess developed, both conditions slowly resolving in three weeks. He then proceeded to have a relapse of his typhoid fever, which happily was an uncomplicated course.

The unusual features were the very high incidence of perforation in this small epidemic, and the rather surprising recovery of the first case, which might suggest that this complication, especially if diagnosed early and given adequate surgical care, is not so lethal as hitherto supposed.—I am, etc.,

London, N.21.

W. GARDEN HENDRY.

Giant Urethral Calculus in the Female

SIR,—With Mr. Norman Lake's article in the *Journal* of Sept. 7 (p. 328) fresh in my mind, I went the following morning to see an old lady of 70 in consultation, with Dr. Charles Sims of Exeter. Apart from the patient being somewhat older, her symptoms and physical signs closely resemble those described by Mr. Lake. The calculus, after removal in the manner Mr. Lake describes, measured 6.7×4.6 cm. with a circumference of 17.7 cm. in its long axis. Its colour and somewhat irregular surface closely resembled that of a potato.—I am, etc.,

Exeter.

P. M. G. RUSSELL.

Health Service Bill

SIR,—From its inception I have been opposed to the National Health Service Bill as I consider that it interferes too seriously with the responsibility and liberty of the individual doctor, which is such a strong factor in the safety of the patient. Study it as I may, I cannot see in what way the State medical service Bill improves so much upon the existing medical services as to warrant this sacrifice. Further, are the existing medical services so bad as to merit the expenditure of so much time in Parliament and of public money upon this State medical service during these critical years? Surely to an honest observer the reply must be in the negative. One is forced then to conclude that the State medical Bill is no health measure at all but a political measure.

I could not agree more completely with Dr. Sybil Tremellen and Drs. Zoë and Paul Harris in their letters (Sept. 21, p. 439). Medical practice is my life, but I will not enter this State medical service; and if I can then no longer make a living as medical practitioner I shall have to find something else to do. It would be far more difficult for me to make this decision had I a wife and young family or any other dependants to support; but it is my considered opinion that if we English men and women do not now, and at every similar issue, refuse to yield right to expediency, we shall find too late that we have sold our birthright for a mess of pottage, and that we are treading the road the Germans trod.—I am, etc.,

Walton-on-the-Hill.

URSULA M. DICK.

SIR,—Dr. Peter Waddington (Oct. 5, p. 515) charges me with lack of political insight in comparing Socialism with Nazism. As a matter of fact my letter made no such comparison. What I did contend was that the surrender of individual thought, and a blind acceptance of whatever thinking the State chooses to do, were the attitude of mind which led to the Nazification of Germany, which is a very different matter. He suggests that I deplore the fact that a Labour Government was returned to power by less than one-half of the electorate, whereas what I actually do deplore is the nauseating attitude taken up by so many Socialists that they have an overwhelming mandate

from the country when, in fact, they have not. Dr. Waddington queries my suggestion that the Bill gives the Minis dictatorial power. I can only think that he has not read the Bill, or that he is imperfectly acquainted with the procedure by which a Minister makes regulations.

Dr. Waddington appears to use the word "strike" reference to a possible refusal on the part of any doctor participate in the scheme. This is a curious attitude of mind. If the Government in due time offers us a contract which find unacceptable we have every right to decline to enter into that contract. This hardly savours of a "strike"—or is it reprehensible in Socialist eyes to venture to differ from Government that it constitutes one?—I am, etc.,

Hove.

NORMAN MAPLE

Universities and Outside Committees

SIR,—Serious misgivings have been felt and expressed regarding the position of the universities in relation to outside "Committees," so many of which have blithely made recommendations to Government Departments which have appointed them; and even when these recommendations seriously affect the educational autonomy of the Universities, they have been adopted by Government Departments without reference either to Parliament or the universities concerned. This tendency is criticized as obviously threatening academic freedom in the *Times Educational Supplement* (Sept. 21, 1946), both in its editorial and in an independent article. It is pointed out in the editorial that "the maintenance of academic freedom has in this day acquired a new significance," and the article presses the need for "a united front to preserve university independence."

London University has experienced an example of this tendency to raise a report of a Departmental Committee practically to the level of a Cabinet edict. The Goodenough Committee, appointed by the then Minister of Health in March 1942, and reporting in May, 1944, recommended (1) that the medical schools of the universities should adopt the principle of admitting a reasonable proportion of students of both sexes (2) that the University should submit to drastic overhaul the medical curriculum (to be conducted apparently by a body wholly outside university jurisdiction). The Minister of Health, Mr. Willink, announced (*Hansard*, Jan. 18, 1945) the decision of the Cabinet to enforce by manipulation of the Exchequer grants to universities these two recommendations of the Goodenough Committee. At no time, as far as I am able to ascertain, were the universities consulted before this decision was published.

The medical schools of London University have accepted under protest, the recommendation imposing co-education. It has been pointed out by a highly responsible and authoritative medical corporation that the composition of the Goodenough Committee detracts from the respect which a committee wielding apparently such influence with the Government should command. The committee consisted of 10 members. There were 12 very famous medical schools of London University—of which one of these schools (University College) was represented in this committee, and that school had three representatives. The second recommendation affecting the curriculum constituted, in my opinion, an even more revolutionary breach of academic freedom: the preparation and ordering of curricula have hitherto been regarded as the inalienable right and duty of universities.

The governing bodies of the teaching hospitals in London, all of whom are schools of the University, find themselves present in an uncomfortably precarious position. The National Health Bill, which has passed its third reading in the House of Commons but is not yet law, makes a distinction between the teaching and the non-teaching voluntary hospitals as regards the independence of their management. The imperative necessity to secure the co-operation of the great teaching hospitals compelled the Minister (but with obvious reluctance) to leave a much larger measure of independence with the governing bodies of teaching hospitals as compared with the non-teaching hospitals. An illustration is offered of the predicament which the present uncertainty produces in the conduct of the teaching hospitals in the experience of the London School of Medicine for Women, with its parent hospital the Royal Free. The Goodenough Committee (see p. 119 of its report) pointed out that the University College Hospital, the Middlesex Hospital, and the

Royal Free Hospital occupy an area which is over-hospitalized, and declared that "the removal of one of these medical schools to another part of London may become advisable," and that "the London School of Medicine for Women should be the school to move." The committee further declared that "University College Hospital Medical School is in the most favourable position of any medical school in London," a view with which the three representatives of that school on the committee were probably in hearty agreement. The Governors of the Royal Free Hospital, with the co-operation of the London School of Medicine for Women, desire to purchase an adjoining site now in the market in order to erect a new permanent wing of the hospital, whose buildings were seriously damaged in the blitz. The question of removal seems to have been broached to the governors of the hospital by the University Grants Committee in November last, when the governors made it quite clear that they were opposed to this suggestion, and since that date it would appear that the Ministry of Health have refused to sanction the carrying out of any projects for the purchase of sites adjoining the Royal Free Hospital; the Ministry would appear to rest this action upon the dictum of the Goodenough Committee, quoted above.

I submit, Sir, that this is a situation which calls for the anxious consideration of the medical profession, and perhaps might engage the attention of the new group of the B.M.A. which deals more particularly with political matters.—I am, etc.,

House of Commons.

E. GRAHAM-LITTLE.

Royal College of Physicians of London

SIR,—Certain Members of the College have written to the medical journals about the representation of Members in the counsels of the College. They must know that the President took the initiative in calling a meeting of Members of the College in January. This was attended by three hundred Members and a committee was appointed to go into the matter. This committee reported to another meeting in April and their recommendations were accepted practically unanimously. The President thereupon brought the matter before the Council of the College, who made recommendations to the Comitia which involved alterations in the Bye-laws of the College, and this was put in hand at once. There is no reason to believe that the great majority of Members are not satisfied with the procedure adopted. A few Members criticized the method of election of Fellows but did not receive substantial support.—I am, etc.,

H. E. A. BOLDERO,
Registrar.

SIR,—If "Dum Spiro Spero" (Aug. 31, p. 313) finds his Membership of the College of Physicians a burden, he has a very simple remedy: he can resign it. When I had been a Member for 25 years: I wondered why I had failed to be elected to the Fellowship, and looked up the Bye-laws. Bye-law LXXV reads as follows.

"The Council, in determining the fitness of Members for nomination to the College for election to the Fellowship, shall take into consideration, in accordance with the Bye-law: standing in the College, academical honours, distinction in literature or science, professional eminence, public appointments, and social position."

In regard to the first five of these, my claims, modest though they were, were in my admittedly prejudiced view at least not inferior to those of many youngsters who were received into the charmed circle after only five or six years' Membership. I therefore concluded that I was defective in "social position," whatever that might mean; that I was in some way "socially undesirable" as they say in totalitarian states.

In June, 1943, I notified the Registrar of my wish to resign my Membership. He replied that the President wished me to take no action until he (the President) had discussed the matter with me. In due course the President invited me to see him. After a long discussion he asked me not to resign before the next election. To this I agreed, and suggested that I should submit a list of my publications. This suggestion was ignored. When in the following May I was again not summoned to receive the coveted Presidential kiss or embrace, or whatever form the accolade may take, I applied for and was graciously given permission to resign.

When my resignation became known to my friends many of them told me that had they only been aware of the injustice

which I had suffered they would have made representations on my behalf to members of the Council or other influential Fellows of their acquaintance. So numerous indeed were these kindly but belated offers that I was forced to conclude that "social position" was something acquired by the process of getting to know the right people. What surprises me is the seriousness with which my action is regarded by my friends. They tell me that I have "burnt my boats" and ruined my prospects of advancement, ignoring the fact that at my seniority I am beyond such considerations. My resignation has impaired neither my enjoyment of life nor my professional efficiency, such as it is. The College, beyond granting me a licence to practise (for which it was handsomely remunerated) six months earlier than I could have obtained it from my University, has not contributed one iota to my education. Its motto might well be *lucis a non lucendo*.

Having freed myself from the stigma of being a discredited Nestor among Members I have at least gained in self-respect. My only regret is the loss of £40 and the time and labour (wasted from an educational point of view) which I spent in cramming for the examination. If "Dum Spiro Spero" follows my example and ceases to indulge in the morbid luxury of giving way to his grief anonymously he will, I am sure, be a happier man.—I am, etc.,

Cambridge.

FF. ROBERTS.

Postgraduate Education

SIR,—Prof. R. W. Johnstone's reproach (Oct. 5, p. 510) that in compiling the account of the facilities for postgraduate education in your Educational Number the Colossus of London was allowed to dominate the picture is due perhaps to the mistitling of the article. The article on "Facilities for Postgraduate Education" was almost wholly concerned with the work of the British Postgraduate Medical Federation, which has its centre in London, although, as Sir Francis Fraser stated, it should become a source of information on postgraduate facilities in all parts of the kingdom. But in other portions of the Educational Number, under the general heading of "Medical Schools," references were made to postgraduate facilities and facilities for taking higher qualifications, and here certainly, in the amount of information afforded, the universities outside London were in no way overshadowed.—I am, etc.,

THE COMPILER.

Definition of Health

SIR,—I should like to comment on the definition of health adopted by the World Health Organization, as reported by Dr. Melville D. MacKenzie (Sept. 21, p. 428). Surely complete physical, mental, and social well-being is a godlike state, which we, being human and mortal, can hardly hope to attain, let alone claim as our right. Besides, if health is to be so described, being a complete state, it cannot be otherwise than as it is. Thus, the following paragraphs of the Basic Principles would be absurd if it was not usually recognized that health is a variable state. To quote Dr. Walter P. Kennedy (*Lancet*, 1946, 2, 427), "... health is a state of being and, as a biological phenomenon, is in a continual condition of flux. ... Health and disease are not a simple pair of contrasting opposites like heat and cold. They are made up of immense numbers of components involving the body, the mind, and the spirit. ... Health, then, is a state which can be measured."

I do not hope to influence the World Health Organization to change their definition, but I wish they had chosen the following: "Health is a balanced state of physical, mental, and social well-being, and not merely the absence of disease or infirmity."

—I am, etc.,

London, W.C.1.

W. F. FELTON.

Contamination of Bread

SIR,—Your annotation on rag flock (Sept. 28, p. 467) has these words in the last line: "... any kind of filling material. ..." It is about another and, I think, far more important filling material that I would beg to say a word or two. There are in my street more dogs and more children than in most streets; there are no gardens to the houses; the dogs and children share the roadway, footways, and gutters: the children prefer the roadway; the dogs have a preference for the footways, especially for depositing their excrement. At

the bottom of the street is a busy baker's shop to which bread is conveyed by motor-vans. This bread is transferred by means of large wooden trays from the motors to the shop, and it is quite a common happening for loaves to fall off the trays both outside and inside the shop. To save space I leave the rest to the imagination of the reader.

Now that there is more paper available, *vide* the enlarged news-sheets with their miles of printed piffle and advertisements, would it not be a matter for the attention of that "red" hot health crusader, Mr. A. Bevan, to see that all bread is wrapped before being sent out from the factories? I have written to our local M.O.H. on this subject; but it may serve a useful purpose if you would give me the space to bring it to the notice of a larger public.

Our Dumb Friends League has a branch in our street, and I would expressly exonerate both the dogs and their keeper from all blame.—I am, etc.,

London, S.W.3.

A. R. EATES.

Ex-Service Practitioners Committee

SIR,—In answer to the letters of Wing-Commander H. M. Stanley Turner and for the information of those medical men who are not aware of the fact, it should be known that at the meeting of Council held on June 5, 1946, it was decided to set up a special committee, now known as the Ex-Service Practitioners Committee. This Committee is composed of members appointed by the Council and after its first meeting decided to co-opt a number of recently demobilized practitioners.

The Committee has had under consideration the difficulties with which ex-Service practitioners are faced on their return to civil life and a number of recommendations have already been made to the Ministry of Health, particularly with regard to the returning specialists. A short statement on the recommendations made and the Ministry's comments will be published in the *Journal* at an early date.—I am, etc.;

P. MARTIN BRODIE,

Edinburgh.

Chairman, Ex-Service Practitioners Committee.

Medico-Legal

EXPERIMENT ON CATS: APPEAL AGAINST FINES AT OXFORD

On June 25 Prof. E. G. T. Liddell, M.D., F.R.S., who holds the Waynflete Chair of Physiology in the University of Oxford, was summoned before the Oxford Magistrates' Court on a charge of causing unnecessary suffering to a number of cats by omitting to give them proper care and attention. He was fined £25 and ordered to pay 10 guineas costs, and Mrs. G. K. Scragg, keeper of the animal house, was fined £5 on a similar summons. The prosecution was instituted by the R.S.P.C.A. Prof. Liddell said he was conducting a group experiment on distemper in cats with the drug sulphamezathine. Prof. Harold Burrow, who holds the Chair of Medicine at the Royal Veterinary College, and Prof. A. D. Gardner, who holds the Chair of Bacteriology at Oxford, gave evidence to the effect the cats could not have been caused serious pain.

Notice of appeal was given and the case came before the court (Mr. John Foster, M.P.) at Oxford City Quarter Sessions on Oct. 7, 8, and 9. Mr. A. J. Long, K.C., for the appellants, said that there was no neglect on the part of Prof. Liddell bringing about suffering to the animals. He was carrying out a *bona fide* experiment on the group of cats to discover the effectiveness of treatment by sulphamezathine during an outbreak of distemper. Asked by the Recorder how he would describe the scientific object of the experiment, Prof. Liddell replied: the alleviation rather than the cure of cats' distemper. In the result the Recorder said he would allow the appeal of Mrs. Scragg, but he would dismiss the appeal by Prof. Liddell. None of the allegations was proved against Prof. Liddell except that of overcrowding, and therefore he would reduce the fine of £25 imposed by the City Magistrates to £5. The Recorder added that Prof. Liddell made an error of judgment in putting too many cats in a compound while they had distemper, but he performed no cruel experiment.

Obituary

Lieut.-Col. R. J. C. THOMPSON, C.M.G., D.S.O., M.D., M.R.C.P.

St. Thomas's men in all parts of the world, and those who served with or under him in the R.A.M.C., will regret to learn of the death of Lieut.-Col. R. J. C. Thompson on Oct. 2. It was only a short time since he retired from the post of Secretary of St. Thomas's Hospital Medical School.

Richard James Campbell Thompson, son of Richard Phillips Thompson of Stamford, Lincs., was born on Aug. 1, 1880, and was educated at Marlborough and St. Thomas's Hospital, qualifying in 1904 and serving as house-surgeon there before he joined the R.A.M.C. From 1910 to 1913 he was seconded to the Egyptian Army for work with the Sudan Sleeping Sickness Commission. He served throughout the 1914-18 war, was mentioned in dispatches, received the D.S.O. and was made C.M.G. He commanded No. 36 C.C.S. during its time of greatest activity on the Somme and was later in command of No. 14 General Hospital at Wimereux. Soon after the end of the war he took the M.R.C.P. (Lond.) and the M.D. of Durham University, and worked as physician and surgeon to the Chelsea Royal Hospital. He retired from the R.A.M.C. in 1922. He followed private practice at Bordighera, and he returned to England to take up the congenial post at St. Thomas's Medical School which brought him into touch with all members of the staff and with generations of students. He married a French lady in 1916; their only child was killed on active service with the R.A.F.V.R. in 1940.

G. F. P. writes: The account of the career of Dr. G. DOUGLAS GRAY in the *Journal* of Sept. 28 revived memories of an episode in the history of plague in which he took part. The International Conference held at Mukden in 1911 to study the origin and course of the epidemic of pneumonic plague which caused nearly 50,000 deaths during the winter of 1910-11 in Manchuria and Northern China was attended by well-known authorities for example, R. P. Strong, Kitasato, Zabolotny, Martini, and Wu Lien Teh; Gray was a worthy representative of Britain. His wide knowledge of the local circumstances that were likely to influence the spread of the epidemic and his sound advice upon methods of prevention proved valuable in the discussions. Moreover, before the Conference was summoned, he co-operated with his Chinese colleagues in planning measures for combating the outbreak. He was obviously a man who had an impelling desire to prevent and relieve human suffering. A robust feeling of patriotism, though he never paraded it, animated and upheld him in all his undertakings. In the social hours of the Conference his pleasant humour, expressed with a trace of stammer and with a twinkle in his eye, made him a most attractive companion. I count myself fortunate in having been associated at that time in China with Dr. Dugald Christie, C.M.G., of Mukden, who also was a member of the Conference. Dr. Douglas Gray, of the British Legation in Peking, and Dr. G. E. Morrison, the eminent correspondent of the *Times*, all of whom were possessed by a love of China which was linked to an ardent love of their own country. Dr. Gray was the last survivor of this distinguished group.

The Minister of Health, Mr. Aneurin Bevan, speaking at the prizegiving ceremony of the Royal Dental Hospital, London, said: "The health of the nation has been improving steadily all along the line—except for its teeth. The condition of the teeth of the people of this country is deplorable. Partly this is due to lack of facilities for dental treatment, but the main reason is that people do not yet realize how important is the influence of the teeth on the general health. At present only a small proportion of the population, perhaps one in ten, seeks regular dental treatment. As Minister of Health, I am bound to be seriously concerned about the other nine. When the National Health Service comes into operation, no one will be unable to obtain dental treatment through lack of means. Unfortunately the manpower situation in dentistry is very seriously short. Most dentists are over 45 years of age, and we need an increased entry of students up to 900 a year if the *Dentist Register* is to be kept at its present level. The premises of dental schools must be extended and the teaching staff increased. Dental surgery is one of the most important branches of preventive medicine."

Medical Notes in Parliament

HEALTH SERVICE BILL

SECOND READING IN THE HOUSE OF LORDS

The debate in the House of Lords which the Lord Chancellor opened on Oct. 8 (*Journal*, Oct. 12, p. 558) was continued by Lord MORAN.

On Oct. 9 the National Health Service Bill was read a second time without a Division and was committed to a committee of the whole House.

Lord MORAN said that everyone was convinced that a drastic reorganization of the hospital service was necessary. One-third of the 93,000 beds in the 1,059 voluntary hospitals in England and Wales were in institutions which had fewer than 100 beds—institutions hopelessly handicapped by their size when they attempted to act as general hospitals—and more than one-third of the 78,000 general beds in municipal hospitals were in public assistance institutions.

Reorganization meant a considerable expenditure of public funds and must entail some measure of public control. Control could only be exercised by the Minister or by the local authorities, and faced by a choice between these alternatives the profession preferred the control of the Minister. For a decade every professional discussion of the hospital service had been dominated by the dread that the hospitals would come under the control of the local authorities. It was the removal of that menace from the profession which had reconciled so many to the passing of the voluntary system and which had done more than anything else to make so many prefer the hospital provisions of the present Minister of Health to those of his predecessor.

A University Service

It was important that the hospital service should be a university service. That was the original conception underlying the establishment of the regions. The regions were originally suggested to bring in the universities. During the war all kinds of specialists were sent by the teaching hospitals into the important hospitals in the region. They attended these hospitals regularly, and they raised their standard almost to university standard. When they were called back at the end of the war there was a sharp fall in the efficiency of hospitals at the periphery. The university service could bring about a redistribution of specialists without duress.

The powers of the Regional Boards were vaguely defined in the Bill. If the inspectors worked independently of the Regional Board the Regional Board would lose authority. There was no guarantee that the Ministry of Health would not interfere in clinical matters. That was not a fictitious phantasy. It actually happened under the emergency medical service during the war.

Doctors feared that they would lose their independence. If that happened the profession would indeed have received a mortal blow. Whatever happened to the health services, however effective the reformation of it, it would avail nothing if the general conditions under which doctors worked did not bring contentment and happiness to them. In the innumerable discussions which the Bill had provoked the effect of the Bill on entry into the profession had hardly been mentioned. It was because the Minister treated the teaching hospitals so sympathetically, because he refused to blunt the growing edge of medicine, that, in the first instance, many doctors examined the provisions of the Bill with sympathy. But those who worked in the academic world in medicine were greatly perturbed at the present time about the powers and composition of the boards that would govern the teaching hospitals.

The well-being of the profession depended upon attracting the exceptional man. The fame of the voluntary hospitals had gone all over the world for one reason and for one reason only—namely, that the great advances of knowledge, which had been of incalculable benefit to the whole world, had come from workers within their walls. The physician at last had been armed, and in consequence there was an almost embarrassing rush to become a physician. At the present time the men of promise were entering for the examination for admission to the Royal College of Physicians at the rate of 1,400 candidates a year.

Spens Committee for Consultants

Lord Moran continued: "I gave notice to the noble Lord who introduced this debate that I should ask the Government to appoint a Committee on the lines of the Spens Committee, with laymen on that Committee, to go into the remuneration

of consultants. I am glad to hear the Government consider such a proposal worth considering and that they will do it."

In the United States the public had been educated to believe that if a man's name was not "in the book" he was not a specialist. At the present time anybody could specialize in England without training, without special qualifications, without anything but assurance. The time was coming when we should have a list of consultants as in America—he hoped it would not come yet, because the general practitioner would then be cut off from the mild amount of specialization he at present undertook. The general practitioner must be brought into the work of the hospitals.

Medical Liberty

He was gravely disturbed by the general fears expressed by practitioners as to the future. They were against this abolition of the selling and buying of practices. They were against what they called a measure of direction, and they were against the basic salary; but these "againsts" all came down to one fear—the fear that there would be a whole-time medical service which would interfere with their liberty. "Will this whole-time service necessarily be good for the profession or the public? I do not think anyone knows the precise answer, but one thing I am certain of: unless there is an adequate incentive or incentives to keep men on their toes and to keep them keen throughout their working days, then a whole-time service would be an incalculable disaster. At the present time I am quite certain that the average doctor lives for his work. What we have got to ask is: will it be true in ten years' time? If I knew the answer to that question I should be able to tell you if the misgivings of the general practitioners are or are not true."

An unfortunate dispute at the eleventh hour had arisen between the Ministry of Health and the panel practitioners. Lord Moran was convinced that the claims of the panel practitioners were fair and just, but the dispute was not about terms but about procedure. The Minister wished to go into the remuneration of panel practitioners at the same time as the remuneration of men in this future service. The panel practitioners felt they had not a mandate for this discussion. He was perfectly certain that the Minister would meet their claims. It would be an absolute disaster if we began this service with a considerable section of practitioners disgruntled—men who felt that they had had a raw deal.

Lord Moran concluded by saying: "This is a measure designed for the betterment of the people in health and in happiness. It is not the product of one party but of parties over a number of years, and I believe that when it becomes law, in spite of all the differences there have been, the whole medical profession will unite to try to make it work."

Lord INMAN, who said he had been associated with hospital work for nearly thirty years, said that years ago hospitals were maintained entirely from voluntary sources, but such was not the case to-day. All sorts of weird appeals were organized to intrigue the public into giving. It was definitely wrong to depend on "stunt" appeals. He yielded to none his admiration of the work of the voluntary hospitals, and to those who said that they were to be killed under the Bill he would reply that the self-sacrificing spirit which had characterized their work would be allowed to continue. In these modern times the heavy cost of curative and preventive treatment and the building and equipment of hospitals meant legitimate financial demands which it was not within the power of voluntary effort to satisfy. The new Bill would continue and expand the work of the hospitals, building on their tradition and experience, to form a worthy edifice of which this country would be proud in years to come.

Evolution—Not Revolution

Lord HORDER said that for the last twenty years doctors had done their utmost to persuade the powers-that-be "to get a move on." But the doctors had hoped that it would be through the more natural process of evolution, rather than through the present method of revolution, that the Government would help them.

"More than once I have allowed that this Bill enhances one very desirable thing—that is, the availability of medicine to the citizen. But, as has been said by one of the speakers here this afternoon, we may pay too much for that advantage if it is gained in a way which does not take into account the possible sacrifices that are entailed. And you cannot stereotype medicine without a great deal of sacrifice. We believe that this Bill does risk stereotyping medicine, and whether we look at medicine from the point of view of the hospital services or from the point of view of the work of the individual doctor it must be a great loss to society if by the operation of this Bill medicine is stereotyped."

The ideal to be aimed at in framing a medical service policy for the nation was not this terrific centralization of power in

one man but a maximum of central direction and a minimum of central control. Closer contact with the medical profession during the framing of the Bill would have safeguarded the Minister, and his successors, under the Bill from the danger of over-centralization. When the Minister was criticized in another place for not discussing his proposals with organizations and bodies representing those who would be responsible for carrying them out he denied the imputation and spoke of consultations—that was his word—which were very wide.

Lord Horder continued: "The Minister uses the word 'consultation' in a very different sense from the one which we usually attach to that word. I was myself present at two of these so-called consultations. The form they took was as follows: The Minister told us what he proposed to do; he answered a few of our questions, and the conference concluded with his telling us that what he had said was to be kept secret. To this unilateral pledge all of us loyally adhered, to find ourselves quite soon tactically handicapped. We were hamstrung. The word 'consultation' was a euphemism for the most blatant form of *ipse dixit*-ism. It seemed to me at the time—and it still seems to me—a very unfortunate and a very unhelpful handling of this vital situation."

Remuneration of Doctors

They had been told that the remuneration of doctors would be in part by basic salary and in part by capitation fees, and that the capitation fees would scale down as the number of the doctor's patients under the national service increased. Now, by regulation, the percentage of remuneration by capitation fees might be reduced; it might ultimately disappear, at which point the doctor became a whole-time salaried Civil Servant. Was this good for medicine or for the community?

"I see no escape from this unthinkable state of affairs except through the medium of a black-market in doctoring, and my mind boggles at the thought of its probable immensity. And yet could we be other than sympathetic if we believe that it is the only salvation for the patient? The Minister tells us it is not possible to insert the terms of remuneration in the Bill. But it should be possible so to amend an existing clause that the method of payment is stated, and this method should be the capitation method unless, in the opinion of the Executive Council in whose area the services are rendered, a different basis is considered necessary."

The prohibition placed upon the buying and selling of a doctor's goodwill for his practice, the power of negative direction of doctors, and the refusal to allow a doctor charged with some offence under the Bill the right of appeal to the High Court were surely matters that required amendment. They seemed to be gross infringements of personal liberty.

Doctors thought that the Standing Advisory Committee of the Central Health Services Council should be appointed by, and take their references from, the Council, and that they should report through the Council to the Minister. The constitution of the local Executive Council should be safeguarded in respect of its medical, dental, and pharmaceutical representation. At present the Minister had power to vary the proportion of medical and lay representation.

Hospital Management Committees

In order to ensure more autonomy for hospitals and, therefore, in order to retain local interest in them, hospital management committees, acting for a group of hospitals, should appoint a house committee in each hospital of the group, subject to the hospital management committee and the Regional Management Committee.

It should be one of the functions of the hospital management committee or of the house committee to set up a medical staff committee, and such committee should have the right to nominate a reasonable number of its members to be members of the hospital management committee or house committee. On the question of medical education, the Bill needed amending, for at present it made no provision for the laying upon the boards of governors of teaching hospitals any duties in respect of furthering medical education and research.

There had been moments of impatience in which the Minister had forgotten that if he did not take the doctors, the hospital administrators, the dentists, the nurses, and the health workers with him the Bill could not succeed in its great purpose. Sometimes he remembered this, as he did only a few days ago when he said: "Now what we hope is to get the co-operation of the great medical profession and of all health workers in the country, because without that co-operation this scheme is bound to fail. The House of Commons only passes Bills; it is the men and women outside who can make them living realities." This was surely the beginning of wisdom. The Minister had courage, enthusiasm, a nimble mind, and a conscientious belief that these proposals were in the best interests of the community. "I think that the Minister

will go far, but in what direction I am not able to say. I think the prognosis in that respect extremely difficult."

Finally, Lord Horder said it was quite obvious that we were about to embark upon a great experiment in the national medical services. It was the doctor's duty to do his utmost to make the experiment succeed. But there was for the doctor an over-riding duty—his duty to his patients. If he could fulfil this paramount duty through these means he would, but it could not be for the patient to decide how long a sacrifice of efficiency should continue.

The Local Authorities

When the debate was resumed on Oct. 9 Lord LISTON replied to some of the points made on the previous day. said Lord Munster had complained that the Bill weakened spirit of local patriotism and of voluntary service by transferring the hospital service from the local authorities to the State. But public-spirited persons who had served on local authorities would not be deterred by the change. In the past many counties and county boroughs had done little to develop hospital service. The large local authorities which ran general hospitals would be no worse off than they were in 1928. Under the Bill these larger local authorities acquire a range of obligations and permissive powers in health services which they had never hitherto had to discharge. The Bill not propose that the Ministry of Health should run the hospitals. Clause 11 said that the Minister must—not may—delegate his powers to regional hospital boards and from them to hospital management committees, or in the case of teaching hospitals to boards of governors. Each hospital committee would be free to decide how its money should be spent within the limits of an annual budget. Hospital committees—boards of governors would be as independent in their day-day arrangements for running the hospitals as the committees that ran them now.

In delimiting the regions to be administered by regional boards the Minister must consult the interested parties before making up his mind. He would then define the regions by regulations, and if a noble lord disapproved of one of the regulations he could move its rejection in the House. Was not, and never had been, the policy of the Government to institute a full-time salaried medical service which would withdraw the whole health scheme from the outset. The Government desired a system of remuneration based partly on capitation fees and partly upon a basic salary. At the same time deprecated the suggestion that full-time employment of doctors in public service led to inefficiency or neglect of patients. The professional standards of medical officers of health or of other doctors employed in hospitals run by local authorities, as a class of doctors employed in the Armed Forces, were as high as those of doctors in private practice. Hospital endowments in memory of an individual would still be used for the benefit of the sick and when an allocation was made from the hospital endowment fund to any particular hospital the wishes of donors would not be forgotten.

Health centres under the Bill would be experimental, and in view of other demands on the building industry it was impossible to wait until every health centre could be newly built.

Domestic Affairs of Hospitals

Lord Moran had asked whether the Ministry or the regional board would investigate hospital complaints and engage or dismiss nursing staff. Both these powers would be delegated to the regions, and there was no real danger of Whitehall interfering in the domestic affairs of hospitals. Lord Moran had mentioned the difference of opinion between the Ministry and the panel practitioners. A meeting between Mr. Bevan and the representatives of the profession would take place on Oct. 10.

The spirit of voluntary service must be retained in the hospitals. Lord Horder had said his ideal for the medical service was the maximum of central direction and the minimum of central control. That was what the Government aimed at under the Bill. Lord Horder's fear of a dead level of mediocrity in the medical profession would prove to be groundless. The service would continue to be a graduated scale in the salaries in the hospital service and progressive remunerations for general practitioners. The good man would have every incentive to get on in medicine. The Bill as it emerged from Parliament would only be the skeleton of a national health service. The service would need the genuine good will and co-operation of the engaged in medicine, and also of public authorities and voluntary agencies. No less essential would be an intelligent and responsive attitude to its own health in the mass of the population.

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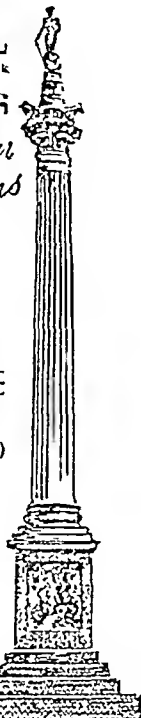


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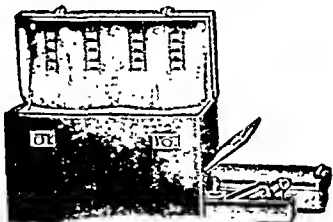
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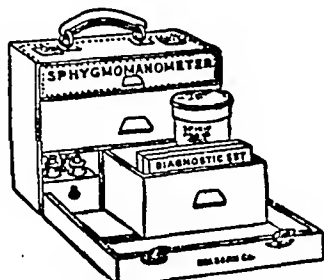
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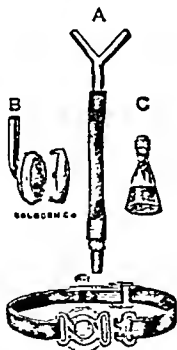
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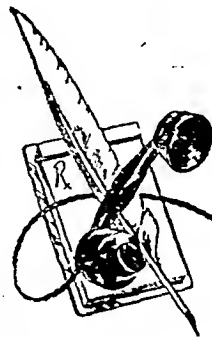
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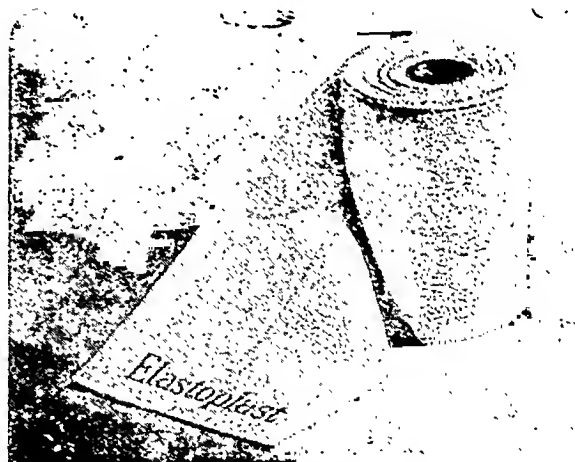
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consideration. When the time came for action it was to be hoped that differences would be forgotten and that the ranks of medicine would be closed to implement the plan. Such an attitude of mind was a patriotic duty. The debate so far had shown a foundation of agreement about the main principles on which the Bill was based. It was not the product of any single party or Government.

The advocacy of a wider and more comprehensive medical service had become more prominent in the B.M.A. during the war, and many doctors then began to press for drastic improvements in what they deemed to be the present inadequate system. The imagination of the public was then gripped by the social security proposals in the Beveridge report. Thereafter the ideas in the Bill had come from varied sources. If the Bill moved in the direction of State medicine it combined freedom for doctors and patients with over-all planning, private and public practice, and unpaid voluntary service with salaried contractual obligations. It was as far from the State system of medicine practised in Russia as it was from the commercial medicine favoured by the United States of America.

Criticism of Bill

Lord LYLE said the Bill was another step on the slippery road leading to nationalization. The promise by Mr. Lloyd George of "ninepence for fourpence" was a small exaggeration compared with the promise of a free health service which in fact was going to cost approximately £150,000,000 a year. In dealing with the position of the doctors, their patients, and the voluntary hospitals this was a thoroughly bad Bill. The outlook for patients under the Bill was gloomy. They would have no satisfactory way of airing their complaints. There would have been no loss had Mr. Bevan allowed existing endowments of hospitals to be preserved so that the wishes of the departed donors could have been respected.

Economic Barrier Removed

Lord BEVERIDGE said he gave whole-hearted support to the Bill in practically all its main features, though it was not intended to do everything that was wanted to promote the health of the people of this country. Health depended on housing, nutrition, sanitation, and so on. The Bill removed completely the economic barrier between sick persons and the best possible treatment. It set up for the first time a true Minister of Health. He hoped that meant that the Ministry was going to be a continual irritant to authorities who were not getting on sufficiently with housing, sanitation, and nutrition.

He did not think that the question of private practice would be very important. He could not imagine any large part of the people continuing to pay for such service when they were entitled to get as good a one without paying for it at all. The regional hospital boards were an improvement on the joint authorities. He was not sure that the executive councils would sufficiently represent the ordinary citizen. At one time the opinion of doctors was in favour of getting health centres. He hoped this was still so. He asked whether there was any means of compelling a local authority to set up a health centre.

His experience as a university teacher was that it was possible to receive the whole of one's income as a salary while retaining freedom, initiative, and a sense of being in the service of the people with whom one dealt. Through the Grants Committee the universities received public funds without public control. He hoped a system of that sort could be applied to the medical services, and above all to the teaching hospitals. The main difference between university teaching and the medical profession was that the medical profession had to work harder at less regular hours, and its job was not so pleasant; it should therefore be paid better than university teaching. The plan of a relatively small salary with capitation fees seemed a good device. The doctor ought to be able to choose to work harder to get more income.

He hoped the medical profession would take from the university teaching profession the practice of refresher courses. Under the new system a doctor would have the chance of six months or a year at a time to rub up his subject. The spirit in which the Bill would be administered could be judged by the spirit in which the Government would approach the amendment which would be moved in the House of Lords. In some matters the Bill was too rigid.

Subscriptions to Hospitals

Lord LUKE said the battle for nationalization had been won and lost in the House of Commons. He thought that the greater tidiness which might result under the present scheme would be at the cost of greater efficiency and more personal service. The Hospital Endowments Fund created by the Government was a big pill to swallow. At the moment people hesitated in making subscriptions, and that was bound

to continue in view of Mr. Bevan's assurance that hospitals in financial difficulties might appeal to him for assistance. Lord LUKE understood that they would not appeal in vain. It was difficult to balance this with the maintenance of an incentive to people to give money to hospitals. How could Mr. Bevan expect to get large subscriptions in the future if he continued to insult the large contributors? He hoped that a formula could be evolved for the interim period which would prevent people's generous habits being broken.

In regard to the non-teaching hospitals, he asked whether it was possible for management committees to manage their hospitals efficiently if they did not have control of the staff. That control had been vested in the regional boards, and there was no provision in the Bill to give effect to the assurance of the Government that there would be no interference by the regional boards with the management committees. The net annual expenditure of the new hospital service would be about £95,000,000. Did that figure include the additional beds which were needed to provide adequate accommodation? He understood these additional beds would number about 90,000. For these the cost would be £135,000,000. He estimated that the country needed 7.6 beds per 1,000 of the population. This on the 1941 census was equivalent to 315,000 beds. The existing provision was 225,000 beds. When would the extra beds be available and how were the hospitals to arrange staff for the additional accommodation? The public had been led to expect something far and away better than the present system. He would do all he could to ensure co-operation, to forget past differences, and to improve what was good.

Lord DONOUGHMORE said it was obvious that voluntary contributors could not face the enormous increase that would be necessary in financing the hospitals of the country. The voluntary hospital had not been called so solely because it was supported by voluntary contributions. On its board men representing all the professions gave their services to the sick for nothing. Unless the medical profession found it possible to support this Bill heart and soul it was bound to fail. The medical profession was altering every day, and he hoped it would not have too much direction in detailed matters of administration. He hoped they would soon be told how many regions there were going to be and what were their functions. In London he had been concerned this summer with negotiations for co-operation between four large hospitals. These hospitals would like to co-operate but did not know which regions they were going to be in.

Dismay of Local Authorities

Lord ADDINGTON said people must come before plans and administrative machinery. Love, care, and consideration could not be exercised if there was friction between the doctors and the Government or between the doctors and the patients, nor would the aims of the Bill be fulfilled if the doctor was not free to follow his own conscience. He hoped the House of Lords would be able to make considerable improvements in the scheme. Some of these were desired by the borough councils of England for which he spoke. Non-county boroughs viewed with dismay the loss of their maternity, child-welfare, and other health services, and so did the county councils the transfer of their hospitals to the Minister. The people had come to look to these local authorities for their needs in public health. The borough councils would like provision to be made to enable a county council to delegate some or all of its public health functions to its non-county boroughs. Local health authorities should be able to nominate their representatives upon the regional hospital boards, management committees, and boards of governors of the teaching hospitals, and should have representation upon the Central Council.

With regard to the voluntary hospitals, he believed those who lived in these areas would find it detrimental always to be treated thirty or fifty miles away. They would prefer to be treated in the small hospitals in their own towns and by their own doctors. They also wanted to be visited by their families and friends. This was particularly the case with chronic invalids. Some of these chronic cases might be given a few of the beds in small hospitals in their own towns. These hospitals should be continued, and there should be a house committee for each of them. In the last week of September the B.M.A. had inaugurated a World Medical Association, with representatives of 31 different nations. The aim was to assist all the peoples of the world to a higher level of health. That had been welcomed by Mr. Bevan, who pointed out that there was in medicine a concern for the individual and that the primary concern of doctors was that the thing necessary should be done. If the Government showed greater care for the health of the people than for political advantage or for preconceived plans the doctors would show they cared much more for the health of the common folk than for financial advantage and some of their professional traditions.

Direction of Doctors

Lord LLEWELLIN said he approached the Bill solely from the point of view of the patient. From the patients' point of view the time had come for a better health service. In his view the Bill did not in the right and best possible way take steps to improve the hospital services and the health services generally. The majority of doctors disliked being controlled. There was no need whatever to buy the doctors out of their practices. The problem of attracting doctors to the under-doctored parts of the country was comparatively small, and it could have been met on the lines of the scheme for the Highlands and Islands of Scotland, which by special inducement secured doctors to serve in those parts. That could have been worked for a far less cost. The new entrants who looked round for a safe job with a regular salary were not the men who rose to the top of their profession. He fancied that in the main the new men who would come into the State medical service would not be the active, progressive men who should be engaged in a great science such as medicine. As a patient, he said: "When we are short of doctors do not let us do anything to drive some of them away. Let us do everything to get the best recruits into the medical profession." Under the Bill the Minister could be questioned in either House of Parliament on anything which happened in any hospital. That was a frightfully hampering thing. If mistakes were made in the hospital an instruction would go out to all regional boards and hospitals that nobody was to do things in that way in the future. Staffs would be tied up by quantities of forms to fill in and quantities of instructions to read. Those for whom he spoke were not going to divide against the second reading of the Bill.

Closure of Debate

The LORD CHANCELLOR closed the debate. Many of the points made were committee points, and he promised that the amendments moved would receive careful consideration, though great care had been taken in preparing the Bill and Mr. Bevan had made considerable concessions. The House would not suppose that the Government assented to any particular amendment. The Labour Party had no doctrine against charity, but they objected to services of essential importance being left to the mercy of charity instead of being provided out of public funds. Essential services to-day were so much more costly than thirty years ago that the State had to come in.

He was sorry some statements had been made which might lead doctors to suppose that the Government was going to nationalize medicine or that the doctors were going to be enslaved. If the Government were to propose a scheme whereby the doctors would become salaried Civil Servants they would not come in. The Government had no such intention. The fear of interference with the doctor should not be encouraged by responsible members of the House of Lords. Mr. Bevan only wished to pay a minor part of the doctors' remuneration in the form of salary. Payment of salaries to university professors and judges did not enslave them. If it was enslaving doctors to say that the new entrants to the Service after the appointed day must get the consent of the Medical Practitioners Committee when taking up public practice, that was precisely the proposal of the Coalition Government. When there was a partnership of three doctors of whom one died and the others wished to get a new man, then the most relevant fact considered by the panel would be: "Here is the man the other two want." In 99 cases out of 100 the man who was wanted would get his way.

On the selling of public practices he thought that in a country practice where patients had no choice of doctors a man indulging in public practice who sold it was virtually selling his patients. If two men came after the practice one of whom was less suitable but was prepared to pay a larger sum, what was the reaction of the vendor? For that reason the Government thought that the selling of a practice by a man who was getting his remuneration in part from public funds was no longer right. He underlined what had been said about the necessity for decentralization. This scheme would fail unless the Minister decentralized on the largest possible scale. The Government believed that the transfer of functions from minor to major local authorities was essential, because in that way alone could the present confusion be removed. The treatment of endowments had its precedent in an Act passed by the last Government, whereby, by Order in Council, endowments given to schools for particular purposes could be taken away and used for different purposes without the consent of the trustees. Under the Bill endowments, after passing to the Minister, had to be reallocated by regulation. The Minister would consider whether a particular bequest was for some local purpose. He renewed his assurance that in Committee the Government would look carefully at all amendments and see whether any of them could be accepted as improving the Bill.

The Bill was then read a second time.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a Congregation on Oct. 1 Mr. H. Thirkill, Master of Clare College, resigned office as Vice-Chancellor, and was re-elected for a further year. In his address to the Senate he made the following reference to the expansion of medical education which the University has had under consideration for some time:

"In general, it was considered that the first step in this expansion should be the establishment of a School of Postgraduate Teaching and Clinical Research composed of Departments in special branches of medicine, which could be in close touch with the established University Departments of Science. A beginning has been made with the creation of a Department of Experimental Medicine and a Department of Radiotherapeutics. In these and other Departments which have been contemplated, and are likely to be established later there will be opportunities for postgraduate training as well as unrivalled facilities for research. The implementation of this plan has called for the closest co-operation with Addenbrooke's Hospital. It is expected that an important step towards the fusion of the interests common to the University and to Addenbrooke's Hospital will be taken during the year by the University Departments of Pathology and Biochemistry becoming responsible for the pathological and biochemical services of the hospital. This should be of mutual benefit. For the hospital, there will be available the resources and expert knowledge to be found in a University department. For the University, there will be the large field of study and research provided by the evidence accessible at the hospital, while the other specialist University Departments, already created or contemplated will have a complete University organization in the basic sciences of pathology and biochemistry to which problems can be referred for advice, assistance, or solution. The whole trend of this policy is in keeping with the general recommendations of the Report of the Interdepartmental Committee on Medical Schools, which is designed to make the University the focus of medical education and research for what will eventually be the East Anglian Region. It is felt, too, that the special Departments will have an attraction for postgraduate students and research workers far beyond the local region, extending to the Dominions and Colonies. At the same time, the need for educating general practitioners in modern medicine has been appreciated. The honorary staff of Addenbrooke's Hospital have, during the past year, given a number of postgraduate courses in general medicine to returned ex-Service medical men. The experience gained from these courses will be of great value in framing suitable courses of instruction for general practitioners in civil practice. The question of the organization of the School of Postgraduate Teaching and Clinical Research is under active consideration by the University and hospital authorities concerned and a report will shortly be presented to the University."

During the months of August and September titles of the degrees of M.B., B.Chir. were conferred by diploma on the following members of Girton or Newnham Colleges: R. S. J. Baker, Mr. H. F. Barnes, K. A. C. Bowen, J. E. G. Brieger, F. M. Fountain, J. F. Grant, Mrs. M. C. Hare, M. Hobson, P. A. Howard, E. C. Howe, G. M. Hunt, H. M. J. Lawn, B. M. Leach, Mrs. J. Raymond, A. M. Sibly.

G. R. E. Naylor, M.B., B.Chir., demonstrator in pathology, has been elected into an official Fellowship at Gonville and Caius College.

The names of candidates for the M.Chir. examination should be sent to the Registry by Dec. 31. The examination begins on Feb. 18.

UNIVERSITY OF LONDON

Ian Aird, Ch.M., F.R.C.S., has been appointed to the University Chair of Surgery tenable at the British Postgraduate Medical School. Miss Dorothy Russell, M.D., Sc.D., to the University Chair of Morbid Anatomy, and Clifford Wilson, D.M., to the University Chair of Medicine, both tenable at the London Hospital Medical College. J. L. D'Silva, D.Sc., M.B., has been appointed to the University Readership in Physiology tenable at St. Bartholomew's Hospital Medical College, and J. M. Robson, M.D., D.Sc., to the University Readership in Pharmacology tenable at Guy's Hospital Medical School.

SOCIETY OF APOTHECARIES OF LONDON

The Gillson Scholarship in Pathology of the annual value of £10 is open to candidates under 35 years of age who are licentiates or freemen of the Society, or become so within six months. Regulation may be obtained from the Registrar, Society of Apothecaries, Blackfriars Lane, E.C.4.

Welfare work in Greece, a children's hospital in Yugoslavia, and day nurseries in Great Britain are among the subjects discussed in the September number of *The World's Children* (20, Gordon Square, London, W.C.1, price 6d.).

No. 39

INFECTIOUS DISEASES AND VITAL STATISTICS

Print below a summary of Infectious Diseases and Vital statistics in the British Isles during the week ended Sept. 28.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) be 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	32	6	19	1	2	17	1	20	—	1
Deaths	—	—	2	—	—	—	—	1	—	—
Diphtheria	285	15	79	26	14	486	37	133	63	15
Deaths	7	—	1	—	—	6	2	—	2	—
Dysentery	66	6	40	1	—	264	52	99	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	1	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	39	9	1	—	34	10	—	5
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	47	3	5	57	3	75	6	25	110	4
Deaths	—	—	—	6	—	—	—	—	17	—
Measles*	1,461	69	79	29	6	406	35	83	25	4
Deaths	1	—	1	—	—	—	—	1	—	—
Ophthalmia neonatorum	67	3	18	1	—	66	6	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	19	1	7(B)	—	—	11	1	1(B)	—	—
Deaths	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	373	13	4	3	—	302	13	5	2	6
Deaths (from influenza)†	5	2	1	—	—	8	—	1	—	—
Pneumonia, primary	—	—	118	35	—	—	—	146	12	—
Deaths	—	18	—	3	8	—	11	—	6	4
Polio-encephalitis, acute	—	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	30	3	3	6	1	40	5	1	7	2
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	6	—	—	—	5	15	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	164	13	17	—	2	124	12	14	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,001	65	168	36	35	1,509	113	272	27	42
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	12	1	1	3	1	15	—	1	4	—
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,451	81	78	39	28	920	39	44	16	6
Deaths	8	1	—	—	1	5	1	—	—	—
Deaths (0-1 year)	355	42	56	19	24	343	37	67	34	14
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,187	615	573	183	121	3,761	558	510	163	93
Annual death rate (per 1,000 persons living)	—	—	12.6	11.7	—	—	—	11.6	10.5	—
Live births	9,545	1,414	1,081	505	243	6,530	835	818	454	239
Annual rate per 1,000 persons living	—	—	21.7	32.4	—	—	—	16.4	29.3	—
Stillbirths	275	29	46	—	—	203	19	27	—	—
Rate per 1,000 total births (including stillborn)	—	—	41	—	—	—	—	32	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Outbreak of Ringworm

The county medical officer of health for West Lothian states that the outbreak of ringworm of the scalp in the Bathgate area involves 160-170 cases. A clinic has been improvised at one of the Bathgate schools and the cases, most of which arose during the summer vacation, will be dealt with by x-ray epilation. Routine measures of isolation and instruction about prevention are already tending to check the outbreak.

Discussion of Table

In England and Wales a decline was reported in the incidence of whooping-cough 159, while an increase was recorded for measles 253, scarlet fever 148, and diphtheria 45.

The notifications of whooping-cough have decreased for six consecutive weeks. A small decrease was reported from most regions and the largest local falls were Lancashire 37 and London 19.

The only variations of note in the incidence of scarlet fever were increases in Yorkshire West Riding 35 and Durham 20. A rise was recorded in the notifications of measles following a continuous decline for the last eleven weeks. The incidence tended to increase in most regions with the exception of London and the South-East, where a fall of 74 occurred; the largest rises were Devonshire 110, Northumberland 70, and Yorkshire West Riding 44.

Diphtheria was generally slightly more prevalent during the week. The largest rises were Lancashire 23 and Warwickshire 11. The total number of cases of dysentery in the country was unchanged; the largest local variation was an increase of 15 in Middlesex (Southall M.B. 10).

In Scotland a rise in incidence was reported for dysentery 18, measles 18, and scarlet fever 10, while a fall of 27 was recorded for whooping-cough. The largest local increase in cases of dysentery was at Edinburgh, where the notifications increased from 3 to 14.

In Eire a rise of 20 in the cases of scarlet fever was due to a general rise in incidence. The increase in whooping-cough was mainly due to the experience of Dublin C.B., where the cases rose from 15 to 32. The incidence of diarrhoea and enteritis remained practically unchanged; 49 of the cases were notified from Dublin C.B.

In Northern Ireland only small changes in the totals of infectious diseases were reported.

Quarterly Returns for England and Wales

The Registrar-General's returns for the June quarter record a birth rate of 19.2 per 1,000, the highest rate in any quarter since that of June, 1925. The infant mortality was 41 per 1,000 live births, being 9 below the average of the ten preceding second quarters. The death rate was 10.7 per 1,000, which was 0.3 above the rate for June, 1945, but 0.9 below the average death rate for the five preceding June quarters.

Infectious Diseases in the Third Quarter

Notifications of infectious diseases during the September quarter of this year showed considerable changes in the general trend of diphtheria, dysentery, and the enteric fevers.

The notifications of diphtheria have been at the lowest level recorded. For each of the thirteen weeks of the third quarter the total has been below the 346 cases which was the lowest level reached in 1945. Cases of diphtheria in this quarter are only two-thirds of the number in the corresponding period in 1945 and approximately a quarter of the number occurring ten years ago. Diphtheria notifications in the third quarters of the past ten years, 1937-46, were: 13,395; 13,639; 10,632; 11,387; 10,631; 9,517; 7,951; 6,133; 5,437; 3,473.

The incidence of dysentery, which rose continuously throughout the war, has fallen rapidly during the third quarter and the total for the quarter is only 27% of that for the same period of 1945, though still almost twice the pre-war level. The notifications for the third quarters of the ten years 1937-46 were: 532, 430, 464, 613, 1,320, 1,718, 2,501, 3,509, 3,396, 923.

The enteric fevers (typhoid and paratyphoid) reached a high level of incidence during the third quarter. The totals for the September quarter of the ten years 1937-46 were: 603, 401, 636, 1,427, 2,876, 261, 240, 245, 255, 723. The high value in 1941 was due to an outbreak of paratyphoid which originated from cream cakes in a multiple bakery in the Liverpool area. The rise this year was mainly due to typhoid contracted by eating ice-cream in Aberystwyth M.B. The sanitary control of ice-cream is the subject of an annotation at page 584.

The Health of Edinburgh

The report of the medical officer of health for 1945 records a birth rate of 15.4 per 1,000, a decrease of 1.2 on the 1944 rate. Infant mortality was 50 per 1,000 births, the lowest rate ever recorded. The infant mortality rate in Edinburgh has been below the rate for the other three large cities since 1920; the corresponding figures for these cities in 1945 were Glasgow 68, Dundee 57, and Aberdeen 54. The general death rate was 14.4 per 1,000 and was 0.6 below the average for the preceding five years. There were 218 deaths attributed to pulmonary tuberculosis, the lowest death rate from this disease on record, but the number of new or suspected sufferers from this disease was the largest ever dealt with by the Department of Health.

Week Ending October 5

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,079, whooping-cough 1,311, diphtheria 319, measles 1,781, acute pneumonia 411, cerebrospinal fever 32, dysentery 63, acute poliomyelitis 23, paratyphoid 20, typhoid 11.

Medical News

Dr. J. Calvert Spence will deliver the Charles West Lecture on Tuesday, Nov. 19, at 5 p.m., at the Royal College of Physicians of London. Subject: "The Care of Children in Hospital."

The next meeting of the Middlesex County Medical Society will be held at Hillingdon County Hospital, Hillingdon, Middlesex, at 2.30 p.m. to-day (Saturday, Oct. 19).

Dr. G. Roche Lynch will deliver a lecture entitled "Medico-Legal Experiences" before the Hull and District Branch of the Royal Institute of Chemistry at the Guildhall, Hull, on Wednesday, Oct. 23, at 7.30 p.m. At Dr. Roche Lynch's request the secretary cordially invites members of the medical profession to attend this lecture.

At a meeting of the Medico-Legal Society at 26, Portland Place, W., on Thursday, Oct. 24, at 8.15 p.m., a paper will be read by L. Le M. Minty, Ph.D., on Legal Aid to Assisted Persons.

At a meeting of the Medical Society for the Study of Venereal Diseases at 11, Chandos Street, W., on Sat., Oct. 26, at 2.30 p.m. Dr. F. R. Curtis will give an address on Venereal Disease in Occupied Germany.

Dr. Neville Lloyd, M.R.C.P., has been appointed chief medical officer, Ministry of Supply, with effect from Sept. 23, 1946. Dr. Katharine Williams, M.R.C.P., who has held the locum tenens appointment as C.M.O., has now taken up duty as principal medical officer, Atomic Energy Research Establishment, Harwell, to which she was appointed on June 11, 1946.

At a scientific reunion of the Société Internationale de Chirurgie Orthopédique et de Traumatologie held in Brussels on Oct. 3 and 4, Prof. Louis Ombredanne was re-elected as president, and Dr. Jean Delchef as secretary-general of the Society. Prof. Harry Platt and Dr. San Ricart (Barcelona) were elected vice-presidents. Dr. Henry Meyerding, of the Mayo Clinic, was elected as president of the next congress, which will be held in Amsterdam in September, 1948.

The first number of a little weekly periodical, *Science To-day*, is dated Oct. 10, 1946. The editor is Mr. A. W. Haslett, M.A., who until recently was Public Relations Officer of the B.M.A. It is published from 104, Clifton Hill, London, N.W.8, and the subscription rate is 30s. a year.

At the 125th anniversary of the founding of McGill University, Montreal, honorary degrees were conferred on Sir Hector etherington, Principal and Vice-Chancellor of the University of Glasgow, and on Dr. Thomas F. Cotton, F.R.C.P., physician to the National Heart Hospital, London, who graduated at McGill University in 1909.

The Dean of Westminster Hospital Medical School, presenting his report for the year on Oct. 7, referred to the amalgamation with the Infants Hospital, Vincent Square, and with All Saints' Hospital for Genito-urinary Disease. The first professorial chair in the School has been created—that of clinical pathology. A pre-war association with the Army Medical College, Millbank, has been resumed, and postgraduate instruction is being given to a number of officers. London University is to make a grant of £25,000 to the School in the coming year.

The Unionist Committees of the four Scottish Universities have unanimously decided to adopt the Right Hon. Walter Elliot, F.R.C.P., F.R.S., as their candidate in the Parliamentary by-election caused by the resignation of Sir John Boyd Orr. Col. Elliot represented the Kelvingrove Division of Glasgow for 21 years until defeated at the General Election. He was Minister of Agriculture, 1932-6, Secretary for Scotland, 1936-8, and Minister of Health, 1938-40.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to 1 EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Articulate, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* unless the contrary be stated.

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ANY QUESTIONS?

Heliotherapy in Pulmonary Tuberculosis

Q.—Is heliotherapy harmful or not in pulmonary tuberculosis?

A.—In 1932, Fishberg (*Pulmonary Tuberculosis*, 4th edn. Kimpton, London) remarked that hardly any writer has advanced a sound reason for the use of heliotherapy in pulmonary tuberculosis. Nothing has been recorded since that time which justifies any alteration of this opinion. Gosse and Erwin (*British Medical Journal*, 1934, 2, 15) have shown that the onset or exacerbation of symptoms in cases of pulmonary tuberculosis often follows sunbathing, and there is considerable evidence that heavy exposure to sunlight can produce a focal reaction around an exudative lung lesion. In a recent review of the whole subject, Mayer (*Radiation and Clinical Therapy of Chronic Pulmonary Disease*, Williams and Wilkins, Baltimore, 1944) concludes that there is no clinical evidence to prove the value of light radiation in uncomplicated pulmonary tuberculosis, while there is considerable evidence that it can be harmful.

Malaria Prophylaxis

Q.—Can you recommend a non-toxic prophylactic, other than quinine, against malaria?

A.—Mepacrine 0.1 g. daily by mouth acts as an efficacious suppressive agent against malaria. Most persons find it relatively non-toxic although it has the disadvantage of staining the skin yellowish. Paludrine, a colourless compound, in a dose of 0.1 g. twice weekly, or chloroquine in a single dose of 0.3 g. weekly, appear even superior to mepacrine in their suppressive actions, but they are not yet ordinarily available although it is expected that paludrine will be readily obtainable within a few months.

Premature Baldness

Q.—I have been asked by a mother if I can do anything to prevent her son, now aged 3, from going bald at the age of 1. Her father and two brothers went bald at that age.

A.—It is a little early to condemn a male infant to premature baldness. For the true masculine type of baldness not much can be done; but when, as often happens, this is associated with seborrhoea of the scalp (dandruff) beginning in late adolescence the active treatment of the seborrhoeic component by sulphur pomades or a resorcin lotion, with regular shampooing, usually delays the more complete forms of baldness for many years. The answer, therefore, is the early treatment of any scalp seborrhoea should this be present or develop.

Right and Left Systolic Blood Pressures

Q.—In many cases of hypertension the systolic pressure of the left arm is higher than that of the right arm. Why should this difference be found and which reading is the correct one?

A.—As a rule the blood pressures in the arms are approximately equal and rather lower than the pressures in the legs. It is not uncommon for a disparity to exist between the systolic pressures in the arms. Provided the difference does not exceed

) mm. of mercury it may be disregarded unless there are other reasons for expecting inequality. In subjects free from cardiovascular disease neither side is more likely than the other to give the higher pressure. A reduction in the blood supply to the limb will result in diminution of the pulse and lowering of systolic and diastolic pressures in it. Lesions of the aorta obstructing the mouths of the great vessels, advanced peripheral arterial disease, pressure on the artery from without, and atrophy of a limb are the most likely causes. Whenever there is a difference between the blood pressure measurements in the arms the higher should be taken as more nearly corresponding to the power of the left ventricle (systolic) and to the general peripheral resistance (diastolic).

Penicillin for Chronic Otitis Media

Q.—Would it be advisable to use penicillin in the form of drops in a child with chronic otitis media?

A.—Penicillin could not be expected to have more than a temporary effect at best in a chronic infection of this kind. Penicillin given in drops would not reach the antrum.

Air Travel and Pregnancy

Q.—A seven-months pregnant woman is obliged to travel by air. Is there a risk of premature labour? If so, would progesterone be of prophylactic value?

A.—Unless there is reason to believe that this woman is in some way predisposed to abortion and premature labour the risk of interruption of the pregnancy is probably little greater than if she did not undertake the journey. The widespread belief that travelling in itself increases the incidence of abortion and premature labour appears to be insecurely founded and has not been substantiated by controlled observations. A recent investigation reported by A. W. Diddle (*Amer. J. Obstet. Gynaec.*, 1944, 48, 354) showed that rough travelling did not increase the abortion rate in a series of pregnant women. The real reason for advising a pregnant woman against undertaking long journeys is not that premature labour is more likely but because she might be in difficult circumstances if it did occur.

If a pregnancy is complicated by some condition predisposing to its premature termination the position is probably different. Travelling, or indeed any minor physical or emotional upset, might then be sufficient to precipitate the onset of expulsive uterine contractions. In the case mentioned, if the pregnancy is normal there is little point in administering progesterone, although it could do no harm and might give the patient more confidence.

T.A.B. Inoculation of Infants

Q.—A patient returning to Rhodesia with her daughter, aged five months, is anxious for the infant to be protected with T.A.B. vaccine. Is this necessary?

A.—Typhoid and paratyphoid infections are rarely encountered in young infants. Provided the feeding can be controlled and sterilization ensured it would not appear to be necessary to inoculate this infant.

Silicosis and Bronchitis in "Saw-doctors"

Q.—Is the diagnosis of silicosis likely to be correct in the case of a bronchitic saw-doctor with finger-clubbing and doubtful x-ray findings?

A.—No. Grinding band-saws on a rapidly revolving carborundum (silicon carbide) disk will not cause silicosis. Therefore if this has always been the man's occupation he could not have acquired this disease. Gardner (*Amer. Rev. Tuberc.*, 1923, 7, 344) proves in a classic experiment that finely divided powder of carborundum failed to produce silicosis despite the sharp-edged nature of its particles. It was following these observations that the "solubility theory" of silicosis developed. On the other hand the grinding of iron may cause a fine dust of this metal, which is opaque to x-rays, and long-continued inhalation may give the appearance of reticulation in the x-ray. This, however, would not be associated with symptoms or with fibrosis in the lungs.

INCOME TAX

Addition to Partnership

R. A. inquires whether, in the case of an additional partner entering a firm, "it is usual for the old partnership to be wound up and the accounts closed, or do the old partnership accounts continue?" He also asks how this question affects the liability of the new partner.

•• Whether the old accounts be closed or not is a matter of arrangement between the partners. It is difficult to say what is the "usual" course, but where the old firm has been assessed to income on a "cash receipts" basis, the tendency is to avoid closing the old accounts, as that would involve changing the basis of assessment over to "gross earnings." R. A. will be assessable not as an individual but as a member of the firm, and will have to bear tax on his share of the firm's assessment. His interest in this question is therefore the same as the interest of the other members of the firm.

Depreciation of Car

N. P. sold his car (on which the standard wear and tear allowance had been claimed and given in past years) in March, 1946. A depreciation allowance has been refused for 1946-7.

•• That is correct. Under the Income Tax Act, 1945, depreciation allowance is to be calculated on the value of the "plant and machinery" as at the end of the "basic year." Presumably in N. P.'s case the basic year did not end until after the car was sold, and consequently there was no value on which to calculate the allowance for 1946-7.

LETTERS, NOTES, ETC.

The "Silver Ring"

The honorary secretary of the Family Planning Association writes from 69, Eccleston Square, S.W.1: The medical committee of this society feels that a warning should be given to practitioners concerning the sudden revival of popularity of a method of contraception called the "silver" or "Grafenberg" ring. This appliance consists of a small spiral or other type of ring composed of silver, platinum, or some other suitable metal, which is inserted into the uterine cavity, where its presence, provided it is retained, is intended to prevent the embedding of the fertilized ovum. The advantages of such an unexact method of contraception are so manifest that the device was fairly widely studied some fifteen years ago, both here and on the Continent. Unfortunately, the risks involved in its use have proved greater than were at first anticipated. In addition to the fact that even in cases where the ring is retained the failure rate is high (5% at least; the ring often being born with the baby) the incidence of pain, menorrhagia, and metrorrhagia have been considerable, and subacute infections, acute salpingitis, etc., have been caused in healthy nulliparous women. Moreover, the device entails the utmost danger to women who have previously had, or who contract, gonorrhoea. One such case was reported which necessitated subsequent hysterectomy. Within the last few months, this device has achieved an alarming popularity, for certain practitioners claim it to be the method of choice, even for young nulliparous brides. Members of this committee have met with many cases of infective lesions occurring in such patients, which they will be happy to publish if it appears necessary. It is very difficult for the medical practitioner to obtain guidance on such a matter, and, without it, he is at a great disadvantage when his patients claim to have had friends who have been highly delighted with the method. In point of fact, no progress has recently been made in improving the essentials of the ordinary contraceptive technique: viz, for security, either some type of occlusive rubber cap must be used by the wife in conjunction with a chemical spermicide; or a sheath, preferably with a spermicide, must be used by the husband. Such methods are non-injurious, and offer a high percentage of safety (98% at least used over 10 fertile years), provided they are competently chosen and applied.

Severe Pre-eclamptic Toxaemia with Separation of Retina

Dr. JAMES A. WATERMAN writes from Trinidad: A 38-year-old married woman was admitted to the Colonial Hospital, Port of Spain, on May 16, 1945. With her first pregnancy twelve years previously the patient had suffered from toxæmia; child living. The present history was that she was seven months pregnant, and had had no antenatal care. She complained of generalized swelling of the body for three weeks and total blindness for seven days; bronchitis for two weeks. Examination on admission revealed numerous rhonchi in the lungs, and nothing abnormal in the heart. The urine was solid with albumin, and the pus present was very

offensive. Blood urea 0.033%. Blood pressure 230/150. An ophthalmoscopic examination by Mr. V. M. Metivier gave the following result: "Retinitis of pregnancy marked, papilloedema very marked in both eyes; retinal detachment in lower quadrant of right eye; extensive retinal detachment of left eye, several patches of exudate and a few haemorrhages; condition indicates profound toxæmia of pregnancy." The patient refused immediate operation. She became delirious on May 21, aborted on May 23, and died on the 25th.

Effects of Penicillin Lozenges

Mr. W. E. THOMPSON (Huddersfield) writes: Your correspondent, answering a question on the incidence of complications following oral penicillin treatment (Sept. 21, p. 447), concludes that the occurrence of stomatitis and glossitis from this cause is a rarity since only four cases have so far been reported. In the few months which have elapsed since penicillin became readily available to the public outside hospital this troublesome complication has necessitated suspension of treatment in three of my own cases and has been observed by some of my medical colleagues to whom I mentioned the cases in conversation. The patients were (1) an adult male with severe acute tonsillitis, (2) a young woman with chronic pharyngitis and subacute rheumatism, and (3) a middle-aged woman with aphthous buccal ulceration associated with early pregnancy. In all three the glossitis was very striking, and in the second case the degree of exfoliation was so marked as to cause the patient's relatives some alarm. Different batches of penicillin lozenges were employed for all three cases. None has been noted so far in children who in the main have received this form of local penicillin therapy more than adults. Judging by the complete absence of any such manifestation in a wide use of penicillin parenterally in hospital, often in massive dosage, it seems improbable that the responsible agent can be anything other than some impurity in the lozenges. Some direct evidence would, however, be welcome as to its nature and mode of action. These few remarks seem justified by the epithet "rare" applied by your correspondent to a complication which almost every doctor must now have seen. The inference is that the *rara avis* is not the clinical case but the medical practitioner who, under the harassing conditions imposed by modern panel practice, can find either the time or the inclination to record and ventilate his personal observations.

Dr. T. V. COOPER (Dorchester) writes: The implication of the answer (Sept. 21, p. 447), under the above heading, is that glossitis and stomatitis following the use of penicillin lozenges are very rare, but my experience would lead me to believe that the figure of 18% mentioned in the question is very near the truth. It is certainly the case that the incidence is high among one's fellow practitioners and nursing staff using this form of therapy, but I believe that this is merely due to the fact that these patients are more observant and more constantly observed. In the *British Medical Journal*, 1946, 1, 924, under the heading "Reports of Societies. Medical Uses of Penicillin," Sir Alexander Fleming commented that: "Penicillin lozenges were useful, but in certain patients produced an unpleasant stomatitis. Here again, while the streptococci disappeared from the mouth, their place was taken by penicillin-insensitive organisms, which might be worse for some patients than the streptococci." My limited observations have failed to confirm this explanation, and it is my belief that the source of the trouble lies in the lozenge base both by virtue of its mechanically irritating properties and the fact that there is sugar present, which is likely to irritate by its osmotic effect. During the war, in conjunction with some American colleagues who were in the district, I made some penicillin lozenges with a gelatine base, and about thirty so far as I know, which were treated with these, showed no complication. Thirty cases is a small number, but I feel convinced that if thirty cases were treated with the B.P. lozenge and carefully observed some instances of glossitis would probably be found. I observed complications so frequently that I hesitate to recommend the use of the present commercial lozenge until either the base is altered or some other reason for the glossitis is conclusively found.

Dr. W. T. S. McKEAN (Belfast) writes: In view of your statement in "Any Questions" (Sept. 21, p. 447) that only four cases of glossitis following treatment with penicillin lozenges have so far been reported I feel that I should put on record my own experience. Recently a rather active period in a long history of chronic tonsillitis prompted me to try penicillin lozenges. I consumed thirty-four lozenges in three days and then I stopped because my tongue was distinctly painful. During the next seven days the hard palate and then the angles of the mouth were involved, and it was only after ten days that I was able to smoke and drink normally hot fluids with comfort. Although the condition is unpleasant for the patient it can hardly be considered by the doctor as serious, and I feel that for this reason the incidence of glossitis and stomatitis is probably greater than the cases so far reported would indicate.

Medical Journals Wanted

Dr. DONALD PATERSON of 27, Devonshire Place, Wimpole Street London, W.1, informs us that the medical library of the University of Manitoba has during the war been unable to obtain, or has lost, copies of the following journals:

British Heart Journal, 1939, 1, No. 3 (July); 1942, 4, No. (July), (both out of print). B.M.A., Tavistock Square, London W.C.1.
British Journal of Experimental Pathology, 1937, 18, No. 3 (June 1935, 16, Nos. 1 (Feb.), 2 (Apr.); 1942, 23, No. 3 (June). H. I. Lewis & Co., Ltd., 136, Gower Street, London, W.C.1.
British Journal of Urology, 1942, 14, No. 2 (June). John Wrigg & Sons, Ltd., 28, Orchard Street, Bristol, 1.
British Medical Bulletin, 1943, 1, Nos. 1, 2, 4 (out of print 3, Hanover Street, London, W.1.
Glasgow Medical Journal, 1941, 18, No. 4 (Oct.), (out of print Alex. MacDougall, 104, West George Street, Glasgow, C.2.
Irish Journal of the Medical Sciences, 1945, No. 8 (Aug.). Cahill & Co., Ltd., Parkgate Printing Works, Dublin, Ireland. London 1, Farnival Street, E.C.4.
Guy's Hospital Reports, 1939, 89, No. 2 (Apr.); 1942, 91, No. (Apr.), (both out of print). Guy's Hospital, London, S.E.1.
Journal of Laryngology and Otology, 1941, 56, No. 3 (Mar.), (out of print); 1945, 60, Nos. 1-5 (Jan.-May). Headley Bros., 10 Kingsway, London, W.C.2.
Lancet, 1945, 2, No. 14 (Oct. 6). 7, Adam Street, Adelphi, London W.C.2.
Nature, 1927, 119, No. 14 (Apr. 2), (out of print); 120, No. 2 (Dec. 24), No. 27 (Dec. 31), (out of print); 1944, 153, No. 1 (Jan. 29), No. 6 (Feb. 5), No. 9 (Feb. 26), (out of print); 1945, 156, No. 1 (July 7), (out of print). Macmillan & Co., Ltd. St. Martin's Street, London, W.C.2.
Royal Army Medical Corps Journal, 1944, 83, Nos. 3-5 (Sept. Nov.), (out of print). Staples Press, Ltd., 83-91, Great Titchfield Street, London, W.1.

If any reader has a spare copy of any of these journals Dr. Paterson would be grateful if they could be forwarded to him so that it can help to fill the gaps in the medical library of the University of Manitoba.

Obsolete Addresses

Dr. L. MILLARD (Swynnerton) writes: May I, through your columns, make an appeal to manufacturers of drugs, instruments, etc., to check up through the *Medical Directory* the addresses of those to whom they wish to send advertisements and samples? A conscientious butler spends time almost every day readdressing as posting correspondence of this nature sent to an address which vacated at least five years ago, and I would like to relieve him of this self-imposed task.

Production of Medical Equipment

Dr. D. R. MACDONALD (Edinburgh) writes: Can nothing be done to speed up the production of medical apparatus? For example, it is at present impossible to purchase an ordinary diagnostic set or a Hamblin's ophthalmoscope without having to wait for about a month. I would suggest: (1) that manufacturers be given first priority for the materials which they require; (2) that export of the essential type of commodity be stopped; (3) that surplus Service stocks be at once placed on the second-hand market.

Penicillin in H. influenzae Meningitis: Correction

In a leading article on this subject (Oct. 5, p. 498) an important reference was omitted. The authors to whom credit is due for first observing that meningitic strains of *H. influenzae* are sensitive to penicillin were R. Forgas, R. Irene Hutchinson, and R. E. Rewell (*Lancet*, June 23, 1945, p. 785). They treated two cases of this disease: one died only twelve hours after admission, but the other recovered following combined treatment with penicillin and sulphadiazine. Both strains of *H. influenzae* "were sensitive to penicillin to about the same degree as the standard Oxford strain of staphylococcus." Subsequent detailed studies of more numerous strains have shown that the concentration required to inhibit the growth is usually between 0.5 and 2.0 units per ml. and intrathecal injection is required in order to maintain this concentration. Reference is again made to this subject in our leading article on p. 581 of this issue.

Corrections

We regret that in the *Journal* of Oct. 12 (p. 555 and in table of contents) Dr. C. E. S. Flemming's name was mis-spelt. There was also an error on p. 529 in the spelling of the full name of William Thomas Green Morton.

Bart's men will regret to hear that Sister Theatres is retiring. It is intended to show gratitude for many kindnesses by a small present. Donations may be sent to the Senior Resident Anaesthetist, St. Bartholomew's Hospital, E.C.1.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY OCTOBER 19 1946

PLEBISCITE ON THE HEALTH SERVICE ACT
The Memorandum reproduced below has been issued by the Committee of the Bournemouth Division of the British Medical Association to its members, and copies have been sent to secretaries of all the other Divisions in Great Britain.

THE BOURNEMOUTH MEMORANDUM

A plebiscite of all members of the profession will be taken in accordance with a decision of the Annual Representative Meeting of the B.M.A. in July last, on the simple issue of whether negotiations on regulations under the National Health Service Bill with the Minister of Health should take place or not. A vote upon this question will be tantamount to acceptance or rejection by a majority of the profession of the principles and essential structure of the Bill as finally enacted by Parliament. The question will have to be answered by each member of the profession individually. It is therefore vitally important that everyone should clearly understand the issues, for upon the decisions thus made the future of medicine in this country, the position of practitioners and patients, and perhaps much else will depend.

When the voting paper for the plebiscite is issued by the Association it will be accompanied by a statement of the issues, and at least one meeting of members and non-members upon the subject will be held in this, as in other, Divisions. But there may then be little time for coming to a decision, so that it is important for each of us to begin thinking about it now and to discuss it with others. Attention is therefore drawn to the statement by the Chairman of Council published in the *British Medical Journal* on Aug. 3, 1946 (p. 168), and the following considerations are also put forward at this time by the Committee of this Division in the hope that they will be helpful to members and non-members:

Structure of the Service

The structure of the Service as laid down by the Bill (which is not expected to be modified materially before enactment) is as follows:

The Minister of Health will be the supreme controlling authority responsible to Parliament. He will be advised by a Central Health Services Council of which the members (except for certain *ex officio* members) will be appointed by the Minister. The Council will be mainly professional (medical, dental, pharmaceutical, and nursing), but will also contain lay persons with experience in local government or hospital management. The Minister will also be advised directly or through the Central Council by Standing Advisory Committees, appointed by him, on various aspects of the Service. The school, industrial, and certain other medical services will continue to be administered by other Government departments (but may be included later).

The Service will be in three divisions, co-ordinated only through certain personnel and through the Minister, viz.: (a) hospital and specialist; (b) local authority; (c) general medical, dental, and other services.

The *Hospital and Specialist Services* will be organized regionally, or if necessary in certain aspects nationally, with Regional Boards (of which the chairman and members, professional and lay, will be appointed by the Minister) and Hospital Management Committees appointed by the Regional Boards and composed of representatives of local authorities, Executive Councils, and the medical and dental staffs. There will be committees of medical staff as of other "health workers" in hospitals. The method of employment of medical staff remains undetermined. The present endowments of hospitals will be taken into a national fund and redistributed to the Regional Boards and to Hospital Management Committees.

Local Authorities (County or County Borough Councils only) will be responsible for provision and maintenance of health centres and

for certain services, e.g., maternity and infant welfare (apart from hospital), home visiting and help, and ambulance. Experiment will be made in the form of health centres, which will be provided and administered by the local authorities. Doctors using the centres will pay for such use.

General Practitioners (and dentists and pharmacists) will be in contract with an Executive Council on a county or county borough basis. The chairman and some of the lay members of each council will be appointed by the Minister; other lay members, up to 50%, will be nominees of the local authority; the remaining 50% will be medical (appointed by a committee of local general practitioners), dental, and pharmaceutical. General practitioners will be remunerated by basic salary plus capitation. They will not be allowed, under severe penalties, to buy or sell their practices; they will have to obtain permission to practise in any area or to change to another area. If the continued inclusion of any practitioner is considered after inquiry to be "prejudicial to the efficiency of the Service" he may be prevented from further practice in either his own area or any other area, and will have no right of appeal to a Court from the final decision of the Minister. The right of any registered practitioner to enter the Service is not conceded. General practitioners will be compensated if entering the Service on the appointed day (April 1, 1948) for loss of the goodwill of their former practices. Such compensation will be paid in full only on retirement, death, or special necessity; otherwise only interest (2½ p.a.) on the value will be paid.

Private Practice. The right of private practice is conceded but the Minister will control the use of private wards in hospitals and have powers to acquire compulsorily any private nursing institution, and in these and other ways may lessen or remove the facilities for private practice.

How the Principles are Affected

The Principles enumerated by the Negotiating Committee and generally agreed as essential are affected by the Bill as follows:

1. "The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full-time salaried servants of the State or local authorities."

Under the Bill, general practitioners will be part-salaried State servants with no security against becoming full salaried. Specialists will be remunerated servants of the Regional (State-owned) Hospital Boards. Public health medical officers will, as now, be employees of local authorities.

2. "The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards, and knowledge, the individual doctor retaining full responsibility for the care of the patient, freedom of judgment, action, speech, and publication, without interference in his professional work."

This is not expressly provided for or against in the Bill, but as a salaried or part-salaried servant the doctor's responsibility will be divided between his patients and his employer, the State.

3. "The citizen should be free to choose or change his or her family doctor, to choose in consultation with his family doctor the hospital at which he should be treated, and free to decide whether he avails himself of the public service or obtains the medical service he needs independently."

This freedom is more or less recognized in the Bill but will be obviously limited by regionalization of hospitals and specialist services, the restrictions upon the general practitioner, and the powers of the Minister to limit or abolish private practice.

4. "Doctors should, like other workers, be free to choose the form, place, and type of work they prefer without governmental or other direction."

Under the Bill there will be indirect interference with choice of place of general practice. It appears also that it will be difficult to change from one form of practice to another—e.g., general to special practice.

5. "Every registered medical practitioner should be entitled as a right to participate in the public service."

This has not been agreed.

6. "The hospital service should be planned over natural hospital areas centred on universities in order that these centres of education and research may influence the whole Service."

This has apparently been accepted but the determination of the hospital regions has still to be made. All hospitals will be owned and managed by the State.

7. "There should be adequate representations of the medical profession on all administrative bodies associated with the new Service in order that doctors may make their contribution to the efficiency of the Service."

There will be medical members on the Central Health Service Council and Advisory Committees; also on the Medical Practices Committee and the Regional Hospital Boards and Hospital Management Committees, but they will be appointed by the Minister, not elected. On the Executive Councils (general practice) the medical members will be the nominees of the local medical practitioners. The chairmen of all these councils and committees will be appointed directly or indirectly by the Minister. The Health Committees of the local authorities will not necessarily contain medical members or be advised by a medical committee.

The principal issue is that of the freedom of patient and doctor, whose interests are in fact identical. The institution of a nationally organized medical service has been accepted in principle by the profession. The incompleteness of the service to be provided under the new Act is disappointing but may be corrected in time. The lack of consultation with the profession's representatives in preparing the Bill is deplorable but could not be the basis for standing out of the Service. The acquisition of the hospitals by the State is against the policy of the B.M.A. as determined at the Special Representative Meeting in May last, when the voting against was 210 to 29. Other sections of the profession and existing hospital management committees are not so strongly opposed and State-ownership is supportable logically in a national organization paid for by taxation and compulsory universal insurance. While in existing circumstances, therefore, the hospital position may not by itself be strong enough ground for general opposition to the Bill, it must be taken into account with the other issues.

Threats to Freedom

The freedom of patients and doctors will be imperilled by the following:

1. By the power of the Minister to diminish or abolish private practice, for freedom of choice and action of patient and doctor and freedom in determination of terms and conditions of medical work could be maintained only with difficulty if there were no alternative to the State service.

2. By refusal of the right of any registered practitioner to enter the Service.

3. By employment of doctors by salary whether whole or part-time, since that will mean for the patient divided loyalty on the part of his doctor, and for the doctor at least some measure of control of his life and professional activity.

4. By direction of the general practitioner as to where he may not practise or remove elsewhere to practise.

5. By abolition of the sale and purchase of goodwill of practices severe penalties (new to this country) against infringement.

6. By lack of right of appeal to a Court against the decision of the Minister to forbid continuance (of a general practitioner) in the Service, the effect of which would be removal of means of livelihood, especially if private practice had been eliminated.

7. By the powers of the Minister to appoint chairmen of administrative councils, boards, and committees and members thereof except for a few *ex officio* or otherwise nominated.

8. By the State ownership of all hospitals, making for rigidity of administration and standardization of practice and equipment, with some loss of the personal touch needed in a medical practice; making also for conversion of specialists into whole- or part-time State servants.

In brief, the Bill, while aiming at a more readily available, co-ordinated, and economical medical service for the nation, contains in some of its provisions grave menaces to the freedom of patients and doctors. With this in mind, each one of us must take the responsibility of deciding the attitude of the profession as to whether the Bill, if enacted in its present form,

is acceptable or so unacceptable that it would be inadvisable for the Association to take part in the formation of the regulations under the Act.

NOTE.—The Minister is already proceeding to form the administrative committees of the Service and to invite individuals to take part in them. Attention is therefore drawn to the following resolution passed at the recent A.R.M. by a large majority: "In the view of this Representative Meeting no registered medical practitioners should accept membership of any committee or board established under the National Health Service Act until the results of the forthcoming plebiscite are available."

DORIS ODLUM, Chairman.

N. ROSS SMITH, Secretary.

Bournemouth Division B.M.A.

Sept. 2, 1946.

HEARD AT HEADQUARTERS

Hospital Treatment of School-children

There is still some uneasiness about the payments for the in-patient treatment of school-children under the recent Education Act. The Annual Representative Meeting passed a resolution in which dissatisfaction was expressed, and some Divisions have continued to testify to the apprehension felt by their members, pointing out various inconsistencies in the scale, and urging Headquarters to take the matter up again with the Minister of Education. The Public Health Committee at its meeting the other day received a deputation from the Association of Honorary Staffs of Major (Non-teaching) Voluntary Hospitals, when strong representations were made. A joint committee of the Public Health, Hospitals, and Consultants and Specialists Committees of the Association, with two representatives of the Association of Honorary Staffs, has been set up with a view to reopening the question with the Minister, and it is urged that, as discussions are proceeding, any fresh agreements which are entered into should be specifically stated to be "without prejudice."

A Scottish Impediment

The Scottish Office of the Association has been subjected to some embarrassment, and some Scottish practitioners have experienced disappointment, because it has not been made clear that the Medical Insurance Agency scheme for the purchase of a practice does not apply in Scotland. This is not because the Agency desires to rule out Scotland from the benefit of the scheme: it is due to the state of Scottish law. It will be remembered that the scheme of the Medical Insurance Agency, which the Association recommends, is run in conjunction with the Westminster Bank, which in approved cases is prepared to lend money up to the purchase price on security of the first charge on the practice or partnership and collateral assurance cover for the full amount of the loan. Under Scottish law, however, the goodwill of a practice is not a negotiable asset. Consequently the banks there will not make the advance. This is to be regretted, but it is the actual position; and any grievance is not against those who have introduced the loan scheme, but against the disparity between the legal systems of the two countries. The systems are gradually being co-ordinated, generally by the penetration of English rules into the law of Scotland, but they are not yet so closely related that this scheme is workable north of the Border. It is unfortunate that this has not been made clear in what has so far been published about the scheme.

The Closed Shop

The "closed shop" issue, which has recently assumed a large, if transitory, prominence in this country, has had to be faced by the medical profession in Canada, where the pressure seems to have been successfully resisted and the medical profession to have won the last round. The trade unions have been told in the first place that the medical profession is not a trade and therefore not eligible for trade union membership. In answer to that, of course, it would immediately be pointed out that there are bodies of professional men and women which are in the legal sense trade unions. It was also urged

that doctors could not be bound by hours of service as trade unionists are bound, and that they are fully licensed as a profession at law so that they could not be compelled to join any group; and it was asked what advantages could possibly accrue to local authorities, trade unions, and the public if it was insisted that medical officers employed by public bodies must join a trade union.

In view of the action of a few councils in this country it is proposed that representatives of the B.M.A. should meet representatives of the T.U.C. with a view to the reassertion of the hitherto undisputed claim of the B.M.A., while not a trade union, to speak for the whole profession. Meanwhile the "closed shop" talk seems to be dying down, and the Transport and General Workers Union, which brought the matter forward, is altering its tone. Some decision will be reached by the Trades Union Congress at Brighton at the end of the month.

The "Doctor" Sign on Cars

The retention of the "Doctor" sign on a good many cars has led to quite heated discussions in some quarters. The sign was introduced originally for use in extreme national emergency, but its display now would be hard to justify in many cases. It is not uncommon to find the sign on many cars parked outside a hall where the local doctors are holding a meeting, and it has been seen outside social clubs where the doctor was certainly not attending in a professional capacity. No doubt some case could be made out for its retention because many journeys of the doctor's car are as urgent as those of the ambulance, which carries its own designation. At the same time the use of the sign on ordinary occasions suggests a priority which may be resented by other road users on important business and is not desired by a very large number of doctors. The Executive Committee of the Stratford Division of the B.M.A. has passed a resolution condemning the continued use of the sign and asking the Council to take some action which would discourage it.

Publicity for Penicillin

Complaint is made in one Branch Council at least of the recent announcement in the lay press that penicillin was being released to chemists throughout the country, with the intimation that it would now be available on a doctor's prescription. One objection is that such an announcement, which is of a professional and technical nature, should have been made in the professional, not the lay, press; another, that the announcement suggests that penicillin has been withheld from patients because it is not available to general practitioners; and again it is complained that the announcement has meant that doctors are inundated with inquiries from every type of patient as to whether theirs was not "a penicillin case." The answer might well be that even if the announcement had been made in the professional press in the first instance, it would immediately have been copied in the lay press; that it is well understood that the civilian issue of penicillin was restricted so long as the great need for its use in the Services existed and manufacturers could not fully cope with the demand; and that so far as the conclusions which patients and potential patients may draw from any such announcement are concerned, this would apply to news about any remedy. It is surely for the doctor to explain to his patient, if necessary, the limitations of the new remedy.

Panel Conference Dinner

The Panel Conference, which in recent years has been a rather brief affair, is expected this year to go into the second day. A dinner is to be held—cooks and waiters permitting—on the evening of Oct. 24, when a presentation will be made to Dr. Guy Dain in appreciation of his long and valuable services to insurance practitioners, to which have since been added conspicuous services as Chairman of Council. But this is an insurance practitioners' affair, and the presentation is part of the Dain Testimonial Fund to which Panel Committees subscribed before the war. Owing to the war the formal presentation has not yet taken place.

UNEMPLOYMENT AMONG EX-SERVICE PRACTITIONERS

Attention has recently been focused in the correspondence columns of the *Journal* on the difficulties facing ex-Service practitioners on their return to civil life. The Council of the Association has for some time been aware of deficiencies in the Government's postgraduate scheme for ex-Service doctors and of the urgent need to provide for them suitable and adequately remunerated employment. A special committee of the Association has been considering these and other problems affecting the returning practitioner and has made a number of recommendations which were considered by the Council at its meeting on July 23, as a result of which representations have been made to the Minister on the following points:

(a) That the number of Class I hospital posts under the Government's postgraduate scheme should be increased to enable ex-Service practitioners eligible for such posts to obtain them at a reasonably early date subsequent to their release from the Forces.

(b) That the attention of hospitals be drawn to the fact that there are now full specialists available for appointment to hospital staffs, and it would be both in their own and the national interest to review their staffing position now with a view to restoring it at least to the 1939 level and to increase the hospital establishments where possible.

(c) That a greater number of Class III hospital posts be authorized both in teaching and non-teaching hospitals to expedite the absorption of ex-Service practitioners eligible for such appointments under the Government's postgraduate scheme.

(d) That the present restriction whereby only those ex-Service practitioners who can prove intent to specialize before recruitment to the Forces and who were not established either in general or special practice are immediately eligible for Class III appointments be removed, and that Class III appointments under the Government's scheme be open to ex-Service practitioners who have made progress in the direction of specialism during their service with the Armed Forces.

Word has now been received from the Ministry of Health that authority has been given to a scheme designed to help ex-Service practitioners—both those fully qualified specialists able to take senior posts in hospitals without the need for supervision, and also the more junior specialists not yet qualified to take full responsibility in a higher post. For the former the Ministry proposes to invite local authorities and the larger voluntary hospitals to increase their hospital establishments by creating additional whole-time posts wherever the volume of specialist work justifies it. The salary of these posts will be met from the Exchequer and will be of the order of £1,000 a year. It has been suggested to employing authorities that the selection of ex-Service candidates for these posts should be made in consultation with the dean or director of postgraduate studies of the appropriate university. For the latter the Ministry proposes to enlarge the facilities for postgraduate training both by extending the duration of the appointments and, as far as may be practicable, by addition to the number of posts. The Ministry further states that everything possible will be done to enable ex-Service practitioners to obtain Class I hospital posts under the Government's postgraduate scheme at a reasonably early date after their release from the Forces.

For those ex-Service practitioners who, though unable to prove intent to specialize before recruitment, have attained full specialist status in the Forces, the Ministry has agreed that, subject to approval by the deans and directors of postgraduate studies at the appropriate universities, Class III posts will be made available for them under the Government's postgraduate scheme. Candidates selected by hospitals will, in the first place, serve for a probationary period of six months, which will be extended if the dean or director of postgraduate studies concerned reports that the candidate is suitable for further training.

Discussions are now taking place with the Ministry on the question of affording further specialist training to those ex-Service practitioners who attained graded specialist status in the Forces. The Ministry has, however, pointed out that it is customary in such cases to grant a Class I post for six months on probation with a view to promotion to a Class III post at the end of that period.

Tenure of Appointment in B1 Posts

A communication has been sent to hospital authorities urging that the senior resident hospital appointments, including B1 appointments, which have been held by the present occupants

for two years or more, including those held by alien practitioners, should be re-advertised as soon as the relevant contract or agreement permits in order that demobilized practitioners may have an opportunity of applying for them.

General Practice

The Council of the B.M.A. is aware that the above concessions do not touch upon the difficulties facing those ex-Service practitioners who intend to enter general practice. It wishes to remind this group of practitioners that a special section of the Secretariat has been set up at headquarters to advise on general practice problems, and it welcomes inquiries both from those contemplating taking in, and those desirous of obtaining, partnerships and assistantships.

Association Notices

GROUP OF ANAESTHETISTS

A meeting of the recently formed Group of Anaesthetists within the Association will be held at B.M.A. House, Tavistock Square, W.C.1, on Friday, Nov. 1, 1946, at 2 p.m. All members of the Association who are engaged predominantly in the practice of anaesthetics are eligible for membership of the Group and both those anaesthetists who have already applied for membership, and those who now contemplate joining, are invited to attend.

The agenda will consist of (a) the election of a chairman; (b) consideration of the size of the Group Committee; and (c) a general discussion on the work of the Group.

(Sgd.) CHARLES HILL,
Secretary.

CONSULTANTS AND SPECIALISTS COMMITTEE

As a result of the recently held elections, the following have been appointed representatives on the Consultants and Specialists Committee for the session 1946-7:

Twenty members elected on a regional basis by consultants and specialists who are members of the Association and who are engaged exclusively in consultant and specialist practice:

- Region 1: Dr. A. A. McI. Nicol, Sunderland.
- Region 2: Dr. E. A. Gerrard, Manchester.
- Region 3: Mr. J. T. Morrison, Liverpool.
- Region 4: Mr. D. Watson, Bradford.
- Region 5: Dr. J. W. Brown, Grimsby.
- Region 6: Dr. P. C. P. Cloake, Birmingham.
- Region 7: Dr. Ff. Roberts, Cambridge.
- Region 8: No nomination.
- Region 9: Mr. H. L. Shepherd, Bristol.
- Region 10: Mr. A. L. Abel, London.
Dr. Geoffrey Bourne, London.
Dr. Geoffrey Evans, London.
Sir Cecil Wakeley, London.
- Region 11: Mr. H. J. McCurrah, Hove.
- Region 12: Mr. N. Ross Smith, Bournemouth.
- Region 13: Dr. C. J. Fuller, Exeter.
- Region 14: Prof. G. I. Strachan, Cardiff.
- Region 15: Dr. I. G. W. Hill, Edinburgh.
- Region 16: Dr. W. R. Snodgrass, Glasgow.
- Region 17: No nomination.

Five members elected on a national basis by members of the Association who are engaged part-time in consultant and specialist practice:

- Dr. W. J. Bethune, Inverness.
- Dr. J. W. Buchanan, Edinburgh.
- Mr. W. J. Payne, Darlington.
- Dr. C. B. Prowse, Hove.
- Dr. W. Yeoman, Harrogate.

Diary of Central Meetings

OCTOBER

- 23. Wed. Special Meeting of Council, 12 noon. (Change of time.)

NOVEMBER

- 6. Wed. Ordinary meeting of Council, 10 a.m.

Branch and Division Meetings to be Held

COVENTRY DIVISION.—Tuesday, Nov. 5. B.M.A. Lecture by Dr. Douglas Guthrie.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Medicine.—Tues., 5 p.m. Presidential address by Maurice Davidson: Judgment in Medicine.

Section of Endocrinology.—Wed., 5.30 p.m. Discussion: O activity of the adrenal cortex. Openers, Mr. L. R. Broster (clin aspects), Dr. E. F. Scowen and Dr. F. L. Warren (biochem aspects). Followed by Dr. A. C. Crooke and others.

Section of Urology.—Thurs., 8 p.m. Presidential address by R. H. O. B. Robinson: Some problems of renal lithiasis.

Section of Epidemiology and State Medicine.—Fri., 2.30 p.m. Discussion: Health problems in Germany. Opener, B. J. Kennedy. Followed by Col. Horsburgh and H. A. Raeburn.

Section of Paediatrics.—Fri., 5 p.m. Paper by Prof. Deboi Kala-azar in infancy.

POSTGRADUATE NEWS

A Course of Lectures and Demonstrations will be held at London Chest Hospital on Fridays at 5 p.m. during the Winter Session from Nov. 1 to Dec. 13, and from Jan. 10 to March inclusive. The Course is free to all graduates. Applications should be made to the Dean, London Chest Hospital, Victoria Park, E.2

The Fellowship of Postgraduate Medicine announces the following courses. (1) Week-end course in rheumatism, all day Saturday and Sunday, Oct. 26 and 27, at Rheumatic Unit, St. Stephen's Hospital, Fulham Road, S.W.; (2) course of six lectures on the clinical aspects of psychiatry, on Tuesdays and Wednesdays (afternoons), at Westminster End Hospital for Nervous Diseases, from Nov. 5 to 20.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Dr. Bain: Aetiology and Treatment of Appendicitis.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, W.C.—Thurs., 5 p.m. Dr. W. J. O'Donovan: Psychomatic Dermatoses. Thurs., 5 p.m. Dr. G. Duckworth: Virus Diseases of the Skin.

APPOINTMENTS

LONDON COUNTY COUNCIL.—The following appointment has been made in mental health services of the Council at the hospital indicated in parentheses: Medical Superintendent: J. H. Watkin, M.D. (Leavesden).

O'DONNELL, J. H., F.R.C.S., D.L.O., Honorary Assistant Surgeon to the Ear, Nose, and Throat Department, Leicester Royal Infirmary.

PILKINGTON, FRANCIS, M.B., M.R.C.P., D.P.M., Medical Superintendent, City of Plymouth Mental Hospital.

ST. GEORGE'S HOSPITAL, S.W.—Director of Pathological Services, T. Cranle M.D. Assistant Orthopaedic Surgeon, R. H. Young, F.R.C.S. Director Physiotherapy Department, D. C. Shields, B.M., B.Ch. Surgeon-in-Charge Proctology Department, R. Marnham, M.Chlr., F.R.C.S. Ophthalmic Surgeon, J. H. Duggan, M.D. F.R.C.S. Assistant Obstetric and Gynaecological Surgeon, A. H. Charles, F.R.C.S. Assistant Psychiatrist, Sir Paul Mallin, Bt., B.M., B.Ch. Psychiatrist to Children's Department, Emanuel Mill M.R.C.P.

WOOD, E. A., M.D., M.R.C.P., Honorary Consulting Physician, Bea Hospital.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or 18 Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

GRAY.—On Oct. 7, 1946, at the Queen Elizabeth Hospital, Birmingham, to Mr. (née Stanton), M.B., Ch.B., wife of S. C. Gray, B.Sc., Ph.D., a son.

JOSEPH.—On Oct. 4, 1946 at Grosvenor House Nursing Home, Stockport, Enie (née Reubens), wife of Capt. Leslie Joseph, R.A.M.C., a daughter Susan Irene.

MOSELI.—On Oct. 5, 1946, at Carlisle, to Margaret Mary (née Carlyle), wife of Dr. A. Mosell, a daughter—Magdalen.

PLAYFAIR.—On Oct. 3, 1946, at Whitby to Margaretta, wife of Dr. Alexan S. Playfair, a son—Rodney William Sedgwick, brother to David.

PRIEST.—On Oct. 3, 1946, in London, to the wife of Dr. W. M. Priest, a son. REILLY.—On Oct. 9, 1946, at St. Mary's Hospital, W.2, to Joy (née Pea wife of Dr. M. C. T. Reilly, a daughter—Susan Margery.

SCADDING.—On Oct. 12, 1946, at Hammersmith Hospital, to Mabel, wife of Dr. J. G. Scadding, a daughter.

SKINNER.—On Sept. 25, 1946, to Doris (née Wright), wife of Dr. George Skinner, a daughter—Rosalind Doris.

THOMAS.—On Oct. 11, 1946, to Joyce (née Parker Gray), wife of Dr. S. Thomas, M.B.E., a daughter.

MARRIAGES

KONSTAM—RITCHIE.—On Oct. 12, 1946, at Alford, Aberdeenshire, Peter Konstam, F.R.C.S. (Licent.), R.A.M.C., to Sheila T. Ritchie, M.B., Ch.B.

O'CALLAGHAN—LEE.—On Oct. 9, 1946, in Manchester, Dr. W. O'Callaghan Suzanne Lee.

TEMPLEMAN—WILLIAMSON.—On Sept. 7, 1946, at St. Nicholas Cathedral, Newcastle, Geoffrey Hugh Templeman, M.B.E., M.B., of Leeds, to Mrs. A. Williamson (née Thompson), P.M.R.A.F.N.S.

DEATH

WILLIAMS.—On Sept. 29, 1946, at Bars House, Chester, Owen Elias Williams, M.R.C.S., L.R.C.P., aged 58.

LONDON SATURDAY OCTOBER 26 1946

THE BLOOD GROUP Rh*

BY

D. F. CAPPELL, M.D., F.R.S.Ed.

(From the Department of Pathology of the University and Western Infirmary, Glasgow)

PART I

A REVIEW OF THE ANTIGENIC STRUCTURE AND SEROLOGICAL REACTIONS OF THE Rh SUBTYPES

The discovery of the Rh factor illustrates very strikingly how pure scientific research may yield unforeseen results of great practical importance. Physicians who frequently practised blood transfusion had long been aware that, in spite of the most careful matching of the donor's blood by the methods then in use, some patients receiving repeated transfusions became progressively more difficult to transfuse owing to the occurrence of severe reactions. It was also known that such intra-group transfusion reactions occasionally occurred at the first transfusion, but only where the patient was pregnant or had been recently delivered. The finding of "irregular" iso-agglutinins in the blood of such a case had also been recorded (Levine and Stetson, 1939). The term "irregular" implied that these agglutinins did not conform to the scheme of the four blood groups, A, B, AB, O. But these observations remained isolated and uncoordinated until the discovery of the Rh factor by Landsteiner and Wiener in 1940.

These workers observed that the injection of blood from rhesus monkeys into rabbits or guinea-pigs led to the development of antibodies which reacted not only with the red blood cells of those monkeys but also with the cells of 85% of the white population; such persons were termed Rh-positive and the remaining 15% Rh-negative. It is interesting to note that the cells of some primate monkeys—e.g., chimpanzees—are uniformly Rh-negative (Wiener and Wade, 1945). Almost immediately Wiener and Peters (1940) applied the discovery of the Rh factor in man to the identification of the irregular iso-agglutinins found in three sufferers from incompatible intra-group transfusion reactions.† It was shown that all three recipients were Rh-negative, while the transfused blood was Rh-positive; accordingly they explained the intra-group incompatibility by the hypothesis that the Rh factor of the transfused blood had acted as an antigen and had brought about iso-immunization of the Rh-negative recipients. Levine and his co-workers (1941) then demonstrated that the liability to severe intra-group transfusion reactions in the puerperium, usually associated with some foetal abnormality such as hydrops or erythroblastosis, was due to iso-immunization of Rh-negative women by pregnancy with a Rh-positive foetus, and they suggested that not only the maternal transfusion reaction but also the foetal disease was brought about by the action of Rh antibodies. These fundamental observations were quickly confirmed by workers in this country (Boorman, Dodd, and Mollison, 1942; Race, Taylor, Cappell, and McFarlane, 1943), and the various disorders—hydrops foetalis, icterus gravis, and congenital anaemia—were included under the heading "haemolytic disease of the newborn." The significance of iso-immunization of Rh-negative mothers was shown by statistical studies:

thus about 90% of the mothers of infants with haemolytic disease were found to be Rh-negative, while all the infants were Rh-positive.

Wartime difficulties made it impossible for most workers in Great Britain to use immune sera prepared against the cells of rhesus monkeys, but sera from Rh-negative persons who had suffered intra-group transfusion reactions and sera from the mothers of erythroblastotic babies were found to be suitable for the classification of human bloods into the Rh-positive and Rh-negative types. Family studies have shown that the Rh factor is inherited as a simple Mendelian dominant† determined by an allelomorph pair of genes—Rh and rh—but it must be noted that the Rh-negative quality of blood (rh) does not imply merely the absence of the Rh-positive quality (Rh), for it will be shown later that both Rh and rh are responsible for the presence of antigens in the red cells each of which can be detected in specific fashion by its appropriate antiserum. The Rh-rh genes are situated upon a different pair of chromosomes from those for the ABO and MN groups. When an individual possesses two similar genes for a character he is said to be homozygous; when dissimilar genes are present he is heterozygous for that character. There are thus three genetic classes of persons—the homozygous Rh-positive (RhRh), the heterozygous Rh-positive (Rhrh) and the homozygous Rh-negative (rhrh). Further, it will be shown below that Rh and rh are not simple entities, but represent gene-complexes, each of which is composed of three closely linked genes, and some at least of the gene loci are the seat of multiple allelomorphism.

The Discovery of Irregular Agglutinins acting on the Rh-negative Gene Product (rh)

In 1941 Levine, studying the serum from the Rh-positive mother of an erythroblastotic baby, detected a weak agglutinin giving about 30% of positive reactions, which he named anti-Hr because it reacted with all Rh-negative bloods. This was the first instance of an "irregular" agglutinin acting against the Rh-negative component (rh). Further development on these lines by the American workers seems to have been hindered by their possessing at this time only a weak serum which missed many bloods. Details concerning such sera were not published until further and more powerful examples had been found by Waller and Levine (1944) and by Wiener, Davidsohn, and Potter (1945). Meanwhile, independently, a powerful irregular agglutinin was detected by Race and Taylor (1943) in the serum of an Rh-positive mother whose second and third children suffered from haemolytic disease. This serum (then named St after the patient's surname) was proved by a large-scale investigation to react with 80% of all bloods, including all Rh-negative

* A B.M.A. lecture delivered before the Ayrshire Division on Feb. 24, 1946.

† Moureau (1941) made similar observations independently, but his work was obscured by the war.

† It is, of course, recognized that this is not true Mendelian dominance, and that with appropriate reagents both Rh and rh can be detected.

bloods. It was therefore important to know whether this serum would detect the Rh-negative factor where it was associated with a Rh-positive factor—e.g., in the heterozygous state—and this it was found to do. In the first place, certain heterozygotes could be identified on genetic grounds—viz., the Rh-positive children of a Rh-negative parent or the Rh-positive parent of a Rh-negative child—and all of these were found to react positively with the St serum. It was also observed that the reactions with heterozygote bloods were weaker than those with homozygous Rh-negative cells and gave a lower titre or end-point. Consequently it was possible to deduce from the results of titration whether a given blood contained one or two Rh-negative factors reacting with the St serum. This has been termed the "single dose" and "double dose" effect, and explains why Levine's original anti-Hr serum gave such a low proportion of positive results (about 30%); clearly it detected only the "double dose" cells—i.e., the homozygous Rh-negatives (15%) and the type now known as Rh₂ (15%). (Later it was shown that the 20% which reacted negatively lacked the Rh-negative (rh) gene complex—i.e., they were mainly the homozygous Rh₁Rh₁ group—see below.) It is now clear that the anti-Hr sera of Levine and of Wiener are similar to the St serum of Race and Taylor and, accordingly, that Levine's hypothetical Hr factor is merely that part of the Rh-negative (rh) gene-complex which is specifically detected by such sera. Levine and Wiener independently demonstrated that the Hr property behaves, when anti-Hr serum is used to detect its presence positively, as a simple Mendelian dominant, but they have been reluctant to include this property in the Rh scheme of genotypes. To postulate an independent pair of allelic genes for the inheritance of Hr is not sufficient to explain its complex relationships with the Rh genotypes; for a powerful anti-Hr serum like St reacts with approximately 80% of bloods, including both the Rh-positive type and the Rh-negative. Not only must the Hr genes be situated upon the same chromosome pair as the Rh genes but in fact they form an integral part of the Rh gene-complex, as is shown below.

Other Irregular Agglutinins

The intensive study of sera from cases of transfusion reaction and from mothers of infants with haemolytic disease soon revealed the occurrence of other sera possessing very different specificities. In England two sera (identified by the initials K.J.) from Rh-positive mothers of affected infants were found almost simultaneously which reacted with 30% of all bloods, including a very few found to be Rh-negative with the standard 85% sera (Race, Taylor, Boorman, and Dodd, 1943); and shortly afterwards we obtained from a Rh-negative mother who had given birth to a macerated foetus a serum which agglutinated about 70% of all bloods, including about 1% of bloods negative with standard anti-Rh serum (85%) but failing to agglutinate about 15% of bloods positive with the 85% serum (Race, Taylor, Cappell, and McFarlane, 1944). Thus British workers had obtained four separate types of sera containing irregular agglutinins—referred to hereafter as "standard anti-Rh," "80%," "70%" (revised anti-Rh' of Wiener, 1943) (revised anti-Rh" of Wiener) sera. It was also observed that some sera had the properties of two of the four—viz., the standard anti-Rh along with either the 70% or the 30% agglutinin in addition. In America, Wiener (1941) had already found a serum giving only 70% of positives (mainly among Rh-positive bloods), and had named it anti-Rh₂ to distinguish it from the standard serum giving 85% positives. Later Wiener and Sonn obtained a serum that contained two agglutinins of unequal strength both of which acted on certain bloods, and by dilution they were able practically to eliminate the action of the weaker antibody and thus obtain a serum giving only 30% of positive reactions; this they named anti-Rh₁. Wiener had also studied sera containing the 85% agglutinin (standard anti-Rh₁) in good strength together with either (a) the 70% agglutinin or (b) the 30% agglutinin. After some vacillation these double agglutinin sera were finally called respectively anti-Rh₁ and anti-Rh₂ (Wiener, 1944a). It soon became clear that Wiener's 85%, 70%, and 30% sera were in fact the same three single types of agglutinin as were used by British workers, but Wiener did not at that time have the advantage of using a powerful serum acting on Rh₂ and Rh-negative (rh) elements (St=Hr).

By means of his sera Wiener (1944b) was able to subdivide Rh-positive bloods (i.e., those agglutinated by the 85% serum) into three subtypes, which he named Rh₁, Rh₂, and Rh, and also Rh-negative bloods into three subtypes—Rh', Rh'', and rh. Further, he recognized that Rh₁ was closely related in its reactions to Rh', and Rh₂ to Rh''. Race, Taylor, Cappell, and McFarlane (1944) had independently reached similar conclusions, and so, in view of the close concordance of our results with Wiener's, we accepted his terminology, with the minor modification of using Rh₁ for his Rh type. By the additional use of the powerful St serum we were able to detect most of the heterozygotes and thus to identify the genotypes of approximately 80% of persons. In addition, the St serum enabled us to discover a seventh variety of Rh (now called Rh₃) and later to predict the probable existence of an eighth very rare form (Rh₄). Recently a fifth type of single agglutinin serum has been found by Mourant (1945) in a male patient who had received repeated blood transfusions. This serum, like St, reacts with all Rh-negative bloods and with heterozygotes possessing the Rh-negative gene-complex, but it differs from St in failing to react with a proportion of the subtype Rh₂. This evidence points to the probability that the patient himself, and also others whose cells are not agglutinated by his serum, are homozygous Rh₂Rh₂.

Since the Rh factor is genetically determined, it follows that each individual possesses two factors (either or both of which may be a Rh type or rh). One is inherited from each parent, and the overlapping of their reactions makes it impossible in some cases to determine the genotype exactly. Some Rh types are common and others rare, and it is therefore customary to assign each person's genotype to the most common group having the given serological reactions, unless a study of the segregation of the genes in other members of the family enables a more exact allocation to be made. The terminology applied to the individual Rh subtypes and their behaviour with the four single agglutinin anti-Rh sera are set out in Table I: for comparison their reactions with guinea-pigs' anti-rhesus serum are given.

TABLE I.—Human Single Agglutinin Sera

Rh Subtypes	Guinea-pig Anti-rhesus Serum	85% (Anti-Rh ₁)	80% (St: Anti-Hr)	30% (Anti-Rh')	70% (Anti-Rh'')
R ₁	+	+	—	—	+
R ₂	+	+	+	+	—
R ₃	+	+	+	+	+
R ₄	+	+	—	+	+
R'	—	—	—	—	—
R''	—	—	+	+	+
R ₃	—	—	+	+	+
rh	—	—	+	—	—

*Reactions in brackets predicted.

Early Views on Rh₁ and Rh₂ as Additive Types

From the results with 85%, 70%, and 30% sera it would be an attractive supposition that the various Rh types are built up by the summation of two or more of the subtypes—e.g., Rh₁ might be regarded as Rh₁+Rh', and Rh₂ as Rh₂+Rh''; while Rh₃ could be regarded as Rh₁+R'+R''. Wiener (1944a) made this suggestion and proposed that the descriptive terms Rh₁ and Rh₂ should be used. This hypothesis had already been considered by Race, Taylor, and myself, and had been abandoned because the information yielded by St serum ruled out such a simple additive solution. Rh₁ is clearly St-negative, as is Rh'; but Rh₂ is quite certainly St-positive—a fact later confirmed by Wiener, Davidsohn, and Potter (1945) when they had the opportunity of studying the reactions of a powerful Hr (=St) serum on the American negro population, in whom the Rh₂ type is very frequent.

Although Wiener's analysis of the Rh genotypes was at first incomplete owing to lack of a powerful anti-Hr serum, and a serum of Mourant's type, his attempted synthesis of the complexities of the Rh subtypes (Wiener, 1944a) led him to alter the terminology which he had applied originally (Wiener, 1943) to the anti-Rh sera, and so to reverse the designations anti-Rh₁ to anti-Rh', and anti-Rh₂ to anti-Rh''. I had already (1943) made this suggestion independently to Fisher and thereby influenced significantly the development of his analysis and synthesis of the Rh structure.

Fisher's Views on the Rh Structure

The various Rh subtypes cannot be satisfactorily explained by postulating a whole series of allelomorphs at a single locus on the chromosome. The common Rh types, Rh₁ and Rh₂, are not usually attributable to the presence of Rh, on one chromosome and Rh' or Rh'' respectively on the other member of the pair. If Rh₁ were usually equal to genotype Rh₁Rh' and Rh₂ equal to Rh₁Rh'' the offspring of parents of these types would be expected to show separation of the genes, which as a rule they do not: nor is it sufficient to suppose that Rh₁=Rh₁+Rh' at two adjacent loci on the same chromosome: Rh₁ reacts positively with St serum, whereas Rh' and Rh₂ are negative with this reagent. Fisher (Race, 1944) devised a scheme which appeared to cover all the facts then known, but which also made four predictions, two of which have since then been verified—viz., the recognition of a further type of serum (Mourant's anti-e serum) and the identification of an additional type, Rh₃.

Fisher suggested that in each individual the Rh phenotype is determined by three closely linked pairs of allelomorphous genes, which he distinguished by the letters Cc, Dd, and Ee, and he supposed that the gene indicated by each of these six letters determined the presence of a distinctive antigen in the red cells. The triple gene-complexes thus give rise to eight theoretical Rh types by reason of the combination of elementary antigens with which they endow the cells. Seven of these combinations have been recognized by analysis of their reactions with the four antisera, while the eighth has not yet been found segregated in such a way that its individual reactions could be determined. The Rh locus is thus visualized as a strip of chromosome occupied by three closely linked genes. It is attractive to suppose that the rarer subtypes may have arisen by crossing-over during the formation of the gametes. Such a view might explain the great rarity of the R_y type, which would require for its formation crossing-over in persons of rare genotype, or possibly double crossing-over between the three closely linked genes. Fisher and Race (1946) have shown that in Great Britain the frequencies of the rare types R₄, R_z, R', and R'' support such a hypothesis, but proof will be obtained only by statistical analysis of genotype studies in races of widely different Rh constitution.

When Fisher's scheme was first propounded, antisera corresponding to four of the six postulated elementary antigens were known, and it was suggested that sera with specificities corresponding to the other two components would probably be found. This prediction was partially fulfilled by Mourant's discovery of an irregular iso-agglutinin which acted upon all cells containing the antigenic products of the gene-complexes Rh₁, Rh₂, Rh', and rh; while it failed to react with cells of type R₂R₃, R₂R', and R_z. This agglutinin has therefore the specificities predicted for anti-e. It is noteworthy that, like the original St serum (anti-c), Mourant's serum gives weak or strong reactions accordingly as the cells contain one or two "e" components. The discovery of a serum with the predicted specificities is strong support for the view that Fisher's scheme is essentially correct.

According to Fisher's scheme the Cc loci may be occupied by CC, Cc, or cc, the C gene product being detected by anti-Rh' serum (anti-C), while the c gene product is detected by St serum (anti-c). The anti-Rh sera of Levine and of Wiener detect the rh gene product because they, like St serum, act upon component c, as is shown by their positive reaction also with all Rh₁ cells. Race, McFarlane, and Cappell (1945) pointed out that the data given by Waller and Levine (1944) suggested that they were using two distinct kinds of anti-Hr serum, one of which corresponded with the British St serum, while the other, stated to give negative reactions with R,R₁ cells, appeared to be anti-d. Levine (1945), however, acknowledged that a mistake had crept into the data in his paper with Waller and that the reaction with R,R₁ cells should have read *positive* (not *negative* as originally stated). All the American anti-Hr sera therefore seem to have the same specificity and correspond exactly to the British St serum—i.e., anti-c. Anti-d serum still awaits recognition.*

* I am informed by Dr. Race that a serum containing anti-d agglutinin has been found by Diamond and Boyd, but details are not yet available.

Levine (1945) and Wiener (1945d) recognize that Hr is antithetical to Rh' and suggest that the relationship is like that of M and N. Wiener (1945d, Table 12), while not admitting their existence, proposes that the terms Hr', Hr₂, and Hr'' be used if the extension of knowledge requires that Hr be subdivided, the term Hr' being there applied to antigen which was originally called Hr. It seems unnecessary to employ two sets of symbols for the same thing, and in my opinion the term "Hr factor" should now be abandoned as no longer serving any useful purpose. The continued use of this symbol suggests that the Hr factor exists independently of the Rh factor, whereas the position is that Wiener's hypothetical three kinds of Hr factor are merely the three elementary antigens of the Rh-negative gene product, designated by Fisher c, d, and e. Wiener's scheme would mean the employment of two sets of symbols whose interrelationships would not be apparent or else the use of a very cumbersome terminology. Thus type Rh₁ could be represented as Rh₁' or as Hr'', while, by analogy, type rh would be Hr'. Fisher's C D E c d e terminology is neater and gives a greater revelation of the constitution of the Rh type.

Extension of Fisher's Scheme

Recent observations (Callender, Race, and Paykoç, 1945) show that in reality Fisher's hypothesis is an oversimplification, since the category of Rh types has had to be further extended (Callender and Race, 1946; in press).

During the investigation of a series of hitherto unrecognized antibodies in the serum of a young woman who had received repeated transfusions it was proved that one of the new antibodies (anti-Willis) reacted with a second allelomorph at the Cc locus, and this has been tentatively named C_w. Further work has shown that almost 50% of anti-Rh' sera (i.e., anti-C) react with both C and C_w (e.g., the original anti-Rh' serum of Race, Taylor, Cappell, and McFarlane, 1944), whereas the others react only with C. The only pure anti-C_w serum so far recorded is that of Callender, Race, and Paykoç (1945). Since the C component occurs in all Rh₁ and Rh' cells, these types can be subdivided into those possessing C and those with C_w; and the list of Rh genotypes is thus further extended. Race, Mourant, and Callender (1946) estimate that about 2% of persons are of the C_w type; therefore Rh₁Rh₁ individuals may possess two C genes or two C_w genes or one of each, the latter being of genotype C_wDe/CDc.

As is to be expected, anti-Rh₁ sera containing the two agglutinins anti-D and anti-C are also divisible into two types—those whose anti-C component is pure anti-C, and those in which it reacts with both C and C_w. Since C_w is relatively rare it is not clear why anti-C_w should be so often associated with anti-C; and it remains to be proved whether anti-C_w is produced only as a result of iso-immunization by C_w or whether it is produced in a non-specific way as a sort of coagglutinin by the allele C.

It is likely that these antigenic differences are concerned in some of the minor discrepancies which have been observed in the behaviour of different human antisera, and that such differences are responsible for some at least of Wiener's "intermediate" Rh genes. Further work may reveal the significance of occasional discrepancies in the reaction of anti-Rh sera now thought to be identical, and there may be multiple alleles at both the D and E loci as well as at the C locus. Clear proof of this, however, is at present lacking owing to difficulty in obtaining repeated samples of blood from the required cases, but a number of suggestive observations have been made, particularly with regard to the Ee locus.†

Nomenclature of the Anti-Rh Sera

As has been pointed out, much confusion exists about the terminology applied to the various anti-Rh sera—a state of affairs which is not simplified by the fact that some writers in this country have continued to use Wiener's older terminology while others have adopted his newer nomenclature. Stratton (1943) refers to the 70% single agglutinin serum as anti-Rh₁, and calls the double agglutinin serum (87%) anti-Rh', according to the terminology which Wiener (1944a) and I (1944) discarded because it fails to designate the antisera in accordance

† Stratton (1946) has since reported another allele at the Dd locus.

with the antigens with which they react. Fisher (Race, 1944) proposed to name the antisera by the Greek letters corresponding to the elementary antigens of his hypothesis, but this method is troublesome to many workers who are not familiar with the Greek characters. As I originally proposed (Cappell, 1944), the simplest terminology is to call the various sera anti-C, anti-D, anti-E, etc., according to the elementary antigens of the Rh complex with which they react, and this system has the further merit that it is easily adaptable as knowledge advances. It has been approved and adopted by Coombs, Mourant, and Race (1945a, 1945b) and by Race, Mourant, and Callender (1946), and the latter writers have already extended it, as required by the finding of the new allelomorph at the Cc locus.

Murray (1944a, 1944b) proposed to give each of the sera a number and to apply the numbers subscript to the letters Rh in order to indicate the antigenic structure of the type under consideration. Thus: anti-Rh' (anti-C)=serum 1; anti-Rh₀ (anti-D)=serum 2; anti-Rh₁ (anti-C+D)=serum 1 2; anti-Rh" (anti-E)=serum 3; anti-Rh₂ (anti-D+E)=serum 2 3; St serum (anti-c=anti-Hr)=serum 4.

These proposals have not found general acceptance and do not appear to offer any advantage over the terminology proposed above. While new types of antisera could of course be designated by additional numbers, their relationships to those previously recognized could not be so easily displayed as in the above system—e.g., the modification of dividing anti-C into anti-C and anti-C_w.

The alternative nomenclatures of the sera are given in Table II.

antibodies of both anti-D and anti-C type. It is now realized also that the few who appear to have only anti-C agglutinins (70% type) have in fact also been immunized against D. When a Rh-negative person (rhrh) becomes immunized against Rh₁ blood (cDE), however, the antibodies are usually of the anti-D type alone; although sera containing both anti-D and anti-E do occasionally occur, they are rare. It should be emphasized that the D antigen is the only really common and important cause of iso-immunization either in intra-group transfusion reactions or in pregnancy; accordingly, those who lack it may become immunized against it in spite of the presence of other Rh components, C or E, in their genetic constitution. I have previously recorded (1944) the iso-immunization of a mother of type Rh'rh by children of type Rh₁rh; and similar cases have been reported by Simmons and Kelsall (1945) and by Wiener (1945b).

"Incomplete" or Blocking Antibodies

Most workers have been struck by the lack of correspondence between the severity of haemolytic disease in the foetus and the titre of anti-Rh agglutinins in the maternal blood. In some of the most severe cases with repeated obstetric disasters the mother's serum yields only a weak or doubtful agglutination with known Rh-positive cells. This apparent discrepancy has been explained by the observations of Race (1944) and of Wiener (1944c) that, in addition to agglutinating antibodies, maternal sera may contain other antibodies which unite with the receptors of antigen D in the red cells and prevent agglutination by anti-D agglutinating serum. Such interfering sub-

TABLE II

Human Iso-Antisera (Alternative Designations)				Rh Types (Elementary Antigen Structure)											
Cappell	Wiener	Fisher	Murray	R ₀ cDe	r cde	R ₁ cDE	R' cdE	CDe	R ₁ C _w De	Cde	R' C _w de	CDE	R ₂ C _w DE	CdE	R ₂ C _w dE
Anti-C _w				—	—	—	—	—	+	—	+	—	+	(—)	(+)
Anti-C+C _w Anti-C	Anti-Rh'	Γ	Serum 1	—	—	—	—	+	—	+	—	+	—	(+)	(+)
				—	—	—	—	+	—	+	—	+	—	(+)	(—)
Anti-C+C _w +D Anti-C+D	Anti-Rh ₁	Γ + Δ	Serum 1 2	+	—	+	—	+	+	+	—	+	+	(+)	(+)
				+	—	+	—	+	+	+	—	+	+	(+)	(—)
Anti-D	Anti-Rh ₀	Δ	Serum 2	+	—	+	—	+	+	—	—	+	+	(—)	(—)
Anti-D+E	Anti-Rh ₂	Δ + H	Serum 2 3	+	—	+	+	+	+	—	—	+	+	(+)	(+)
Anti-E	Anti-Rh"	H	Serum 3	—	—	+	+	—	—	—	—	+	+	(+)	(+)
Anti-c	St anti-Hr	γ	Serum 4	+	+	+	+	—	—	—	—	—	—	(—)	(—)
Anti-d		δ	Serum 5	(—)	(+)	(—)	(+)	(—)	(—)	(+)	(+)	(—)	(—)	(+)	(+)
Anti-e		η	Serum 6	+	+	—	—	+	+	+	+	—	—	—	—

Practical Consequences of the Subtypes

Table I shows that among the eight subtypes of Rh four react positively with the guinea-pig immune anti-Rh serum and that only one of the human iso-immune sera gives the same reactions—viz., the 85% serum (anti-Rh₀). Many workers have included within the classification of Rh-positive all human which react not only with 85% serum but also with 70% 30% sera, but in my opinion this is confusing, and indeed rous. It would be much better to restrict the term "Rh₀" to those cells which react positively with 85% serum i.e., those which contain antigen D. As I have pointed out already (Cappell, 1945), the inclusion of the subtypes R' and R" among Rh-positives constitutes a formidable danger for such individuals, since owing to their lacking antigen D they will develop anti-D just as readily as do Rh-negative persons. If they are reckoned as Rh positive they are liable to be given a transfusion of a true Rh-positive blood, which is incompatible, and this may lead to tragic results if there happens to be anti-D in their serum. On the other hand, although the subtypes R' and R" are both fairly rare (about 1%) it would be wise to eliminate them from the panel of Rh-negative bloods supplied for transfusion, lest they be administered to immunized Rh-negative persons in whose sera there are antibodies of the corresponding type. This danger is much greater with Rh' blood (Cde/cde) because about one-half of the women who become iso-immunized by the Rh₁ gene-complex (CDe) develop

stances have been termed "incomplete" or "blocking" antibodies: they seem to correspond to the old term "agglutinoids." The other Rh antigen receptors—e.g., C or E—are not affected, and the "blocked" cells are thus susceptible to agglutination by sera which act specifically on their unblocked receptors; for example, blocked Rh₁ cells behave like Rh' cells and are agglutinated by anti-C serum; while blocked Rh₂ cells behave like Rh" cells and are agglutinated by anti-E serum.

Coombs, Mourant, and Race (1945a, 1945b) later showed that the union of the blocking antibodies with Rh-positive cells could be demonstrated by washing treated cells free from serum and then subjecting them to the action of anti-human-globulin serum, when prompt agglutination took place. The anti-globulin serum reinforces the action of the maternal antibody presumably by combining with the natural antibody-globulin adsorbed on the surface of the red cells. By this means a very weak antibody may be detected even when present in an amount insufficient by itself to give a distinct reaction. Coombs, Mourant, and Race (1946) refer to this as the *indirect* test, as compared with the *direct* test when the anti-human-globulin serum is added directly to washed cells in order to detect *in vivo* sensitization (see later).

Diamond and Abelson (1945) have pointed out that many of these difficulties can be removed by avoiding the use of saline for diluting the red-cell serum mixtures to be tested. If full-strength maternal serum is mixed with whole blood or

with a cell suspension prepared by dilution in their own serum (Wiener, 1945d) or in a 30% solution of serum albumin. either human or bovine (Diamond and Denton, 1945), rapid agglutination of Rh-positive cells is brought about even when blocking antibodies are present in such amount as to inhibit completely agglutination by the ordinary method. Diamond and Ahelson state that the tests performed on an open slide with albumin solution as a diluent are more rapid and accurate than by any other method, over 99% of sera from Rh-negative mothers of babies affected with haemolytic disease giving positive evidence of Rh antibodies. Albumin solutions of not less than 20% concentration are free from troublesome rouleaux formation, but not all samples of concentrated albumin give equally satisfactory results (Race, Stanbury, personal communication). Rouleaux formation is, however, very troublesome when human serum or plasma is used as the diluent for the cell-serum mixtures, both in the slide test and when performed in tubes as described by Wiener (1945d) under the name of "the conglutination test." When the maternal serum contains only a very weak antibody the results of this test may be equivocal and difficult to distinguish from rouleaux formation, and it is in just such cases that especial difficulty in the interpretation of the other standard tests is encountered. When serum containing only blocking antibodies is incubated with appropriate red cells in saline dilutions the absence of agglutination is attributed by Wiener to the dissociation of a hypothetical protein complex, which he has called "conglutinin," on which the linkage of blocking antibody and red-cell antigen is said to depend. "Conglutinin," in Wiener's sense, is a heat-stable protein, and does not seem to bear any relationship to the complement-like substance to which the name was originally applied (Muir and Browning, 1906). Wiener regards this discovery as the solution of most of the remaining mysteries of the mode of action of Rh antibodies, and has attempted to explain the rapid onset of symptoms after birth as due to the sudden development of "conglutinin" in the postnatal plasma. When the mother's serum is rich in blocking antibodies, however, the foetus often fails to reach full term and is commonly stillborn prematurely, often in a macerated condition with severe erythroblastosis. Miscarriage of a hydropic foetus may occur as early as the fifth month, and it is therefore impossible to accept the view that the interaction of maternal antibodies and foetal cells requires the intermediary action of a hypothetical protein appearing only at or near term.

It is important to note that the open slide test cannot be used alone as a means of analysing the nature of the antibodies present in a serum, because it fails to distinguish between the effects of agglutinating and blocking antibodies. Accordingly, an anti-C serum from an Rh-negative person will by this technique give positive reactions not only with R_1 (CDe) and R' (Cde) cells but with R_2 (cDe) and R_3 (cDE) cells, owing to its content of blocking anti-D, on which its specificity usually depends. For genotype studies and for the analysis of the constituent antibodies the standard test-tube method must be employed, using appropriate Rh types of cells in saline dilutions.

Boorman, Dodd, and Morgan (1945) state that the anti-Rh titre of the maternal serum may be estimated by the tube method, AB serum or plasma being used as the diluent; the results show a much higher titre than in the original saline dilution methods of Wiener (1941) and of Taylor (1943), but among human sera this augmentation of titre is observed only with *iso-immune* sera—e.g., *immune* anti-A and anti-B or anti-Rh—but not with the natural *iso-agglutinins* of human sera. This method may therefore serve to distinguish the natural *iso-agglutinins* from those of immune origin. The adverse effect of saline dilution on anti-Rh sera probably explains why in so many cases of haemolytic disease the maternal serum reacts strongly when mixed with an equal volume of 2% cell suspension but fails to react when diluted 1 in 2 or more. For the actual serum concentration of the mixture is then reduced to 1 in 4 or less. A truer index of the amount of anti-Rh present is obtained by carrying out the titration in serum as Boorman, Dodd, and Morgan (1945) suggest.

"Blocking" antibodies have usually the same specificity as anti-Rh₀ serum—i.e., they act upon antigen D—but they appear to have a greater avidity than the anti-D agglutinins, so that in a mixture they are able to unite with the D receptors first

and thus prevent agglutination. Examples of blocking antibodies with other specificities have been reported by Callender and Paykoç (1945) with the specificity of anti-c (St=anti-Hr), and by Diamond and Abelson (1945) of types anti-Rh₀ (=D), anti-Rh' (=C), and anti-Rh'' (=E).

In some cases of haemolytic disease the cells of the newborn Rh-positive child may be so saturated with blocking antibody that they fail to react with anti-Rh₀ (anti-D serum), and may thus appear to be Rh-negative: they still react, however, with anti-Rh' (anti-C) serum if of Rh₀ type, or with anti-Rh'' (anti-E) serum if of type Rh₁. If recovery occurs the true genotype will be detectable when the child is several months old, after the effects of the maternal antibodies have disappeared. (See Cases 7 and 8.)

Agglutinating antibodies, even when abundant in the maternal blood, can rarely be demonstrated in the foetal serum, but Baar (1945) has shown that blocking antibodies are often present, and can be detected by their capacity to block the "D" receptors of suitable red cells. In view of the alleged greater avidity of "blocking" antibodies, their persistence in the free state in the foetal serum is surprising. Baar has not claimed that in all such cases the red cell receptors of the foetus are fully saturated with blocking antibodies, so that they appear to be Rh-negative, as in Cases 7 and 8 of this series, but this phenomenon was present in some (personal communication).

By means of the rabbit anti-human-globulin serum Coombs, Mourant, and Race (1946) have shown that in all cases of haemolytic disease tested by this method the foetal erythrocytes are found to be sensitized *in vivo* and when washed free from plasma are immediately agglutinated by the anti-human-globulin serum, presumably owing to the presence of absorbed antibody-globulin on the red cell membrane. They refer to this as the *direct* test, and have shown that the cells of an affected foetus which appeared to be Rh-negative (Rh₀rh) were highly sensitized owing to the blocking of the D receptors; after recovery the infant's cells were found to be Rh-positive and of genotype Rh₀rh. Had the direct Coombs test been available when we encountered Case 7 (below) it would have enabled us to detect sensitization of the apparently Rh-negative foetal cells, and would thus have furnished additional proof that this child belonged to genotype Rh₀rh (cDe/cde), like some of the sibs.

Blocking antibodies may appear in the maternal serum instead of agglutinating antibodies, but in some cases they develop later; thus irregular *iso-agglutinins* may be detected in the second trimester of pregnancy, but may be absent at term; nevertheless the foetus will be severely affected. In other cases anti-Rh agglutinins may be present in fair amount during the first one or two pregnancies in which the foetus is affected, but in subsequent pregnancies may be replaced by blocking antibodies. Thus estimation of the anti-Rh titre in pregnancy is a warning only if due attention is paid to the presence of blocking antibodies as well as those of agglutinating type.

It is now recognized that the development of blocking antibodies is a bad prognostic sign and that it is usually followed by the most severe form of foetal disease—e.g., hydrops foetalis.

[Part II, with list of references, will appear next week]

In an address at the annual meeting of the Mental Hospitals Association held in the London Guildhall, Dr. Thomas Beaton, physician-superintendent of St. James Hospital, Portsmouth, said that the adjustment of mental health services to the National Health Service would in many ways be easy as compared with general medicine and surgery. Apart from a few registered hospitals and similar institutions, the mental hospitals service, he said, was already organized nationally. Though there had been local management and development in the different areas, yet under the supervision of the Board of Control, the co-operation of such bodies as the Royal Medico-Psychological Association, the Mental Hospitals Association, and the Union of Mental Hospital and Institutional Workers had brought about a standardization on a national basis far in advance of anything in existence in general medicine and surgery, in fact the new National Health Service could learn much from the experience of the administration of mental health.

THE RECEPTIVITY OF CERVICAL MUCUS TO SPERMATOZOA

BY

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In infecund couples the post-coital (Sims) test often shows that the spermatozoa do not penetrate the cervical canal, or, having penetrated, do not survive therein. Such defective fecundation may be due to seminal deficiency or to abnormal cervical conditions, or both (cf. Miller and Kurzrok, 1932; Lane-Roberts *et al.*, 1939; Green-Armytage, 1943; Siegler, 1944; Barton and Wiesner, 1944, 1945).

Experience has shown that cervical faults are not always apparent. We have seen many cases where spermatozoa of undoubted fecundity (donor's semen) did not penetrate or did not survive in cervical mucus which by all accepted signs (profuse, cell-poor, transparent secretion) presented the fecund appearance associated with the ovulatory phase. It was no longer possible, therefore, in the investigation of a sterile woman, to assume that the cervical mucus was receptive unless the post-coital test was positive—i.e., showed motile sperms in the cervix. In cases of impaired invasion it became necessary to assess the receptivity of the cervical mucus before apportioning responsibility between husband and wife. We therefore attempted to devise a method for testing directly the receptivity of the mucus and the invasive power of the spermatozoa.

Biological Basis of the Invasion Test in Women

During the ovulatory phase a cascade of clear mucus descends from the gaping external os into the vagina. After intercourse the surface of this cascade is in intimate contact with the seminal pool; but the two colloids—semen and cervical mucus—do not mix: they maintain their separate identities. The relative immiscibility of semen and cervical mucus is so pronounced that a drop of one can be centrifuged past a portion of the other. In accordance with the general behaviour of immiscible colloids or liquids, an interface is formed where semen and mucus are in contact with each other. The interface between two such colloids is endowed with properties, such as tension, corresponding with those of surfaces in general. It may be likened to an invisible membrane, and the passage of small particles across such an interface may require an appreciable amount of energy. Suitable *in vitro* preparations, in which fecund semen is brought into contact with healthy cervical mucus, reveal the significance of this interface; for most spermatozoa, on approaching the interface, are retarded or prevented from penetrating. On the other hand, many normal (virile) spermatozoa pass through the interface and survive in the cervical mucus for hours or days. Generally such contact preparations can be used as models of the individual conditions prevailing at the cervical entrance after intercourse or insemination.

Technique in Female Invasion Test

A perfectly clean and grease-free cover-slip is ringed with fine, leaving four narrow gaps. The slip is placed on white paper or a porcelain slab, ringed side up. The cervix is exposed during the presumptive ovulatory phase by a dry unlubricated speculum under good illumination. The protruding cervical mucus cascade is now removed by gentle swabbing with dry cotton-wool, without pressure upon the external os. A small portion of the cascade then still adjacent to the external os is used for the routine test. It is best removed by inserting the tip of a long forceps, opening the blades to a distance of about 3 mm. and closing them again. Thereby the tip of the blades is charged with the small portion of mucus required for the test. When the blades are gently separated above a clean grease-free slide the curious fibrosity (thread-forming capacity) of ovulatory mucus results in the formation of a strand, which is deposited on the slide. The slide is immediately inverted

and pressed lightly against the ringed cover-slip. Thus a capillary chamber, charged with a film of cervical mucus 2–5 mm. wide and about 50 μ deep, is obtained. The chamber must now be charged with semen of established fecundity proved by a recent conception. We use fresh specimens (aged 1 to 6 hours) supplied for, and employed in, A.I.D. (artificial insemination with donated semen). A platinum loop is charged with semen and immediately brought into contact with one of the gaps in the ring. The semen flows by capillary action underneath the cover-slip. By repeating this process the space between the mucus and the edge of the slip is filled. The air escapes through the gaps in the vaseline ring, thus ensuring contact between mucus and semen, without the formation of air bubbles or interstices. The gaps are now sealed with melted vaseline, which must not be hot lest the spermatozoa be damaged. The sealed slide may be kept at room temperature, and is examined on sealing and thereafter at intervals of not more than two hours each. Examination is preferably carried out with a binocular microscope, fitted with a mechanical stage and graduated fine adjustment, so that selected fields and planes can be identified in successive inspections. For quantitative determinations, such as are required for specific research problems, and to acquire familiarity with normal standards, a counting ring has been devised. It is made from a circular cover-slip on which a circle 3 mm. in diameter is drawn with glass ink. This slip is then placed on the diaphragm of the eye-piece; on viewing the slide a circle is thus marked out. The number of spermatozoa leaving or entering the circle per minute is counted. This count directly relates to the density of motile spermatozoa present, and if repeated at intervals yields a measure of invasion and survival. Other specific appliances, such as constant temperature stages, incubators, etc., are not necessary in clinical work; and for routine purposes nothing more than really clean slides, a platinum loop, a microscope, and some patience is required.

Results: Normal Mucus

In a number of cases cervical mucus was removed just before an insemination which resulted in conception; observations in these cases, and in other instances of undoubted fecundity, may serve as standards to be described first. In these cases the sealed preparation has a striking and characteristic appearance. Even macroscopic inspection shows clearly the sharply defined boundary line between the water-clear mucus and the opaque semen. This boundary, far from being obliterated by diffusion of semen into the mucus, grows more pronounced on standing. Microscopically, it is again this boundary between semen and mucus which dominates the picture. At this interface the spermatozoa tend to congregate in dense masses; only a small proportion of highly active sperms pass into the cervical mucus, some almost instantaneously, so that even a few seconds after the slide has been charged sperms are found within the mucus. The subsequent fate of these sperms varies greatly. Many swim about at high speed and, since collisions are less frequent than in densely populated semen, their path is less devious; but it appears to be random, and many sperms pass back into the semen. Other spermatozoa that have also passed through the interface continue to "whip" their tails but fail to show any forward movement. These "oscillatory" sperms may be found anywhere within the mucus, but are most numerous in the field adjacent to the boundary. Yet other sperms, strong enough to break through the interfacial tension, soon lose all motility. Thus a gradient develops; the total density of sperms decreases, but the proportion of motile ones increases, with distance from the interface (see Fig. 1). For the first few hours after the slide has been set up the invasion of the mucus continues. A larger number of sperms invade from than return to the semen, and thus the density of sperms within the mucus increases gradually. After varying periods (2 to 5 hours) a point of culmination is reached. At this stage the seminal fluid contains comparatively few motile spermatozoa, since it has been impoverished by continuous emigration of the most active ones. At the interface the seminal fluid is bounded by a dense felt of spermatozoa, too weak to penetrate the interface, and forming, as they assemble, a growing obstacle to the more active ones on either side of the boundary. On the cervical side a belt of oscillatory or immotile sperms is seen near the interface, the more distant mucus being uniformly

invaded' by motile sperms. This condition characterizes the 'positive' invasion test.

The spermatozoa may continue to live on either side of the interface for 12 to 48 hours at room temperature in such slides; they never survive for 4 to 5 days as they do in the living cervix. The actual period of survival depends on a variety of factors of no present clinical interest. Death of the sperms is often preceded by angulation of the head.

Observations on invasion slides bear upon certain problems of the physiology of fecundation: for instance, there is no evidence that the cervical mucus "attracts" the spermatozoa; the gradually increasing density of the spermatozoa is adequately explained by chance movements—in fact, the interface may be likened to a biological membrane, and the spermatozoa to particles endowed with kinetic energy but moving at random. Though the assembly of sperms at the interface might suggest positive attraction by the mucus, it is more likely that the felt consists of weaklings unable to extricate themselves from the conditions in the boundary phase; for similar congregations can be seen at interfaces between air bubbles and semen, in artificial emulsions of semen, etc. Inanimate particles may congregate in a similar manner (Rideal, 1930).

Sources of Error

It was thought possible that the use of pure semen might be inadvisable, for in human fecundation *in vivo* a pool forms from the semi-liquid contents of the vagina and the ejaculate, and fecundation takes place from this pool; but by using portions of fresh seminal pools in invasion tests the results were not different from those observed with semen itself. More important are errors arising from misinterpretations. Owing to variations in the wetting of the glass slide the cervical mucus may form a film with an irregular outline and narrow indentations, and the seminal fluid is liable to penetrate these crevices (Fig. 2). The resulting intrusion suggests a spearhead of sperms—a veritable "phalanx" or "caravan" penetrating the mucus. Miller and Kurzrok suggested that these intrusions are produced by the mucolytic action of semen and represent the initial stages of sperm-invasion. But careful observation and staining of the semen with carmine show that the phalanges never transgress the boundaries of the semen (revealed by the dye), that no diffusion takes place, and that the sperms *invade individually all along the interface*. In fact, invasion from the phalanges is retarded, probably because of the increased tension in the crevices, which is shown by the alignment of sperms parallel to the closely approximated interfaces between which they are caught.

Results: Abnormal Mucus

In many cases of undoubted female infecundity—e.g., in some women who fail to conceive after repeated A.I.D.—the invasion test is "negative." In such cases the characteristic interface is formed and persists as usual; but the fate of the spermatozoa varies greatly. Neglecting minor deviations from the norm, six fairly definite types of mucus may be distinguished. These are:

1. Spermatozoa pass readily through the interface and penetrate the whole depth of the mucous film. However, they lose motility within 10 to 60 minutes, though some oscillate for longer periods.
2. Spermatozoa pass readily through the interface, but, having invaded to a shallow depth (less than 0.2 mm.), they lose motility, though oscillation may continue for some hours. This type of mucus characteristically shows a reasonably dense invasion limited to the boundary region.
3. Spermatozoa pass through the interface, but lose motility and rapidly cease even to oscillate in the boundary region.
4. Spermatozoa fail to penetrate the mucus; they congregate at the interface, forming the typical felt. Movement along the semen side of the interface may continue for many hours.
5. In rare cases the mucus not only does not admit spermatozoa but appears to affect the boundary region of the semen: for the spermatozoa die soon after their arrival at the interface.
6. In some infecund women the cervix is comparatively "dry"; it yields only small quantities of rapidly drying mucus unsuitable for the test.

These types are, of course, not sharply distinct from each other; thus some specimens of mucus may be virtually non-invadable (type 4), though isolated sperms may penetrate (Fig. 3).

Allowing for such minor variations, the types are not difficult to distinguish after some practice.

Three factors seem to determine the suitability of cervical mucus for fecundation: first, the capacity to allow true (forward) motility of spermatozoa; secondly, the capacity to sustain sperm life, as shown by oscillation and/or forward motility for extended periods; thirdly, the invadability of the mucus. These factors may of course reflect variations involving few or many different physico-chemical properties of the mucus.

Clinical Interpretations of Results

The invasion test was carried out in numerous instances prior to A.I.D., the latter being followed by a Sims test. This series of observations made it possible to relate the results of the test to conditions *in vivo*. It showed that a positive invasion test almost invariably corresponds to a satisfactory Sims test, and that, conversely, the latter reveals inadequate cervical invasion in cases where the invasion test shows defective mucus. Clinical experience thus suggests the interpretation summarized in the accompanying Table, which takes into account both cases of A.I.D. and post-coital tests proper.

Table Summarizing Results

Properties of Mucus <i>in vitro</i>			Sims Test*	Fecundity
Invadability	Sustaining Capacity	Motility Factor		
Present	Present	Present	Deep invasion with good survival of sperms	Present
"	"	Impaired	Many oscillatory sperms in cervix, but few, if any, motile ones	Impaired
"	Impaired	—	Immotile sperms in cervix; often no invasion of isthmus	Absent
Impaired	—	—	Cervix not invaded	"

* Sustaining capacity relates to the capacity of the mucus to maintain the life though not necessarily the forward motility of sperms.

The term "Sims test" applies equally to the post-coital examination of the cervix and to the examination after insemination.

Receptivity of Cervical Mucus in Relation to Appearance and Other Properties

The normal cyclical changes of cervical mucus are well known and have been studied by objective methods (e.g., measurement of recoil; changes in volume and water content: cf. Clift, 1945; Viergiver and Pommerenke, 1946). Hence the determination of physical signs, such as the thread-forming capacity of the ovulatory mucus, might suggest itself in place of the invasion test. As already indicated, our experience has shown that the correspondence between manifest physical signs and biological characteristics is inconstant. Clear elastic mucus ("glair filante") has often given negative results in the invasion test. Thus in cases of manifest chronic cervicitis the mucus may temporarily clear during the ovulatory phase but remain biologically defective. The receptivity of the cervical mucus depends evidently on intimate structure and possibly on chemical factors which are not wholly reflected by the comparatively gross characteristics revealed to the eye or measured by present physical methods.

Frequency of Cervical Dysfunction

In 13 out of 21 women aged less than 35 years who failed to conceive after A.I.D. repeated for three months or longer, cervical invasion was impaired even though other known infecundity factors had been ruled out by the usual tests. Again, taking 50 consecutive cases investigated for sterility in which the Sims test was negative, unsatisfactory invasion tests were obtained in 14 cases. While it is impossible to estimate precisely, at this stage, the frequency of cervical dysfunction, it appears to be common even in the absence of endocervicitis (cf. also Palmer and Palmer, 1945).

Investigation and Therapy

Where the invasion test has given a negative result investigation of the possible causes must be instituted. According to our experience, briefly reviewed below, this task requires that three basic facts concerning the biology of the cervix should be borne in mind. First, that impaired cervical function reflects only, in many cases, general debility with or without specific

disturbances (such as chronic duodenal ulcer, hypochromic anaemia, chronic infective sinusitis, pyelitis). Infection, if present, may have attained a chronic subclinical state yet affect cervical function; this applies particularly to infections of the urinary tract. In many women the cervical secretion is so susceptible to adverse systemic factors that seemingly insignificant ailments must be given due consideration in the investigation. Secondly, adequate cervical secretion depends on oestrogenic secretion (cf. Schroeder, 1928; Wollner, 1936; Barton and Wiesner, 1945). This may be deficient; but in many women with impaired cervical function no general signs of oestrogenic deficiency are present (e.g., hypoplasia); in such cases the deficiency may be caused by a raised cervical threshold to oestrogens, resulting in a decreased rate of mucous flow. Thirdly, the cervix itself may be the seat of an infective pro-

impairment involves a wide field of clinical procedure and access to the appropriate expert opinion.

Specific Therapeutic Measures

1. The administration of oestrone has been found useful in nearly all cases of defective invasion whether other measures were required or not. It was usually given in the form of crystalline suspensions (2 to 4 injections of 1.5 mg. each, during the first half of the cycle). No contraindications to this procedure have been found, though it may delay ovulation by a few days. The increased flow of cervical mucus evoked by oestrone appears to assist any concomitant measures; in some cases no other treatment is required. In the presence of uncomplicated erosions the local administration of oestrone, applied in pessary form, often results in full epithelization and

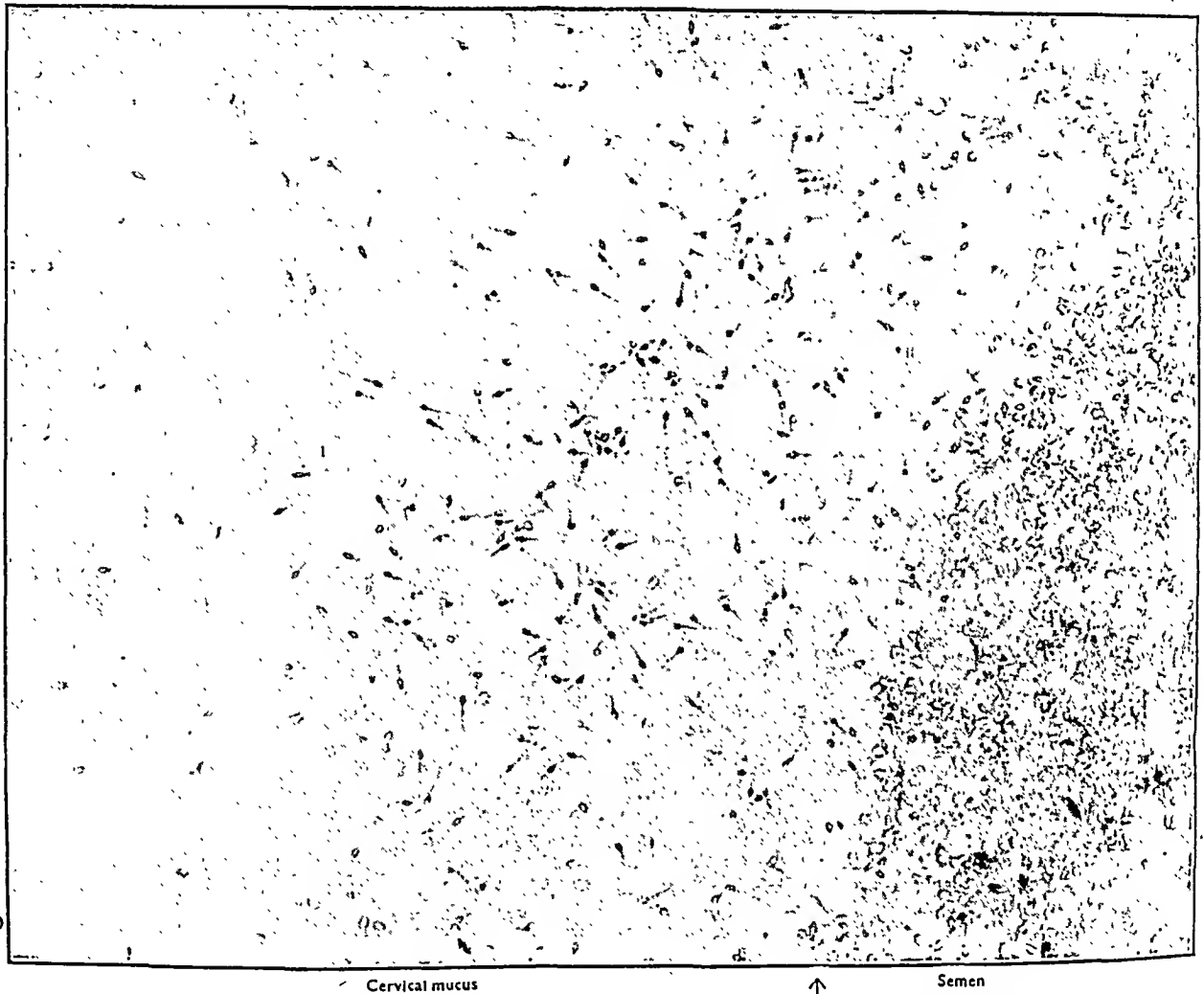


FIG. 1.—Invasion of receptive ovulatory mucus by spermatozoa (fecund semen). Photomicrograph of unstained live specimen. The interface crosses the field above the arrow on the margin. Note decrease in density of invaders with distance from interface. Mag. $\times 320$; instantaneous exposure. Specimen 12 hours old.

s. In many cases of cervical infection the classical features of inflammation are absent, though routine methods may demonstrate the presence of pathogenic organisms.*

Clinical experience indicates that the impairment of oestrogenic secretion or of cervical reaction to oestrogens may be caused by general factors or infective processes. In other respects, too, the various factors controlling cervical function, and thereby fecundity, are interlinked. In view of the importance of all these factors the proper investigation of cervical

improved cervical function. The pessaries are applied every other evening throughout the cycle and the patient is instructed to douche with warm water on the following morning. With the usual pessaries no effect upon the temperature cycle has been observed.

2. In view of the established efficacy of sulphonamide therapy in cervicitis of gonococcal origin a series of cases of cervicitis of non-gonococcal origin were treated similarly. Sulphonamides were administered orally whether or not other measures (such as cautery or antiseptic applications) were instituted. After initial experiences a number of cases were treated solely with sulphonamides, given orally. The results were to us startling. In numerous instances in which a purulent cervical mucus plug had persisted for years or had recurred after cautery or other measures the cervical mucus assumed normal

* Material for cultures should be taken with the platinum loop and planted immediately upon blood agar. Both aerobic and anaerobic methods should be employed. Incubation should if necessary be prolonged for 48 hours, since the initial growth of organisms obtained from the endocervix or the cervical surface may be inhibited.

appearance, permitted sperm invasion and survival, and pregnancy resulted.

Vaginal cervical cultures have demonstrated a specific pathogenic organism (e.g., *B. coli*) the choice of sulphonamide may be decided. In many cases with a purulent plug in which the mucus had to be presumed sulphadiazine was employed, and in the present case it was recorded that comparatively small doses often suffice. The patient (3 g. daily for five days, no dose being taken after midnight; repeat after a 5-days break. Six pints of blood were transfused daily while taking the tablets, but no alkaline adjustment or change in diet). With this procedure no nausea or other complications were recorded, nor was the normal routine of the patient disturbed. The success of mild sulphonamide therapy seems to us to justify its employment before recourse is had to intensive treatment or other specific measures such as autogenous vaccines, penicillin, etc.

French authors (Palmer and Palmer, 1945) record similar observations. They not only state that chronic endocervicitis is, directly or indirectly, the most common cause of female sterility but also that sulphonamide therapy is successful in about 80% of these cases, leaving a residue of only 20% needing surgical attention.

It may be added that in any woman of child-bearing age in whom surgical measures are contemplated the need for conserving the mucous matrix should be borne in mind. In our experience the milder measures, such as sulphonamide packs, glycerin drains, diathermy, etc., should be tried before any measure involving loss of tissue (e.g., conization). We have seen patients in whom infective processes were effectively dealt with by radical measures at the cost of permanent impairment of secretory function and fecundity.

Invasioo Test in the Male

The technique for testing mucus of doubtful receptivity may be used in the examination of semen of unknown invasive potency. In the present communication only a brief review of the method will be given.

Technique.—Fresh semen obtained by masturbation or taken from a fresh vaginal pool is used; condom specimens are unsuitable. The semen is allowed to liquefy and thus become homogeneous before use. A slide containing fully receptive

mucus is used, and is charged with the semen to be tested. The receptivity of the mucus is established by a control-slide in which it is exposed to fecund semen. Little difficulty was encountered in obtaining suitable mucus; for many female patients attend for their own purposes during the ovulatory phase and consent to supply a specimen of mucus. Several slides containing mucus may be set up and stored in the moist chamber (e.g., a Petri dish) for several hours before use. In all other respects the technique follows the description given previously.

Results.—Nearly two hundred specimens of semen were tested against receptive mucus. From many of these specimens sperms invaded the mucus, with good survival and persistent motility after invasion. These "normal" findings demand no further description.

Several types of impaired invasion and/or viability were noted, however. In the simplest cases the number of invaders was small, both absolutely and in relation to the density of the spermatozoa in the semen. Such deficient invasion is often associated with low viability *in vitro*. In other instances invaders tended to lose forward motility within 60 minutes after penetration. In most of these cases invasion remained

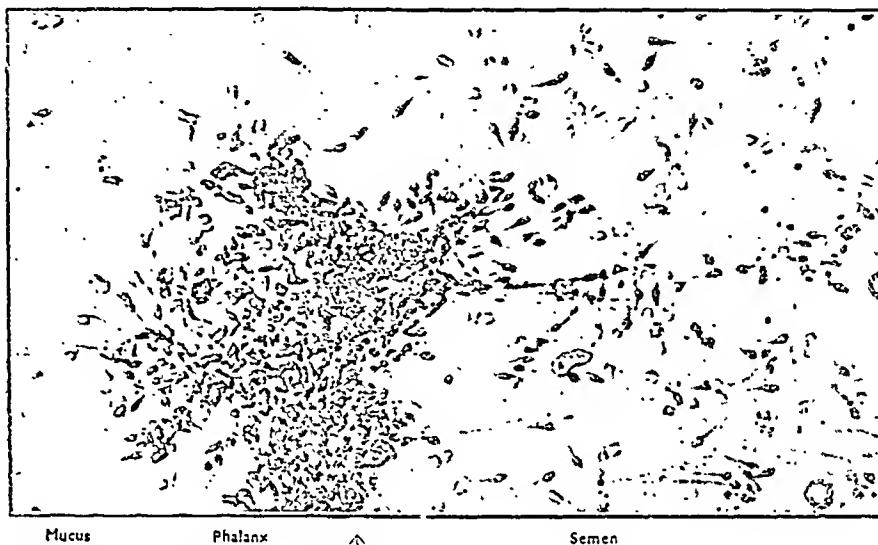


FIG. 2.—Formation of phalanx in negative test (fecund semen). The spermatozoa have penetrated into an interstice between mucus and cover-slip where the latter was not wetted by the former. These deceptive formations do not represent invasion. Mag. $\times 400$. Specimen 12 hours old.

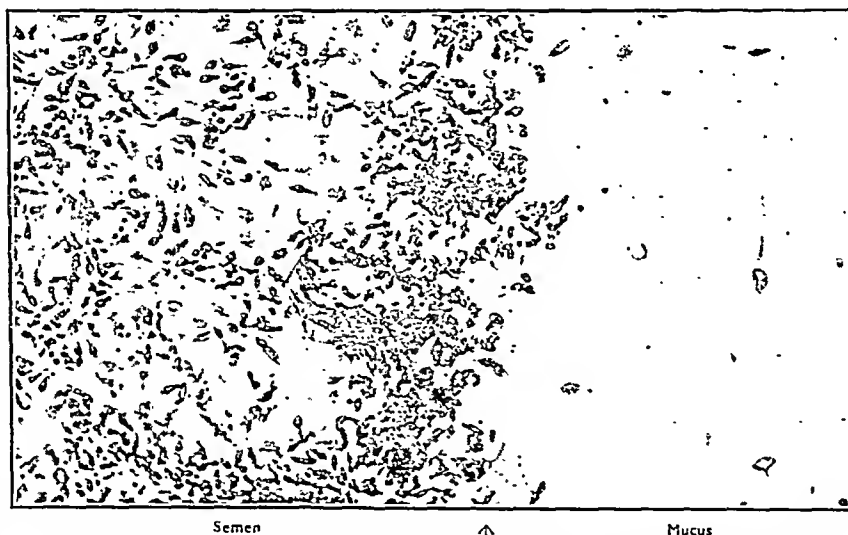


FIG. 3.—Impaired invasion of seemingly normal mucus by spermatozoa (fecund semen). Isolated spermatozoa penetrate the mucus to a shallow depth only. Note "telling" of spermatozoa at the interface. Mag. $\times 400$. Specimen 12 hours old.

shallow. Still more pronounced was the deficiency of semen which provided invaders that became completely immotile almost immediately after invasion. Some specimens contained only isolated sperms capable of invasion or none at all. Lastly, in some specimens viability of the spermatozoa is so low that most of them lose motility soon after emission; and in these cases the usual assembly of sperms at the interface is absent. Apart from non-invasive semen the various types are not sharply differentiated, though by every standard they show greater or lesser impairment of normal behaviour.

The relationship between cytological characteristics of the semen and the invasive potency of the sperms varies widely. In some cases of oligozoospermia invasive potency was higher than in some densely populated specimens; in fact, some of the latter provided no invaders. Generally speaking, the cytological assay of semen does not yield sufficient information concerning the invasive potency of the spermatozoa, on which fecundity depends. On the other hand, high invasive potency does not always balance low density of spermatozoa (oligozoospermia). Our experience suggests the necessity for combining invasion tests with the routine assay of semen.

The treatment of deficient invasive potency is a subject outside the scope of the present communication. It has been referred to by Walker (1945).

Summary

Semen and cervical mucus are virtually immiscible. Fecundation depends on the ability of the sperms to penetrate the interface between mucus and semen. The mode of invasion is described.

This process can be studied individually in special contact preparations, the receptivity of the mucus being assessed by exposing fecund semen, while the semen is assayed against normal ovum.

In many sterile women the mucus does not admit of useful spermatozoa, and these findings are closely correlated with the results of Sims (post-coital) tests.

The non-surgical treatment of cervical dysfunction is discussed, with special reference to sulphonamides.

The authors wish to acknowledge the co-operation of Mr. R. Matson (Royal Surrey County Hospital), who carried out the bacteriological examinations in numerous cases. Details of the bacteriological and other observations will be published in due course.

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ACUTE OSTEOMYELITIS OF LUMBAR SPINE IN AN ADULT

BY

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The following case may be of interest on account of the rarity with which this disease occurs in adults, and because of its close resemblance to tuberculosis of the region involved.

Case Report

The patient, a man aged 43, was first seen in the outpatient department of this hospital on Feb. 8, 1946. He looked very ill, and complained of a painful swelling behind the left hip, the pain being more severe when sitting and at night. He had noticed the swelling three weeks previously, and it had increased in size; his temperature was 101° F. (38.3° C.), he had a dry cough, and night sweats disturbed him considerably. There was no history of trauma.

The swelling was situated a little behind and below the great trochanter to the gluteus maximus muscle (Fig. 1); it was diffuse, and gave the impression that it was connected with the trochanteric bursa of the gluteus maximus. There was deep fluctuation.

Hip movements were free in all directions but caused pain in the buttock. A little irregularity in outline and stiffness in the lower lumbar spine were present, and tenderness on deep pressure in the region of the first and second lumbar vertebrae could be elicited. The patient had lost much weight.

He was admitted to the ward, but a general examination did not reveal any abnormality in the chest or elsewhere, and, in view of the insidious onset and tenderness over the spine, a diagnosis of Pott's disease seemed the correct answer to this problem. X-ray films of the spine showed rarefaction of the upper anterior aspect

of the second lumbar vertebra with possible involvement of the first (Fig. 2). The blood picture showed a severe secondary anaemia with haemoglobin 52%, red blood corpuscles 2,630,000, white blood corpuscles 18,000, of which 87% were polymorphs; the blood sedimentation rate was 67 mm. in one hour. This picture was entirely contrary to expectations, strongly suggesting a pyogenic rather than a tuberculous infection, and on aspiration of the abscess a dirty yellow pus was evacuated which provided a copious growth of *Staphylococcus aureus*. Six days after admission the whole left leg became swollen, and another tender area was discovered on the antero-lateral aspect of the thigh a little below the level of the great trochanter. Under general anaesthesia the original abscess was laid open by a 4-in. (10 cm.) incision, and over a pint (568 ml.)

of pus under considerable pressure was evacuated; exploration with the finger revealed that the abscess was connected with the femoral sheath, seemed to come from the direction of the sacro-iliac foramen. On exploration of the lower part of the wound another abscess cavity was entered, and this must have accounted for the swelling on the antero-lateral part of the thigh. Fifteen ounces (425 ml.) of pus were evacuated from this region.

It would appear that the pus had tracked from its origin in the lumbar spine into the pelvis, along the sacro-iliac foramen, passing through the gluteal region, and then along tissue planes to the front of the thigh, where pressure on the femoral vein resulted in generalized swelling of the limb.

The depths of the abscess cavities were well insufflated with sulphathiazole powder mixed with 100,000 units of penicillin, and a drainage-tube was inserted down to but not through the sacro-iliac foramen. The wound was partly closed with interrupted sutures, dressed, and the patient was returned to bed. A transfusion of two pints (1.14 l.) of blood was given and penicillin in 30,000-unit doses intramuscularly continued four-hourly. The patient was extremely ill, and his condition gave rise to much anxiety; but on the third day after operation the temperature became normal and the pulse improved both in rate and in volume. Penicillin was



FIG. 1.—Showing the position of the swelling.

continued for a further three days following the drop in temperature. A plaster bed was prepared, in which he was comfortably nursed; his general condition showed steady improvement and pain had almost disappeared. The wound was completely healed five weeks after operation. His haemoglobin had now risen to 70%, with red cells at 4,020,000. The spine was again x-rayed, and recalcification as well as some new bone formation was evident; the presence of a small sequestrum was also reported.

The patient was discharged to a convalescent home nine weeks after admission to the hospital, fit, and entirely free from pain; although not yet allowed to walk, he was able to sit quite com-

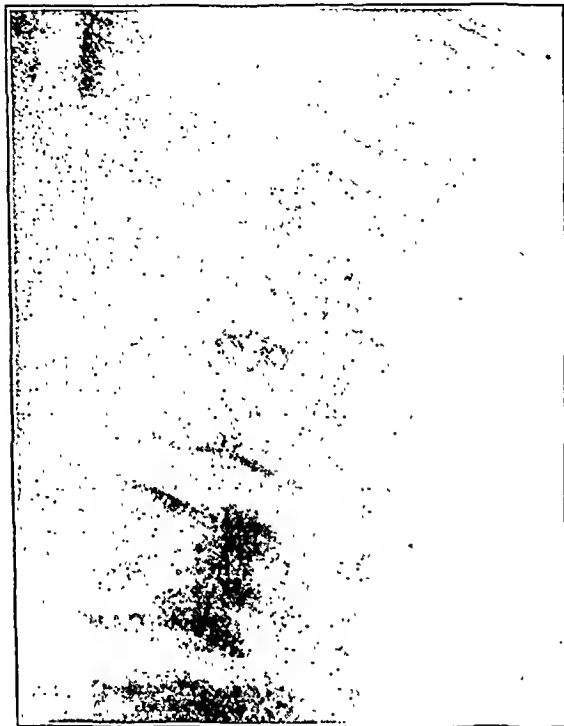


FIG. 2.—Showing destruction of bone and rarefaction of the upper anterior part of the second lumbar vertebra.

fortably and seemed very anxious to "get going." He was seen again on May 17, after his return from the convalescent home, and he could move about and walk quite freely without discomfort or pain. A further x-ray film on May 31 showed a little more new bone formation.

Comment

The interesting features about this case are the insidious onset, the age of the patient, and the strong resemblance clinically to tuberculous disease of the bone and the development of a very large collection of pus in the presence of a comparatively small area of bone necrosis, as shown by x-ray films.

I would like to thank Mr. D. Denham Pinnock, senior surgeon to the hospital, for the facilities he gave me for dealing with this case, and for his wise counsel throughout; and Dr. Moore Patterson for his great interest and help, and for permission to reproduce the skiagram, which was taken in his department. Lastly, I must not forget the care and devotion shown by Sister Watts, whose nursing largely subscribed to the recovery of this patient.

The Council of British Societies for Relief Abroad (75, Victoria Street, London, S.W.1) states that since the autumn of 1945 members of British voluntary societies have been doing welfare work on behalf of German people living in the larger cities of the British Zone and among the refugees coming in from the East. These workers are grouped in teams numbering about 12 people, men and women with varied training. They represent the British Red Cross and Order of St. John, the Quakers (Friends Relief Service and Friends Ambulance Unit), the Salvation Army, the Girl Guides, the Save the Children Fund, the Catholic Committee for Relief Abroad, and the International Voluntary Service for Peace. Many of these organizations have members serving not only in Germany but also in other countries where there is severe distress—in France, Poland, Austria, Italy, Yugoslavia, and Greece.

NICOTINAMIDE DEFICIENCY AFTER ORAL ADMINISTRATION OF PENICILLIN

BY

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Diminished urinary output of nicotinamide methochloride in human beings after oral administration of succinyl sulphathiazole or sulphaguanidine has been described by Ellinger, Coulson, and Benesch (1944) and by Ellinger, Benesch, and Kay (1945); and nicotinamide deficiency symptoms have been noted in a case of Flexner dysentery after oral administration of succinyl sulphathiazole by Hardwick (1946). One of us (F.M.S.) has had the opportunity of observing the occurrence of "black tongue" after oral administration of sulphadiazine in one case and of penicillin in another. These cases were reported at the quarterly meeting of the Royal Medico-Psychological Society on Feb. 14, 1946. Quite recently Bedford (1946) reported two cases of "black tongue" after oral application of penicillin, mentioning that he had heard of another. We were able to examine further the patient who had developed "black tongue" after oral administration of penicillin, and it may be of interest to report findings in this case.

The patient was a woman aged 55 employed on administrative duties. She enjoyed good health, but during the war years she had suffered from three mild attacks of nicotinamide deficiency, characterized by lassitude, pellagroid skin changes, erythematous rashes on forearms, legs, and neck, thickening of the skin followed by pigmentation, mild disturbances of deep sensation of the legs with clumsy gait and difficulty in balancing on rough ground, and by abdominal pain and distension. All three attacks were quickly relieved by taking 200 mg. of nicotinic acid daily for four to five days, after which 50-100 mg was taken for a few more days. She had been free from attacks for two years and attributed this to an improved diet—more protein and less carbohydrate.

In October, 1945, she had a mild attack of pharyngitis for which she was given 15 penicillin tablets (Boots) of 500 units each in five days; these were placed on the dorsum of the tongue and allowed to dissolve. They were supplemented by oral administration of penicillin drops containing 500 units per ml. in saline solution pipetted on to the tongue at frequent intervals over five days. At the end of this time the tongue showed a dark slaty colour, which was discovered accidentally on examining the throat. The patient now complained of lassitude, of inability to concentrate on mental work, and of subjective sensory changes in both legs: the legs felt "woolly" and as if they did not belong to her and had to be "placed." The skin of the forearms and back of the hands was dry, coarse, and inelastic.

Penicillin was discontinued and nicotinic acid 200 mg. three times a day was taken for three days: subjective symptoms were relieved and the appearance of the tongue was improved, but brown furring persisted for another two days; the skin of the forearms became normal a few days later.

Effects of Oral Penicillin

The patient was willing to undergo further investigation, so it was decided to observe the effect of oral penicillin on her daily urinary nicotinamide methochloride output, examined by the method of Coulson, Ellinger, and Holden (1944), and to relate this to any clinical changes that might occur. The examination was carried out between Feb. 20 and March 12, 1946.

The daily nicotinamide methochloride output estimated for four days before penicillin administration was 2.40, 2.40, 2.46, 2.01 mg., and on the fifth day the response (actual elimination minus predosing mean elimination) to the ingestion of 100 mg. nicotinic acid was 6.38 mg., equal to 4.55% of ingested nicotinic acid. Penicillin administration was started on March 2, 1946: 34 tablets (Boots) of 500 units each were applied during six days, one at a time, to the left side of the tongue and allowed to dissolve in this position. The urinary output of nicotinamide methochloride fell on the fourth and fifth days of penicillin administration to 1.24 and 1.02 mg. respectively, and

the first symptoms of nicotinamide deficiency occurred. When penicillin was discontinued on the seventh day the nicotinamide methochloride output rose immediately to 2.66 and 2.42 mg. per day, and to 6.46 mg. after ingestion of 100 mg. nicotinic acid, which means a response of 4.08 mg., equivalent to 2.92% of nicotinic acid ingested.

After 11 tablets (thirty hours) the tongue presented the following aspects: a few light-brown patches were seen on the dorsum

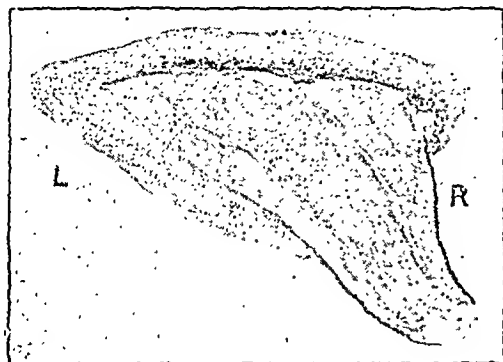


Fig. 1

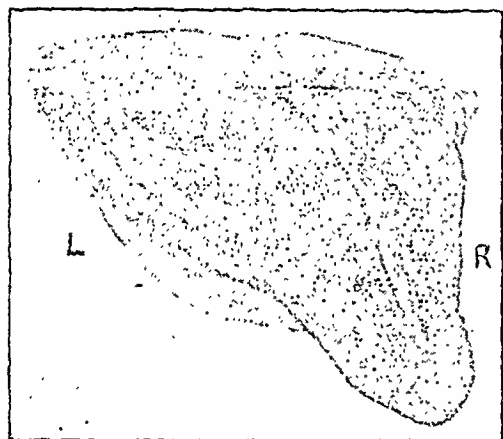


Fig. 2

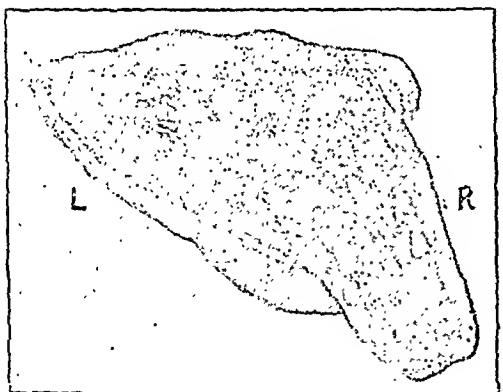


Fig. 3

Figs 1 to 3. Showing appearance of tongue during the second course of penicillin, reproduced from water-colour paintings made from mirror images: Fig. 1 on third day; Fig. 2 on sixth (last) day of penicillin administration; Fig. 3 on fourth day after discontinuing penicillin. L=left, R=right, side of tongue.

mainly to the left of the midline. These patches could not be removed by washing or scraping the mucous membrane. After the 18th tablet (third day) the dorsum was of a blue-grey cyanotic colour with patchy brown areas (*vide* Fig. 1). After 34 tablets (sixth day) the colour of the dorsum had darkened and the brown areas were now very striking, particularly on the left side (*vide* Fig. 2). They did not extend to the posterior

third. In some places discoloration was punctate and individual papillae brown-topped. The tip, which was denuded of papillae, and the margins were pink. Small venules of a decyanotic colour could be seen coursing over the pink later margins. The tongue was bulky and the fissures were deep than usual.

On the fifth and sixth days of penicillin administration malaise and lassitude were experienced. Mental work deteriorated owing to the difficulty felt in concentrating and in recalling the names of objects and concepts not in constant and familiar use. Recall of the forgotten item had to be aided by a laborious process of association. Subjective sensory change were experienced, and when walking over a rough surface visual aid and a wider base were necessary to maintain equilibrium. The soles of the feet felt "woolly," so that inequalities in the ground could not be easily negotiated. There were also several attacks of epigastric pain, distension without diarrhoea, and urgency of micturition. Slight ataxia was the only neurological sign elicited. On the fifth day an erythematous rash and irritation of the skin of the dorsum of the feet were noted. These symptoms persisted for three days after penicillin was discontinued, while the colour of the tongue faded and a yellow-white fur which could not be scraped off spread over its surface (*vide* Fig. 3). On the ninth day 100 mg. of nicotinic acid given orally caused rapid relief of subjective symptoms, and the tongue appeared normal by the eleventh day.

After discontinuing penicillin the urinary nicotinamide methochloride elimination rose to a higher level than that existing before the experiment (average between March 13 and 21, 4.7 mg./day).

Owing to a misunderstanding urine samples had not been collected during the first days of penicillin dosing; it was therefore decided to carry out another experiment with 24-hour samples of urine, using for the saturation tests parenteral nicotinamide instead of oral nicotinic acid. After three preliminary days (March 29-31, 1946), during which the urinary nicotinamide methochloride eliminations were 4.35, 4.69, and 4.09 mg./day, 100 mg. nicotinamide was given. The response was 19.8 mg. nicotinamide methochloride, equivalent to 13.9% of the administered nicotinamide.

When 100,000 units of penicillin (Glaxo, almost pure) in aqueous solution were ingested by mouth in equal doses from April 3 to 8 inclusive, the urinary nicotinamide methochloride output decreased to 3.12, 2.98, 2.55, 2.27, and 2.55 mg./day respectively. On April 8, 100 mg. nicotinamide was given parenterally; the response (21.1 mg., equal to 14.8%) was similar to that obtained before this course of penicillin was started. After discontinuing penicillin the nicotinamide methochloride elimination fell below the pre-penicillin level, and on April 12-18 (excluding April 17) it was 3.45, 2.18, 1.82, 2.24, 2.63, 2.32 mg./day respectively. On the fourth day of penicillin administration a slight erythematous rash of the face and forearms and mild epigastric pain were noted. Mental dullness and difficulty in concentration were experienced, but the symptoms were much less definite than on earlier occasions. On the fifth day there were awkwardness in walking owing to a "woolly" feeling of the soles, some restlessness, and difficulty in recalling names. The tongue was red, felt bulky and uncomfortable, but showed no obvious change from the normal. On the sixth day there was a light-brown fur on the dorsum of the tongue and the tip was red and denuded of papillae; the skin of the forearms and of the backs of the hands and feet was somewhat dry and inelastic. After 100 mg. nicotinamide intramuscularly all subjective symptoms were rapidly relieved; but the skin of the forearms remained dry, inelastic, and wrinkled for another four days, while the fur on the tongue cleared rapidly.

Discussion

Darkening of the tongue was observed after local treatment of the oral cavity with penicillin in an otherwise healthy person who had previously shown signs of nicotinamide deficiency on several occasions. In a second person a similar appearance of the tongue was noted after oral administration of 20 g. of sulphadiazine for the relief of an infection of the upper respiratory tract. The darkening of the tongue in the latter case was

first observed two days after a three-day course of sulphathiazine had ended. The only other signs noted were dryness and itchiness of the skin. The condition was rapidly relieved by nicotinic acid in both cases. Recently three more cases of darkened tongue were reported by Bedford (1946), and the aetiology of two of these cases was discussed. "Black tongue," which is the sign of canine nicotinamide deficiency, has not, so far as we are aware, been previously described as occurring in human nicotinamide deficiency. In this condition other changes in the appearance of the tongue prevail. In none of the volunteers examined by Ellinger *et al.* (1944, 1945) was black tongue observed after oral administration of succinyl sulphathiazole or sulphaguanidine. The fact that in our case and the three mentioned by Bedford penicillin was in contact with the tongue for a considerable time makes it probable that the changes observed are partly due to a local effect of the drug on the tongue. In the case here described in detail, however, additional signs common in human nicotinamide deficiencies also developed after the oral intake of penicillin. The earlier spontaneous attacks of nicotinamide deficiency and the low response to nicotinic acid before the second course of penicillin, indicated a low nicotinamide status when compared with the normal output and response as described by Ellinger and Coulson (1944), Ruffin, Cayer, and Perlzweig (1944), Coulson, Ellinger, and Smart (1945), and Ellinger, Benesch, and Hardwick (1945). The nicotinamide methochloride output was decreased by the second course of penicillin to a deficiency level, and severe deficiency symptoms were experienced. After discontinuing penicillin the nicotinamide rose to a higher level than before the course. This may have been due to a change of the intestinal flora caused by penicillin. It is now well established that up to two-thirds of orally administered penicillin can reach the colon unaltered (McDermott, Bunn, Benoit, DuBois, and Reynolds, 1946), and the decrease of nicotinamide methochloride output after penicillin is in full agreement with the findings of Ellinger *et al.* (1944, 1945) after the intake of succinyl sulphathiazole or sulphaguanidine.

At the beginning of the third course of penicillin the nicotinamide level was far above the deficiency level, and general deficiency symptoms developed more slowly and were less severe, while the nicotinamide methochloride elimination was similarly depressed but did not fall as low as during the second course owing to the higher initial level. The darkening of the tongue, which had been very marked on the first two occasions when the contact of penicillin with the oral cavity was protracted, was far less noticeable on the third occasion when the contact was only brief.

From the biochemical investigation of the case it is evident that penicillin orally administered can produce a nicotinamide deficiency, as Ellinger *et al.* (1944, 1945) have shown for succinyl sulphathiazole or sulphaguanidine. The degree of the decrease of nicotinamide methochloride output caused by these drugs varies within wide individual limits.

Whether a nicotinamide deficiency develops or not depends on the relative contribution of the bacterial flora to the nicotinamide requirements of the person concerned and on the nicotinamide status of that person: this is evident from the varying reactions of our patient to the three courses of penicillin. The local effect causing the darkening of the tongue has still to be investigated; the appearance of the tongue did not suggest that this darkening was due to a bacterial film but rather to a pigmentation of the papillae. The nicotinamide status of patients treated orally with penicillin should therefore be watched, and if necessary nicotinamide should be given parenterally.

Summary

A case of nicotinamide deficiency after oral intake of penicillin has been described which was characterized in addition to the known nicotinamide deficiency symptoms by darkening of the tongue similar to that observed in another patient after intake of sulphathiazine. In both cases symptoms disappeared after discontinuance of the drugs and administration of nicotinic acid.

We wish to record our thanks to Dr. N. McDiarmid, medical superintendent of Three Counties Hospital, for permission to

publish these cases; to Dr. T. F. Macrae, of Glaxo Laboratories, Ltd., for a generous gift of penicillin; and to the Ella Sachs Plotz Foundation, Boston, for a grant for technical assistance to one of us (P. E.). Our thanks are due to Miss J. Vaughan Morgan for technical assistance.

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WORK OF THE GOVERNMENT LYMPH ESTABLISHMENT

JULY, 1898, TO JUNE, 1946

BY

H. S. FREMLIN, M.R.C.S., L.R.C.P., D.P.H.

Formerly Bacteriologist to the Lymph Department of the Ministry of Health

The total number of doses of calf lymph issued from the Government Lymph Establishment between January, 1899, and June, 1946, was 43,804,088, and the number of calves used was 25,350. It is interesting to note that of the total doses issued 21,893,781 went to civilians and 21,910,307 to the Forces.

We began our work at the British Institute of Preventive Medicine at Chelsea, later known as the Lister Institute of Preventive Medicine. Previously vaccination was carried out chiefly from human lymph. The vaccinator inoculated it from arm to arm in children; the cases were examined a week later and the child that produced the best vesicles was selected for the vaccination of the next group of children. Any excess of this good lymph was collected either in capillary tubes or on small ivory or bone slips pointed at the end on which the lymph was removed. These were then put round the rim of a plate to dry; when dry they were kept in a box or paper holder for use when required.

At that time Dr. Cory, assisted by Dr. Stott and Mr. Savory, had an establishment known as the Animal Vaccine Station at Lamb's Conduit Street, where calf lymph was used for those who preferred it. One calf was vaccinated every week and yielded sufficient lymph for direct vaccination and for collection in tubes. These tubes were sent to the Local Government Board and were examined by Mr. Farn, I think for the presence of blood; and if blood was found they were rejected. The advantage of calf lymph was that such diseases as syphilis were avoided. Nevertheless, whether the lymph was obtained from children or calves, bacteria were introduced with the vaccine and might set up inflammation, at times with serious consequences.

In Germany and in France it was found that vaccine could be diluted with six times its weight of 50% glycerin in sterile water and still be equally active—this, of course, allowing of a great saving of lymph. The Local Government Board sent Drs. Copeman and Blaxall to make inquiries on the spot, and they reported favourably on this method. Dr. Copeman investigated the effect of the glycerin on the bacteria contained in the vaccine, and found that though the lymph showed numerous bacteria before the glycerin was added they had almost disappeared within a month without any loss of potency on the part of the lymph itself. The dilution of 1 in 7 of the lymph added greatly to the amount available for use, and this was important when hundreds of thousands of cases were vaccinated every year. It took a long time to collect lymph direct from a vesicle in its pure state, and this would have made it impossible to provide the number of tubes required—about 2,000 a day and possibly twice as many—during a smallpox epidemic.

For calf inoculation a good quality of lymph was essential. When we started work at Chelsea we used calf lymph at first,

but as ours failed we obtained supplies from both Germany and France. That from Cologne was the best. Our stock of lymph was kept at 50° F. (10° C.) and it was potent for six weeks at this temperature. In this connexion, thanks to the courtesy of the Director of the Lister Institute, I had the opportunity of keeping glycerinated lymph for some hours in liquid air at 300° F. (185° C.) below zero. This destroyed neither the vaccine nor the accompanying bacteria. With regard to the stock lymph used for calf vaccination, we found that rabbit lymph gave good results on calves and so we were able to obtain suitable material.

When we began our work there were four of us on the staff—Dr. Blaxall and myself, a secretary, and a boy to assist us. After about two years an epidemic of smallpox broke out and we required a great increase of staff, not only for calf vaccination and bacteriological investigation, but also for clerical work and dispatch of tubes, and there was much additional work for laboratory assistants.

New Establishment at Hendon

In 1907 the Government Lymph Establishment at Hendon was ready for us. Here we had a large two-storey building for laboratory and clerical work, the clerical department being on the ground floor, the laboratories on the floor above. Near by was a large room for vaccinating calves. Four calf stables, each capable of holding twenty animals, and having lofts for storage, were in the same area, together with a small animal house. The electricity and hot water were supplied from a large building with a staff of engineers. In addition, two senior officials of the establishment lived on the premises. Here we had a permanent staff of thirty, as we had on the premises all the men who attended the calves as well as those who assisted in their vaccination and in the collection of the lymph pulp.

Owing to the poor keeping qualities of calf lymph, which quickly loses potency at normal temperatures, production in the early days was governed by the demand, since it had to be issued as soon as it could be passed through the necessary laboratory tests. This meant that no reserve could be kept to meet sudden demands occasioned by outbreaks of smallpox. Experiments in cool storage were made at first with ice (or ice chests), in which the lymph would keep fresh for about six weeks. Then, in 1902, a cool chamber was hired and lymph was stored experimentally at 22° F. (-5.5° C.). By 1904 these experiments had proved so promising that inquiries were made as to the best refrigeration plant available for the projected new establishment at Hendon. Plans for this building were already in hand. The plant was installed and ready for use when the establishment was opened in 1907. From July 3, 1907, all lymphs were placed in the refrigerator, working below 0° C., as soon as they were collected. Further experiments were made, and it was established beyond dispute that lymph kept continuously below freezing point, would retain its potency for two years or more. Cold storage of vaccine lymph has since become universal.

The introduction of this method of storing lymph made it possible for a reserve to be kept, and material equivalent to over a million doses in various stages of preparation was normally held in reserve to meet sudden demands. The value of this reserve was amply demonstrated at the outbreak of the 1914-18 war, when very large supplies of lymph were needed immediately for the Forces. Between 1914 and 1918 over 600,000 doses were issued. An even better demonstration afforded during the 1939-45 conflict, when not only our Forces but those of our Allies stationed in this country had to be supplied. In addition we supplied 750,000 doses to Scotland during the 1942 outbreak of smallpox there, as well as dealing with minor outbreaks in England. Altogether, from September, 1939, to May, 1945, over 15,000,000 doses were issued. At one time during the war our reserve stood at over 5,000,000 doses.

Next to the importance of the discovery of vaccine lymph itself, the introduction of refrigeration must certainly rank second. With its advent an adequate reserve can be kept for emergencies, and production can be spread evenly over a period instead of going up and down with a fluctuating demand. The maintenance of a reserve is very important, as between the

necessity for an increase in production and the material being available for distribution there must always be a time-lag at least a month. This delay is unavoidable. Extra animals have first to be procured, and then kept at least five days quarantine before they are vaccinated. A further few days elapse before the material can be collected, and, after that, there must be allowed for the laboratory tests, tubing, etc.

It is certainly safe to say that without refrigeration the enormous demands of the last war could not have been met and all orders supplied, as they were, on the day of receipt. In conclusion, I wish to mention the work of the secretary Mr. P. W. Sutton, who dealt with the number of calves and tubes required each year, and carried out this exacting work from 1899 to the present time. He has kindly contributed the section above dealing with cold storage.

Medical Memoranda

Novel Method of Digital Traction

In a recent case of multiple compound fractures of the phalanges I hesitated to use the ordinary pulp pin because the pulp of the finger-tips was lacerated and because I did not want to prejudice an already doubtful circulation. At Dr. T. S. Cochrane's suggestion, therefore, I adopted the following method, which I have not seen described and which proved completely satisfactory.

Under general anaesthesia a small hole (about 1/16 (1.6 mm.) in diameter) was bored manually through the central part of the finger-nail by means of a suitable dental drill.



handle. A medium-sized curved cutting needle, threaded with silk thread, was passed proximally between the nail and its bed to emerge through the hole. Sufficient traction was applied to maintain the fracture in the corrected position, and the ends of the silk were tied and fixed to the usual "banjo" splint, as shown in the accompanying photograph. This kept the fracture in satisfactory position for four weeks, without any pain or discomfort to the patient. The expected fraying of the silk against the edge of the nail hole did not occur.

I should like to express my thanks to Dr. Oliver Walker for the excellent photograph.

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Reviews

RADIOTHERAPY IN MALIGNANT DISEASE

The Results of Radium and X-ray Therapy in Malignant Disease. Second Statistical Report from the Holt Radium Institute, Manchester. 1934-38. Compiled by Ralston Paterson, Margaret Tod, and Marion Russell. (Pp. 145. 7s. 6d. plus 5d. postage.) Edinburgh: E. and S. Livingstone. 1946.

This is an epic account of work done in the Holt Radium Institute before the war. It is a statistical volume showing results in an easily appreciated form, and, so far as the writer of this review can judge, the statistical work has been faithfully carried out and the figures give an undistorted impression of the results. The results are all analysed at least 5 years after treatment, and it is evident that the follow-up organization has been sufficiently good to permit of the loss of a negligible proportion of the patients treated, in spite of the difficulties caused by the war.

In the general survey at the beginning of the report three essentials of cancer work are listed. The first of these is education of patient and doctor, and the report is itself meant to educate both. For this purpose it is divided into three parts. The first is designed to show the organization and results obtained in a manner which can be assimilated by the intelligent layman. Since 1942 there has gradually developed an organization for seeing and treating patients, centred on Manchester and covering a region from Westmorland to Staffordshire, and an increase of from 1,313 to 4,530 patients seen per annum has occurred. A great increase is shown in the proportion of x-ray to radium treatment carried out during the war. The results of the treatment are striking in a disease popularly supposed to be incurable; 40% of about 6,400 patients were alive 5 years after treatment. Tables are given in this part of the report concerning the various sites affected by cancer, and in all of these the importance of early treatment is made obvious.

The second part of the report is concerned with relating results to method of treatment. Certain methods appear to give better results than others. Some of the advantages satisfy tests of statistical significance, but to enable those interested to make up their minds whether the advantages are real or apparent more facts must be given regarding the way in which the treatment is decided. Any such figures as these can only support one method of treatment against another if there has been random selection of cases. Part III of the report shows that a very small proportion of survivors die of cancer after 5 years.

This is the best report of its kind ever seen by the reviewer, and it is to be hoped that other centres will be afforded the necessary facilities to give a similar account of their work.

VOLUNTARY HEALTH WORK IN THE U.S.A.

Voluntary Health Agencies: An Interpretive Study. By Selskar M. Gunn and Philip S. Platt. (Pp. 382. \$3.00.) New York: Ronald Press Company.

In 1941 the National Health Council, assisted by the Rockefeller Foundation, launched a three-year study of voluntary health agencies of the United States. An influential advisory committee was appointed and the results of the survey were sent to forty leaders in the field of health and welfare, who held a two-day conference in New York to discuss them. The study now published is one of the most complete of its kind ever prepared; yet it is remarkable what is left out. Hospitals are not included. All institutions for the custodial care of the sick, dispensaries, clinics, out-patient departments, are ruled out; so are associations formed for supplying group medical service, medical insurance organizations, health services in industrial undertakings. Even professional bodies, such as the American Medical Association, much of whose activity is devoted to serving and protecting the health of the people, are touched upon only incidentally.

What, then, does the survey include? Organizations concerned with health education, community health planning, the combating of certain diseases, and the advancement of research and legislation relating to health. There are 20,000 such voluntary health agencies in the United States. At least 300,000 rather exceptional men and women are giving freely of their

time to the direction of these enterprises, and probably a million others are helping in a less official way. They collect ten million pounds a year from a warm-hearted public. The agencies are the expression of public spirit, pride in a healthy community, a highly developed civic sense. Most of them began with an individual sensitive to a public need who organized a group in his locality, and many expanded into a State or national organization. Thus in Philadelphia in the latter part of the nineteenth century a movement against tuberculosis was started; in New York, the combating of venereal disease; in Connecticut, the promotion of mental hygiene; in many cities, the care of mothers and infants. All these movements presently became national, and so later on did those for cancer control, for the prevention of blindness, for the assistance of the hard of hearing, for public health nursing. One of the most extraordinary developments in recent years has been an organized attack upon infantile paralysis, including research into cause, prevention, and cure. Nothing like this movement, which owes a great deal to the name of Roosevelt, has ever swept over the American scene. It has administrative branches in 36 States, and its separate agencies number 2,600, exceeded only by the tuberculosis associations, national, State, and local, which number 3,000, and the 3,700 chapters of the American Red Cross. On the other hand, for some reason, the most recent national organization, concerned with diabetes, has failed to touch the public imagination. One voluntary agency with national status is the birth control movement, which since 1942 has been the Planned Parenthood Federation of America, Inc. Its battle is not yet won. In Massachusetts doctors are not allowed to prescribe contraceptives, and in Connecticut their use is forbidden.

Many of these voluntary movements when they reach a certain level of public acceptance are taken over by public health departments. The combating of infant mortality is now a Government concern, whereas 35 years ago, in 26 out of 28 of the largest cities of the Union, voluntary agencies were carrying the entire responsibility. In all this absorption there is nothing for resentment. After all, the voluntary movement betokens the interest of a relatively few awakened people; the Government organization means the potential awakening of the whole community. Voluntary effort is, of course, more roving, more experimental, and its value in that respect has to be weighed against the assured support and patronage and (perhaps) more efficient management by the State. Some voluntary agencies have shown a praiseworthy resilience in the face of encroachment. One instance is the House of the Good Samaritan at Boston. It began as a tuberculosis hospital. Then its service was taken over by the State, whereupon it specialized in cancer. The cancer service in turn became a State service, and now the institution is concentrating on cardiac cases and carrying out notable research on rheumatic fever.

In spite of this flow of voluntary service and contribution, those responsible for the survey are by no means satisfied. The agencies are spread unevenly. They offend the natural taste of the administrator for uniformity. They sprang up spontaneously and independently. The wind blew where it listed. The seed was scattered indifferently on all manner of soil. No central direction or planning was attempted. There is duplication here and gap there. Some segments of the health problem are over-served and others not served at all. There is every kind of confusion and waste. The time has come, say the authors of this study, when the voluntary health agencies must reorganize for the task that lies ahead. Their funds must be used more wisely and economically. There must be more team play, more centralized organization and direction. It is, of course, a great gain to efficiency if, instead of competitive appeals, there can be a nation-wide campaign for the proper distribution of health agencies over the entire country, but it may not be altogether good philanthropy. There may be more to be said for the sporadic local effort than these authors realize. If the taking over of voluntary work by the State dries up the springs of private generosity, so does, to some extent, centralized planning in the voluntary field itself. A citizen subscribes to a movement in his own small town for the after-care and relief of crippled children; he does so because the movement serves his neighbours' children and gratifies his local pride, but if in a redistribution this local movement is judged redundant and replaced by something bigger and better fifty miles away he

may not feel the same interest in it. It is well to leave some ends rough-hewn. The authors say that the voluntary health movement has "its fullest flowering in the United States." They can overdo the trimness of the garden.

AFTER-EFFECTS OF TRAUMA OF THE UPPER LIMB

The Traumatic Deformities and Disabilities of the Upper Extremity. By Arthur Steindler, M.D., F.A.C.S., in collaboration with John Louis Marxer, M.D. (Pp. 515; 1048 illustrations. \$10.00 prepaid.) Springfield: Charles C. Thomas. 1946.

Dr. Steindler's well-known eclecticism and catholicism are splendidly displayed in this work. He has set out to discuss not the relatively clear-cut problems of acute trauma but rather the after-effects—the complications of injury. Though "deformity" is a prominent feature, it is rather the disturbances of function that may follow the unsuccessful treatment of injury with which he is more concerned. The author rightly emphasizes how varied may be the disabilities produced by the self-same anatomical lesion and conversely how an identical deformity or disability may result from such very different primary traumatic lesions. In the arm there are particular reasons for stressing function because of its complexity anatomically and physiologically and of its importance to man as a worker.

The mere correction of a malunited radius is of less importance to Steindler than the establishment of a proper physiological usefulness in the limb as a whole. It is, however, not to be supposed that he is only concerned with instruction in the treatment of neglected injuries. While recognizing that the control of infection, the proper alignment of damaged parts, the proper placement of joints with adequate rest to restore biological equilibrium, will prevent future disability, Steindler recognizes that even with perfect primary treatment certain disabilities will still remain.

The work is a mine of information presented largely in the form of case reports. There is a pleasing absence of dogmatism—the cases speak for themselves. Yet we could wish that Dr. Steindler did more often give definite opinion from his vast experience and tell us more about the errors which so often must have been present in the primary treatment before these cases came to him. In a presentation which is patently honest it is inevitable that occasionally it should seem discursive and even incomplete. Nevertheless this is a most valuable study, which all practising orthopaedic surgeons should possess.

If we have one criticism it is with the publisher, who, on the back of the title page, gives stern warning against reproduction of its contents "in any form whatsoever without permission except by a reviewer who wishes to quote extremely brief passages." This is indeed strange in a medical work by a man of such universal sympathy, who has given much to mankind both in originality as well as in what he himself has selected from the writings and practice of other workers the world over.

SOME VICTORIAN MEMORIES

Tooting Corner. By Eric Bligh. (Pp. 336. 15s.) London: Secker and Warburg. 1945.

"The great Victorian age . . .", so Mr. Bligh refers to it; and if its contemporaries were more confident of its greatness than we are, at least we cannot deny that they were accustomed living in the grand manner. "Characters" were as abundant as our gnarled yet shapely English trees, and preached, demed, prayed, bred, built, expressed themselves with a decency and vigour that shame our supposedly uninhibited "century of the common man." *Tooting Corner* teems with such people. The author's father dominates these reminiscences with his forceful personality and masterful appearance; indeed, like so many of the more famous men of his time he seems to have borne a striking resemblance to Landseer's lions. No age is better suited than the Victorian to reminiscence; like a Pre-Raphaelite tapestry the total picture is confusing, overcrowded, whereas the corner revealed in one man's memory is both delightful and indicative of the whole.

Most of Mr. Bligh's ancestors were Dissenters, and his accounts of their chapels, thick black clothes, odour of yellow soap, extemporary and interminable prayers poured forth among pitch-pine walls and imitation morocco bindings, are

recorded with an amused detachment that is likely to be shared by most of his readers. His father, who was a doctor, graduated at Edinburgh, spent several years in Demerara tending natives and preaching to them as persuasively as an ignorant of their language would permit, and finally settled at Tooting, then a country town—where patients seem to have been even more reluctant than usual to pay their doctors' bills. He often, thankless, underpaid work was his lot; a laconic entry in his diary runs: "Miss C. confined, child dead. Mrs. C. lay in bed all day and drinking gin."

Of himself the author says little (the tale ends with his schooldays); but he had the misfortune to be afflicted with a stammer throughout his youth, and the attempts of various doctors to cure it make instructive reading. Perhaps the depths of barbarity were reached by the specialist (described as comparatively eminent authority on stammering) who performed circumcision to loose the wretched lad's tongue. He was finally cured in his later years by psychotherapeutic suggestion.

This is an excellent book for holiday or bed-table. An account of themselves is always educative to doctors; and many anecdotes, digressions, and comments on the life it ended so abruptly in 1914 are stimulating to read.

Notes on Books

Living Together Again, by PHOEBE D. BENDIT and Dr. LAURE J. BENDIT (Gramol Publications, Ltd., 60, Broadway, Chesham Bucks), is a most opportune book, and being priced at only 2s. is within the reach of all whom it concerns. This is important to those who perhaps find it most difficult to resume satisfactory family relationships after long separation are those whose economic situation with the consequent difficulties of finding suitable homes and conditions of life, makes it impossible to find money or time for study of much literature dealing with their peculiar problems. The same reason the advice and explanations given them must be simple, easily assimilated, and amply illustrated by examples. "The human casebook." The authors have succeeded admirably in their task, and those who are experiencing the inevitable difficulties of readjustment will find their own difficulties illustrated by numerous stories of the Johns and Janes, the Williams and M. which are so well told. It is easy to say that patience, tolerance and understanding are all that is wanted, but it is necessary for people to see just how they themselves are to exercise these virtues. Also they must realize that many of their present difficulties do not only from the present circumstances but from old tendencies, habits of mind which have existed in themselves and their parents even perhaps since childhood. The present state of affairs is indeed new, but here, as in everything else, *plus ça change, plus la même chose*. Doctors are constantly being called upon to aid these newly united families in their difficulties, and they would do well to study this little book themselves and tell their patients read it.

Public Baths and Health in England, 16th-18th Century published at Baltimore by the Johns Hopkins Press (\$1.50). Dr. C. MULLETT, the diligent author of this essay on the English balneo of some two centuries, quotes from a bibliography of 238 papers on the subject. Continental wars and international unrest during the sixteenth to eighteenth centuries caused English watering places a boom, especially among fashionable and wealthy folk. A ritual of bathing emerged. Laymen and physicians alike debated the merits of hot and cold baths and their curative qualities. Although in the 1620s Dr. Tobias Venner railed against the number of unlearned empirics and quacks of all kinds who extolled their baths, gracing the medical profession by their "mountbancery," there was little or no attempt at scientific analysis of the waters and their medicinal effects. This essay gives a good description of attempts to establish the whole system of balneology.

The fourth edition of Prof. ALBERT KUNTZ's excellent *Text of Neuro-Anatomy* (Baillière, Tindall and Cox; 32s. 6d.) follows the pattern of earlier editions. Each chapter is clear and ends with a summary and an adequate bibliography. There is a diagram on most pages and everything has been done to present the anatomy of the nervous system in a straightforward way. It is not difficult to divorce structure from function, and although Prof. Kuntz has been concerned with anatomy he has presented it in such a way that the purpose of the form is always evident. The subject is related to the physiology and to the understanding of clinical signs, and in the 26 chapters, besides many with such usual titles as "The Pons" or "Long Conduction Pathways," there are others on "Nervous Integration," "The Functions of the Cerebral Hemispheres," and "Laboratory Study." It would be difficult to conceive a more comprehensive book of its size for the senior student.

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THE CAPITATION FEE

Insurance practitioners were last month¹ asked to consider a recommendation by the I.A.C. to the Panel Conference that they should place their resignations from the Insurance Service in the hands of the I.A.C. to be used at its discretion

"unless the Minister is willing fully to apply the Spens Report to the current capitation fee, with effect at least from January 1, 1946, or, failing agreement, to refer to the Spens Committee or a representative section of that Committee, or other agreed independent body, the question of the interpretation of the Spens Committee Report in relation to the current capitation fee, both parties agreeing in advance to accept the findings."

The I.A.C. had already in July² criticized the Minister of Health's offer of 12s. 6d. as "gravely inadequate." At the invitation of the Minister, representatives of the Committee met officials of the Ministry on October 10. Sir William Douglas, the Secretary of the Ministry, attended a meeting of the I.A.C. on October 17 and on the next day sent a letter to the Secretary of the B.M.A. (printed in this week's *Supplement*) in which he stated that the Minister was "willing fully to apply the Spens Report to the current capitation fee with effect from January 1, 1946, the increase of 2s. being regarded as a payment on account." The Minister invites the I.A.C. to enter discussions on the Report forthwith "with special reference to the current capitation fee." It is promised that the discussions will be conducted "expeditiously." The I.A.C. decided to recommend the Panel Conference at its meeting on October 24 to accept the Minister's proposal. We go to press before the Conference meets and therefore in ignorance of the Conference's decision. While waiting for this we may note that the Chairman of Council hails this concession of the Minister as a victory for the insurance practitioners of this country. It does indeed show that when the medical profession takes a firm stand on an unambiguous point of principle and fact it can compel consideration of its case. Without prejudging the outcome of the Panel Conference on Thursday it may be helpful to review the events preceding the retreat of the Minister from a position which he seemed at one time to hold tenaciously.

In 1939 the capitation fee was 9s., but insurance practitioners were seriously dissatisfied with much of the evidence which led a Court of Inquiry to fix the fee at this level. In 1942 the figure was increased to 9s. 9d. to meet increased expenses and the situation created by the inclusion in the N.H.I. scheme of non-manual workers with an income of up to £420 a year. Another 9d. in December,

1943, brought the capitation fee to 10s. 6d. It may be recalled that in 1920 and 1921 the capitation figure was 11s. The Insurance Acts Committee did not cease in the early days of the war to voice the complaints of insurance practitioners about the inadequacy of the payment for their work, and in response Mr. Ernest Brown, then Minister of Health, promised that when the war was over the whole question would be investigated "from the ground up." In May, 1944, the Ministry of Health proposed the appointment of the Spens Committee, and the Secretary of the Ministry stated in a letter to the British Medical Association that the results of the proposed inquiry into the remuneration of general practitioners "would be equally valuable and usable no matter what forms of public medical practice may continue or may come into being, under the present law or under any future legislation." In a further letter in July of the same year, the Secretary of the Ministry said that the findings of the proposed Committee would apply "irrespective of the institution of any National Health Service and would directly bear upon existing conditions in the present National Health Insurance scheme." Believing in these assurances the profession agreed to co-operate in setting up the Spens Committee, whose Report was issued in May this year and approved by the profession. The I.A.C. thereupon asked the Minister to apply the findings of the Spens Committee to "existing conditions in the present National Health Insurance scheme." But the Minister refused to do this without at the same time relating the findings of the Spens Committee to the proposed new Health Service. This was in flat contradiction to unambiguous statements previously issued by his Department, and the Insurance Acts Committee therefore refused to negotiate on the basis suggested by the Minister. The Minister, it may be noted, accepted the recommendations of the Spens Committee but would not apply them forthwith to the current capitation fee. But the I.A.C. stood firm, and by his action last week the Minister has acknowledged the error of his ways.

The Spens Committee concluded that in the majority of cases the net income of a general practitioner in 1939 was inadequate to the extent of £200 a year. The only way in which the practitioner in 1939 could have adjusted his income to the level considered to be a meet reward for the work done would have been through an increase in private fees. It is clear that the doctors themselves kept private fees to a level considered to be a fair remuneration for the work they did. Therefore the cause of the inadequacy of income declared by the Spens Committee is the low capitation fee, and the deficit agreed on can be made good only through an adjustment of the capitation fee. In arriving at what the increase should be, consideration must also be taken of the new class of insured persons, the increase in practice expenses, and the altered value of money. The Spens Committee based its recommendations in terms of the 1939 value of money. There is a prevalent misconception that it recommended a capitation fee of 15s. in the N.H.I. scheme. This is not the case. The Spens Committee estimated the outside cost of its proposals for the future to be "15s. a head to provide for the remuneration of general practitioners on the assumption that the number of persons covered by a publicly organized service is

¹ *British Medical Journal*, 1946, 2, 395.

² *British Medical Journal Suppl.*, 1946, 2, 31.

45,000,000" (paragraph 19 of the Spens Report). Again we would emphasize that this figure was arrived at in terms of the 1939 value of money. If, therefore, the Panel Conference has decided that the I.A.C. should negotiate with the Minister on a revision of the capitation fee in terms of the Report of the Spens Committee, it will no doubt insist upon a correct interpretation of the Committee's recommendations.

INFERTILITY

About 10% of marriages in this country are childless—and that without the wishes of the partners concerned. In many others fertility is so low that only one or two children are produced in the course of many years. Some 40,000 to 45,000 of what will ultimately prove to be fruitless marriages take place in England and Wales each year. The figure for the United States of America is about 150,000.¹ Infertility is not necessarily on the increase, but it is more freely admitted. It is so common as to constitute a problem of national importance, although the medical practitioner sees it more often as a problem facing individuals and knows only too well the anxiety, unhappiness, and bitterness that childlessness can cause.

The investigation and treatment of infertility has, in recent years, received considerable attention, and in many centres special clinics are devoted to it. It is no longer enough to dilate the cervix for hypothetical stenosis and to carry out curettage for non-existent "endometritis." Complicated and time-consuming tests of all kinds are often necessary before the cause can be determined and a decision made about treatment. The published proceedings of a conference on the diagnosis of sterility, held in New York in January, 1945,¹ provide a comprehensive and critical review of most of the present-day methods of study of these cases. The subjects of the papers vary from the essentially practical, such as history-taking and tubal patency tests, to the more academic, such as the cause and significance of haemospermia, and include the controversial, such as testicular biopsy. The value of the book is enhanced by verbatim reports of the comments of the many authorities who took part in the discussions after each paper. Both these and the main speakers do not hesitate to report negative findings, and their factual statements and cautious interpretations should act as a corrective to those whose enthusiasm for some special investigation or line of treatment is not always matched by a scientific outlook and due sense of proportion. The paper on the endometrial cycle by Hertig is remarkable for its fine photographs of the different phases, of a 7½-day human ovum previously reported, and also a new 4-day-old human ovum which was found lying free in the uterine cavity.

There is now general agreement that 40 to 60% of the male partners of infertile unions can be shown by semen analysis to have impaired fertility of varying degrees, and this has been emphasized recently in this *Journal* by Jeffcoate.² American workers mostly give the higher figure, and workers in this country the lower, the difference being explained by the fact that the former demand

a higher standard for "normal" seminal values. As long ago as 1904³ Haggart wrote: "... one-third to one-half of all childless marriages are due to the male. . . ." This statement, which passed unheeded or was not accepted for so long, can now be regarded as not exaggerating male responsibility to any extent, and Simmons⁴ is probably right when he says: "Detailed semen study is the most important single clinical detail in the investigation of infertile marriage."

The history of the study of infertility is marked by cycles in each of which the emphasis has been placed on a different causal factor, real or imaginary, sometimes accompanied by a new method of investigation. Salpingography was first attempted independently by Cary⁵ and Rubin⁶ in 1910 and 1915, and tubal insufflation introduced by Rubin⁶ in 1920, have, on the whole, both stood the test of time and experience. Others have not, however; for instance, estimation of the vaginal pH, despite the fact that precoital douches of sodium bicarbonate solution appear to facilitate conception in some cases, has fallen into disuse since it was realized that the vagina never achieves a degree of acidity which is incompatible with fertility. The recognition of the occurrence of anovular menstruation was followed by a phase in which the place of infrequent ovulation as a cause of infertility was probably overstated, although Israel¹ still rates it as high as 15%. Its importance in any case difficult to assess, because menstruation with ovulation, even if demonstrated, may be only a temporary or intermittent phenomenon. Nevertheless some test of the occurrence of ovulation is necessary in the investigation of an infertile woman when no other obvious cause is found, and moreover, from the standpoint of treatment it is important for a woman to know when she is ovulating. The value of daily temperature records in this respect borne out by the experience of Tomkins.¹ A recent trend is to place emphasis on the penetrability of cervical mucus by spermatozoa (see article by Mary Barton and Wiesner at page 606), and the postcoital test, usually associated with the name of Sims or Huhner, has been revived and extended. An "in vitro" modification, usually called Kurzrok-Miller lytic test, is to study the behaviour of spermatozoa brought in contact with cervical mucus on a microscope slide. This has the advantage of making it possible by controlled experiments to say whether it is the mucus or the spermatozoa which are at fault in a case where penetration does not take place. In contrast to the views of some of the enthusiasts for tests of this type, Williams¹ concludes that they are of little practical value and that when there is cervical opposition to the entrance of spermatozoa, then a pathological condition of the cervix, recognizable by ordinary clinical examination, is present.

The study of infertility has naturally involved a study of fertility and has undoubtedly resulted in a considerable increase in knowledge regarding the physiology of both male and female genital systems. Unfortunately, however, more accurate diagnosis has not been attended by much improvement in the results of treatment. Of all cases—and these presumably include those in which all that is required

¹ Reference Handbook of Medical Science, 1904, Wm. Wood and Co., New York.

² Amer. J. Obstet. Gynec., 1914, 69, 462.

³ Surg. Gynec. Obstet., 1915, 20, 435.

⁴ J. Amer. med. Ass., 1920, 75, 661.

¹ Proceedings of the Conference on Diagnosis in Sterility, 1946, edited by E. T. Engle. Charles C. Thomas, Springfield, Illinois: \$5.00.

² British Medical Journal, 1946, 2, 185.

s instruction in the physiology of reproduction or the removal of some simple bar to coitus—Cary,¹ one of the pioneers in the field, estimates that only one-third can be cured. "Cure," however, is a word not easily applied to his condition. The occurrence of a pregnancy after some form of treatment does not necessarily imply any relationship between the two. Indeed all gynaecologists have had frequent experience of cases where a woman admitted for treatment of sterility has proved to be already pregnant. And what is the criterion of a cure of infertility? A single pregnancy, though gratifying to all concerned, cannot be taken to mean that the fertility of either partner is raised permanently or even temporarily. It may be only a chance occurrence after which the partners of the marriage continue to suffer from infertility, though they do not always complain of it, being satisfied to some extent by the one child.

While there is no doubt that cervical dilatation, treatment of cervicitis, tubal insufflation, correction of retroversion, precoital douches of various kinds, etc., have in some cases a therapeutic value, the treatment of infertility is on the whole unsatisfactory. Above all is this true when fertility is so grossly impaired as to constitute, for all practical purposes, sterility; when there is complete obstruction in either the male or female genital tract, or when the production of spermatozoa or ova is totally suppressed. Operative measures for the relief of occlusion of the Fallopian tube, vas, or epididymis are not often successful. However, these lesions are nearly always caused by gonorrhoea, tuberculosis, puerperal infection (especially post-abortion) or pelvic peritonitis secondary to appendicitis, and it is not unreasonable to hope that in the future they will be prevented. If they are, then the total number of cases of infertility and sterility will be reduced by one-third. Also prophylaxis may well have something to offer in those cases when spermatogenesis or ovogenesis is at fault, for there is evidence to show that these are sometimes caused not only by mumps but other acute infections and by general ill-health and endocrine disturbances in childhood and adolescence.

RESEARCH IN CHRONIC RHEUMATISM

As long ago as 1922 the Ministry of Health conducted a sample survey among insured workers to determine the incidence, and cost, of the group of complaints commonly called rheumatism. It was found that this group was responsible in England and Wales for one-sixth of the industrial invalidity, for a yearly expenditure on sickness benefit of £2,000,000, and for an annual loss of 3,000,000 weeks of working time. More recently it has been estimated that approximately one-third of the payments by approved societies under the National Health Insurance scheme are made in respect of conditions labelled "chronic rheumatism." While its severity ranges from slight inconvenience to dire crippling, the prevalence of the disease in adult and early adult life—during the productive and reproductive years—presents an enormous and costly burden, with serious effects on society as a whole, on industry, on the home, and on family life.

The Medical Advisory Committee to the Ministry of Health recommended in 1945 that a number of diagnostic and research centres should be established for the study of chronic rheumatism and for the improvement of existing facilities for

diagnosis and treatment. Improved methods of diagnosis and treatment, though they may lead to the alleviation of much suffering, will not in themselves bring about any diminution in the incidence of the disease. This can result only from fundamental research into the causation and nature of the disease process. For this reason it was proposed that the special centres should be located in university medical schools and teaching hospitals, where resources are available for a combined attack on the disease in all its forms.

A rheumatism centre of the kind contemplated by the Ministry is to be established at the University of Manchester, with the assistance of a grant from the Nuffield Foundation of £100,000 spread over ten years. In broad outline it is proposed to establish a diagnostic and research centre at the teaching hospital—the Manchester Royal Infirmary—to deal with short-stay in-patients and out-patients who will be referred to this clinic from peripheral clinics in the region. For long-stay in-patients there will also be a clinic at a base hospital near the centre, provided by the Manchester Public Health Committee, and a second base hospital in the country—the Devonshire Royal Hospital at Buxton. At the base hospitals lengthy investigations will be carried out and problems of rehabilitation and resettlement will be studied. This scheme will ensure ready access to a very large number of cases of the disease, especially in its early stages; this is a pre-requisite for any successful attack upon its causation, diagnosis, and treatment. At the centre the work will cover two main fields: the clinical, sociological, and industrial aspects of the disease, and the fundamental study of the disease process by pathological, bacteriological, and biochemical methods. The clinical work will be under the direction of a physician who will have the full co-operation of the departments of orthopaedics and physiotherapy of the Manchester Royal Infirmary as well as of the University Dental School. The social aspects of the disease, and its industrial implications, will be studied in co-operation with the University Department of Industrial Health. The basis of all fundamental research into the causes of diseases of the bones and joints is the study of bone and joint pathology; this study will be under the direction of a whole-time pathologist who is an expert in this field.

An important element in the organization of the health services of the area will be the diffusion throughout the area of the expert knowledge gained at the university centre and the bringing of the physicians and surgeons of the peripheral area into closer relation with the medical school. An ultimately wider diffusion will be achieved through the medical school, since its undergraduates will grow up with a better general knowledge of the subject.

PRESSURE DRESSINGS FOR BURNS

On theoretical grounds it is possible to advise conclusively that the application of a pressure dressing to a burn will limit the extravasation of plasma into the burnt area and will consequently prevent part of that diminution of blood volume which is largely responsible for the shock that follows burning. Moreover, pressure dressings have been employed by plastic surgeons for years to increase the likelihood of a skin graft's "taking." The advantage of applying a pressure dressing to a burnt area has now been measured experimentally by Cameron and others¹ in goats, and by Glenn, Gilbert, and Drinker² in dogs.

Already in 1945 Cameron and his fellow-workers³ had shown that prompt application of pressure bandages to

¹ *J. Path. Bact.*, 1946, 53, 1.

² *J. clin. Invest.*, 1943, 22, 609.

³ *J. Path. Bact.*, 1945, 57, 37.

the severely burnt limbs of goats retarded the loss of plasma from blood vessels, diminished haemoconcentration or prevented its occurrence, and favourably influenced the clinical condition of the animals. The same team of workers have now shown by carefully controlled experiments on the lower limbs of goats that the healing of a compressed burn is greatly accelerated and that the increase in the rapidity of healing is independent of sepsis or asepsis. The pressure is applied by the application of quick-setting Gypsona plaster bandages closely wrapped round the burnt limb to leave a considerable overlap beyond the burn margin; a layer of dry sterile gauze separates the plaster from the skin. The control goats received no plaster application but were dressed by sterile gauze kept in position by elastoplast. The animals in both series had their dressings changed frequently and were fully loaded with sulphathiazole. The mean healing times for the two groups were 39.5 ± 1.8 days for the pressure-treated goats, and 63 ± 5.7 days for the controls. This reduction is significant.

The time of application of pressure is of some importance. If it is delayed for more than four hours after the burn is sustained healing is not accelerated, so in clinical practice the pressure should be applied if possible within this period. The duration of maintenance of pressure is equally important. There appears to be a critical phase which lasts for several days after burning and during which removal of the plaster case occasions severe oedema of the burnt area and delay in healing; the pressure should therefore be maintained for some nine days. After nine days it seems of little moment whether it is continued until the sixteenth or the thirtieth day.

On purely theoretical grounds Bingham and Logie independently employed plaster immobilization for burnt extremities sustained in a forward area in Libya in 1942, and there was a clinical impression then, statistically unsupported, that healing was accelerated, the patient's comfort improved, and the general condition ameliorated by this simple measure. However, there is argument now for the widespread application of plaster-of-Paris pressure to burns recently sustained.

DUST REDUCTION IN MINES

Among the most important measures for the prevention of pneumoconiosis in miners are the use of water for dust reduction and improvements in ventilation. Water can aid in the reduction of dust in three ways: (1) by suppressing dust already in the air; (2) by allaying dust and thus preventing its dissemination; and (3) by preventing the formation of dust. The influence of increased ventilation on dust concentrations is obvious: if dust production remains constant an increase in the volume of air passing reduces the concentration of the dust; and if increased ventilation is combined with the appropriate use of water still greater reductions in dust concentrations can be achieved.

During recent years much work has been done in Great Britain on the use of mist projectors in suppressing dust, especially at loading points and after blasting. For the effective removal of dust by this method it is essential that the water be discharged into the air in the form of a finely atomized spray; a coarse spray is relatively ineffective. Dust concentrations in the air of mine roadways are much reduced by the periodic application of water to the roads. For several years past wet drilling has been recognized as an important factor in the reduction of dust formation in rock drilling; and it has been shown in Great Britain and the United States that in coal mines and metalliferous mines substantial reductions in dustiness can be brought about by spraying hewn or blasted rock and coal before

they are loaded. During the last few years, in the anthracite mines of South Wales, the infusion of water into the coal face before blasting has done much to reduce the concentration of dust at that point.

In two recent papers Tebbens and Tabershaw¹ have given further evidence of the effects of the use of water and increased ventilation on the dustiness of mine air. The data were obtained from two surveys of concentrations of air-borne dusts in a group of haematite mines. At the time of the first survey water was available for use in drilling, but owing to prejudice against it most of the drilling was done dry; and only limited amounts of water were used in dumping ore. In the interval between the two surveys the widespread use of water for dust control was introduced. Drillers were educated and persuaded to use water; in ore-handling operations water was used to wet the broken rock, and the main haulage-ways and headings were regularly damped.

These measures proved very effective. They reduced the dust exposure of drillers by about five-sixths, and substantially reduced the exposure of other workers. The dustiest operations in these mines are those connected with loading "muck," and although on this work the use of water reduced the dust concentrations by more than one-half further reduction was necessary to render the work reasonably free from the risk of silicosis. The desired result was obtained by providing increased ventilation. In the stopes where this work was carried on the average dust concentration was 153 million particles per cu. ft. (28,300 c.c.m.) when the quantity of air passing was below 1,000 cu. ft. per min., but when the air supply was raised to 8,000 cu. ft. per min. the average dust concentration was reduced to 25 million particles per cu. ft., which was regarded as the maximum safe concentration for rock containing 15-20% pure silica.

The Association of Anaesthetists of Great Britain and Ireland are next week celebrating the centenary of the first administration of ether in Great Britain. On Wednesday, Oct. 30, the Princess Royal will at the Royal College of Surgeons of England unveil a plaque commemorating four pioneers in anaesthesia. This will be followed by a reception by the President and Council of the College. On Oct. 31 the John Snow Medal will be presented to Lieut.-Col. H. W. Featherstone, Major L. G. Morrison, and Squad-Ldr. E. A. Pask, and in the evening there will be a dinner in the Great Hall of Lincoln's Inn by kind permission of the Masters of the Bench. On Oct. 29 to Nov. 1 there will be an exhibition of anaesthetic apparatus, including Mr. A. Charles King's museum, in the Council Room of the College of Surgeons.

At a special meeting of the Liverpool Medical Institution held on Oct. 19 with the President, Dr. G. F. Rawdon Smith, in the chair, honorary membership of the Institution was conferred upon Dr. A. E. Barclay, F.R.C.P., Sir W. Allen Daley, M.D., F.R.C.P., Dame Louise Mellroy, M.D., F.R.C.P., Prof. Charles McNeil, M.D., F.R.C.P., Dr. Ivan W. Magill, and Sir Alfred Webb-Johnson, P.R.C.S. The six new honorary members were introduced by Dr. Robert Coope, acting as public orator.

Dr. J. C. Spence will give the Charles West Lecture on Tuesday, Nov. 19, at 5 p.m. at the Royal College of Physicians of London, Pall Mall East. Subject: "The Care of Children in Hospital."

ANAESTHESIA CENTENARY CELEBRATIONS

EXHIBITION AT WELLCOME MUSEUM

The centenary of the first surgical operation to be performed under general anaesthesia was celebrated in London on Oct. 16 by the opening of an exhibition at the Wellcome Historical Medical Museum in Euston Road. Dr. E. Ashworth Underwood, director of the Museum, presided, and Lord Moran gave an address.

Lord MORAN said that for ages people had tried to produce something which would permit of operations being done without pain, but the nineteenth century was reached before anything really happened at all. And not only was anaesthesia not being discovered, but when it was announced it seemed to hang fire, first because the drugs were not standardized, and secondly because religious scruples interfered a good deal with their use. Even in Queen Victoria's reign the scripture was read, "In sorrow shalt thou bring forth children," and it was held that there should be no interference with that divine plan. Among preparations for the anaesthetic age were Priestley's contributions to pneumatic chemistry—the study of gases—and Humphry Davy's production and use of "laughing gas." Then there was Hickman's work in the eighteen-twenties which allowed surgical anaesthesia by inhalation to be a practical proposition. But it was left to Wells and Morton to bring the thing about. Wells, apparently, did everything that was necessary, but Morton had the power, to use the modern phrase, to "put it across," and his was the name that 100 years later was associated with this development. Lord Moran added one or two general observations. Progress in medicine, he said, had never been up a smooth incline, but always by fits and starts, with long periods of stagnation and then a sudden jump forward. In spite of what he had said about anaesthesia's hanging fire, its discovery was a gift of everlasting mercy to mankind. It was really no accident, but part of the great crusade of the nineteenth century to improve and humanize the conditions under which people lived and worked and suffered. He looked with profound satisfaction upon the fact that the democracies of Britain and America had taken the chief share in this humanizing process.

The exhibition, which Lady Moran then declared open, is arranged in a most instructive fashion by means of originals, reconstructions and models, photographs and illustrative diagrams, and a wealth of books. One showcase illustrates the knowledge of narcotic and stimulating drugs in primitive times and among the Greeks and Romans; another the days of surgery without anaesthesia; and yet others the therapeutic uses of vapours and gases and ether frolics, the work on inhalation anaesthesia, the development of the anaesthetic uses of chloroform, the introduction and development of nitrous oxide anaesthesia, together with much literature on the subject, including old copies of *Punch* and the *Illustrated London News* showing the early popular reaction to anaesthesia.

Three Periods of Anaesthesia

On the same day a meeting of the History of Medicine Section of the Royal Society of Medicine was held, when Prof. CHARLES SINGER, who took the chair, spoke of anaesthesia in the pre-anaesthetic period (before 1846) and other speakers dealt with the developments in the second half of the nineteenth century and in the first half of the twentieth.

Prof. Singer said that it was an error to suppose that before 1846 operations were always performed on the fully conscious. Narcotics and analgesics were known very early; they were mentioned in Egyptian writings and in the Hippocratic collection. The narcotic drugs of antiquity were mainly of the natural order *Solanaceae*, to which belonged not only mandrake and belladonna, but also the potato, the tomato, and tobacco. The main narcotics available to the people of the Middle Ages were opium, mandrake or belladonna, chiefly the leaves, and hyoscyamus or henbane. The best literary account of the surgical use of narcotic drugs dated from the fourteenth century and was given by Boccaccio in his *Decameron*, in which there was an account of an anaesthetic proposed for the amputation of a leg. Hypnotism was first used in surgical operations by John Elliotson (1791–1862), professor in the University of London and president of the Royal Medical and Chirurgical

Society. A medical observer, Robert Kinglake, had left an account of the effect of nitrous oxide on Humphry Davy and on a number of other persons, and the speaker read some of these extracts. Kinglake afterwards experimented with ether, but did not suggest it for anaesthetic purposes.

Dr. BARBARA DUNCUM read a paper on the development of inhalation anaesthesia down to the turn of the century. She mentioned that by 1850 anaesthetic practice had assumed certain distinctive characteristics in different parts of the world. In the northern States of America ether was used; the southern States traditionally followed the example of Paris in medical matters, and in Paris chloroform was administered from a folded cloth, according to Simpson's directions. The rest of Europe also followed Parisian methods, and in Scotland, of course, Simpson's method reigned supreme. In England a very different state of affairs obtained. Mainly, no doubt, because of John Snow's strong influence, the English from the first considered the giving of an anaesthetic to be a specialist's job, whereas elsewhere it was not considered necessary to employ an expert anaesthetist and the task of administration was usually relegated to a junior house surgeon. Simple and effective as Simpson's method of chloroform anaesthesia was, the English, by the beginning of 1848, had already devised a number of more or less elaborate chloroform inhalers, and Snow was controlling the anaesthetic mixture by regulating the temperature of the vaporizing chamber by a water jacket. Snow's portable regulating chloroform inhaler served his contemporaries as a model until the introduction of Clover's chloroform apparatus in 1862. Clover, after Snow's death in 1858, had quietly become recognized as the leader in anaesthetic practice, and chiefly through him a committee of investigation of the Royal Medical and Chirurgical Society carried out experiments on ether and chloroform which resulted in a new and more flexible attitude towards anaesthetic questions in British practice, with the realization that no single agent could be expected completely to satisfy every requirement.

Dr. JOSEPH BLUMFIELD followed with a recital of the various steps in the development of anaesthetics since 1900. He mentioned the use of ethyl chloride in America, France, and Germany in the early years of this century, the use of prolonged nitrous oxide and oxygen in America about 1913, the practice of synergistic analgesia in America about 1923, and the work of Leonard Hill and Dale on the advantage of N_2O under pressure. About 1925 explosion dangers from static sparks were very much in the public mind, and precautions were taken. Dr. Blumfield also touched on the introduction of the new basal narcotics, and closed with some reflections on the more co-operative and understanding attitude of the patients to-day as compared with their ignorant fears of anaesthesia in earlier days.

First Use of Inhalation Anaesthesia in Britain

Finally Dr. E. ASHWORTH UNDERWOOD supplemented his paper in the *British Medical Journal* of Oct. 12 by giving the details of what appears to be the first instance of ether inhalation for anaesthesia in this country. His attention was called last year to a remark by Mr. J. W. McDougall, secretary and treasurer of the Dumfries and Galloway Royal Infirmary, in an address to a rotary club, that "the infirmary was the first hospital in Europe to use general anaesthetics for its major operations, and that was before [the anaesthetic effect of] chloroform was discovered." Dr. Underwood thereupon wrote to Mr. McDougall, who replied that in the late autumn of 1846 Dr. William Fraser, a native of Dumfries, who was a ship surgeon, was visiting the infirmary while on leave, when a casualty with a fractured limb was brought in. The two surgeons of the infirmary, James McLauchlan and William Scott, asked Fraser to have a look at the case. Amputation being decided upon, Fraser, who had heard of the sulphuric ether discovery (probably from Morton of Boston, whom he knew) persuaded the surgeons to try it out on the case in question. By means of an apparatus hastily improvised, constructed by the three surgeons, the injured man was enabled to inhale a quantity of sulphuric ether vapour while the operation was performed in a painless and satisfactory manner. In a *Visitors' Guide to Dumfries* (1871) Dr. Underwood also found an account of this incident, and it was added that in 1868 Sir James Y. Simpson, speaking on the subject at a conversazione at the Royal College of Surgeons of Edinburgh, had mentioned

this fact and said that after the ether had been first used at Dumfries it was next employed by Mr. Liston, the eminent surgeon of London. This meant that the operation preceded that of Liston, that is to say, that it took place before Dec. 21, 1846. Mr. McDougal said the "late autumn," which implied a date in November. From a study of the hospital records of amputations it seemed that the operation must have been performed on or before Nov. 11, 1846.

NATIONAL INSTITUTE FOR THE DEAF

The National Institute for the Deaf had to close down a certain proportion of its activities during the war, but it is now contemplating a vigorous resumption, as was shown by the enthusiasm at its annual general meeting held in London. The DUKE OF MONTROSE (President of the Institute) said that in this first full year of peace they were determined to bring the cause of the deaf into the front line. It was estimated that there were in this country a million people deaf or with subnormal hearing. It was good news that as part of the National Health Service scheme a standard aural aid was to be provided for all which would be free of charge.

The Government's Proposed Hearing-aid

Lord WALKDEN (a member of H.M. Government) said that as a result of research by the Electric Acoustics Committee of the Medical Research Council an electric hearing-aid had been produced which had been accepted by the Government and was to form part of the provision under the scheme for a National Health Service. This would certainly be available in 1948, though he could not say in which month of that year. Both the instrument itself and the subsequent servicing would be available freely for all who needed it. The deaf would be enabled to have the benefit of consultations at special clinics in suitable centres, where experts would be able to say whether they could be helped by treatment; if they could be so helped the treatment would be afforded, again free of charge, and if not, the instrument would be provided. The outstanding difficulty in providing the instrument was to obtain suitable labour—the labour of the skilled instrument maker. The minute valves of the apparatus, much finer than those used in wireless sets, were difficult to produce and to maintain, but he was sanguine that full success would be achieved by the year after next.

Mr. R. SCOTT STEVENSON, who was warmly greeted as the new chairman of the executive committee of the Institute, said that he hoped the Government did not imagine that the problem of the deaf and the deafened would be solved by the provision of a universal hearing-aid. That was by no means the case. To begin with, there were many people to whom a valve amplifier would be of no value. In some types of deafness the simple ear trumpet was more successful than far more elaborate apparatus. There were many to whom no hearing-aid of any kind would be of use, and for them lip-reading and sign language was the only method of communication. Probably the greatest single need of the deaf in this country was not a hearing-aid but the provision of more teachers. Although the education of the deaf and dumb was now a statutory obligation, it was saddening that there should be only one school in existence for their higher education, and that that single grammar school should be attended by comparatively few children and should be in financial difficulties. The provision of hearing-aids, good as it was in itself, was not the end of the matter. He went on to pay a tribute to reputable hearing-aid manufacturers who had done a good job of work in this country, and he hoped the Government would not overlook the desirability of consulting with them in the production of their aid. If the Institute had only been able to get the component parts during the war it would itself have provided, through a group of hearing-aid manufacturers, a standard aid at a cost of not more than £10. The Institute was intending to reissue its list of approved hearing-aid manufacturers, but he explained that approval was limited to their ethical practice in selling and did not cover necessarily scientific approval of the aid. It was also hoped to set up a technical laboratory under the Institute's auspices for testing and repairs. In many quarters, again, there was a tendency to lay too much stress

on the size of the aid. No doubt smallness and inconspicuousness were useful characteristics, but efficiency outweighed them and he would rather have an aid the size of a portmanteau if it worked better. He wished to make it plain that those who had the interests of the deaf at heart were far from being ungrateful to the Government—which had done more for the deaf than any previous Government—but he begged them again not to take it for granted that the provision of a valve amplifier was all that needed to be done for the deaf.

Otology in a National Health Service

Lord LEVERHULME said that the Institute was fortunate in having secured Mr. Scott Stevenson as its new chairman. It was a happy coincidence that during his service in the R.A.M.C. Mr. Stevenson was billeted with the Duke of Montrose, who interested him in the work of the National Institute. They looked forward to a period of great vigour under his leadership. Lord Leverhulme also mentioned that Lord Cecil had put down an amendment to the National Health Service Bill in the House of Lords, the purport of which was that whatever was provided for an ophthalmic service should be also provided for an otological one. Other speakers included Mr. EDWIN EVANS, M.P., and Miss MARGARET RAWLINGS. A recent broadcast on behalf of the Institute by this accomplished actress brought in more than £2,500, to which was subsequently added a gift of £500 from the Goldsmiths' Company. The Institute, whose National Headquarters are at 105, Gower Street, London, W.C.1, has devoted £1,000 of the sum received to the training of qualified welfare workers for the deaf and dumb.

MEDICINE AND THE STATE

In the course of an address given in Liverpool Cathedral on Oct. 20 Sir ALFRED WEBB-JOHNSON, President of the Royal College of Surgeons, said:

For two things our hearts may well be troubled. One is lest the great administrative machine which is to be set up in connexion with the National Health Service may dim the high ideals of our profession, or mar the close relationship which should always exist between doctor and patient. The other cause for disquiet is lest scientific discoveries be used for man's hurt and ultimate destruction, instead of being devoted solely and entirely to his benefit and improvement.

It is the tradition of our calling that the poorest and humblest has just as great a claim on our services as the highest and most affluent. The measure of their need is the measure of the help which it is our duty and privilege to render. Thus it was that Sir Frederick Treves, when his Sovereign, King Edward VII, thanked him for his life-saving attentions, was able to reply with pride: "Sir, you have had as much care and skill in your illness as the humblest of your subjects." Such is the service that it is our privilege and duty to render, but we have been only too conscious of the limits of our ability—limits imposed by lack of adequate facilities. We have known that there were serious gaps in our service, and have realized that those gaps could only be filled with the help of the State. The State is about to take a great part in British Medicine. This is not surprising, for medicine is of wholly unique importance for the very existence of social life. But "As the master builder must care for the whole building—so he that undertaketh to set it out (and use it) must seek out all things for the adorning thereof." This will be our special and immediate task.

Some Essentials of Service

We must first ensure that the conditions of service are such as to allow intellectual freedom, and to give character as much chance as cleverness. We must avoid the development of Molière's type of doctor, who thought it more honourable to fail according to rule than to succeed by innovation. We must guard against uniformity, for the highest products of the human mind are the outcome of freedom and variety rather than of uniform organization. Independence, which inspires that fearless advice, must be preserved. In fact, if any of the essential freedoms of a great profession are threatened, then in the interests of the people, there must be revision of the plan. Even when a system has been formed there may still be much to add, to alter, and to reject.

The doctor's work is primarily a personal service, and his calling exacts the utmost that man can give—full knowledge, exquisite judgment, and skill of the highest, to be put forth, not at any self-chosen moment, but daily at the need of others. But illness is essentially a personal event. It consists of the individual himself. The patient is not limited by his outer covering. His surface is not his real frontier. A man may be more interested in his environment than in his own body. His position in the community or some work to which his passion drives him may appear to be of more importance than life itself. Thus it is that the family doctor has often to be his patient's confidant and friend. Then again, as Trotter said, "the well-equipped clinician must possess the qualities of the artist, the man of science, and the humanist, but he must exercise them only in so far as they subserve the getting well of the individual patient." He must feel directly responsible to his patient, not for him—to someone else. It is a hard doctrine, but none the less true, that this essential function of the doctor—the care of the given patient—may involve the foregoing of exactly scientific diagnosis, of the artistic perfecting of an operation, or even of the interests of society at large.

Dangers of a Comprehensive Plan

Those of us whose work lies in the hospitals must be prepared for changes under a new organization. We must see to it, however, that we carry into the national hospitals the same spirit which inspired us in the great voluntary hospitals. There we learned to scan gently our brother man—judging not, asking no questions, but meeting out to all alike a hospitality worthy of the Hôtel Dieu, and deeming ourselves honoured in being allowed to act as its dispensers. We must keep the souls and individuality of our hospitals alive, for hospitals are human institutions. No rigid plan, without margin or elasticity, will suffice or succeed. Above all, the State must not try to control development too strictly, for hospitals are also scientific institutions, and the essence of science is change.

We know the dangers of a great comprehensive plan for a National Health Service. We must guard against them—and it is right and fitting that we should gather in this holy place on the occasion of the Festival of Saint Luke, the Beloved Physician, to dedicate ourselves anew to the high ideals of our calling.

Application of Scientific Discoveries

But medicine is a science as well as an art, and we are vitally concerned with the application of scientific discoveries for the benefit of mankind. In our own time inventions and developments have followed each other fast as falling leaves, and the great blessing is that the leaves from the tree of science have been largely for the healing of the people. Advances have been achieved by the method of experiment—the method which, beyond all shadow of doubt, is the most effective implement for the advancement of knowledge ever invented by man. Moreover, it satisfies man's inveterate instinct not to confide his weight to a branch until he has tested it.

The greatest discovery in modern medicine is the detection of the minute bodies which cause many diseases, and the means by which they are carried. Pasteur, Lister, and Manson are the rocks upon which the whole structure of our modern knowledge is built. They were men of humble piety and devout Christianity. So also was Ronald Ross, to whom belongs the honour of the actual detection of the mosquito as the carrier of the malaria parasite. We have but lately realized that we may be able to control or destroy these winged vectors of disease. Millions on millions of lives could be saved and the morale of native peoples raised by the prevention of malaria alone. The millions that are saved must be fed. They must be reckoned with. This will be a problem for future generations: our task and duty are clear. As Carlyle wrote: "Let a man do his work; the fruit of it is in the care of Another than he." And do we not read in the Book of Wisdom: "Glorious is the fruit of good labours"? But let us also heed these words of Carlyle: "Man, 'Symbol of eternity imprisoned into time,' it is not thy works, which are all mortal, infinitely little, and the greatest no greater than the least, but only the spirit that thou workest in, that can have worth or continuance."

That is the point—the spirit that thou workest in. Scientific discoveries are powers for evil as well as for good. Is it not time that we decided that their use for the wholesale and

indiscriminate destruction of human life should be outlawed? It is not only physical and chemical knowledge that can be misapplied. It has even been suggested that biological discoveries might be used for bacterial warfare. Is it not more in accord with our traditions and ideals to follow the example of Jenner, who when England and France were at war sent Woodville to Paris to help to control an epidemic of smallpox which was raging in the French capital? To commemorate this humanitarian action there stands at Boulogne to-day a statue to Jenner inscribed: "A Edward Jenner—La France Reconnaissante."

It may be that man is at the cross-roads. Will he proceed higher and further, or will he bring about the catastrophic ending of the whole human story? It is for man to decide his own fate.

Correspondence

Geographical Distribution of Disseminated Sclerosis: A Request for Information

SIR,—Disseminated sclerosis is well known to be common in some countries (e.g., Switzerland) and very rare in others (e.g., South Africa). Its incidence varies also in different parts of a country, for it is more common in North than in South Switzerland. Investigations at present being carried out indicate that disseminated sclerosis is relatively common in England, and that patients suffering from the disease number two to four per 10,000 population. There seem, however, to be certain parts of the country where it is much more common than this, and others in which it is rarely if ever seen. Information regarding its geographical distribution is being collected here for research purposes, and if any doctor can give information regarding the local incidence of disseminated sclerosis or has been impressed by its frequency or rarity in his district, we should be grateful if he would communicate with us. Areas of the country where the disease does not occur are just as important as those in which it is frequent.—I am, etc.,

Radcliffe Infirmary (Neurology), Oxford.

W. RITCHIE RUSSELL.

Errors in Regard to Goitre

SIR,—My attention has been drawn to a paper by Linnell, Keynes, and Piercy (Sept. 28, p. 449) appropriately entitled "Some Vulgar Errors in Regard to Goitre." I propose to confine myself to a criticism of paragraph IV, headed in fact correctly, "That no goitre should be considered toxic unless the basal metabolic rate is found to be above normal."

Let us deal first with the measurement of the basal metabolism. It is a relatively simple technique if it is done in the right way, but it has many pitfalls for the uninitiated. Du Bois (1936) has written an excellent monograph on the subject, and more recently (1944) I recapitulated certain essential criteria for obtaining an accurate and reproducible result on in-patients and out-patients. Using such well-known normal standards as those of Aub-Du Bois or Harris-Benedict, the range for normal people in England is 0 to minus 21. It is important not to confuse, as is so frequently done, a reading that is "within normal limits" with a reading that is "normal" for the individual. For example, I have seen a case of thyrotoxicosis with an initial basal metabolism of minus 8 which is "within normal limits," but that reading was raised above the patient's own "normal," which was in the region of minus 21 (1934).

It is wrong to say that a subject's basal metabolism can give "very different readings on two successive days." There must be something very far wrong with the technique employed if such results are obtained. Facilities rather than finance are of course very necessary pre-requisites for obtaining accurate results, and obviously these vary from clinic to clinic. At the Middlesex Hospital I have found no such difficulty in a study of over 2,000 normal healthy subjects, and in examining over 6,000 cases of thyrotoxicosis referred to the Courtauld Institute of Biochemistry, the Middlesex Hospital, from that hospital and from other similar institutions.

Next let us study the action of iodine on the basal metabolism in thyrotoxicosis. To begin with, it must be appreciated that iodine has no effect whatsoever on the basal metabolism.

of normal healthy people. But iodine has a specific action in lowering the basal metabolism in a case of active thyrotoxicosis—very rarely it may cause the basal rate to rise. Not only pure iodine itself but all its soluble compounds have a similar action if the dose exceeds 6 mg. of iodine daily, or the equivalent of approximately 1 min. (0.06 ml.) of Lugol's solution. If, therefore, the thyrotoxicosis is active, iodine will certainly alter significantly the basal rate. In the case I reported with an initial reading of minus 8, iodine reduced the basal rate to the region of minus 21. Even if the thyrotoxicosis is minimal iodine will produce such an effect. While not making any comments on alterations in the general metabolism in thyrotoxicosis (there is, however, an ample literature on impairment of calcium, carbohydrate, creatine, and iodine) it can be stated that the basal metabolism is certainly affected and is significantly altered. I had the privilege on many occasions of discussing the metabolic aspects of thyrotoxicosis with my good friend the late Mr. Cecil Joll. He, keen critic as he was, on no occasion referred to the measurement of the basal metabolism as a "poor test." On the contrary, he expressed in a letter quite the opposite view (1934).

The use of thiouracil in lowering the basal metabolism as a diagnostic test in doubtful cases of thyrotoxicosis is of course of doubtful value. Thiouracil will cause a normal basal metabolism to fall even to a myxoedematous level, acting as it does in inhibiting the formation of thyroxine at the site of its synthesis, the thyroid gland. Iodine on the other hand is the only drug that has a specific action first in affecting the raised basal rate in thyrotoxicosis, secondly in having no effect on a normal basal rate.

In summary, it may be said that measurement of the basal metabolism requires care, careful technique, the employment of controls, alcohol-checked apparatuses, patience, and an awareness that its determination presents many pitfalls to the unskilled operator. My visit to America has impressed me, among many other things, with the care and accuracy with which this determination is carried out and also with reports made on the results obtained.—I am, etc.,

London, W.1.

J. DOUGLAS ROBERTSON.

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SIR.—I feel that in their article Dr. J. W. Linnell, Mr. Geoffrey Keynes, and Mr. J. E. Piercy (Sept. 28, p. 449) have grossly overestimated the frequency of thyrotoxicosis as a cause of auricular fibrillation when they state that "it is not yet generally appreciated that next to acute rheumatism toxic goitre is the most fruitful cause of auricular fibrillation."

In an analysis of 575 cases of auricular fibrillation published in 1932 by McEachern and Baker (*American Journal of Medical Science*) thyrotoxicosis accounted for 7.5% of cases, rheumatic heart disease for 34.4%, coronary artery disease for 31.1%, and hypertension for 16.9%; emphysema, syphilis, and miscellaneous conditions accounted for the rest. Four years earlier a series of 376 cases of auricular fibrillation was published by White and Jones, and thyrotoxicosis, as the aetiological agent, was found in 4.0% of cases, ranking fourth on the list. One has only to recollect the frequency in which one sees auricular fibrillation in obese and stolid individuals over the age of fifty to be sceptical of the importance of toxic goitre as the cause in the large majority.

Could it be that the now fashionable disregard for the B.M.R. has made a diagnosis of "early thyrotoxicosis" so frequent and often, in my opinion, so unjustifiable?—I am, etc.,

Liverpool.

C. M. MILLER.

SIR.—The article on "Some Vulgar Errors in Regard to Goitre" (Sept. 28, p. 449) is deeply interesting and worthy of very close study; and the part dealing with thyrotoxicosis suggests questions to which it would be helpful to have answers. One sentence caused me some apprehension: "We, for our part, believe with Hertzler and many other workers in different parts of the world, that by the time early

middle life is reached goitres without some evidence of associated toxicity are rare." Such goitres are in my experience much more common in women, and the signs and symptoms of mild toxicity are exactly those that may be present in women of that age who have no goitre.

Then again the less gross and less easily discernible signs and symptoms of thyrotoxicosis at any age are those which different clinical conditions may show, and in some of these the resting and, I believe, even the sleeping pulse rate may be raised. Given these signs and symptoms, should one recommend a subtotal thyroidectomy to preclude the possible onset of an auricular fibrillation?—and these are signs and symptoms the interpretation of which must be a matter of personal opinion. That auricular fibrillation may be the result of, or associated with, thyrotoxicosis is undoubted, but in my experience, which may differ from that of others, the fibrillation occurring in a case of mitral stenosis or acute rheumatism is already established, at least at the time one sees the case; and if that statement be accurate, then the position of paroxysmal auricular fibrillation in regard to thyrotoxicosis becomes interesting indeed. Again, "the fact that there may be phases of exacerbation and intermission of the symptoms does not make their discovery easier." It certainly does not, and this statement also applies to the other conditions which give precisely similar symptoms. Moreover, it has occurred that a goitre has appeared accompanied by the milder symptoms of toxicity as a result of emotional stress, and symptoms and goitre disappear, to reappear a few years later on the occasion of another emotional strain.

All these considerations increase the burden of responsibility on the doctor who has to decide what treatment is advisable in a case where the exact diagnosis must be a matter of conjecture; and the mortality even in the hands of expert surgeons is still 1%. I agree that the above types of cases provide the least operative risk; and although the operation by experienced surgeons in undoubted cases of thyrotoxicosis gives extremely satisfactory, even superlatively good, results, there are cases, also equally expertly operated on, where the immediate or final results are not so comforting to the patients or their doctor.—I am, etc.,

London, E.2.

L. J. MOIR.

Catheter and Prostate

SIR.—Mr. C. J. A. Woodside asks (Aug. 31, p. 309) what should be done for the patient suffering from acute upon chronic retention from prostatic obstruction. The answer is that morphine and the suprapubic insertion of an aseptic lumbar puncture needle attached by a sterile rubber tube led into a sterile bottle will permit comfortable and safe transport for 100 or 200 miles. This is less painful than catheterization and does no damage to the delicate urethra (June 29, p. 997). Such a needle has been left in the bladder for three days, but in the presence of pyuria this would be a dangerous procedure. If a catheter has "perforce" been passed, then an immediate prostatectomy with closure of the bladder with unusually intensive chemotherapy and sepsis should be carried out forthwith. Mr. Morton Whitby failed in his attempt to close the bladder (*Lancet*, 1934, 1, 81) because of his want of asepsis and omission of trigonectomy, which is an essential part of my operation. Perhaps my introduction of sodium citrate would have made his operation possible. In my last 700 cases there has been one postoperative clot retention necessitating opening of the bladder. The clot was removed but no bleeding point of the bladder. The clot was removed but no bleeding point found, and the bladder was then resutured. When I meet my next clot retention, having stopped the bleeding I shall again close the bladder in order to avoid sepsis. For six years I have not done a suprapubic drainage and never expect to do another.—I am, etc.,

Manchester.

WILSON H. HEY.

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SIR.—Blindness from trachoma in China is a very prevalent condition, and in my role of surgeon to seven Honanese hospitals I have seen a distressing number of these cases. Corneal grafting by the accepted method is out of the question in China for various reasons related to the veneration people have for deceased relatives.

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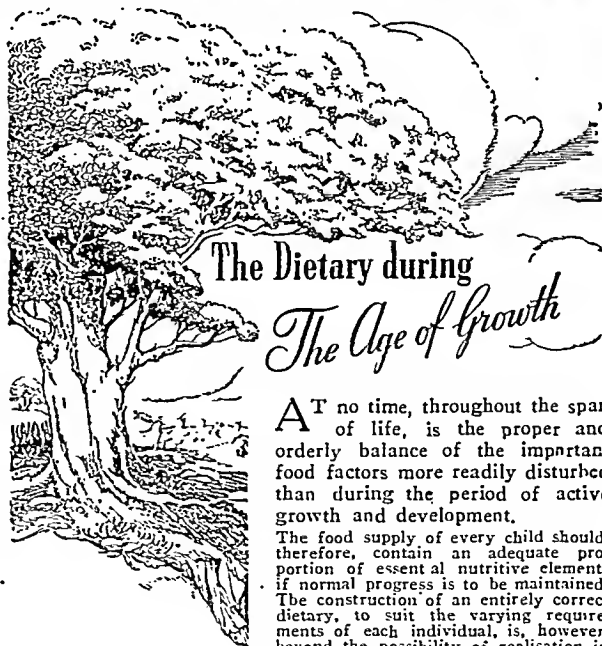
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*Proc. Roy. Soc., Med., (1945) 39, 46

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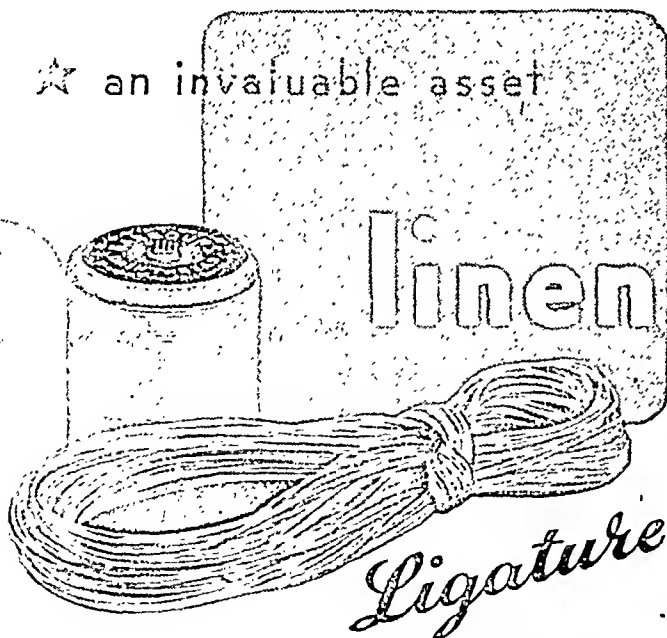
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Although I had no special knowledge of ophthalmology, his problem had obtruded itself so strongly that I was impelled to try the grafting of amniotic membrane. Amniotic membrane, after treatment, is fairly transparent and when laid on the cocaineized eye it was found that the individual bricks could be counted on a wall at a distance of thirty feet. It was felt too that if the grafting should succeed tissue metaplasia might reasonably be expected to take place.

A totally blind beggar volunteered for the experiment. He had a chronic infection of the eyelids from trachoma, which had caused his blindness. After three days a graft of his left eye had taken soundly and his anterior chamber was filling out. He could distinguish light. Shortly afterwards he could see objects, and on the seventh day he could count fingers at two feet; on the ninth day he could eat his meals with chopsticks; on the tenth day he had two small ulcer-like areas below the pupil and could not see so well. Instillation of penicillin was tried and two days later (almost at the time of writing) he had an improvement of vision. A good result from this case can hardly be hoped for as the patient's eyelids were already grossly infected.

At the same time two further grafts were done on two people with no infection and unilateral blindness. The result of these cases is now awaited and will be reported on later. In the meantime it is evident that amniotic membrane is a suitable tissue for use in corneal grafting.—I am, etc.,

WILLIAM J. C. WELLS.
Consultant Surgeon, U.N.R.R.A.

Shanghai.

Abacterial Pyuria Presenting as Urethritis

SIR,—I read Capt. A. B. Fieldsend's interesting article on the above subject (Oct. 5, p. 493) and should like to make a few suggestions:

(1) Three cases of abacterial pyuria are described without any reference to the condition of the kidneys. Surely, to most urologists, sterile urine containing pus cells is so strongly suggestive of an acid-fast infection that they will not accept any other diagnosis until this has been excluded? A tuberculous urethritis is admittedly rare, but it is described by Continental urologists as being a not infrequent accompaniment of a tuberculous infection of prostate or vesicles. (2) Inability to find the gonococcus and a negative complement-fixation test lead your correspondent to discard a diagnosis of gonorrhoea. Is this justified? My experience of gonorrhoea in this country is small, but when serving in West Africa one had to deal with gonorrhoea in numbers quite unparalleled at home. The two most striking features out there were the extreme difficulty in curing Europeans infected by African women and the difficulty in those cases of demonstrating the gonococcus unless the cases were seen right at the start, and before any treatment had been given. That they all were gonococcal and not "non-specific" was shown by the fact that smears were always taken daily, and every now and then a few gonococci would make their appearance—seldom intracellular even then. I so vividly remember an unfortunate young medical officer who came to me from up-country in despair at having failed to cure himself. I turned on all my guns, including all the usual methods except penicillin, which was not available, but had to confess defeat and passed him further "down the line." They were no more successful, and at the end of six months the poor chap was boarded home in the hopes, I suppose, that a change in climate might have some effect. (3) Finally, with regard to the third case, surely a gonococcal cystitis is not very uncommon? Certainly, where the West African is concerned, a simple urethral discharge is regarded with such little concern that it is often only a severe cystitis which drives him to seek medical attention. As he has probably already taken some black market sulphonamide tablets (sold in the market at 5s. each) the elusive gonococcus may never be captured.—I am, etc.,

Ashford, Middx.

R. T. BURKITT.

Benign Tertian Malaria in England

SIR,—The following two cases of benign tertian malaria are considered of interest as both occurred in subjects who have never been abroad. In both cases it is believed that infection occurred in Oxford.

The first, a girl of seventeen, suffered from intermittent daily pyrexia from Aug. 26 until antimalarial treatment was started on

Sept. 26, after a blood film had shown B.T. trophozoites. After an indefinite onset with general malaise, lassitude, and headache, she complained each afternoon of chills and shivering followed by heat and sweating, the whole cycle lasting several hours. Headaches were her main complaint. The highest recorded temperature was 105° F. (40.6° C.). There was a partial remission of symptoms for several days in mid-September. Agglutination tests were negative for typhoid, paratyphoid, and undulant fever, and a chest skiagram showed no abnormalities. On Sept. 3 her spleen was just palpable. Her symptoms were promptly and completely relieved by quinine. Her brother had a relapse of B.T. malaria, confirmed by positive blood films, while on leave from Burma in April last. He was treated at home for a week before being sent back to his unit. Following demobilization he has lived at home since June 3, but has had no further symptoms. The second case was a railway worker aged 47 who has left Oxford only once in the past nine years. His symptoms of fever occurred each night from about Sept. 15 until antimalarial treatment was begun on Oct. 1, following a positive blood film. At the time of onset he was convalescent from an attack of pneumonia which began on Aug. 28. In this case headaches were absent.

These two patients live within sixty yards of each other and close to a slow-flowing branch of the Thames.—We are, etc.,

A. L. B. STEVENS.
G. G. B. BLACKMAN.

Oxford.

Delete "Curarine"

SIR,—One must regret that both Drs. T. Cecil Gray and John Halton in their interesting description of their method of using *d*-tubocurarine chloride "as an integral part of anaesthetic procedure" (Aug. 31, p. 293), and Dr. C. Langton Hewer in a more recent reference (Oct. 12, p. 531), so quickly relapse into the misnomer "curarine" for the curare preparation which they used. The confusion which has arisen because "curarine" once meant one thing and is now in danger of meaning a number of other things, and the desirability that the term, used without prefix, should therefore be dropped, has already been the subject of a letter from Dr. Trevan of the Wellcome Research Institute (*Lancet*, Sept. 7, p. 361). The makers of the preparation which Drs. Gray and Halton were using, and whose former nomenclature they followed, have now rechristened their preparation "tubarine" in order to meet the needs of doctors who feel "*d*-tubocurarine chloride" to be too long a name for repeated use. We must expect other preparations of curares and drugs with curariform actions to appear on the market. They also will probably carry long names for accuracy and short names for convenience. They will not all have the same total pharmacological action, however, nor will they be of the same strengths. And, unless we are going both to continue confusion and make nonsense of much of the work which was done on these alkaloids in earlier days, we must avoid reducing any of these titles to plain "curarine."

For years the term "curarine" was applied to an impure alkaloid variously obtained from calabash curare and *Strychnos toxifera*. It had better now be regarded as a term of historical interest only.—I am, etc.,

Edinburgh.

RANYARD WEST.

The Referendum

SIR,—The B.M.A., it is understood, will take a referendum, as soon as the National Health Service Bill passes through the House of Lords, asking its members whether they wish negotiations opened with the Minister of Health on the terms of service in the new scheme. As we have no reason to believe that "negotiations" will achieve anything unless there is a definite threat to this Bill's very existence, it would seem obvious that there is only one course of action open to us when we make our answer. Given a Minister who shows more respect for age-old traditions of service and a more compromising attitude one would feel very differently about opposing outright a Bill which has cost so much in time and human endeavour.

If we as a profession genuinely believe that this Bill will bring about the enslavement of both the individual doctor and his patient, to the detriment of both, and that drastic changes in certain vital respects are necessary to remedy these defects, we should answer NO with all the strength and faith that is within us. Genuine negotiations can then follow, and not till then, and the results will be fruitful. Let us realize that the Minister is a man experienced in the methods of industrial

dispute, where both sides come to the conference table possessed of considerable bargaining power. Surely it is the Minister's belief or hope that the doctors are so divided that has led him to override all opposition in a way which suggests his contempt for the medical profession as a force to be contended with.

Those of us who feel that their future might be jeopardized by opposing this Bill by means of the referendum can reflect that they are merely expressing an honest opinion. In the event of a 90% vote against the Bill they will place in the hands of our leaders a weapon which will enable them to fight this battle to a satisfactory conclusion.—We are, etc.,

J. K. BOSTOCK. W. R. MAIN.
H. G. CERESETO. E. S. POPE.

Buckingham.

The Milk Ration.

SIR,—I am sure many practitioners will be grateful to Mr. A. Staveley Gough for his letter (Oct. 12, p. 551) on the milk ration. A vicious circle is now well established. As the milk ration sinks the pressure on the doctor to place ailing patients in one or another favoured category rises; none of those entitled goes a single day without his or her full extra allowance; the priority pool swells, the non-priority puddle dwindles; the decent, honest, healthy citizen feels—and is—ill-used, the doctor is riled. Surely it is time to break this circle somewhere.

I suggest that for many of the categories the allowance might be halved without undue hardship. One pint a day for ulcer patients not in bed, for post-operative conditions, and perhaps for tuberculosis, and half a pint for temporary illness, the sick child at home, "dyspepsia"—blessed word—and perhaps colitis ought to be enough. Probably not even the Minister knows precisely how the nation's milk is distributed between the different categories, but it seems a fair guess that such a halving would permit the ordinary ration to be appreciably raised and reduce a little the unceasing demand for priorities.

At the same time the Minister might declare a countervailing bounty for persons over 75 and revise that ominous category I (g) which forbids any medical man under the rank of tuberculosis officer to provide any extra milk at all for a patient with a pleural effusion.—I am, etc.,

London, N.W.3.

LINDSEY W. BATTEN.

Selection of Medical Students

SIR,—The correspondence in the *Journal* of Oct. 5 suggests that the problem of selection of medical students may call for a knowledge of techniques not possessed by the amateur selector. Although I had already realized this it none the less seemed to me important to make a detailed presentation of the case from the amateur point of view, since in fact selection of medical students in this country is carried out mostly by teachers, and professional selectors rarely have an opportunity using their skill in choosing medical students. This is not intended as an apology for the amateur nor a slight for the professional, but merely a statement of the present position. (I use the words amateur and professional in their relation to technique of selection.) Having put forward the amateur's point of view I very much welcome the criticisms of the professional, but I should like to make some comments on these.

Dr. D. R. MacCalman (p. 511) informs me that the Army psychologists in 1941 took up the problem where I left off. I actually knew that the technique of selection had been highly developed in the Services and stated so in my article, but I also stated that until the information obtained was made available the knowledge of its existence was of little immediate help. I am grateful for the hints which Dr. MacCalman gives about the general nature of the work in the Services, but I should welcome still more details of the methods used, and the suggestion made by Mr. Slater that the War Office might be invited to publish this information is an excellent one. Dr. MacCalman suggests that testing for a general capacity of "officer effectiveness" is much better than looking for individual qualities. Perhaps he could suggest how this can be applied to selection of medical students. Is there a quality of "doctor effectiveness" which can be assessed, and if so,

how can this be done? I am very interested to learn of the research which is being carried out at Aberdeen, and I hope the results will be made available as soon as possible. I am afraid I did not make quite clear my attitude towards participation of psychologists in selection of medical students. After pointing out that there was sometimes a feeling of alarm at the idea of psychologists selecting medical students I went on to give reasons why this fear was probably groundless, though I am sure it is true to say that the feeling exists. I can certainly assure Dr. MacCalman that I personally feel no alarm about this matter, as I am sure that the way to success must lie in full co-operation between the well-meaning amateur who at present has the executive responsibility for recruitment to the medical profession and the well-trained professional who has the necessary techniques.

Mr. Patrick Slater (p. 512) has questioned my conclusions about the negative value of interest in selection. I stated that an interest in medicine expressed by an applicant has little selection value, and I still hold to this opinion. The candidate's general interests are, of course, something quite different and, as Mr. Slater points out, one of the means of judging character. I cannot agree with his contention that the most economical method of selection is to choose at each stage those who have the highest probability of succeeding at the next. It implies that the basis of selection should be ability to pass the examinations of the medical curriculum, or, to push the argument further, to pass the first M.B. examination. I should very much like to know from Mr. Slater what criteria have been used at the National Institute of Industrial Psychology in giving prospective medical students advice about their suitability for a medical career. If reliable methods have been worked out they should certainly be made available. Finally I agree very fully with the view expressed in your leading article, that selection of the applicants is only the beginning of the problem and should logically be followed by guidance during the period of training, so that the talents of the individual might later be used to the fullest advantage in one of the many fields of work offered by modern medicine.—I am, etc.,

University College, London.

D. H. SMYTH.

SIR,—Mr. J. S. Wilkie, in his article on the Selection of Women Medical Students (Sept. 14, p. 367), makes a great many statements—and an even greater number of implicit assumptions—which would appear unwarranted to psychologists used to applying the scientific method to problems of vocational selection. To deal with every controversial point in the article would take up too much of your space. May I concentrate, therefore, on the more surprising points?

(1) All Mr. Wilkie's elaborate statistical calculations are concerned with the relationship between individual questions, or groups of questions, and the total test score. Little of value can be deduced from these relations unless data are given on the validity of the test as a whole—i.e., on the relationship between total test score and students' proficiency (assessed independently of the test). Mr. Wilkie deduces, for instance, that the second part of his test (sub-questions to which the answer can be given in one word) is as reliable as the first (questions to be answered by continuous passages of prose), because the two parts correlate roughly to the same extent with question No. 10, or it may be because the average correlation of questions Nos. 6-10 with the total is significantly higher than the average correlation of questions Nos. 1-5 with the total. Mr. Wilkie's reasoning on this point is not clear to the writer, but it is evident that no data are given which throw any light on the relative validity of the two parts of the test. (2) The finding of the higher correlation with the total of questions Nos. 6-10 may well be an artefact of the scoring systems. If, in general, questions Nos. 1-5 show less range of scores than questions Nos. 6-10 (Nos. 1-5 having smaller variance), then the difference between the correlations which were obtained is to be expected on purely arithmetical grounds. The data for this explanation are not given, but in view of Mr. Wilkie's description of the marking of the two sets of questions it would appear highly probable that this is in fact the case. (3) Mr. Wilkie infers that question No. 10 is a "test of intelligence" from the fact that the 118 first-year candidates do not score significantly less than the 258 second-year candidates. Apart from the fact that he adduces no evidence to prove that these two groups are

comparable (he even mentions that "it is not difficult to think of circumstances which might have had a prejudicial effect on some of the studies of the older group"), the following objections present themselves: (a) No one question can constitute "a test of intelligence." A number of questions embodying a variety of logical principles is essential. (b) The assumption that any question in which the first-year candidates do at least as well as the second-year ones is *for that reason* a measure of intelligence leads to the most absurd conclusions. On this criterion, a question as to the relative merits of two film stars or the best method of baking bread would almost certainly turn out to be a test of intelligence. (c) Mr. Wilkie tacitly admits the improbability of question No. 10 being a test of intelligence when he says that "it might also be a test of self-confidence." The same question cannot assess both intelligence and self-confidence (or any other temperament trait) unless they are identical or are always found together. Neither doctors nor psychologists would assert that the most self-confident people are in fact the most intelligent. That the former trait is "not an undesirable quality in a medical student" is irrelevant here. All that can legitimately be said on the question of the relative proficiency of first- and second-year candidates is that if the second-year do significantly *better* on some test, and *other things are equal*, then the test is probably *not* assessing intelligence. (4) Mr. Wilkie evidently believes that armchair inspection of any test question is sufficient to determine whether "whatever it tests is an ability or a group of abilities which would be desirable in a student of medicine." Apart from the fact that little agreement has been reached by the medical profession as to the qualities necessary and sufficient for medical competence (see Dr. Smyth's comprehensive inventory of human virtues, Sept. 14, p. 360), there is no short-cut method of determining what it is that a psychological test assesses, let alone what one particular question assesses. This can be done only by testing large numbers of people, following them up (whatever their test performance) and comparing their success or failure in their career with their original test scores. (5) Apart from criticism of the test questions, the system of marking was such as to render inter-question correlations meaningless. Some of the questions, such as No. 2 ("concerning methods of teaching two school subjects") were necessarily highly subjective in their marking.

The second part of the test is described as capable of being "marked with much greater ease and reliability than the first part." The first five questions have been arbitrarily "translated into numerical form" and these marks have been compared with the marks allotted on the remaining questions. This is not statistically permissible.

The writer has no quarrel with Mr. Wilkie's final conclusion—that a test designed to be objectively marked is as reliable for selection purposes as a test with the same function whose marking is subjective. She would claim, however, that it is possible to reach that conclusion only by means of tests whose consistency and validity have already been established. Finally, she would suggest that vocational selection might be treated with the respect accorded to other technical problems—i.e., long-term experiments should be planned, reliable criteria should be provided for purposes of comparison, and the co-operation of the relevant experts should be enlisted.—I am, etc.,

Psychological Laboratory, Cambridge. A. W. HEIM, M.A., Ph.D.

Legal and Medical "Insanity"

SIR,—Admitted imperfections in the McNaghten Rules are unlikely to be corrected by the type of pseudo-scientific casuistry displayed by Dr. J. A. McCluskie (Oct. 12, p. 555) when he questions the meaning of the words *right* and *wrong*. Nor is it possible to extract from his letter one single constructive proposal for the improvement of judicial procedure in the type of case under discussion. In fact, such procedure would inevitably be even more unsatisfactory than it is at present were his assumption as to the purposelessness of these fundamental terms valid. Where there is no conception of absolute values there can be no justice. The essence of the present legal view is surely that a man is either responsible or certifiable: to the lay mind this has the merits of logic, justice, and simplicity. If it is right, the first task of the psychiatrist in helping to improve upon the existing rules will be to define the place of

the psychopath in this proposition. If it is wrong, he must be prepared to suggest a better alternative. But if such distinctions have little or no meaning for him, it is hard to see how he in his turn can accept this responsibility.—I am, etc.,

London, S.E.5.

D. STAFFORD-CLARK.

Perforation of the Ileum in Enteric Fever

SIR,—Dr. G. E. Dunkerley in his article "Perforation of the Ileum in Enteric Fever" (Sept. 28, p. 454) has made an important contribution to this interesting subject, of which on two occasions during the last two years I have had experience.

Perforation in my first patient occurred on the twelfth day, without previous diarrhoea or distension, and was not diagnosed as such until eleven hours after the event, when peritonitis was established. The single perforation 1 ft. (30 cm.) from the ileo-caecal valve was closed and the pelvis drained. The post-operative course was uneventful by bloodstained pleural effusion, pelvic abscess, obstruction by bands, myocarditis, a mild heat stroke, and a ventral hernia; but the patient recovered.

The second patient suffered from severe diarrhoea and distension but had been on succinyl sulphathiazole therapy for 24 hours before perforation occurred on the thirteenth day. I saw him within a quarter of an hour of a sudden attack of right-sided abdominal pain, but perforation did not seem to be a certainty. He was lying quietly in bed; the temperature was 101° F. (38.3° C.) and pulse rate 110. The abdomen was not rigid, but there was tenderness in the right iliac fossa. Gut sounds were audible with a stethoscope. Two hours later the pulse rate had risen to 120 and the temperature to 105° F. (40.6° C.), and a rigor occurred. The abdomen was now rigid and tender all over, and gut sounds and liver dullness were absent. At operation (2½ hours after the attack of severe pain), a single perforation 1½ ft. (45 cm.) from the ileo-caecal valve was found and was sutured. Convalescence was even more stormy than in the first case. Gastric suction and continuous intravenous infusion were given almost continuously for 40 days. Complications in this case were: secondary haemorrhage from the right deep epigastric artery (which required ligaturing), obstruction of the small intestine by bands followed by herniation of a loop of jejunum through the wound (treated by resuture of the main wound and enterostomy through a separate stab incision), and later there followed symptoms of tetany, myocarditis, and finally a left-sided empyema (drained surgically by Major I. P. James); but again the patient recovered.

These two case histories support Dr. Dunkerley's thesis that perforation usually occurs earlier than in the third week and the classical signs of perforation may be absent in the early stages. The prognosis is also better than is generally supposed, because nowadays we are able to treat the associated serious derangements of the blood chemistry. The typhoid patient requires plenty of fluid and a high protein diet administered by three-hourly feeds, and often, when the action of the damaged bowel flags, timely parenteral substitution is necessary to keep the patient alive.—I am, etc.,

Leeds.

MICHAEL C. OLDFIELD.

Postgraduate Education

SIR,—I feel compelled to express my approval of every detail of Mr. John Stallworthy's well-reasoned letter (Oct. 5, p. 510). It is high time that practical clinical medicine and surgery should be granted the importance overdue to them. It is the practising physician or surgeon who applies the good results of research undertaken by his more academically minded colleagues—the professor and the research worker. In the past, however, clinical workers themselves have made most important contributions to clinical research. This is often forgotten. The Postgraduate Federation outlined by Sir Francis Fraser must of necessity foster the academic aspect to the detriment of the practical and clinical. It appears to me that a unique opportunity presents itself in London to place medical teaching on a sound basis. It has been suggested that all undergraduate teaching should be based on the University and that the three Royal Colleges should organize postgraduate education. These latter already have experience of this and I feel that by co-operation with approved hospitals they could create and organize a postgraduate teaching service second to none in the world. Teaching, both clinical and academic, would be fostered, and research encouraged—all in their rightful proportions.—I am, etc.,

London, W.1.

CHARLES D. READ.

Disseminated Sclerosis: Corrections

SIR,—I would be glad if you would correct the following errors in your report of my Presidential Address (Oct. 19, p. 587) on "The Problem of Disseminated Sclerosis," which are somewhat misleading.

(1) "Some recent work in Moscow" is contained in a paper by M. S. Margulis, V. D. Soloviev, and A. K. Shubladze, which is published in the current number of the *Journal of Neurology, Neurosurgery, and Psychiatry*. They claim isolation of a virus from two cases of acute disseminated encephalomyelitis, but no similar claim is made for disseminated sclerosis as implied in your report.

(2) In discussing the known pathways of infection in toxic-infective diseases of the nervous system, reference was made to the attention given, in the early part of this century, to the peripheral nervous system as the route of infection by the sequence of events in rabies, tetanus, and diphtheria, and not in disseminated sclerosis as suggested by your report.

(3) Reference was made to a survey of 142 cases of disseminated sclerosis; these cases were collected over a period of four years and not one year as stated.—I am, etc.,

Middlesex Hospital, W.1.

DOUGLAS MCALPINE.

BRITISH ORTHOPAEDIC ASSOCIATION

Orthopaedists assembled in London for a very full annual meeting on Oct. 18 and 19. Discussion, presidential address, papers, and films occupied the first day at the Royal Society of Medicine, dinner was at Grosvenor House, and business meeting and clinical demonstrations followed next morning at St. Thomas's Hospital.

Annual Dinner

The British Orthopaedic Association is a well-established authoritative body, and certainly added to its stature by the brilliance of its annual dinner of twenty-one tables, at which austerity fare, uniform, and lounge suits were all giving way to roast duckling and boiled shirts. The President, Mr. George Perkins, welcomed the return of the members' ladies, and toasted as official guests the Prime Minister, the Ministers of Health and of National Insurance, and a number of foreign orthopaedists. Sir Heneage Ogilvie (Vice-President, Royal College of Surgeons) proposed the health of the Association with wit and wisdom. Sir Reginald Watson-Jones (Orthopaedic Surgeon to the King) deplored the lack of spontaneous song and smiles in England to-day and laid some responsibility upon those who sought to regiment the flowers rather than place reliance upon "the unofficial English Rose." He said he did not want to be a Civil Servant and would not be a Civil Servant. Mr. Attlee pleaded for happiness derived from freedom on an ordered plan of co-operation" and instanced example of the equalitarian countries. Mr. Bevan, reminding his audience, with apt orthopaedic metaphor, of the many tied stems in "the unofficial English Rose," explained that he sought "to put the best kind of medical apparatus in the hands of the profession for them to use it freely and independently for the maximum benefit of the patients," and added: "My relations with the British Medical Association are growing more friendly week by week." (He had that day made an announcement about discussions on the capitation fee for insurance practitioners, which will be found in the *Supplement*.) The Minister of National Insurance spoke of his own debt to orthopaedists after a mining accident and declared that the best planned orthopaedic service was desirable to combat the high incidence of accidents in this vital industry.

The meeting showed that orthopaedists will carry to the post-war world a rationalized amplified service gained from their interchange of abundant wartime experiences.

The Central Council for Health Education has revised its committee structure, resulting in the constitution of two major committees dealing respectively with field work and with materials in Health Education. At the first meetings of these new committees Dr. A. B. Williamson, M.O.H. for Portsmouth, was appointed chairman of the field work committee, and Dr. H. Maurice Williams, M.O.H. for Southampton, was appointed chairman of the materials committee.

Obituary

C. S. MYERS, C.B.E., M.D., F.R.S.

We regret to announce that Dr. Charles S. Myers, the eminent psychologist and a pioneer in industrial psychology, died suddenly at his home, Winsford, near Minchhead, Somerset, on Oct. 12. His life work has had a profound influence on the selection of personnel for industry and for military service. He taught the significance of the human factor, trained a band of enthusiastic disciples in the techniques of investigation, and persuaded many large industrial firms to employ a psychological consultant.

Charles Samuel Myers was born in London on March 13, 1873, and from the City of London School entered Caius College, Cambridge, where he won first-class honours in Parts 1 and 2 of the Natural Sciences Tripos and was appointed Arnold Gerstenberg student by the University. He went on to St. Bartholomew's Hospital for his clinical course and graduated M.B., B.Ch. in 1898, in which year he travelled with the Cambridge Anthropological Expedition to Torres Straits and Sarawak. On his return he became house-physician at Bart's and proceeded M.D. in 1901 and was elected a Fellow of his College. While living at Cambridge he became Reader in Experimental Psychology and Director of the Psychological Laboratory; he also held for three years the chair of psychology at King's College, London. Myers was the first president of the British Psychological Society and edited the *British Journal of Psychology* from 1911 to 1924. Meanwhile he had taken the Cambridge degree of Sc.D. and was elected F.R.S. in 1915. He did outstanding work for a long time as Principal of the National Institute of Industrial Psychology and later became its honorary scientific adviser. He presided over the International Congress of Psychology in 1923, gave the Herbert Spencer Lecture at Oxford in 1929, the Hobhouse Memorial Lecture in London in 1932, the Joule Memorial Lecture at Manchester in 1933, and in the same year the Bradshaw Lecture before the Royal College of Physicians of London on "A Psychological Regard for Medical Education."

Myers did valuable work as consulting psychologist to the British Armies in France in the war of 1914-18 with the rank of lieutenant-col., R.A.M.C.; making a particular study of what was then termed "shell shock," and he was one of the first to join the Advisory Committee on Personnel Selection set up later by the War Office. He had also been a member of the Home Office Factory Lighting Committee and of the Industrial Health Research Board. The University of Manchester conferred on him the honorary degree of D.Sc., and the University of Calcutta its honorary LL.D. He wrote on the theoretical as well as the practical sides of his subject. Besides contributions to journals devoted to psychology, anthropology, medicine, and physiology, he published *Mind and Work* in 1920, *A Textbook of Experimental Psychology* (third edition, 1925), *Industrial Psychology in Great Britain* (second edition, 1933), and other books entitled *Business Rationalization* (1932), *A Psychologist's Point of View* (1933), *In the Realm of Mind* (1937), and with Henry J. Welch *Ten Years of Industrial Psychology*. A gifted scientist, he had remarkable prevision of the service that his branch of science could give in choosing people for the right job. The following reference to Myers's pioneer work as director of the National Institute for Industrial Psychology is quoted from a tribute in the *Manchester Guardian*: The institute grew, in fact, from his statement, while lecturing in 1919, that his Army experience had convinced him that psychology must be taken out of the laboratory and applied to the practical problems of life and work. One of his hearers, Mr. Henry Welch, a tea and rubber merchant, had himself thought of applying psychological methods to business appointments. They joined hands and started the institute.

HENRY HANNA, M.B., B.Sc.

Mr. Henry Hanna died suddenly at his residence in University Square, Belfast, on Sept. 28. A well-known figure to successive generations of medical students, he had many friends and

enjoyed a high reputation in the practice of otorhinolaryngology and ophthalmology.

Born in 1874 he was educated at the Belfast Royal Academy, Queen's College, Belfast, and St. John's College, Cambridge. He held Royal University of Ireland conferred on him the degree of B.A. in 1894 and the M.A. and B.Sc. in 1896. After, he took up the study of medicine and graduated M.B. in 1903. Then followed a time as resident medical officer at the Royal Victoria Hospital, Belfast, a period as demonstrator of anatomy in the University, and finally a course of post-graduate study in his chosen subjects at Vienna. After this he set up in specialist practice in Belfast and was appointed to the visiting staffs of the Royal Victoria Hospital and of the Belfast Infirmary, now the City Hospital. He retired from the "Royal" in 1939, in his last year holding office as chairman of staff, but throughout the war, like other consultant members of the staff, he came to the aid of the hospital to make up for loss of the services of those who had joined the Armed Forces. Some measure of his vitality and continued interest in his work is shown by the fact that he retained his active position on the staff of the City Hospital (a connexion going back for well over 15 years) until the time of his death.

In his early days he was trained as a biologist and for a time he taught botany and geology at the Royal College of Science in Dublin. These experiences, his friends recognized, did much to influence his life and to determine the nature of his subsequent interests and pursuits. He was an enthusiastic collector and in his house had many valuable pictures, pieces of porcelain, and exquisite examples of old Irish glass. Outdoors, his hobbies took him in a variety of directions, but he was perhaps most happy with the rod, and each year he spent many evenings, regularly during the summer months, by the water fishing.

Mr. Hanna took his part in public life, being a past president of the Ulster Medical Society, the Irish Ophthalmological Society, and of his own special section at the British Medical Association's meeting in Belfast in 1937. But he was reserved as a rule in large gatherings unless some matter urged on him the necessity for speaking (which he then did most effectively). Unquestionably he enjoyed more the happiness of his own fireside with his wife and children and their friends or the chance encounter with his colleagues, when they would be sure to glean some appreciation of his dry wit and shrewd ability to assess both situations and persons. At times irascible, he had a strong sense of justice, but his nature was warm at heart and deeply appreciative of the trials and sufferings of others.

News has been received from Auckland of the death on Oct. 3 after a long illness of Dr. ROBERT HALDANE MACKILL, C.B.E., who before his retirement in 1932 had been medical officer in the Government Health Department of New Zealand for 31 years. A native of Scotland, he was born in 1870, second son of Sir John Mackill, of Kemback, Fife, 10th baronet. He graduated M.B., C.M. at Edinburgh University in 1893, proceeded M.D. in 1899, and took the Cambridge D.P.H. in 1901 after service in the South African war as civil surgeon with the Natal Field Force. During the war of 1914-18 he held a commission in the R.A.M.C. and served at Alexandria with the Sanitary Branch of the Egyptian Expeditionary Force for a year, and then was appointed A.D.M.S. (San.) with the N.Z. Expeditionary Force. Dr. Mackill was created C.B.E. in 1919 for his work in the war, and had been honorary pathologist to the Auckland Hospital and M.O.H. for Auckland.

Dr. NORMAN F. ELLIOTT BURROWS, late Surg. Lieut.-Cmdr., R.N.V.R., sends the following tribute to Dr. T. WATTS EDEN: "Although many of his contemporaries and colleagues will pay their tributes to Dr. Eden, may I, as representing a very much younger vintage, say how much I deplore his death, and what a loss the medical world has sustained by his passing. I first met him at the end of 1944 when I was stationed in Devon with the Marines. He paid a courtesy call to my sick bay, and having introduced himself as Dr. Eden, I immediately asked him if he was any relation to the Eden of Eden and Holland. I shall always remember the look of pardonable pride on his face as he replied simply, 'I am Eden.' He was one of the most gentlemanly, unselfish, and mentally alert people it has been my pleasure to meet, and in these days of hurry, lack of courtesy, and materialism it is refreshing to have met and enjoyed the company of a man of his calibre.

The Services

A PRESENTATION BY ARMY CONSULTANTS

On Oct. 14 at the Royal Society of Medicine the Army medical consultants, now demobilized, presented to the Director-General A.M.S., Lieut.-Gen. Sir Alexander Hood, for the headquarters mess of the R.A.M.C. at Millbank, an album containing the portraits and records of service of members of the medical and dental professions who served as consultants and advisers with the land forces of the British Empire at home and overseas during the second world war. A sum of money was also presented to the Royal Army Medical College for the endowment of a prize.

Sir Heneage Ogilvie, who made the presentations, said that he thought it could be claimed, without undue boasting, that the British soldier in the recent war had had better medical attention than any soldier of any army had ever received before in military history, and this was largely due to the happy association and loyal co-operation which prevailed during the momentous years of war between the regular officers of the Army Medical Service and those who, from all branches of medicine, were only too eager to join for the period of the war a service of such high traditions.

Sir Alexander Hood, in accepting the gifts on behalf of the Service, said that his first acquaintance with the consultants was in 1930 in France when a very happy band were gathered together in Dieppe, and used to come up to the fastness where he and his brother officers were lodged in Arras, bringing with them not only great stores of knowledge and wisdom, but also certain provender which was extremely acceptable. His next experience of them was when he came to the War Office and got into touch with a large number of most co-operative and busy people whose services the Army was very fortunate to command. He referred to some distinctive achievements, one of them the production of the *Army Medical Bulletin* the first number of which was published early in 1941, and the last—the 51st—in June, 1945. The *Bulletin* was looked forward to by medical officers all over the world. Then there were the consultants' meetings, when sometimes as many as forty would sit round the table, the number including some from the American and Dominion Armies, and also French and Belgians and people from the E.M.S. and the Medical Research Council. Many consultants were fortunate enough to go far overseas. He thought there was not the slightest doubt that the standard of medicine and surgery in India, West Africa, and elsewhere owed a tremendous amount to the work of the consultants who were serving there with the Army. "You can look back on your achievements with great satisfaction. If sometimes the administrative machine seemed to you to suffer from considerable inertia, please remember that we did our best. We were a happy party, and it is by having happy people work with one that the best work is done. I look back on this association as covering some of my happiest days in the Army. I agree that the British soldier was better looked after in this war than any soldier has ever been, and that was due very largely to the consultants who served with us."

FL-Lieut. C. B. I. Willey, M.C., R.A.F.V.R., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services rendered during the period of operations against the Japanese in Malaya and the Netherlands East Indies terminating in March, 1942. He has also been mentioned in dispatches in recognition of gallant and distinguished services while a prisoner of war in Japanese hands.

Acting Squad.-Ldr. R. A. Cumming, R.A.F., has been appointed O.B.E. (Military Division) in recognition of gallant and distinguished services while a prisoner of war in Japanese hands. His name also appears in a list of people mentioned in dispatches in recognition of gallant and distinguished services in Malaya, Hong Kong, and the Netherlands East Indies during the operations against the Japanese terminating in March, 1942.

The Queen of the Netherlands has conferred the decoration of Knight Officer of the Order of Orange Nassau with Swords upon Major G. F. Bramley, and Major (Temp.) H. Kennedy, M.B.E., R.A.M.C., in recognition of distinguished services in the cause of the Allies.

The following decorations have been conferred by the President of the U.S.A. in recognition of distinguished services in the cause of the Allies. *Legion of Merit, Degree of Commander*: Brig. (Temp.) H. L. G. Hughes, C.B.E., D.S.O., M.C., R.A.M.C. *Legion of Merit, Degree of Officer*: Lieut.-Col. A. N. B. Odbert, O.B.E., R.A.M.C. *Legion of Merit, Degree of Legionnaire*: Col. T. Young, O.B.E., R.A.M.C. *Silver Star Medal*: Lieut. J. D. Devitt, R.A.M.C.

surgical research, a moving spirit in surgical education, an operator, an inspiring writer, and a well-loved teacher. Sir Henry

said that Dr. Whipple had so often directed and helped him in the past that he felt particular pleasure in having him for a brief period in his charge. "We honour him, not for his many distinctions, but for the ability that earned those distinctions, not for the many important offices he holds or has held, but for the outstanding qualities of mind and character that have earned him those appointments. Dr. Whipple's name is printed large on every page of surgical advance, and where other surgeons are breaking new ground and treading fearfully, as they are to-day in the surgery of malignant diseases of the pancreas, there they see Allen Whipple before them saying: 'Here I am. This is the way I have gone, and where I have trodden you may follow safely.'"

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At the annual meeting of the College, held on Oct. 16, the following officers were elected for the ensuing year:

President, Mr. James M. Graham. *Vice-President*, Prof. R. W. Johnstone. *Secretary and Treasurer*, Mr. K. Paterson Brown. *Representative on General Medical Council*, Sir Henry Wade. *Convener of Museum Committee*, Mr. W. Quarry Wood. *Librarian*, Dr. Douglas Guthrie.

The following, having passed the requisite examinations, were admitted Fellows:

N. Alders, C. J. B. Anderson, W. G. Birks, S. K. Burcher, A. G. S. Calder, E. A. Chisholm, L. M. David, F. W. T. Davies, A. J. Freese, G. L. Gale, M. P. Goradia, J. B. M. Green, F. M. Hanna, E. L. John, W. G. Kerr, J. E. Laing, W. H. S. Liebenberg, T. Levitt, A. A. MacGibbon, J. M. McInroy, T. B. McMurray, J. M. Matheson, K. N. Mitra, R. F. O'Driscoll, G. V. Osborne, A. P. R. Pinlo, E. C. Richardson, G. K. Riddoch, L. J. Roy, A. R. Taylor, D. J. Waterson, A. Young.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

A course of lectures on "Recent Advances affecting Obstetrical and Gynaecological Practice" will be given in the College House (58, Queen Anne Street, W.) on Fridays, Nov. 1, 15, and 29, Dec. 13, and Jan. 10, at 5 p.m. Admission is free, by ticket obtainable from the secretary of the College. Applicants should state for which lectures tickets are required. Details will be published in the diary column of the *Supplement* for the appropriate weeks.

Medical Notes in Parliament

HEALTH SERVICE BILL

Committee Stage in the House of Lords

The Committee Stage of the National Health Service Bill was begun in the House of Lords on Oct. 17.

The House agreed to Clause 1 of the Bill without discussion. On Clause 2 Lord MORAN moved to leave out subsections 3 and 4 dealing with the constitution and duties of Standing Advisory Committees and to substitute the following:

(3) The Central Council may, if the Minister so approves, appoint standing advisory committees for the purpose of assisting them in such manner and subject to such conditions, if any, as they may direct, in the exercise of their functions under subsection (1) of this section in regard to all or any matters relating to particular services provided under this Act. Any such standing advisory committee may consist either wholly of members of the Central Council or partly of members of the Central Council and partly of other persons being persons of experience in the particular service or services with which the committee is concerned.

Lord MORAN said he was anxious to make the Bill of value and did not wish to be associated with wrecking amendments. He moved this amendment to strengthen the Central Health Services Council. The difference between the Bill as it stood and his amendment was that in the Bill the Minister appointed Standing Committees and they reported directly to him. In his amendment the Council appointed these Standing Committees and they reported through the Council to the Minister. There was a general feeling throughout the profession, and the Negotiating Committee was unanimous, that if the Bill passed as it stood the Standing Committees would do the work and the Central Health Services Council would be robbed of its chief function. At the present time those actively engaged in the practice of their profession played little part in administering the health services and it was hoped that this Central Council would be a means by which those engaged in active practice could take an active part not merely once or twice a year but in everything important concerning health which came before the Minister.

In the House of Commons Mr. Bevan, in trying to define what the Central Health Services Council could do, gave as an example that the Central Council could not advise the Minister on putting up a gynaecological service. Lord MORAN took that example and explained that at present there was a dispute in the profession. The British Medical Association felt that every practitioner on the *Register* should have the right to attend midwifery cases. The Royal College of Obstetricians and Gynaecologists felt that only a practitioner who had special training should be allowed to attend confinements. Both felt strongly on this point. Supposing that the dispute had to be referred to the Committee of Gynaecologists the answer would not be in doubt but would not bring conviction to the profession generally. The Central Council should adjudicate between these two sections of the profession. The Minister, when he dealt with matters concerning general practitioners, had got into the habit—the right habit—of consulting the British Medical Association. He had not yet established the equally healthy habit of consulting the bodies which represented consultants and specialists. If the Bill was to be a success Parliament must make the profession feel it was responsible for that success. With the profession behind it there was some chance that the whole scheme would work really well.

The LORD CHANCELLOR (Lord JOWITT) said the Government could not accept the amendment. He himself had to sit on a body which consisted of less than twenty members but which found that the only way to get through its business was to refer a large number of specialist questions to subcommittees with power to act. Before the Minister appointed Standing Committees he had to consult with the Central Health Services Council. The Bill provided that the Standing Committees could report direct to the Minister but should also send a copy of their report to the Central Council so that the Council could make observations on it. That was a better plan than the Council of forty-one, which was bound to be unwieldy. Suppose there was a question relating to dentistry, was it necessary that the Government should wait for the report of the forty-one members, of whom two were registered pharmacists, one a midwife, and two registered nurses?

Lord MORAN said that the amendment only asked that the Central Council should appoint its own subcommittees rather than that committees which were not really subcommittees should be appointed by someone else. In view of what the Lord Chancellor had said he withdrew the amendment.

Lord MUNSTER asked Lord Jowitt to explain the provision in Clause 2 which said that the Minister, after consultation with the Central Council, could refrain from laying the annual report of that Council before Parliament if he was satisfied that it would be contrary to the public interest.

The LORD CHANCELLOR said the report might include matters connected with war or about a promising discovery made with regard to cancer which it would be undesirable in the public interest to release too soon. Apart from rare cases of that sort he did not think that the proviso would have to operate so long as peace remained.

The House then agreed to Clause 2 and Clause 3. On the motion of the LORD CHANCELLOR a drafting amendment was made in Clause 4 (Accommodation Available on Part Payment). In the same Clause the EARL OF MUNSTER moved to insert a proviso that where there was provided in any hospital accommodation in single rooms or small wards such accommodation should not be converted into larger rooms or wards. Lord Jowitt gave an assurance that such rooms would not be converted unless this was found necessary in the interests of the services provided by the hospital as a whole or in the wider interests of the co-ordinated hospital service. Lord MUNSTER withdrew his amendment but said he still feared that on account of the shortage of hospital accommodation Mr. Bevan would be forced to remove the whole of the private accommodation in many hospitals. Clause 4 was agreed to.

Accommodation for Private Patients

On Clause 5, subsection (2) begins: "The Minister may allow any medical practitioner serving on the staff of a hospital providing hospital and specialist services to make arrangements for the treatment of his private patients either at that hospital or at any other hospital."

Lord LEWELLIN moved to omit from this passage the words "serving on the staff of a hospital providing hospital and specialist services." He said the amendment would allow a doctor to follow his patient into a hospital even though that doctor was not a specialist on the staff of that hospital and would allow a patient to continue under the same doctor. The doctor who suited a patient best was the one who knew that patient's past history and had his confidence.

Lord SALTOUS said this difficulty was found in many hospitals to-day and was often covered by the hospitals making all

medical practitioners within a certain range honorary members of their staff.

Lord HORDER said that from the medical angle he gave emphatic support to the amendment. It was greatly in the interest of the patient on personal and on medical grounds that continuity should be preserved.

Lord LISTOWEL said that, under the Bill a doctor who remained outside the public service could give institutional as well as domiciliary treatment to his patients. The patient could have an operation in a nursing home from a doctor who remained outside the service. The amendment would allow a specialist or general practitioner who chose to stay outside the public service to use for his private work hospitals provided at the public expense.

Lord CRANBORNE said the patient had made his contribution to the State scheme and the Opposition felt that when he entered the State hospital he should be limited only to the State treatment. The medical practitioner who was not a member of the State service could not under the Clause as it stood even arrange for his patient to be treated by somebody else at a State hospital. That practitioner was completely outlawed. The position was utterly unjustifiable. He could not believe that the people intended in setting up a State service that there should be this divorce between a physician and his patient. The Opposition favoured a State service but did not believe that there should be a continual whittling down of private practice so that in effect it was really useless.

Lord ADDISON said the practice of attaching medical practitioners in a district to a hospital was quite common. These men could take their patients in and no question would arise. But a hospital was an organization run by the staff and when medical practitioners outside sent their patients into the hospital they did not follow them themselves. The patients were treated by a member of the staff of the hospital and that was what the Bill proposed. The amendment proposed that for the purpose of private nursing a medical man would send his patient in, follow the patient in and thereby become a member of the staff. Hospitals could not be run on that indiscriminate basis. The practice now in existence was satisfactory.

Lord SWINTON said that if, as Lord Addison had argued, there was to be no alteration in the existing position there need be no Clause. The effect of the Clause was to give a special privilege to a particular class of doctor. Lord LLEWELLIN asked whether the words "serving on the staff" which were used in the subsection meant a full-time doctor on the staff. Lord ADDISON said they did not. Lord LLEWELLIN said he felt there might be some misunderstanding and his friends would like to reconsider the matter. He withdrew his amendment and Clause 5 as previously amended was agreed to.

Transfer of Hospitals to the Minister

Lord LISTOWEL said Clause 6 as drafted was too wide. It would transfer to the Minister property belonging to local authorities which was not part of a hospital. It would, for instance, transfer to him a site which had been bought for the purpose of building a hospital but had not been so used. He proposed an amendment to alter the wording of subsection (2) in order to afford protection to the local authorities. The House accepted the amendment.

Lord IDDESLEIGH moved to provide that on the transfer to the Minister of a voluntary hospital having associations which had it with a particular religious organization regard should be had in the general administration and in making appointments on the management committee and the staff to the preservation of that hospital's character and associations. He instanced The Retreat (the mental home provided by the Society of Friends), the Jewish Hospitals, and the numerous Roman Catholic hospitals.

The LORD CHANCELLOR said Mr. Bevan had already given an undertaking broadly on those lines. The Minister could not sacrifice medical considerations, but so far as practicable it was right that the Ministry should maintain and uphold the denominational character of these hospitals. He would look into the matter before the Report Stage and see how far he could go to meet Lord Iddesleigh.

The amendment was withdrawn and the House agreed to Clause 6.

On Clause 7 Lord MAUGHAM moved to insert at the end of subsection (4) a proviso that in the case of any endowments for which a special application or appropriation had been directed or declared by the donor, the Minister should, so far as practicable, secure that the directions of the donor should not be prejudiced.

Lord READING, Lord LLEWELLIN, Lord SALTOUN, and the DUKE OF MONTROSE supported the amendment.

The LORD CHANCELLOR said that whereas with regard to the teaching hospitals no redistribution of funds was contemplated

it was of the essence of the National Health Service Scheme that there should be a redistribution of the funds of the voluntary hospitals. The Chancellor of the Exchequer had been persuaded to agree that the endowments of voluntary hospitals should remain for teaching purposes so that the hospitals would have a cushion between themselves and the rigour of Treasury control, but there were also the municipal hospitals which had no endowments and some voluntary hospitals which were inadequately endowed. It therefore seemed right to the Government that there should be a redistribution of endowments of voluntary hospitals so that all the hospitals which were going to form part of a common service should be able to share in the proceeds. It was probable that the capital value of the endowments was about £50,000,000, but that contained part of the endowments of the teaching hospitals.

Lord LLEWELLIN said the object of the amendment was to ensure that hospitals, or parts of hospitals, given as voluntary hospitals, were continued. Lord MAUGHAM thought that the action contemplated by the Government was a breach of trust. Lord SAMUEL did not think that the purposes of ancient endowments would be satisfied if the old voluntary hospitals were continued with comforts and amenities while the municipal hospitals were bare and barren of additional comforts. What the donors desired was that the sick should be well cared for and happy.

Lord LONDONDERRY said he understood that if a hospital was well endowed and could produce an income every year the Exchequer would provide a lesser sum for the benefit of the hospital than if the circumstances were otherwise.

The LORD CHANCELLOR replied that that was not so. He said he could not weaken on this question. If money was left for the Reigate Hospital the intention of the Government was that this money should be taken, put into the pool, and distributed among other hospitals. If there were some special case such as that of a gift which involved the maintenance of a garden he would consider whether he could devise some way to meet it provided these words were confined to special cases.

The amendment was withdrawn and Lord LLEWELLIN moved to add after subsection (4) a proviso dealing with the interim period before the appointed day. Those who in the past had done good work collecting money for hospitals still wished to collect sums for such things as additional comforts but feared that if they did so the money would go into the Endowment Fund. His amendment was that in the interim period a little fund could be built up.

The LORD CHANCELLOR said he felt sympathy about the matter. It was unlikely that between the passing of the Bill and the appointed day charitably minded people would lend money to the hospitals if they knew that on the appointed day it would be taken into a fund and pooled. He would consider whether before the Report Stage he could devise some appropriate form of words to meet this important point.

The amendment was withdrawn and the Committee agreed to drafting amendments proposed by Lord LISTOWEL. Clause 6 as amended was then agreed to and Clause 8 was adopted without amendment.

The House then adjourned.

Functions of Management Committees

The Committee stage of the Bill was resumed on Oct. 21. On Clause 12 Lord LUKE moved an amendment to readjust the functions as between the regional boards and the hospital management committees. He said that the management committees or groups of hospitals should have powers from the regional boards similar to those enjoyed from the Minister by the teaching hospitals. To take the appointment of hospital staff away from the management committees would bring about a divided loyalty and would introduce the factor of removal of control. If the Minister wanted responsible people to be members of management committees he should give them suitable responsibilities.

The LORD CHANCELLOR agreed that the success of the scheme would depend almost entirely upon a very wide measure of delegation. The real issue was on the question of machinery. It would be prescribed by regulation that the management committees should do all things in regard to the day-to-day running of hospitals and incurring expense on behalf of the regional boards, but questions of major policy would be for the boards.

Lord LLEWELLIN said that this was doing it the wrong way. In the Bill as drafted the hospital management committees were left with no powers, and he wanted it to be seen in the Bill that there was a real job of work to be done by these committees. Otherwise people would not be prepared to serve on them. Viscount SIMON said it should be possible to make it plain in the actual language of the Bill—and not leave it to regulation after the Bill had been passed—that the committees were going to have a job left to them.

Vitamins in disorders of the circulation

The following are suggestions for the application of vitamin therapy in certain disorders of the circulation. Other conditions of the circulatory system were dealt with in a similar form in the last issue of this Journal.

Condition	Indications	Therapeutic Agents																		
BLOOD DISEASES. Anemias.	Iron deficiency anaemias are frequently complicated by vitamin deficiencies. The macrocytic anaemias such as Addisonian pernicious anaemia and sprue have been found in preliminary trials to respond to folic acid.	COMPLEVITE. Tablets of 2 colours to be taken in equal numbers. One of each colour thrice daily provides: <table> <tr> <td>Vitamins</td><td>Minerals</td><td></td></tr> <tr> <td>A 4,000 i.u.</td><td>Ca -</td><td>160 mg.</td></tr> <tr> <td>B₁ 0.60mg</td><td>Fe -</td><td>68 mg.</td></tr> <tr> <td>C 20.0mg</td><td>Iodine</td><td>not less than 10</td></tr> <tr> <td>D 300 i.u.</td><td>Mn.</td><td>p.p.m.</td></tr> <tr> <td></td><td>Cu</td><td></td></tr> </table> <p>It is hoped that folic acid will soon be available in this country for therapeutic trial.</p>	Vitamins	Minerals		A 4,000 i.u.	Ca -	160 mg.	B ₁ 0.60mg	Fe -	68 mg.	C 20.0mg	Iodine	not less than 10	D 300 i.u.	Mn.	p.p.m.		Cu	
Vitamins	Minerals																			
A 4,000 i.u.	Ca -	160 mg.																		
B ₁ 0.60mg	Fe -	68 mg.																		
C 20.0mg	Iodine	not less than 10																		
D 300 i.u.	Mn.	p.p.m.																		
	Cu																			
Hypoprothrombinaemia Haemorrhagic disease of the new-born.	The prothrombin is normally low for the first few days of life.	VITAMIN K, VITAMINS LTD. One tablet (10 mg.) daily to the mother during the last month of pregnancy or every 6 hours if seen first in labour, or 5 mg. by injection to the infant.																		

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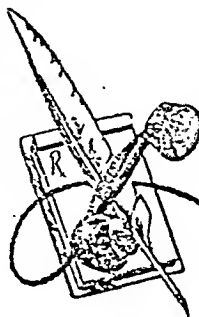
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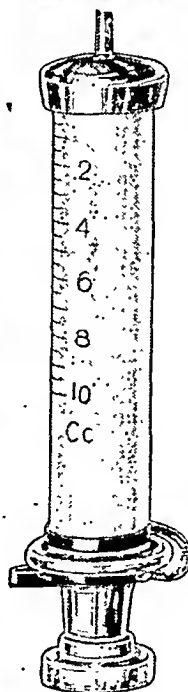
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Council in War Memorandum No. 15.

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The LORD CHANCELLOR said that it would be possible to do what the amendment suggested, but quite deliberately it was not being done. It was provided that the hospital management committees might exercise on behalf of the regional hospital boards certain functions which were to be prescribed. He wanted the boards to leave a very wide discretion to the hospital management committees, and he believed that that was the best way of securing a co-ordinated system.

Viscount CRANBORNE asked that the Government should give the matter a little more thought. The LORD CHANCELLOR undertook to consider the matter further and the amendment was withdrawn.

Teaching and Research Facilities

LORD MORAN moved an amendment the main purpose of which was to ensure the setting up of medical staff committees in the hospitals. He said that in the voluntary hospitals there were such committees who kept the hospitals up to date. The matter was important because it was the very root of the efficiency of the administration of the voluntary hospitals.

LORD HORDER said he would be satisfied with an assurance that it would be within the power of the hospital management committees to encourage the setting up of medical staff committees.

The LORD CHANCELLOR said that he would desire to encourage the setting up of medical staff committees rather than providing that the hospital management committees should arrange for them to be set up. The initiative of the medical staffs on this matter would not only be welcomed but it would be regarded as lamentable if they did not take the initiative. He was reluctant, however, to put a provision in the Bill, and preferred to leave it to regulations. The amendment was, by leave, withdrawn.

LORD MORAN moved a further amendment to secure that the board of governors of every teaching hospital should provide those facilities for medical teaching and research required by the university or medical school with whom the teaching hospital was associated. He feared that in time the board of management might feel that there was extravagance and that more was being done than the comfort of the patient warranted, with a consequent weakening of teaching and research in the hospital. LORD HORDER and LORD CHERWELL supported the amendment.

The LORD CHANCELLOR said that it was fundamental that there should be facilities for teaching and research, but he thought it was going a little too far to provide whatever facilities the universities might require. He undertook to see if some suitable words could be drafted to meet the point. The amendment was withdrawn.

Legal Status of Management Committees

On Clause 13 LORD LLEWELLIN moved an amendment to provide that hospital management committees might sue or be sued, and have their own right to make contracts for the daily services of the hospital. He said that if they had to refer back to the regional boards they would become mere ciphers and there would be a complete lack of decentralization.

The LORD CHANCELLOR said that in certain of their actions the management committees could sue or be sued in the ordinary way. It was only when they were acting on behalf of the regional boards that they could not. In a co-ordinated scheme there must be a chain of authority involving the Minister at the top, the regional board, and the management committee acting on behalf of the board. It did not mean that the management committees were mere ciphers any more than estate agents were.

Viscount CRANBORNE said that the logical conclusion to draw from the Lord Chancellor's argument was that the only really responsible person was the Minister, and yet certain responsibilities were conferred on the regional boards. In that case, why not confer responsibilities on the management committees?

LORD INMAN said that he had received numerous letters from people who were leaving voluntary hospital work because they were losing their responsibilities, and he hoped that a compromise might be reached.

The amendment was carried against the Government by 59 votes to 17—Opposition majority, 42.

Appointment of Officers

On Clause 14 LORD LUKE moved an amendment which would have the effect of enabling appointments of staff to be in the hands of hospital management committees instead of in those of the regional hospital boards, as the Bill proposed.

The EARL OF LISTOWEL said that in fact the whole of the medical, nursing, and domestic staffs, except for a few specialists at the top, would be chosen, appointed, and if need be dismissed by the hospital management committees. LORD

LLEWELLIN said that it did not appear from the terms of the Bill that the Minister would be able to make regulations to that effect, since the staffs who looked after the hospitals would be officers of the regional boards.

The LORD CHANCELLOR said he could not state what the regulation would be, but the broad line was that certain matters would be within the province of the committees, including the appointment and dismissal of staff—with the exception of the senior staffs. He did not think there would be anything in the nature of an appeal to the regional hospital board in the case of a member of the staff being dismissed. Viscount CRANBORNE said that the Opposition wanted the hospital management committees to be able to appoint and dismiss staffs, and they insisted that that should be put in the Bill.

Viscount ADDISON said that amendments such as this would torpedo the possibility of a regional scheme. LORD LLEWELLIN said that they had been assured that these officers would, when the regulations came out, be officers of the regional board, but in fact they would be subject to dismissal by the management committee. It should be shown in the Bill to whom these officers really belonged. LORD INMAN said there were advantages in the Government's scheme. It would be convenient, for instance, to have accountants spread throughout a region and not attached to one hospital. Nurses, too, liked to move from one hospital to another, and did not want to be tied to one particular hospital. Viscount CRANBORNE suggested that there might be some differentiation between types of officers. As the word was used it covered both a hall-porter and a lung specialist, and whereas there would be advantages in a specialist ranging throughout an area that advantage would not apply to a porter. The amendment was negatived.

Maternity and Child Welfare

On Clause 19 LORD BALFOUR OF BURLEIGH moved an amendment to give power to the L.C.C. to delegate maternity and child welfare and ancillary services to the City and the metropolitan boroughs. He said that in the autumn of 1945 this arrangement was unanimously recommended at a meeting of the L.C.C. and no one had yet explained why they had changed their minds. Rumour had it that Lord Latham had said it should be so and it was so. In that case Lord Latham was a dictator, and this mixture of Hitlerism and bumbledom should be swept from the Bill. The MARQUESS OF ABERDEEN and LORD JESSEL supported the amendment.

The LORD CHANCELLOR said that at the time the L.C.C. passed the resolution they were going to keep their hospitals, and since they did not want too much on their plate they were prepared to delegate these services. But now that they were losing their hospitals they had the time and the ability to conduct these other services. The functions that remained with the L.C.C. were the provision of health centres, at which most of the functions of maternity and child welfare would be carried out, domiciliary midwifery, the ambulance service, and the care and after-care of the sick. The Government thought it desirable to concentrate responsibility for the health services on the local authorities in any given area in one authority. Would it be wise to place responsibility for maternity and child welfare in the hands of the metropolitan boroughs while keeping responsibility for domiciliary midwifery in the county council? Was it wise to leave provision for health centres for general medical and dental services with the L.C.C. while leaving maternity clinics and infant welfare centres with the borough councils? The amendment would increase administrative friction and difficulty, and produce a loss of efficiency and co-ordination. The amendment would be a retrograde step. By all means let the county council develop on a regional basis and take in representatives of the borough councils, but it would not be wise or sensible administration to have one body dealing with the under-fives and another with the over-fives.

* The EARL OF MUNSTER, the MARQUESS OF READING, and LORD LLEWELLIN supported the amendment, which was carried—again against the Government—by 35 votes to 15—Opposition majority, 20.

Bread and Chalk

Answering Sir ERNEST GRAHAM-LITTLE on Oct. 8, Mr. STRACHEY said the amount of creta preparata which was added to flour had been decided after consultation with the scientific and medical advisers of the Ministry of Food and after recommendations had been made by the Medical Research Council and considered by the Standing Committee on Medical and Nutritional Problems. These bodies included leading physicians. It was not proposed to add to their numbers. Mr. Strachey thought it was preferable to continue to use the accurate term "creta preparata" for the substance, conforming to the specification of the *British Pharmacopoeia*, which was added to flour. Sir E. Graham-Little suggested the use,

in circulars and Parliamentary answers, of the word "chalk." Mr. Strachey replied that chalk, as popularly understood, was a substance of variable composition which might contain as little as 85% or as much as 99% of calcium carbonate.

On Oct. 9, in a further reply to Sir E. Graham-Little, Mr. Strachey said that although the extraction rate of flour was being lowered to 85% it was inadvisable to lower the rate of addition of creta preparata below the original recommendation. Alternative sources of calcium in the diet were short at present.

Answering Sir Wm. Darling on Oct. 8, Mr. Strachey said he was anxious to reduce the flour extraction rate to 80% as soon as practicable. In national bread, bakers were allowed to use, beside national flour, water, salt, and yeast, any of the following substances: white flour, oils and fats, improvers in the nature of yeast food, any acid or acidic substances for regulating the acidity of the dough, potato and potato flour, barm.

Long-term View on Loans

On Oct. 8 Sir E. GRAHAM-LITTLE asked what provision was made for the resettlement in practice of medical practitioners whose houses were mortgaged to insurance companies at the time of their call-up to the Forces and who were faced with foreclosure by the insurance companies and found themselves, on demobilization, homeless and without means to buy another practice.

Mr. BEVAN replied that the arrangements made to assist the resettlement of medical officers discharged from the Forces did not include the provision of money for the purchase of a practice which could normally be obtained from the financial agencies with whom the medical profession were accustomed to deal. In the particular case to which Sir Ernest had drawn attention there might be hardship due to special difficulty in obtaining a loan in this way, but if the Health Service Bill was approved by Parliament the purchase of a practice would, when the Service came into force, no longer be necessary.

Surgical Boots

On Oct. 10 Mr. PRESCOTT asked whether the Minister of Pensions was aware of the delay still experienced in the repair and provision of surgical boots for disabled ex-Service-men.

Mr. PALING said production was still somewhat below demand in this small specialized industry, but through the help of the Minister of Supply his Department's principal contractors would shortly move into a modern and larger factory. When the new factory was in full operation output would meet demand.

Inter-Departmental Committee on Dentistry

Mr. BAIRD asked on Oct. 11 what action was proposed to give effect to the final report of the Inter-Departmental Committee on Dentistry.

Mr. BEVAN said the recommendations of the committee concerned measures to secure an adequate number of dentists for the population, legislation dealing with the practice of dentistry and the government of the dental profession, and matters concerning dental research. Many of the proposals were in the first place subjects for educational authorities. The Government had invited universities, dental schools, and teaching hospitals to consider the Report, and would consider introducing as soon as practicable legislation relating to those recommendations which dealt with the practice of dentistry and the government of the dental profession. The Government appreciated the importance of dental care as part of a comprehensive health service, and had already decided to provide the University Grants Committee with an additional sum of £100,000 for distribution during 1946-7 to assist dental schools in meeting increased recurrent expenditure resulting from an increased intake of dental students. They agreed that grants towards capital expenditure by dental schools for the same purpose should be made through the Medical Grants Committee. The Medical Research Council had accepted a recommendation that to assist them in their work in this field they should reconstitute their Dental Research Committee. The Council would be able to finance this work from the general grant-in-aid which they received from the Exchequer.

Pasteurization

Mr. TOM WILLIAMS, replying to Lieut.-Col. SHARP on Oct. 14, stated that where tubercle bacilli are found in a bulk sample of milk taken in a consuming area, the offending cow, if still in the herd, is usually detected very quickly, but in a small minority of cases there may be some unavoidable delay, due to the need

for biological tests. The point raised in the latter part of the Question, whether he would exercise his powers under the Food and Drugs (Adulteration) Act, 1938, and order immediate pasteurization of the milk from a particular herd, was under consideration by the Departments concerned in connexion with the revision of the Milk and Dairies Regulations.

Medical Research Council

On Oct. 15 Major VERNON asked the numbers of staff employed by the Medical Research Council and the salaries paid in the categories. Mr. HERBERT MORRISON furnished this table:

Staff Employed by M.R.C.

	Numbers	Salaries
Administrative officers ..	10	590-£750
Scientific staff, including qualified assistants ..	204	300-2,500
Other staff paid monthly ..	171	250-750
Established staff paid weekly ..	63	Under 250
Temporary staff paid weekly (mainly under age 21) ..	96	Under 250

In addition, 15 scientific officers and 8 temporary staff paid weekly are employed on a part-time basis, with salaries *pro rata* within the ranges given above.

Sweets and Teeth

Mr. PETER FREEMAN on Oct. 15 drew attention to experiments on 45 children performed by Dr. J. D. King, of the Medical Research Council, over periods of six months and two years. He said such experiments were calculated, in the opinion of medical authorities at the time, to injure the teeth of the children. He asked why children from an orphanage were chosen.

Mr. HERBERT MORRISON answered that the experiment involved giving a small extra ration of sweets to a number of children whose dental condition was under observation. The children were kept under constant supervision throughout to ensure that they suffered no ill effects from the experiment, which would have been stopped at once if there seemed to be any danger of this. In fact, as had been expected, there were no ill-effects and the children thoroughly enjoyed the experiment. It was necessary to study children in institutions owing to the need for an adequate number of subjects living under identical conditions on a known diet.

Priority Milk

Answering Sir HENRY MORRIS-JONES on Oct. 16, Dr. SUMMERSKILL dealt with milk supplies. She said she had reviewed the allocation of milk between priority and non-priority consumers after consultation with the standing committee on medical and nutritional problems. She hoped it would not be necessary to reduce the supply to non-priority adults below two pints per week during the winter. She would increase it above that figure as soon as the output rose in the spring. She was not prepared to reduce the quantities supplied to mothers and children below the present amounts, which her medical advisers recommended as essential. She could not make special arrangements in the case of the elderly or people living alone.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* an increased incidence was recorded for measles 320, scarlet fever 78, and diphtheria 34; cases of whooping-cough declined by 140.

Changes in the local returns for scarlet fever were barely appreciable except for increases in London 26, Lancashire 26, and Middlesex 20. The largest increases in notification of diphtheria were Lancashire 12 and Glamorganshire 11. A further decline in whooping-cough was general throughout the country and no large variations in incidence were reported. In Devonshire the notifications of measles fell by 107, but in all the other areas a rise occurred, notably in Lancashire 121. The largest return for dysentery was Warwickshire, Birmingham C.B. 7.

In *Scotland* infectious diseases generally were more prevalent and rises included scarlet fever 50, acute primary pneumonia 47, measles 38, and diphtheria 26. The only exception to the general trend was a fall of 9 in the notifications of cerebro-spinal fever. The incidence of this disease was at the lowest level for over a year. The increase in diphtheria was mainly contributed by the Western Area, where the number of cases

se from 57 to 86. The rise in the incidence of scarlet fever as fairly general; the largest increase was 24 in Glasgow.

In *Eire* a general increase was recorded for diphtheria 18 and measles 23. Although the notifications of diarrhoea and enteritis increased by 1 for the whole country, a fall of 9 was recorded in Dublin C.B.

Typhoid and Paratyphoid Outbreaks

Up to Oct. 21 there were 47 cases of typhoid in Armagh ever Hospital and 12 cases in other fever hospitals. The diagnosis has yet to be confirmed bacteriologically in only two of the Armagh cases. The source of the infection—which is now under control—was a milk supplier.

At Sheffield there has been a mild outbreak of paratyphoid fever involving so far 24 cases.

Quarterly Returns for Northern Ireland

During the June quarter the births were equivalent to a rate of 23.8 per 1,000, which is 1.0 above the corresponding quarter of 1945 but 0.6 below the average for the second quarters of the five years 1941-5. The infant mortality was 55 per 1,000 registered births compared with an average rate of 69 for the second quarters of the five preceding years. The deaths of only 6 women were attributed to diseases and accidents of pregnancy and childbirth, representing a rate of 0.8 per 1,000 births, which is 2.7 below the average of the corresponding quarters of 1941-5. The general death-rate was 12.1 per 1,000 and was 1.6 below the five years' average. Diarrhoea and enteritis in children under 2 was responsible for 58 deaths. There were 117 deaths due to pulmonary tuberculosis and 79 due to other forms of tuberculosis. These were 22 and 6, respectively, below the averages of the June quarters for the five preceding years.

Week Ending October 12

The notifications of infectious diseases in England and Wales during the week included scarlet fever 1,106, whooping-cough 1,362, diphtheria 269, measles 2,005, acute pneumonia 351, cerebrospinal fever 37, dysentery 44, acute poliomyelitis 22, paratyphoid 6, typhoid 3.

Ten-year Summary

The Minister of Health furnished on Oct. 16 the following table setting out the incidence of certain infectious diseases:

England and Wales

	Diphtheria		Scarlet Fever	
	Cases Notified	Deaths	Cases Notified	Deaths
1936	57,795	3,003	104,862	440
1937	61,341	2,898	95,735	305
1938	65,008	2,861	99,278	311
1939	47,343	2,133	78,101	181
1940	46,280	2,480	65,302	154
1941	50,804	2,641	59,433	133
1942	41,404	1,827	85,084	104
1943	34,662	1,371	116,034	134
1944*	23,199	934	92,671	107
1945*	18,596	722	73,687	84

	Measles		Whooping-cough		Chickenpox†
	Cases Notified	Deaths	Cases Notified	Deaths	Deaths
1936	Not notifiable	2,593	Not notifiable	1,918	23
1937	"	980	"	1,600	19
1938	"	1,524	"	1,052	18
1939	"	303	"	1,229	18
1940	409,521	857	53,607	678	10
1941	409,715	1,145	173,330	2,383	28
1942	286,341	458	66,016	799	16
1943	376,104	773	96,136	1,114	19
1944*	158,479	243	94,044	1,054	24
1945*	446,796	729	62,691	689	9

* Notifications for years 1944 and 1945 include corrections of diagnoses made at infectious disease hospitals; material for an exact comparison with the years 1936-43 is not available.

† Chickenpox is not a notifiable disease.

Tuberculosis in Vienna

New cases of tuberculosis notified in Vienna during the last six months were: 491 new cases in April, 481 in May, 586 in June, 369 in July, 382 in August, and 335 in September. The number of beds at present available for cases of tuberculosis in Vienna is 2,500.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Oct. 5

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county) (c) Scotland, (d) *Eire*, (e) Northern Ireland

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county) (c) The 16 principal towns in Scotland, (d) The 13 principal towns in *Eire*, (e) The 10 principal towns in Northern Ireland

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	32	2	10	2	—	38	1	23	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	319	22	105	44	10	479	33	166	105	11
Deaths	5	—	—	2	—	12	1	—	1	—
Dysentery	63	5	35	1	—	207	56	108	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	39	7	3	—	—	43	10	3
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	58	—	—	—	—	62	—
Deaths	39	3	8	16	1	47	7	18	15	5
Measles*	1,781	91	117	52	8	367	33	68	43	1
Deaths	2	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	80	8	11	—	—	79	4	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	20	—	2(B)	—	1(B)	11	—	2(B)	—	—
Deaths	2	—	—	—	—	—	—	—	—	—
Pneumonia, influenza (from influenza)†	411	21	2	—	1	377	25	3	2	4
Deaths	7	1	1	—	—	8	—	4	—	—
Pneumonia, primary	—	—	165	16	—	—	—	121	13	—
Deaths	—	21	—	5	7	—	17	—	4	5
Polio-encephalitis, acute	2	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	23	—	1	4	1	29	3	—	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	2	18	—	—	—	3	17	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	163	9	20	4	—	155	11	22	—	2
Deaths	—	1	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,079	91	218	36	32	1,633	135	318	27	45
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	11	3	2	6	3	15	5	4	2	1
Deaths	—	—	1	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,311	90	96	31	22	909	55	30	60	7
Deaths	12	3	1	—	—	4	1	—	—	—
Deaths (0-1 year)	385	58	55	32	9	291	36	56	33	19
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	3,914	604	538	183	103	3,947	564	518	171	113
Annual death rate (per 1,000 persons living)	—	—	11.8	12.0	—	—	—	11.8	11.0	—
Live births	9,570	1482	1114	431	295	6,831	870	914	449	265
Annual rate per 1,000 persons living	—	—	22.4	27.6	—	—	—	18.3	29.0	—
Stillbirths	253	33	33	—	—	200	11	29	—	—
Rate per 1,000 total births (including stillborn)	—	—	29	—	—	—	—	31	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and *Eire*.

Medical News

The 20th annual Lloyd Roberts' Lecture will be delivered in the Physiology Theatre of Manchester University by Prof. Michael Polanyi, F.R.S., on Tuesday, Nov. 19, at 4.15 p.m. Subject: "The Foundations of Academic Freedom."

The following programme has been arranged for the tenth anniversary celebrations of the founding of the Empire Rheumatism Council. Friday, Oct. 25, 7.15 p.m., Heberden Society Dinner to welcome official Swedish delegates to the celebrations, at Euston Hotel, with Dr. C. W. Buckley in the chair. Saturday, Oct. 26, 11 a.m., Prof. J. A. Höjer will deliver an address on "The Organization of Treatment and Research into Rheumatism in Sweden," at the Medical Society of London, 11, Chandos Street, Cavendish Square, W., with Lord Horder in the chair, supported by His Excellency the Swedish Minister. Monday, Oct. 28, 4 p.m., Reception at the Hall of the Society of Apothecaries, Blackfriars Lane, E.C., guests will be received by Mr. Aneurin Bevan, Minister of Health, and Lord Horder, chairman of the Council. The guests of honour are the Swedish Minister, with Prof. J. A. Höjer and Dr. B. Strandell of the Royal Swedish Health Department, and Dr. Loring T. Swaim, of the American Rheumatism Association. There will be a message from H.R.H. the Duke of Gloucester. Tuesday, Oct. 29, 1.15 p.m., Lunch, to be given by H.M. Government, at Savoy Hotel, Strand, W.C., with Mr. Aneurin Bevan in the chair; 5.30 p.m., Reception by the British Council at 74, Brook Street, W.

A series of lectures will be given at the Royal Institute of Public Health and Hygiene, 28, Portland Place, W., on Wednesdays, Oct. 30 to Dec. 18, at 3.30 p.m. The lecturers and their subjects are: Dr. W. H. Bradley, "Methods adopted in the Detection of 'The Carrier'"; Dr. Brian Russell, "Some Possibilities in the Prevention of Disorders of the Skin"; Miss Barbara M. Duncum, D.Phil., "The Popular History of Anaesthesia"; Mr. C. W. A. Kimbell, F.R.C.S., "Medical Aspects of Life in the Prisoner of War Camp"; Miss Barbara Low, B.A., "Juvenile Delinquency"; Prof. Arnold Sorsby, F.R.C.S., "Blindness in Childhood—Past Achievements and Present Problems"; Sir Allen Daley, M.D., "The Public Health Services of London during the Past Hundred Years"; Dr. C. H. C. Toussaint, "Tuberculosis—The Objective and Its Approach." Seats are reserved for Fellows, Members, and Associates of the Institute, but accommodation is provided for others who are interested in health problems. The Museum of Hygiene may be viewed before or after the lectures.

At a meeting of the London Association of the Medical Women's Federation in the Hastings Hall of B.M.A. House on Tuesday, Nov. 5, at 8.30 p.m., Lady Florey will speak on "The Chemotherapy of Infected Wounds." Coffee at 8.15 p.m. in the Members' Common Room. The next meeting will be held on Friday, Dec. 6, when Dr. W. Ritchie Russell will speak on "Rehabilitation after Head Injuries."

The third Medical Research Society lecture will be given by W. J. Kolff on "The Artificial Kidney" at the University College Hospital Medical School, Gower Street, W.C., on Thursday, Nov. 7, at 5 p.m. Those professionally interested are invited to attend.

At a meeting of the Tuberculosis Association to be held at 26, Portland Place, W., on Friday, Nov. 15, at 3.15 p.m., Dr. J. F. Brailsford will read a paper on "The Technique and Standardization of Radiographs of the Chest," and after tea Dr. G. S. Todd and Dr. David Anderson will open a discussion on "Chest Diseases and Flying."

A meeting of those interested in a proposed Association of Plastic Surgeons will be held at the Royal College of Surgeons, Lincoln's Inn Fields, on Wednesday, Nov. 20, at 5 p.m. The President of the Royal College of Surgeons welcomes the formation of such an association and suggests that it should fall into line with other similar associations already affiliated to the Royal College of Surgeons.

Aberdeen University Court has appointed Dr. Alexander H. Macklin to the new post of medical officer with charge of the students' health services. He is at present physician in charge of the electrocardiographic department of Dundee Royal Infirmary.

The Home Office announces amending Orders made by the Secretary of State which came into operation on Oct. 15, bringing certain additional substances within the scope of the Poisons List and Rules. To Part I of the Poisons List there are added dihydrodesoxymorphine, and also pethidine and its salts. To Part II is added zinc phosphide. Dihydrodesoxymorphine, pethidine and its salts, and zinc phosphide are added to the First Schedule; but "articles containing zinc phosphide and prepared for the destruction of rats and mice" are exempted from First Schedule requirements by an amendment to Rule 10.

Letters, Notes, and Answers

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ANY QUESTIONS?

Androgens, for Enlarged Prostate

Q.—*Since androgens are said to activate prostatic epithelium what is the rationale of treatment of senile enlargement of the prostate with androgens?*

A.—The theoretical basis for the use of androgens for enlarged prostate is the fact that sexual potency wanes in some men in the sixth and seventh decades, and sometimes earlier. There is also some evidence, based on biological assay of androgens in the urine, that there is decreased testicular secretion in these later phases of life when the prostate gland enlarges. However, it is equally true that androgens do activate prostatic epithelium. The committee set up by the Medical Research Council before the war came to the conclusion that no objective evidence was forthcoming in favour of the value of testosterone in senile enlargement of the prostate. On the other hand, most clinicians had the impression that the symptoms of the condition were subjectively improved.

There is no definite knowledge as to the endocrine aetiology of senile enlargement of the prostate, but the theory has been advanced that a relative preponderance of oestrogens in old age due to a deficiency of testosterone, is responsible. Experimentally, oestrogens will produce fibromuscular hypertrophy of the prostatic gland. Carcinoma of the prostate is treated by oestrogens on the theory that they produce a physiological castration, and possibly have a direct favourable action on the cancer. The subject as a whole, therefore, is seen to be quite involved.

Tender Granulation Tissue

Q.—*If the skin is removed from any part of the body the underlying tissue, except the actual nerves, is at first insensitive to pain. Later, when covered with granulation tissue, the exposed tissue becomes exquisitely tender. Why?*

A.—Sensitivity in granulation tissue is of two types. The first is generalized over the whole surface and is evoked by, say, the removal of a dressing. It is an indefinite pain, and is probably due to tension transmitted through the ingrowing vessels to their deeper sources. It may therefore be sympathetic in origin. The second type consists of acutely sensitive areas which are clearly defined and usually small. These are presumably sites of nerve-budding and are often found near the edge of the defect, where it is probable that a few exposed end organs persist.

Undescended Testicles

Q.—*What advice should be given to the parents of a boy, aged 10, healthy, and with no sign of endocrine defect, in whom the testicles are not in the scrotum and cannot be detected in the inguinal canal?*

A.—If the testicles are still on their normal route of descent they will probably come down at puberty. If they have left their normal course they will not descend spontaneously and surgery will ultimately be needed. The best advice is that no action should be taken until the age of 12, or until signs of puberty are first seen if this should be earlier. The boy should then be given a course of intramuscular injections of chorionic gonadotrophin (500 international units twice weekly). If the testicles have not descended in three months on such treatment operation is advisable. Treatment will not in this case be

wasted, as it is now generally admitted that the increase in size and blood supply of the imprisoned testicles improves their chance of ultimate survival in the scrotum.

I do not know the proportion of cases in which spontaneous descent occurs at puberty, but it is certainly high. In such cases endocrine treatment may be regarded as a test of their capacity to descend. It is incorrect to state, as some do, that endocrine treatment is no more than a test and that all cases which can be cured by these means would recover spontaneously.

D.D.T. Paint

Q.—Can D.D.T. be mixed effectively with paint or distemper?

A.—D.D.T. can be incorporated in various ways in white-wash, distemper, and paint. However, where "drying" oils are present (as in paint or washable distemper) the insecticidal action of D.D.T. is much reduced, presumably because it is then much less available to poison insects. Therefore they can, without harm, remain much longer in contact with D.D.T.-paint or D.D.T.-distemper than with the residue of an ordinary spray deposit. There seems to be no advantage whatever in incorporating D.D.T. into distemper or paint, since it does not seem to be any more persistent in this form and it is certainly much less efficient.

Excessive Coffee-drinking

Q.—Can you refer me to some authoritative study of the ill effects of excessive coffee-drinking?

A.—The most authoritative discussion of coffee-drinking is published in the *Archiv für experimentelle Pathologie und Pharmakologie* (1938, 190, 118). The discussion is opened by no less an authority than Straub, and he is followed by Eichler, Stieve, Stepp, and Flury. There is a recent paper by Roth, Ivy, and Atkinson in the *Journal of the American Medical Association* (1944, 126, 814), dealing with caffeine and peptic ulcer, in which evidence is presented that 70% of ulcer patients found that coffee and tea increased their symptoms.

Making Soft Toys Aseptic

Q.—What is the best method for disinfecting unbleached wool and fur fabric used in the manufacture of soft toys? Would the application of antiseptic powder be satisfactory?

A.—The best way to treat unbleached wool, fur fabric, or toys made of these materials, in order to render them aseptic, would be to sterilize with steam, in the same way as surgical material and instruments are sterilized. The introduction of antiseptic powder would not be nearly so satisfactory. All such powders are irritant and might produce dermatitis in susceptible individuals; and it would certainly be undesirable to give children toys impregnated with materials of this kind.

High Altitudes and Duodenal Ulcer

Q.—A man in his middle fifties has had three attacks of duodenal ulceration, with two severe haematemeses. He now proposes to live on an altitude of about 8,000 ft. (2,400 m.), practically on the Equator. What effect, if any, will this have on the coagulation of the blood? Is it true that a great many people living under these conditions become "nervy" and "jumpy"? Finally, are such conditions suitable for children?

A.—Duodenal ulcer is a chronic complaint always liable to relapse unless continued care is taken. Although this patient is said to have had only "three attacks of duodenal ulceration," the fact that he has had two dangerous haematemeses suggests that the prognosis is unsatisfactory. Unless this patient can be in a position to look after himself and his diet in the best possible way further haemorrhage can be expected. He should bear in mind that in the last war he would have been considered unfit for service anywhere overseas.

Questions about the effect of altitude upon the coagulation of the blood (which will be unaltered) are of little moment compared with those about the possibilities for diet in his new surroundings. Even more important are the medical and hospital facilities provided. The patient may well become "jumpy" and "nervy" if he is living some hundreds of miles

away from the nearest hospital and blood-transfusion apparatus. Extra oxygen is not usually required below 10,000 ft. (3,000 m.), but 8,000 ft. is not far below this and considerable constitutional upsets are to be expected. These will be noticed on arrival, before the individual has become acclimatized, and again after a long stay at that height. Lethargy, jumpiness, and flatulent dyspepsia may be anticipated. Conditions at 8,000 ft. cannot be recommended for children.

Erysipeloid

Q.—What is the most satisfactory form of treatment for a very troublesome erysipeloid condition common in butchers and fishmongers, known as "fish-handlers' disease"?

A.—Erysipeloid, an infection due to *Erysipelothrix rhusiopathiae*, responds dramatically to intramuscular penicillin within a matter of 48 hours. I have seen good response to as small a dose as 100,000 units.

Treatment of Ophthalmia Neonatorum

Q.—What is the recognized modern treatment for ophthalmia neonatorum?

A.—The classical methods of treatment consisted essentially of ceaselessly washing away all the pus from the infected eye to prevent it from damaging the cornea, and waiting for spontaneous healing, which generally took some weeks. In contrast, the modern methods of treatment deal with the infection primarily. Two alternative procedures are available:

(1) *Sulphonamide Therapy.*—Employed locally the sulphonamides are useless in ophthalmia neonatorum, as they are inactivated by pus and breakdown products of the tissues; given by mouth they are highly effective. When the baby is first seen a swab of the pus is taken both for a smear preparation and for a culture. The eyes are then irrigated with bland lotion, such as half-normal saline solution at room temperature: 1% atropine sulphate drops and drops of medicinal paraffin are instilled as a routine measure, and half a tablet of sulphamezathine (0.25 g.) crushed into powder is given by mouth in a teaspoonful of water or milk. Sulphamezathine administration is continued in doses of 0.125 g. every four hours, day and night, until 48 hours after a clinical cure is obtained. Local treatment consists in three-hourly irrigation with a saline solution during the first day in cases with profuse discharge; as a rule there is no need for further irrigation on the subsequent days. After irrigation medicinal paraffin is instilled to prevent the lids sticking together. Atropine is instilled three times daily in cases with corneal haze or ulceration.

With this treatment swelling of the lids generally subsides within 12 hours after admission; purulent discharge disappears within 24 hours, so that a threatening purulent ophthalmia becomes a simple conjunctivitis giving no anxiety. The eyes are either dry or very nearly so within 72 hours. Some 40% of all affected babies show complete clinical cure within three days, and 90% within eight days. Resistant cases are only relative failures with a somewhat prolonged course which, however, does not give rise to anxiety, as there is conjunctivitis rather than purulent ophthalmia. Isolated cases of complete resistance to sulphonamides have, however, been observed. Babies tolerate oral sulphonamides well. Nothing is gained by using doses smaller than those indicated, and it is important to continue the treatment for 48 hours after clinical cure, as too early suspension may lead to a relapse.

(2) *Penicillin Therapy.*—Unlike the sulphonamides, penicillin remains effective in the presence of pus. It can therefore be used as a local agent, and has one other advantage in that cure is even more rapid and dramatic. For the present, however, treatment is rather exacting, and it is not yet as standardized as oral sulphonamide therapy.

In the use of penicillin, concentration and frequency are all important. The present routine procedure consists of the following stages: (1) A swab of the pus is taken for bacteriological examination. (2) The eye is then irrigated with half-normal saline at room temperature to wash away pus. (3) A nurse seated on a chair takes the baby on her lap, and another nurse is responsible for putting into the eye two drops of penicillin, 2,500 units per ml., every minute. (4) Pus does not tend to re-form while this treatment is in progress. Any secretion can readily be wiped off with pledgets of cotton-wool.

is to be created. In view of the fact, however, that such a Government medical officer would be required to accept liabilities such as night calls and other demands which are the common lot of the private practitioner, and from which the public health medical officer is ordinarily exempt, he should receive an allowance of £10 a month in addition to his salary.

Patients' Payments

General practitioner service—and also dentistry, optical services, drugs, and surgical appliances, and the services of recognized health personnel—should be paid for, in the commission's view, by the patient himself up to a prescribed maximum each year. It is suggested that on the first £500 of his income he should pay up to 2% per annum (with a minimum of £2) for any medical services in the category stated which he or his family may require. On the second £500 he should pay at the rate of 2½%, on the third £500 at the rate of 3%, and so on. Thus with an annual income of £200 the individual would have to spend on these medical services a sum of £4 before he became eligible for State benefit; with an income of £600 he would pay £12 10s.; with an income of £1,000 he would pay £22 10s. Above the maximum any additional cost would be met from the Government fund. It would be required that the individual should not only have incurred this expenditure, but should actually have met it. The benefit of the arrangement is that no individual would be called upon to bear an undue financial burden for sickness in any one year. The medical expenditure of the whole family would be counted towards the respective maxima so that married men with large families would receive more aid than bachelors or childless couples.

The general practitioner would, presumably, be remunerated on a fee-for-service basis, partly from the patient, and, for any amount in excess of the patient's maximum liability, from the State. The Government, in consultation with professional bodies, will lay down certain agreed rates of charge for medical and other services.

Hospitals a State Service

The financial advantages to the general practitioner will be a reduction in the amount of bad debts and in the expense of debt collection, and he may expect an increase of practice because patients would no longer be deterred by the prospect of incurring high cost. On the other hand, since the commission recommends that surgical and medical treatment in hospitals and consultant, maternity, x-ray, and laboratory services should be provided free to all by means of a full-time salaried staff, the general practitioner would find himself excluded from hospitals and maternity homes where he has been accustomed to follow his patient. The commission lays it down that patients who do not wish to accept the services of the salaried hospital consultant staff should pay the full economic rates as well as their private practitioner's fee. Two members of the commission, including Dr. Burnett, put in a demurrer here, urging that maternity homes should remain open to general practitioners. But the commission's recommendation is that cases in maternity homes should be attended by salaried obstetricians assisted by midwives, who will be responsible for normal deliveries, with consultant obstetricians and gynaecologists within call.

Apparently the practice of general practitioners of following their own cases into hospitals has raised difficulties in Southern Rhodesia, where the Government owns and runs nearly all the nineteen hospitals, and with three or four minor exceptions all the maternity homes. Entry to a Government hospital—at least in Salisbury, the capital—has come to be regarded as the right of every general practitioner, a state of affairs which is said not to obtain in the hospitals of any other Government of the Empire. As beds become vacant, the general practitioner's private cases are nursed under his orders by Government nurses, and medicines ordered are supplied from Government stocks on Government funds, and for all this the patient pays the normal fee to his private doctor, and to the Government he makes only a sub-economic payment. It is stated that practitioners attending the hospitals make control difficult, and in fact the Government hospital

becomes a private nursing home for general practitioners have no responsibility for its efficient and economical run. The commission finds that operations requiring a high degree of skill and experience are frequently performed by practitioners with little of either. Nearly half the demand on overworked out-patient nursing staff is taken up by patients who have an appointment with their private doctor in department.

The commission therefore recommends that the privilege of general access be withdrawn, and that a full-time salaried including consultants, be set up, their services to be available to the whole population. It is considered that it might be possible to appoint a sufficient number of whole-time consultants to deal with most of the medical and surgical cases which need hospital attention.

Administration

A very large part of the report is occupied with the discussion of what are called "health" promotive services—"nutrition, housing, the school medical service—as well as with preventive services, such as sanitation, water supplies, and malaria control. On the administrative side the commission recommends the setting up of a national health board to form long-term plans and generally to advise the Government on all matters of health. A board of nine is recommended including two medical members, who would probably be appointed on the nomination of the B.M.A. Branches. It is proposed that the country be divided into five regions, each with a council to advise, plan, and co-ordinate, and the regions into areas—larger than the present municipalities—with committees having both advisory and executive functions.

The salary proposed for the chief medical officer "Secretary for Health" as he would be called—would be immediately under a Minister of Health is £2,250. To him would be directors of public health and of research receiving £1,750, rising to £2,000. Medical inspectors of schools and regional medical officers would receive £1,500, rising to £1,750, senior research officers and medical officers in charge of laboratories, £1,300 to £1,500, and area medical officers—the rank and file of the service—£750, rising to £1,000 instead of their present £600, rising to £900.

Another recommendation is that medical officers should be afforded facilities by way of generous study leave for acquiring additional qualifications. There is no medical teaching in the colony, nor is there likely to be one for many years to come. It is also suggested that a panel of professional men be appointed at the High Commissioner's office in London to scrutinize the qualifications, experience, and suitability of candidates for medical employment in Southern Rhodesia.

HEARD AT HEADQUARTERS

The Civil Service

The Lord Chancellor in the Second Reading debate in the House of Lords said that even if a doctor's entire salary paid [by the State] that did not involve his becoming a Civil Servant. A good deal depends, of course, upon the meaning attached to the word "mere." The Chief Medical Officer of the Ministry is not a "mere" Civil Servant. But "Civil Service" as defined by Murray is a collective term for a non-warlike branches of the public administrative service of the State, including, among others, the educational departments which the State controls. Thus all teachers in Schools are Civil Servants, mere or otherwise. It is difficult to see how the term would be inapplicable to doctors employed in a whole-time salaried service.

The Deaf not Satisfied

The friends of the deaf, as represented by their National Institute, seem to be by no means satisfied with Lord Walsingham's statement that in 1948 everyone who needs it will receive aural aid free of charge and with free servicing. Lord Walsingham

Government Whip in the House of Lords, seemed rather to suggest that this, with treatment for those who would benefit by it, was all that the Government could be expected to do on behalf of this hitherto largely neglected class of the community. It was pointed out to him that for the deaf and dumb a valve amplifier will be of no use at all, and that for many others of the deaf the old-fashioned ear trumpet would be more suitable than an electrical aid. More important, according to friends of the deaf, is the provision of educational facilities for the deaf and dumb.

The Refraction Service

A meeting of representatives of the Ophthalmic Group Committee of the B.M.A. with sight-testing opticians has led to the appointment of a joint committee consisting of five representatives on each side, with an officer of the Ministry of Health as chairman. This is to be known as the Eye Services Committee, and its purpose is to consider the status, scope of work, and designation of opticians in the final form of the national ophthalmic service, and the criteria, if any, to be applied in the selection of opticians for appointment. Three meetings have already been held, and a fourth has been fixed for the beginning of November. At the first meeting it was provisionally agreed to recommend to the parent bodies that the scope of the work of the opticians, subject to the overriding responsibility of the ophthalmologist, should be to examine by refraction and otherwise the eyes of persons referred to them by the ophthalmologist and to report back to him. The second and third meetings were occupied with a discussion of the personal arrangements in an eye services clinic.

Mr. John Foster gave to the Ophthalmological Section of the Royal Society of Medicine the other evening an interesting account of his tour of eye service clinics in France and Switzerland. In Switzerland—that remarkable country where even the street cleaners smoke cigars—the doctors do refraction, but not, as here, because patients come to them on account of headaches. Apparently they do not have headaches in Switzerland: there people come for the improvement of their sight.

Everlasting Fees

The General Practice Committee had a heavy mass of work before it at its first meeting of the session. An agenda of 34 items seemed to include an unusual number of questions relating to fees, involving most difficult and detailed consideration. Thus there were questions of the fees payable to civilian medical practitioners called upon to examine military personnel on release from service; fees for administration of anaesthetics by practitioners employed on a "per case" basis by local authorities; fees for the treatment of unaccompanied children under the Government evacuation scheme (children who have no suitable homes to which to return); fees for Admiralty surgeons and agents; fees for life assurance examinations; fees for examination of volunteers for the Women's Land Army; fees for the examination of dependants of airmen proceeding over-seas; fees of medical officers to emergency training colleges for teachers; and finally—the constable bringing up the rear—fees for the treatment of members of the police force. The members of the committee must, as Mercutio says in *Romeo and Juliet*, "straight dream on fees."

At the T.U.C.

Very few resolutions touching on health services are on the agenda of the Trades Union Congress at Brighton. The chief is a motion by the Women Public Health Officers' Association calling attention to the widespread and serious shortage of maternity beds in hospitals and urging the Ministry of Health to recruit qualified midwives for work in maternity wards on a non-resident shift basis, to provide increased facilities for training pupil midwives, and to employ State registered and assistant nurses for nursing in maternity wards, thus enabling qualified midwives to concentrate on confinements.

The National Union of Vehicle Builders is opposed to workers' being compelled to submit themselves to medical examination by firms' doctors, when seeking employment,

without the right of appeal to an independent tribunal, and declares that in all cases of adverse medical reports the workers should be informed of the grounds upon which the report rests. The Associated Society of Locomotive Engineers and Firemen wants to instruct the General Council to press the Government to introduce an efficient industrial health service to cover all industries; and the Medical Practitioners' Union is urging that practitioners under the National Health Service adjudged to be guilty of faults incurring removal from the Service should have full right of appeal to the courts.

THE DAIN FUND

REPORT OF THE TRUSTEES

Inaugurated in 1936 to honour Dr. H. Guy Dain, of Birmingham, for his outstanding services to the medical profession, the Dain Testimonial Fund, consisting of £4,564 4s. 7d., was completed in 1939 and would have been presented to Dr. Dain at the Panel Conference that year but for the outbreak of war. The formal presentation, however, is to be made at the Panel Conference, 1946.

Dr. Dain intimated that he wished his Testimonial to be devoted to the assistance of the sons and daughters of medical practitioners in need of financial help for educational purposes. The importance of this work and of its claims upon the interest of members of the profession generally needs neither emphasis nor justification, but it tends to be forgotten amid the many claims upon the time and generosity of members of a busy profession.

The interest accruing from the investments of the Fund together with gifts received since its inception (£175 19s.) has enabled the Trustees to do valuable work. Of the eighteen applications received, assistance has been given to eight cases by grants amounting to a total of £755 13s. These grants varied from a single sum of £30 to grants of £100 per annum for a period of four years. In two further cases the Dain Fund is sharing the financial responsibility with the Royal Medical Foundation of Epsom College and the Ladies' Guild of the Royal Medical Benevolent Fund. To certain applicants it has not been possible to give assistance at all owing to other cases of greater need or through lack of funds. Each application is considered in detail, and if assistance is not possible from the Dain Fund every effort is made to obtain help from other sources. In several cases this has been possible, and the following funds have taken over the responsibility: the Medical War Relief Fund, the Medical Benevolent Society of Birmingham, the Royal Medical Benevolent Fund, and local Panel Committee Benevolent Funds.

Almost without exception applications for assistance have the same history: the early death of a practitioner leaves a widow with heavy financial commitments in the education of her children. Cases of this kind which do not come to the notice of the Trustees of the Fund are no doubt numerous, and educational charges continue to be met at the price of strain and overwork of the parent and anxiety to the student. In the cases which do come before the Trustees, personal sacrifice and the finest adjustment of domestic expenditure leave a balance which cannot be met without assistance. If this is not forthcoming, it may mean the abandonment of a career, and the career is often that of medicine. Though the Fund is dedicated to assistance in education generally, in many cases assistance is sought for the continuance of medical education, or for preparation for it, many of the children desiring to follow a family tradition of the practice of medicine. The following cases are of interest:

Case A.—A medical practitioner died in 1939 leaving two young sons. The widow appealed for assistance for both boys. The elder, however, was awarded a scholarship at a public school in 1939, the younger obtaining a similar scholarship in 1940. Assistance was requested for the younger boy during the intervening year and a grant was approved.

Case B.—A medical practitioner was wounded so severely in the 1914-18 war that eventually he had to give up work altogether. He made application to the Dain Fund for assistance towards the education of his daughter. The Trustees awarded a grant, and

the same year his daughter obtained her School Certificate. The following is an extract from this doctor's acknowledgment: "Will you very kindly convey to the Trustees of the Dain Fund my deep appreciation of their generous help in thus enabling B. to complete her school education? It is not possible to find words adequate to express one's gratitude."

Case C.—The early death at the age of 39 of a general practitioner, while he was still repaying a loan for a share in a practice, left his wife and son in extreme financial difficulties. The widow did private nursing, from which she earned about £50 per annum, to increase her very small private income. In 1941, nine years after her husband's death, she developed carcinoma and underwent a major operation. At this time an appeal was made to the Ladies' Guild of the Royal Medical Benevolent Fund for assistance in the education of her son. The fees over a period of four years were shared by the two funds. The boy did well and passed his School Certificate in 1945.

Case D.—The widow of a medical practitioner was left with a son and daughter aged three and six years at the time of their father's death. She had a very small income, but managed to complete their school education. At the time of the application her daughter was doing secretarial work and could just manage to keep herself with a little help from her mother; the boy had won a scholarship at a London medical school and was a pre-medical student evacuated to a town in the Home Counties. His mother had difficulty in finding sufficient money to cover expenses, chiefly in connexion with his board and lodging, and made an appeal for assistance. The Trustees of the Fund awarded six grants to her for these expenses during his training. He qualified M.B., B.S.(Lond.), and after holding two house appointments is now serving with the R.A.M.C.

Case E.—A general practitioner died in 1929 leaving a widow, two daughters, and one son. In 1940 the boy obtained a scholarship at a public school from the Lent Term, 1941. Application was made for assistance in the fees for his private school. A local benevolent society agreed to contribute, and a similar grant was made from the Dain Fund until he entered the public school.

Case F.—A general practitioner died suddenly leaving a widow and five children. The three elder children were self-supporting, but the two younger were dependent on their mother. A boy, the fourth child, had started his training as a dental student, and in order to enable him to continue his studies an application was made to the Fund for financial assistance. Information was obtained regarding his ability, and a grant for four years was approved in 1946, the continuation of the grant being subject to a satisfactory annual report from the dean of the dental school.

The Trustees feel that this opportunity should be taken to bring the aims and objects of the Dain Fund once more to the notice of the profession, and to recommend its claims, not only as testimony of appreciation of the efforts over many years of one of its most active members, but also as a means of assisting some of the less fortunate children of medical practitioners.

Gifts to the Fund should be addressed to the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1.

September, 1946.

MEDICAL EXAMINATIONS FOR LIFE ASSURANCE PURPOSES

The number of inquiries which have recently been received indicates that there is at the present time considerable uncertainty in the minds of practitioners about the policy of the Association on the question of the fees which should be paid for medical examinations in connexion with life assurance.

In accordance with a recommendation of the A.R.M. last July the Association is now discussing with the Life Offices Association the basis for a new agreement providing for the payment of fees substantially higher than those now paid. It is anticipated that agreement will be reached on this question very shortly. In the meantime practitioners are recommended to accept payment for such examinations at the current rates.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following have resumed civilian practice: Dr. R. H. Dobbs, at 135, Harley Street, W.1; Charles Donald, F.R.C.S., at 66, Harley Street, W.1 (Langham 2878); D. L. Griffiths, F.R.C.S., at 14, St. John Street, Manchester, 3 (Blackfriars 9598). *Corrected announcement:* Dr. W. Lindsay Neustatter, at 128, Harley Street, W.1 (Welbeck 3868 and Beaconsfield 723).

Correspondence

Inefficiency of Government Schemes

SIR.—A very large number of people believe the B.M.A. to be the strongest trade union in the country. They are wrong of course, but the belief is firmly held. An even larger number hold the medical profession in high esteem. In doing so they are, up to the present, probably right. Let us be very careful that we do not jeopardize that esteem. We have all seen more than enough of strikes, go slow, more pay, less work, and so on. If we join the sorry ranks of self-first-and-the-country-nowhere merchants, we shall by our example encourage them to further excesses.

Would it not be a better and wiser policy to accept the offer of the Minister of Health, while at the same time we insert in every paper in the country announcements explaining that we consider the offer unjust, inadequate, and dishonest? At the same time, and in the same announcements, it would be well to add that the majority of the doctors in this country are very strongly opposed to taking part in any National Health Service sponsored by the shoddy, incompetent crew who rule us at present.

Our first duty is the safeguarding of the health of the community: the safeguarding of our incomes is a secondary consideration. We are amply justified in stating that we will not take part in any gamble in which the national health is at stake. That would not be a strike, but just ordinary prudence.

When we consider the mess that the present Government has made of foreign affairs, coal, housing, food, and stock breeding, it becomes obvious that any scheme emanating from them is almost certainly foredoomed to failure.—I am, etc.,

London, W.9.

JAMES GOSSIP.

"Basic Salary"

SIR.—To differentiate between "full-time salary" and "basic salary" may be good tactics for a politician, but we must at all costs avoid the trap. It should be clearly recognized that when the Minister of Health says "basic salary" he must really mean "basic contract." The contract inevitably goes with the salary, and while it is impossible to find any genuine reason for the Minister's anxiety to foist a salary upon us it is easy to see why he might desire to force us into making a basic contract with him. Given such a contract, even though it may be the source of only part of the doctor's income, the doctor becomes utterly dependent on the good will of the Minister for his ability to seek a livelihood. A capitation fee leaves the hiring and firing of doctors where it naturally belongs—with the patient. If before we can make contracts with individual patients we must first make, and keep valid, a contract with the Minister, then he is assuming legally a quite unnatural overriding power to hire and fire us. This simple and frightening fact remains true no matter how small a proportion of our incomes is offered as a "basic salary."—I am, etc.,

West Bromwich.

D. SAKLATVALA

Medical Unemployment

SIR.—It is apparent from the self-satisfied tone of "Rather Disgusted" (Sept. 21, p. 85) that he has not served with the Forces. I can assure him that it is not due to lack of initiative on the part of many demobilized doctors that they are unable to obtain work either in hospitals or in private practice. I have answered many advertisements in order to buy a practice or obtain an assistantship with a view to partnership, and in many cases have failed even to get a reply from the advertiser. Many of my colleagues who served their country in the Forces have applied for various hospital posts but have been unable to obtain them; and what is the pay when such a post is obtained?—about £100–£350 a year. (I know there are a few "super-scale" posts up to £2,000 a year, but these are very few and far between.) This is not a rosy picture for a man who may have a wife and family to keep; and who can blame him for looking forward to the day when medicine will be taken over by the State and doctors assured of at least a living wage?

My answer to "Rather Disgusted" is that he should sell his practice and house, join one of H.M. Services and on demobilization see what it is like trying to obtain a suitable post. I consider myself luckier than most as I can afford to wait a little while and to purchase a practice or a part share: but as yet I have been unable to find one.—I am, etc.,

"ONE OF THE MANY UNEMPLOYED."

SIR,—With reference to the recent correspondence from ex-Service and rejected doctors, I advertised for help a short time ago and had about thirty applicants. My offer was £500 basic salary, sleep in, 3/4 share of all increase in practice over present figure—I have been ill for a considerable time and can only do a portion of the work as yet—partnership in 12–24 months without capital payment if results justified it.

I think this is a reasonable offer, but one after another has turned it down for some reason or another. In view of the outcry of "unemployed doctors" this has given me furiously to think.—I am, etc.,

London, W.C.

"PUZZLED."

Trials of a Job-hunter

"DELTA" writes: For the past three months I have been, like many hundreds of other doctors, "job-hunting," and must have written a score of applications, enclosing testimonials, etc., in answer to advertisements in your columns. In only a small minority of cases have I been honoured by the courtesy of a reply. In the vast majority the applications—and in two cases reply-paid telegrams—have been completely ignored. If the secretarial staffs of the various hospitals, etc., to which I have written are too overworked to answer even in the negative the masses of applications they probably receive, may I suggest the advisability of their taking on some of us unemployed as additional clerks?

ADDITIONS TO B.M.A. LIBRARY

The following *Supplements* of the Scandinavian journal *Acta Radiologica* have been placed in the Library of the British Medical Association (the figures in bold type refer to the number of the *Supplement*).

The Roentgen Density of the Cystine Calculus. By Axel Renander 1941, 41.

Beiträge zur Röntgendiagnostik der Otitis Media Acuta. By Sölve Welin. 1941, 42.

Hystero-Salpingo-Pelviographie. By Sven Roland Kjellberg. 1942, 43.

Experiments with Mammalian Sarcoma Extracts in regard to Cell-free Transuission and Induced Tumour Immunity. By Carl Krebs, Oskar Thordarson, and Johannes Harbo. 1942, 44.

The Muscular Build and Movements of the Stomach and Duodenal Bulb. By Johan Torgersen. 1942, 45.

Studies on Protein Metabolism in the Cells of Epithelial Tumours By Torbjörn Caspersson and Lars Santesson. 1942, 46.

Die Urographie bei der Nierentuberkulose. By Olle Olsson. 1943, 47.

Cancer of the Lip. By Bertil Ebenius. 1943, 48.

*Studien über einige Biologische Wirkungen der Röntgen- und γ -Strahlen. Insbesondere am *Phycomyces Blakesleeanus*.* By Arne G. Forsberg. 1943, 49.

Radiotherapy in Actinomycosis. By Eivind Stokkeland. 1943, 50.

The Value of the Barium Enema in the Diagnosis and Treatment of Intussusception in Children. By Jens Munck Nordentoft 1943, 51.

The Radiosensitivity of the Bone Marrow. By Torfinn Denstad 1943, 52.

Renal Tuberculosis and Roentgenologic Examination. By Ragnar Steinert. 1943, 53.

Untersuchungen über die Röntgennahbestrahlung. By Sven Hultberg. 1943, 54.

Studien über die Kumulative Wirkung der Röntgenstrahlen bei Fraktionierung. By Magnus Strandqvist. 1944, 55.

Cerebral Angiography with Perabrodil (Carotis Angiography). By Arne Engeset. 1944, 56.

Cancer of the Breast, with Special Reference to the Results of Different Methods of Treatment. By Sture Rödén. 1944, 57.

Urethrocytography in the Male with Special Regard to Micturition. By Nils P. G. Edling. 1945, 58.

They are all in English with the exception of Nos. 42, 43, 47, 49, 54, and 55, which are in German.

Association Notices

COMMITTEES OF SPECIAL GROUPS WITHIN THE ASSOCIATION

As a result of the elections held recently within the membership of Special Groups of the British Medical Association, the following Group Committees have been appointed for the period 1946–9:

FULL-TIME NON-PROFESSORIAL MEDICAL TEACHERS LABORATORY AND RESEARCH WORKERS GROUP COMMITTEE

Dr. C. J. C. Britton, London.
Dr. W. R. M. Morton, Cambridge
Dr. A. J. Rhodes, London.
Dr. W. Susman, Manchester.
4 vacancies.

ORTHOPAEDIC GROUP COMMITTEE

Mr. B. H. Burns, London.
Mr. V. H. Ellis, London.
Mr. C. G. Irwin, Newcastle-upon-Tyne
Mr. S. T. Irwin, Belfast.
Mr. S. A. S. Malkin, Nottingham.
Mr. A. Miller, Glasgow.
Mr. G. Perkins, London.
Prof. Harry Platt, Manchester
Mr. Philip Wiles, London.

PATHOLOGISTS GROUP COMMITTEE

Prof. G. R. Cameron, London.
Prof. D. F. Cappel, Glasgow.
Dr. C. E. Dukes, London.
Dr. S. C. Dyke, Tettenhall.
Dr. R. W. Fairbrother, Manchester
Dr. J. G. Greenfield, London.
Dr. R. J. V. Pulvertaft, London.
Dr. A. F. S. Sladden, Swansea.
Sir Lionel Whitby, Cambridge.

PHYSICAL MEDICINE GROUP COMMITTEE

Dr. L. D. Bailey, Northwood.
Dr. P. Bauwens, London.
Dr. C. W. Buckley, Derby
Dr. J. B. Burt, Bath.
Dr. F. S. Cooksey, Epsom.
Dr. W. S. C. Copeman, London.
Dr. J. Cowan, Manchester.
Dr. J. W. T. Patterson, Droitwich.
Sir Morton Smart, London.
Dr. W. S. Tegner, London.

1 member to be appointed by Radiologists Group Committee
1 member to be appointed by Spa Practitioners Group Committee.

PSYCHOLOGICAL MEDICINE GROUP COMMITTEE

Dr. H. Crichton-Miller, London.
Surg.-Capt. D. Curran, London.
Lieut.-Col. H. V. Dicks, London.
Prof. D. K. Henderson, Edinburgh.
Lieut.-Col. P. K. McCowan, Dumfries.
Dr. W. G. Masefield, Eastbourne.
Lieut.-Col. A. A. W. Petrie, Sutton.
Dr. J. R. Rees, London.
Dr. W. Rees Thomas, St. Annes-on-Sea.

RADIOLOGISTS GROUP COMMITTEE

Dr. J. F. Brailsford, Birmingham.
Dr. S. Whately Davidson, Newcastle-upon-Tyne.
Mr. J. L. A. Grout, Sheffield.
Dr. M. H. Jupe, London.
Dr. A. B. Maclean, Glasgow.
Dr. R. Boulton Myles, Worthing.
Dr. Ralston Paterson, Manchester.
Dr. S. Cochrane Shanks, London.
Dr. C. G. Teall, Birmingham.

SPA PRACTITIONERS GROUP COMMITTEE

Dr. W. Edgecombe, Harrogate.
Dr. R. G. Gordon, Bath.
Dr. L. C. Hill, Bath.
Dr. A. R. Neligan, Droitwich.
Dr. L. J. Prosser, Harrogate.
Dr. W. Yeoman, Harrogate.
1 vacancy.

GROUP OF ANAESTHETISTS

A meeting of the recently formed Group of Anaesthetists within the Association will be held at B.M.A. House, Tavistock Square, W.C.1, on Friday, Nov. 1, 1946, at 2 p.m. All members of the Association who are engaged predominantly in the practice of anaesthetics are eligible for membership of the Group and both those anaesthetists who have already applied for membership, and those who now contemplate joining, are invited to attend.

The agenda will consist of (a) the election of a chairman; (b) consideration of the size of the Group Committee; and (c) a general discussion on the work of the Group.

(Sgd.) CHARLES HILL,
Secretary.

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

The Katherine Bishop Harman Prize

The Council of the B.M.A. is prepared to consider an award of the Katherine Bishop Harman Prize of the value of £75 in 1947. The purpose of the prize, which was founded in 1926, is to encourage study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best essay submitted in open competition, competitors being left free to select the work they wish to present, provided this falls within the scope of the prize. Any medical practitioner registered in the British Empire is eligible to compete.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1947, but will be offered again in the year next following this decision, and in this event the money value of the prize on the occasion in question will be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be final.

Each essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address. Essays must be forwarded so as to reach the Secretary, to whom all inquiries should be addressed, at B.M.A. House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946.

Diary of Central Meetings

OCTOBER

30. Wed. Postgraduate Subcommittee: (Film Committee), 2 p.m.

NOVEMBER

6. Wed. Ordinary meeting of Council, 10 a.m.
8. Fri. G.M.C. Committee, 2 p.m.
19. Tues. Undergraduate Subcommittee: (Film Committee), 2 p.m.

Branch and Division Meetings to be Held

BOURNEMOUTH DIVISION.—At Burlington Hotel, Owls Road, Boscombe, Friday, Nov. 8, at 7.30 p.m. for 7.45 p.m. Annual dinner.

BRIGHTON DIVISION.—At Royal Pavilion, Brighton, Tuesday, Oct. 29, 8.30 p.m. Annual general meeting. Election of officers, etc.

Meetings of Branches and Divisions

COVENTRY DIVISION

An ordinary general meeting of the Division was held in the Coventry and Warwickshire Hospital on Oct. 8. Twenty-three members were present. A discussion on the relationship between the industrial medical officer and the general practitioner was opened by Dr. MACDONALD, who said that the joint task of the I.M.O. and the G.P. was to ensure the health and the

earning capacity of the worker. He outlined his work in an up-to-date surgery and spoke of his close relationship with the labor bureau. There was difficulty in drawing the line between treatment which could be given at a factory and that which should be given by the worker's own doctor. The worker requiring physiotherapy could be given it at work, which was a help to the man on piece work.

Others taking part in the discussion were Drs. Wright, Catto, Coghill, Turner, Clayton, and Gallagher. It was considered that the I.M.O. wished an employee to see a consultant at hospital or otherwise, the I.M.O. should consult the worker's own doctor.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Prof. A. Lipschutz: *Mon.*, 3.30 p.m., The Tumorigenic Action of Steroids and its Implication for the Problem of Cancer *Tues.*, 3.30 p.m., The Antitumorigenic Action of Steroids; *Fri.*, 3.30 p.m., The Steroid Balance and the Antitumoral Autodefence

ROYAL SOCIETY OF MEDICINE

Lloyd Roberts Lecture.—*Mon.*, 3 p.m. Field Marshal Viscount Montgomery of Alamein, G.C.B., D.S.O.: Morale—with particular reference to the British soldier. Admission will be by ticket only
Section of Odontology.—*Mon.*, 5.30 p.m. Presidential address by Prof. H. Stobie: The role of dentistry in Medicine.

Section of Otolaryngology.—*Fri.*, 10.30 a.m. (Cases at 10 a.m.) Presidential address by Mr. H. V. Forster: Otolaryngology in school-children and Child Welfare. A discussion will follow.

Section of Laryngology.—*Fri.*, 2.30 p.m. Presidential address by Mr. Norman Paterson: Reminiscences and reflections. Film by Mr. Lionel Colledge: Laryngectomy.

Section of Anaesthetics.—*Fri.*, 7.15 p.m. Meeting to celebrate the centenary of the first public administration of an anaesthetic. Reception by Sir Gordon Gordon-Taylor. 8.15 p.m. Presidential address by Dr. E. S. Rowbotham: A hundred years of anaesthesia.

BIOCHEMICAL SOCIETY AND SOCIETY FOR GENERAL MICROBIOLOGY.—At London School of Hygiene and Tropical Medicine, Keppel Street, W.C.2, *Sat.* (Nov. 2), 11.15 a.m. Joint discussion: Quantitative Biochemical Analysis by Microbiological Response.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—*Fri.*, 8.3 p.m. Prof. H. V. Dicks: Role of the Family Doctor in Mental Hygiene.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.—*Mon.* 8.30 p.m. Discussion: Symptomatology and Treatment of Intervertebral Disks. To be introduced by Mr. Norman Dott and S. Charles Symonds.

PADDOINGTON MEDICAL SOCIETY.—At St. Mary's Hospital, W., *Tues.* 9 p.m. Dr. G. B. Mitchell-Heags: Penicillin in the Treatment of Skin Diseases. Cases will be shown.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS, 58, Queen Anne Street, W.—*Fri.*, 5 p.m. Prof. J. Chassar Moir: Application of Radiology to the Diagnosis of Cephalo-pelvic Disproportion.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—*Thurs.*, 8 p.m. Mr. Buckley: Genito-Urinary Infections.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, *Tues.*, 5 p.m. Dr. A. C. P. Campbell: Cellular Defence.

LONDON SCHOOL OF DERMATOLOGY, 5 Lisle Street, Leicester Square, W.C.2.—*Tues.*, 5 p.m. Sir Archibald Gray: Sarcoidosis. *Thurs.* 5 p.m. Dr. J. L. Franklin: Lichen Planus and Lichenoid Eruptions.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

FITZGERALD-O'CONNOR.—On Oct. 12, 1946, at Helenshowe, Abingdon, Berk to Dr. and Mrs. G. Fitzgerald-O'Connor, a fourth child and third son, Alexander Francis.

KENNEDY.—On Oct. 3, 1946, at Redhill, to Barbara (née Singleton) and John Kennedy, D.O.M.S., a son—Richard John.

WOOLLEY.—On Oct. 18, 1946, at the Queen Mary Nursing Home, Derby, Vivien, wife of Dr. M. J. S. Woolley, of Oak Dene, Duffield Road, Derby, a daughter.

MARRIAGE

ESSON—WALSH.—On Oct. 12, 1946, at St. Andrew's Parish Church, Ashton-on-Ribble, Preston, Lancs, by Canon F. A. Addison, M.A., Mr. William E. Eson, of Singapore and Penang, to Dr. Isabel Taylor Walsh, of Redcliffe, Ashton-on-Ribble, Lancs.

DEATHS

GREENSHIELDS-DAVIS.—On Oct. 10, 1946, the result of a road accident some where in Austria, Geoffrey Richard, aged 24 years, Captain 7th Hussars (Queen's Own), third year medical student at Edinburgh University. Beloved only child of Dr. Gwendolyn G. Newth and stepson of Dr. A. A. F. Newth, senior school medical officer, Nottingham.

MURRAY.—On Oct. 13, 1946, at Scafield House, Banff, Andrew Brown Murray, M.B., C.M., beloved husband of Bertha Stevenson.

NUTTALL.—On Aug. 18, 1946, William Nuttall, M.B., Ch.B., of Thornton near Blackpool (late Little Lever, Bolton), aged 83.

BRITISH MEDICAL JOURNAL

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PSYCHICAL SEIZURES*

BY

WILDER PENFIELD, M.D., F.R.S., Hon.F.R.C.S.

(From the Department of Neurology and Neurosurgery, McGill University, Montreal,
and the Montreal Neurological Institute)

The statement has been made that in certain types of abnormal behaviour the patients were experiencing "psychomotor seizures," as though the epileptic discharge were capable of creating and elaborating abnormal thought processes. From the point of view of a psychiatrist it is important to know whether this may be true. Is abnormal behaviour ever a manifestation of a continuing epileptic state? Description of the psychical manifestations of certain types of local seizures and of the abnormal post-ictal states that sometimes follow may throw some light on the answer to this question.

Ictus epilepticus, or an epileptic seizure, is a state produced by intense spontaneous neuronal activity. This activity has a tendency to spread throughout the grey matter of the brain with unbridled augmentation. For the duration of the seizure, until exhaustion sets in, ganglion cells seem to be capable of abnormally great functional discharge. Furthermore, a group of cells discharging at this high rate may produce a similar state in adjacent or in connected groups. Thus, a focal epileptic discharge may spread across grey matter like a prairie fire, or it may follow more distant neuronal pathways to other areas of grey matter.

The presence of a focus of increased ganglionic activity may be detected by electro-encephalography between attacks. The increase and the spread associated with each attack are also easily recorded electrographically, and the neuronal exhaustion that follows is indicated by electrical silence. Thus the suggestion of Hughlings Jackson that seizures begin locally receives further verification. The word ictus means seizure; and we may study by electrical methods the inter-ictal state of the focus, the ictal exaltation of metabolic activity, and the post-ictal state of fatigue (Jasper and Penfield, 1943).

The clinical type of seizure depends upon the location of the initial discharge, and the attack should be classified accordingly. For example, twitching of the right thumb signifies discharge in the grey matter of the precentral gyrus where the thumb has its representation for movement. When an epileptic sees moving lights it indicates a discharge in the visual cortex of one occipital lobe. Simple lapse of consciousness without other manifestation may mean discharge in the highest level of functional integration. Any local discharge may spread farther and the seizure become more elaborate, and it may end as a generalized convulsion (grand mal). Such major seizures are apt to look very much alike from case to case if seen in the terminal stage. But the important problem is, Where was the original discharge? That question may be answered by

describing the beginning of the attack or the character of the minor seizure. Do not believe, until proved, the statement that a certain patient's attacks begin in various ways, for it is almost never true. Different stages may be observed or remembered. A sensory aura is not a phenomenon essentially different from a seizure. It is a minor seizure if it goes no further. If it is a prelude it indicates the firing of the fuse that is about to explode a succession of nerve-cell groups.

For the purposes of this discussion it is important to emphasize that during local epileptic discharge, as well as in the subsequent period of fatigue, the involved area is paralysed so far as any useful function is concerned. The thumb which is forced into Jacksonian movement cannot be controlled by the patient unless he holds it with his other hand, which still responds normally to activity of the opposite hemisphere. During a visual seizure the patient sees only the lights that blot out vision. He is blind to all else. The petit-mal attack, or highest level seizure, "blacks out" consciousness for its duration.

Ictus epilepticus may thus produce amazingly selective paralysis. It was the realization of this fact that placed in the hands of Hughlings Jackson a master key which he used to unlock many an anatomical and physiological problem. The ictal paralysis and the post-ictal paralysis may be equally complete. The thumb is paralysed, the eye is blind, or the patient is unconscious for a little time after the explosion is over as well as during the seizure. This is the negative side of a seizure. It is often overlooked in our thinking, and many seizures actually manifest themselves only by the silence caused by this negative state. This is true in general of the complicated functions of speech and thinking. Discharge in one frontal pole produces silence and loss of consciousness. Discharge in Broca's area of the dominant hemisphere produces not speech but cessation of speaking.

Under the heading of motor or sensory seizures the following may be listed: Jacksonian motor, somato-sensory, contraversive without loss of consciousness, masticatory, auditory, vertiginous, visual, olfactory, autonomic. All of these are either sensory or motor, at least at the outset, and sometimes they may be mixed. Two types of seizure may be mentioned which are not strictly sensory, motor, or psychical: unconscious contraversive and illusion of perception.

The unconscious contraversive seizure results from discharge in one frontal pole. It begins with silence—that is, with loss of all consciousness—and it is followed by turning to the opposite side. Illusion of perception results commonly from discharge in the cortex of one temporal lobe. During a seizure of this sort the patient is still aware of his surroundings, but the interpretation of his present experience is altered. The illusion may be that things seen seem to go farther away or

* Extracts from an address, delivered May 17, 1946, at Boston, and June 14, 1946, at Oxford. The complete paper will be published with other addresses in book form to commemorate the opening of the MacLean Hospital Laboratories, Boston, Massachusetts.

to come nearer to him; or that sounds seem more distant or louder. A present experience may seem to be remembered and thus appear strangely familiar; his environment may seem suddenly strange, or the patient himself seem remote as though he were an onlooker. Such an experience arising from discharge in one or other temporal-lobe cortex suggests that there are in that region localized neuronal connexion patterns that are utilized in the interpretation of visual and auditory experience. This is one form of what was once called an intellectual aura. Hughlings Jackson referred to it as a dreamy state. But included in the dreamy states of Jackson are also the hallucinations which I have for convenience of discussion included with the psychical manifestations of seizures.

Psychical Phenomena

These attacks may end as generalized convulsions and thus may be said to become motor, but in the outset they are purely psychical phenomena.

Hallucinations.—Elaborate hallucinations, like dreams, constitute a moderately common manifestation of a seizure. The localization of ictal hallucinations is in the cortex of one temporal lobe. The experience may be entirely visual, such as a scene from the distant past. There is usually some doubling of consciousness so that the patient recognizes the significance and the unreality of the state. It may be a vivid past experience, such as that of a woman who saw herself giving birth to her child. It may repeat the formula of a familiar childhood dream, but usually it is a simple experience with no psychological significance and the elements are chiefly visual and auditory. Music as a hallucination may be a simple air or it may be a symphony. It seems to arise at the anterior pole of one temporal lobe.

A few examples may be given.

W. D. experienced an epigastric sensation which rose up to his head at the beginning of an attack. Then he heard words, usually those he had heard recently; and yet if he was at the time in conversation or listening to a lecture they were not the words of the speaker. He never thought that someone was talking to him, and he had never been fooled into believing that the radio had been turned on. He might experience the odour of iodoform at such times—suggesting spread of discharge into the uncinate gyrus.

P. R. seemed to hear the music of a symphony for a few seconds, or she would hear voices and might ask her friends to talk more loudly so that she could understand them in spite of these spurious voices. This might be followed by a feeling of warmth in the right ankle and up the right side, which seems to have been a vasomotor phenomenon. Her focus was deep in the left temporal region.

H. P. could remember an aura that referred to her childhood. She seemed to be in a park, and saw a boy there and once a girl. She thought the circumstances were always the same and always familiar. Sometimes the figure or scene came very near her, and then she felt it in her throat. She had a superficial focus in the right temporal lobe. During an operation under local anaesthesia the right hemisphere of the 14-year-old girl was exposed. Some results of electrical stimulation of the temporal cortex were as follows: at one point stimulation caused her to say that she felt as though she might have an attack. When asked what she meant, she said, "That dream, but it passed over." When another point was stimulated she said, "I am seeing somebody." A short interval was allowed and then the point was stimulated again without warning the patient. After a pause she said, "It's coming again." When asked if she saw somebody she said, "Sure, a boy." At another point she said she felt queer; and at still another, lower down, she felt as though an attack were coming on, but it did not come. Stimulation at most of the other points produced some aspect of the dream. At 22 the electrode was kept in place for a longer period. She said, "Dream is starting. There are a lot of people—in the living-room—I think one of them is my mother."

From a psychological point of view there are many interesting aspects to such phenomena. The experience is a continuous progressive one like a dream. It does not happen all at once. In some cases different stages in the dream can be produced by stimulation at different points, and these points remain constant for that particular feature. It is sufficient to point out now that an acquired neuronal connexion pattern, which is evidently related to the mechanism of memory recording, may become so strongly facilitated by the recurring passage over it of an epileptic discharge that it can be activated by electrical

stimulation at various neighbouring points. Furthermore, the patient can himself contemplate such hallucinations and describe them objectively just as he would report a memory that he might summon up.

Forced Thinking.—A feeling of compulsion to think or the occurrence of unusual thoughts may be a preliminary to an attack, although this is quite rare and the descriptions are nearly always meagre, as is shown by the following examples.

H. C. found that his attacks began with an alteration in his thinking. He said he felt himself forced to think about something at these times and that he knew this was a signal that an attack might be imminent. But he could not describe the alterations in his mental processes any further.

W. S. would find himself saying to himself that he "told somebody or other to do this or that." It was usually someone he knew at home, but not always the same person, and he did not seem to see the individual; but he knew a major seizure might be imminent. He stated that a succession of thoughts went through his mind.

J. J. said thoughts crowded into his mind. For example, there was a slice of bread on the table, and he felt it necessary to turn or move the bread. The thoughts did not lead him to do anything, but he knew there was a danger of an attack.

The origin of the attack in these cases has so far proved to be in the posterior part of one frontal lobe anterior to the motor cortex. Perhaps the experience is not properly called forced thinking, for it is remarkable that there are not in our series more complicated types of thought process which the patient can remember. None of the individuals regarded such thoughts as meaning anything—except a warning. Even during this alteration of thinking the subject felt himself to be an onlooker, perceived the significance of the state, and usually tried to turn his mind to something else.

Stereotyped Behaviour.—In a small group of patients there has occurred stereotyped behaviour during a seizure. One man M. R., clutched his own throat as though he would choke himself and resisted with great strength any effort to stop him. He then behaved in a confused manner for hours. He had a scar and an epileptogenic focus, resulting from a depressed fracture, situated in the right frontal lobe near the midline and just anterior to the motor cortex. Electrical stimulation here reproduced the state just described (Penfield and Erickson, 1941). He had amnesia for the whole seizure.

More recently in several similar cases coated electrodes were placed in the subdural and extradural space about the frontal lobes so as to record the beginning and the spread of spontaneous seizures. Without describing these cases in detail here it may be pointed out simply that stereotyped abnormal behaviour has occurred during or just after a localized seizure involving the posterior or median part of one frontal lobe near the longitudinal fissure. It has not yet been observed in association with attacks arising in other areas. How much of the behaviour is the result of release of brain areas by local ictal or post-ictal paralysis and how much is due to discharge in some neurone pattern must remain an open question.

Automatism.—Automatic behaviour as a post-ictal phenomenon has been well described by Hughlings Jackson. This state is a frequent sequel to attacks arising from different areas, but it is seen most often following short attacks localized in the region of one fissure of Sylvius. Most often the seizure manifests itself only as a masticatory attack. Thus the patient smacks his lips and swallows for a time, then he is apt to walk away or move about the house in an aimless manner. Such patients are violent only if opposed. They have amnesia for the period and come to themselves rather suddenly and without a period of sleep. It is obvious that most cortical mechanisms are intact during post-ictal automatism, but the higher neural centres which are the anatomical substratum for conscious activity are paralysed.

Ictal Automatism.—This occurs most frequently in idiopathic or cryptogenic epilepsy. The discharge is evidently taking place in the neural substratum or consciousness just referred to, the highest level of integration. This is evidently a midline area in close anatomical relation with the frontal lobes, to judge from the electro-encephalographic and other evidence that need not be recapitulated now. The attack is commonly referred to as petit mal. The patient may carry on in an automatic manner activity which he had already intended, but he is

onfused. The paralytic effect is produced by the discharge and may be continued during the post-ictal fatigue period. The automatism may therefore be considered both ictal and post-ictal.

Post-Status-Epilepticus Psychotic State.—Finally, psychotic behaviour with negativism, fixed delusions, and hallucinations continuing for days and weeks occurs in rare cases. This is he sequel to a series of seizures continuing for some time. In all patients of this type that we have observed, and in which a focal discharge could be proved, the location of the focus has been in one or other frontal lobe.

For example, N. J. had a small infiltrating tumour in the left posterior frontal area. After admission she had a series of attacks originating in the left frontal region. On the sixth day she was confused, suspicious, negativistic, and said her medicine was poison. Before the attacks Dr. Jasper found multiple spikes, also slow and sharp waves originating from the area of the tumour. But during the negativistic state that followed the seizures there was an increased abnormality of cortical rhythm from the region about this focus, but only minor abnormality from posterior and contralateral regions.

This condition seems to follow a series of seizures. It follows status epilepticus. We have assumed that this is not the result of post-ictal paralysis nor of ictal discharge. Instead, it seems to be associated with an alteration in the normal function of the cortex, chiefly in one area of the brain, and is of interest because of the apparent localization of the abnormality.

Conclusion

In general, automatism may occur during or after a seizure, and post-ictal automatism may succeed ictal automatism with little or no sign of the transition. In either case it seems to be the result of functional paralysis of a restricted area of the central nervous system, an area very high in the scale of functional re-representation. It is a negative manifestation of the attack. On the other hand both hallucinations and perceptual illusions are ictal phenomena and may sometimes be produced by temporal stimulation. These states do not greatly alter the patient's behaviour, for he recognizes them to be spurious. The state which we have called forced thinking is clearly ictal. But it, too, is recognized by the patient as something different from normal thought.

Stereotyped behaviour, like automatism, occurs during a period for which the patient has no memory. It differs from automatism in that there is some definite pattern of action which the patient adopts at such times. Our observations indicate that it is ictal inasmuch as it has occurred during a seizure, but whether the behaviour is the positive result of the discharge, or whether it is due to activity of the central nervous system released from the usual influence of the portion of the frontal lobe that seems to be chiefly involved in the seizure, is not clear.

REFERENCES

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The Ministry of Education has issued a circular (No. 117) on homecraft as a subject of further education. It is intimated that in framing their plans local authorities should not interpret the word "homecraft" too narrowly, and a list of subjects which it may embrace is given. These include sanitation, ventilation, and water supply, maternity and child welfare, the care of children, and health education, with the treatment of common accidents and ailments. The Ministry says that it should be the aim of education authorities to make provision to cover all these subjects except in so far as the needs are met by other existing agencies such as the maternity and infant welfare service. The educational provision may take various forms such as short full-time courses or longer part-time courses on selected topics, or lectures and demonstrations, or the help given at advice centres by personal contact and simple leaflets. It is added that while this further education in homecraft is primarily directed to women it should not be considered as for women only, and lectures or short courses may well be arranged for fathers and husbands concerning the problem of bringing up children or other home duties.

THE BLOOD GROUP Rh*

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PART II

CLINICAL APPLICATIONS IN TRANSFUSION THERAPY AND IN HAEMOLYTIC DISEASE OF THE NEWBORN

The Rh Factor in Blood Transfusion Therapy

As shown in the foregoing section, in each individual the Rh factor consists of two sets of three elementary antigens, and theoretically the recipient of a blood transfusion might develop antibodies against any one of the antigens which he or she lacks. Thus far five of the six possible antibodies have been identified, but while some are common others are exceedingly rare. ABO blood grouping is now so well understood and reliable grouping sera are so generally available that transfusion reactions due to errors in ABO groupings are rare. Reactions between bloods compatible on the basis of ABO groups are designated "intra-group reactions," and such intra-group incompatibility is due mainly to the Rh factor, although on rare occasions other blood group factors such as P, M, and N may be concerned.

When a Rh-negative individual receives repeated transfusions of Rh-positive blood the first transfusion is normally symptomless, and the transfused cells may survive satisfactorily in the recipient's circulation. In others the donor's cells are destroyed more quickly than usual, and the lasting benefit may not be obtained. Further transfusions of Rh-positive blood in such cases are likely to be followed by progressively more severe symptoms—chills, headache, rigors, jaundice, and, later, haemoglobinuria and anuria. These phenomena are due to iso-immunization of the Rh-negative recipient by the antigens of Rh-positive blood, and are commonly accompanied by the appearance of Rh antibodies in the serum. In most cases transfusion of Rh-positive blood must be repeated several times before iso-immunization appears; but, exceptionally, a single transfusion may initiate the process and a second transfusion be treated as incompatible (Callender and Paykoç, 1946). These workers made a careful follow-up of 100 cases. In all groups there were only two with irregular iso-agglutinins, active at 37° C., but several of the 15 Rh-negative recipients had failed to become immunized or sensitized in spite of having received as many as 30 transfusions over a period of two years. Lack of reaction in the first transfusion of Rh-positive blood to a Rh-negative recipient does not always apply to women in pregnancy or, indeed, to women who have previously borne children; this aspect of the subject is considered in detail later.

When iso-immunization of a Rh-negative recipient cde/cde is induced by transfusion of Rh-positive blood it is usually the elementary antigen D which is effective. The transfused blood in 70% of cases will contain the antigens CDe (type Rh, 70%) and in 30% the antigens cDE (type Rh, 30%), although in about one-half of the latter the R₂ will be associated with R₁ (type Rh,R₂=15%). The resulting antibodies have usually the specificity of anti-D (85%), but this may be accompanied by the agglutninoid or blocking anti-D, so that agglutination is not apparent in tests conducted by the standard saline dilution method. In some cases the anti-D is accompanied by anti-C, and a double agglutinin serum (anti-Rh₁=87%) results. If in this case sufficient blocking anti-D develops to neutralize the agglutinating anti-D the resulting serum gives the reactions of anti-C (70%). When the transfused cells have been of type Rh, (cDE) only the D is usually effective and the elementary antigen E rarely gives rise to antibodies; when it does, a double agglutinin serum results (anti-D plus anti-E), and here, too, the development of blocking anti-D can give rise to a serum of more restricted specificity—the 30% anti-Rb" (i.e., anti-E type).

An important aspect of this question is the observation that once sensitization has been established it appears to remain

* A B.N.A. lecture delivered before the Ayrshire Division on Feb. 24, 1946.

permanently imprinted on the recipient's constitution, and a further transfusion, even many years later, may be followed by a severe reaction (anamnesic reaction). There are therefore good grounds for the view (Cappell, 1944) that females in or below the reproductive period should receive by transfusion only blood of similar Rh type to their own. Diamond (1945) has emphasized that sensitization of the Rh-negative woman by transfusion of Rh-positive blood leads to the most severe forms of haemolytic disease in subsequent pregnancies, and evidence is accumulating that the indiscriminate use of blood transfusion in women without regard to the Rh factor is dangerous, and carries an unjustified hazard for the future (see leading article, *B.M.J.*, 1945, 2, 535). In my opinion no woman in the reproductive period should ever be given blood until it has been ascertained whether she is Rh-positive or Rh-negative, and she should then receive only the appropriate type. This ideal state may be difficult to realize at present, but it represents what should be aimed at, and it would be possible if the clinicians demand it and give the necessary co-operation. In obstetric emergencies the Rh grouping is essential and should never be omitted (see later); in operations of election and in medical cases the question should be anticipated and the Rh type ascertained beforehand along with the ABO group. Every pathological or haematological department worthy of the name should be prepared to carry out such tests as required, and be able to provide the answer within a few hours at most.

Rh Factor in Pregnancy

Since approximately one marriage in eight involves a Rh-positive man and a Rh-negative woman, in about one pregnancy in ten the foetus is Rh-positive and the mother Rh-negative. Sensitization appears to occur only in about one in 25 opportunities—i.e., haemolytic disease may be expected in about 1 in 250 births. Rh incompatibility is therefore by far the most important genetic cause of foetal death, and it far outweighs congenital syphilis, with which it used to be so often confused, as a factor in neonatal mortality; nevertheless much more time and effort are put into the search for maternal and congenital syphilis in the antenatal clinics and their attendant laboratories than into Rh investigations. As in transfusion risks, the danger arises from immunization of Rh-negative mothers, in this case by a Rh-positive foetus who inherits the Rh-positive gene from the father. Taylor and Race (1944) point out that iso-immunization is more likely to occur where the father is homozygous Rh-positive (RhRh), so that each successive foetus carries the Rh-positive gene, but the disease is by no means rare with heterozygous fathers (Rhrh). In my own series many of the fathers have not been genotyped, either because they were not available or because at that time the investigation was not advanced enough and further samples could not be obtained later. I have, however, records of the father's genotype in 38 cases, and of these 22 are homozygous and 16 are heterozygous Rh-positive.

Illustrative Cases

Case 1.—Mrs. G.: Group A Rh-negative, rr, cde/ede. Mr. G.: Group O Rh-positive, Rh,Rh, CDe/CDe. 1939: Female; alive and well; Group O, R,r, CDe/ede. 1940: Female; alive and well; Group O, R,r, CDe/ede. 1941: 8/12 twins; died two days, icterus gravis neonatorum. 1942: Male; died two days, icterus gravis neonatorum. 1943: Male; died two days, icterus gravis neonatorum. 1945: Male; macerated foetus; Group O R,r, CDe/ede. The serum contained anti-Rh₀ (anti-D) titre 1:8.

This family illustrates the typical course of iso-immunization in a Rh-negative woman with a homozygous positive husband. Haemolytic disease has recurred in each child after the first appearance of the disease, and it is extremely unlikely that any normal child will be born.

Case 2.—Mrs. C.: Group O Rh-negative, rr, cde/ede. Mr. C.: Group B Rh-positive, R,R, CDe/CDe. 1931: Miscarriage 2½ months. 1932: F.; Full-time stillbirth. 1934: Miscarriage 2½ months. 1936: F.; f.-t. S.B. 1938: M.; f.-t.; lived two days jaundiced. 1945: F.; Group B Rh-positive, R,r, CDe/ede.

The infant born by Caesarean section showed extreme anaemia and mild hydrops. A slow transfusion of 180 ml. of Rh-negative blood was begun within 15 minutes of birth, and the infant was apparently well for about 36 hours in spite of fairly severe jaundice. It then became dyspnoeic and died

suddenly. Necropsy showed severe erythroblastosis and pronounced kernicterus involving all the nuclei of midbrain and medulla, the olivary nuclei being most deeply stained.

Case 3.—Mrs. S.: Group O Rh-negative, rr, cde/ede. Mr. S. Group O Rh-positive, heterozygous R,r, CDe/cde. 1st: F.; f.-t. a. and w. 2nd: M.; induced two weeks before term; a. and w. Group O Rh-negative, cde/cde. 3rd: F.; foetus malformed I.G.N.; died third day. 4th: F.; induced two weeks before term a. and w.; Group O Rh-negative, cde/cde. 5th: F.; S.E. hydramnios; jaundiced. 6th: Hydramnios; premature S.B.

This patient's serum contains a weak agglutinating antibody of type anti-Rh₀ (anti-D). It is noteworthy that both of the children surviving after the firstborn are Rh-negative and presumably have escaped haemolytic disease in consequence of their lack of Rh antigen.

Case 4.—Mrs. Ma.: Group A, Rh-negative, rr, cde/cde. Mr. Ma.: Group O Rh-positive, R,, presumably R₂R₂, CDe/CDe. 1st: a. and w.; A, R₂r, cDe/cde. 2nd: a. and w.; A, R₂r, cDe/cde. 3rd: a. and w.; not tested. 4th: F.; a. and w.; A, R₂r, cDe/cde. 5th: F.; f.-t.; congenital anaemia; Group O R,r, cDe/cde.

The mother's serum contained a powerful anti-Rh₀ agglutinin, titre 1:512; this was also present in the breast milk (titre 1:64). The baby appeared normal at birth (Hb 116) and there was no erythroblastemia. On the fifth day the infant was slightly jaundiced and was losing weight; its haemoglobin had fallen to 78%. Breast feeding was stopped. The haemoglobin continued to fall, and after four weeks the mother brought the child back to the clinic on account of pallor. Haemoglobin level was then only 26%. A slow transfusion of 180 ml. of Group O Rh-negative blood was given as packed cells resuspended in 90 ml. of saline, and thereafter the child made a good recovery. The ingestion of anti-Rh in the breast milk may have aggravated the condition, and gain in weight began only after the breast feeding was stopped.

Case 5.—Mrs. A.M.: Group A Rh-negative, rr, cde/cde. 1st: A.M.: Group O Rh-positive, probably Rh,Rh, CDe/CDe. 1st: 3/12 miscarriage. 2nd–10th: All a. and w.; all A, R,r, cDe/cde. 11th: 3/12 miscarriage. 12th: F.; a. and w.; A, R,r, cDe/cde. 13th: 3/12 miscarriage. 14th: F.; premature; I.G.N.; Group R,r, cDe/cde.

In this remarkable family after an initial miscarriage 1 Rh-negative mother bore 9 successive normal Rh-positive children, and only at the 14th pregnancy was haemolytic disease recognized. Since all the children are type R,r it is highly probable that the father is homozygous R₂R₂. The baby was seen only on the fifth day, when jaundice was already pronounced, but after a transfusion of 100 ml. of Rh-negative blood gradual improvement took place and subsequent progress was satisfactory.

Case 6.—Mrs. H.: Group A, Rh-negative, R'r, Cde/cde. Mr. H. Group A, R,r, CDe/cde. 1st: M.; f.-t.; a. and w.; A, R,r, CDe/cde. 2nd: M.; f.-t.; d., I.G.N.; presumably R₂r or R₂R'. 3rd: M.; f.-t.; d., I.G.N.; presumably R₂r or R₂R'. 4th: M.; f.-t.; a. and w.; A, R'r, Cde/cde. 5th: M.; f.-t.; a. and w.; A, R,r, cde/cde. 6th: M.; f.-t.; a. and w.; A, R,r, cde/cde. Maternal serum contained a weak anti-Rh₀ agglutinin.

This family illustrates well the segregation of Rh genes. The mother lacks component D, and became iso-immunized by D antigen of the first child, so that the second and third child died of icterus gravis, while the fourth and fifth children lacked antigen D, escaped the disease. This case illustrates the danger of including R' in the Rh-positive class. If the patient were transfused with Rh-positive blood type R₁ or R₂ she would experience severe and possibly fatal haemolytic reaction.

Cases of this kind have been reported by Wiener (1945b) and by Simmons and Kelsall (1945) as examples of iso-immunization of Rh-positive mothers. In my view they ought to be classified as Rh-negative.

Case 7.—Mrs. G.: Group A, Rh-negative, rr, cde/cde. Mr. G.: Group A, Rh-positive, R,r, cDe/cde. 1st: F.; a. and w.; A, R,r, cDe/cde. 2nd: M.; a. and w.; A, R,r, cDe/cde. 3rd: F.; a. and w.; O rr, cde/cde. 4th: F.; f.-t. S.B. 5th: M.; premature S.B. 6th: F.; premature (5½ months) S.B.; hydrops foetalis; probably R,r.

The sixth pregnancy terminated with a severe concealed accidental haemorrhage, for which the patient was admitted to hospital as an emergency. No urine was obtained on

theterization. A blood transfusion (Group A Rh-positive) as followed by a severe rigor and delivery of a stillborn hydropic foetus weighing 2 lb. 12 oz. (1.35 kg.). The placenta weighed 2 lb. 2 oz. (0.96 kg.). Anuria persisted and death occurred five days later. Necropsy revealed bilateral cortical necrosis of the kidneys and extensive anterior pituitary necrosis.

The mother's pre-transfusion serum was later found to contain anti-Rh, agglutinins; these diminished greatly after transfusion, but the titre had risen again before death. The baby's cells appeared to be Rh-negative, but it is almost certain that they were really R_r (cDe/cde) with the D antigen rendered unrecognizable by the action of blocking anti-D substance.

The father and two of the children are of this rare type, so that in the absence of the components C and E the blocking of D rendered the cells serologically Rh-negative.

Case 8.—Mrs. Fl.: Group O Rh-negative, rr, cde/cde. Mr. Fl.: Group O Rh-positive, R_rR_r, CDe/CDe. Baby Fl.: Group O, apparently R_r; I.G.N. (?Cdc/cde.)

The child suffered from haemolytic disease type II, but its cells were not agglutinated by the mother's serum or by any anti-Rh, (anti-D) serum; agglutination was obtained with anti-Rh' sera (anti-C), and the cells accordingly appeared to belong to type Rh—a finding which not only failed to explain the haemolytic disease but also conflicted with the rules of inheritance. The child was transfused with Rh-negative blood and made a good recovery from haemolytic disease; when tested three months later the cells were found to be of type R_r CDe/cde, as had been suspected.

The mother's serum failed to agglutinate saline suspensions of known Rh-positive cells by the normal titration method, but caused agglutination when mixed with undiluted Rh-positive blood. Known Rh-positive cells after treatment with saline dilutions of maternal serum were found to be insusceptible to the action of known anti-D sera; it is therefore certain that Mrs. Fl.'s serum contained a pure blocking anti-D antibody which, by saturating the receptors of the child's red cells, had rendered them temporarily Rh-negative. This is probably the explanation of the finding of Rh-negative (R') cells in cases 59 and 78 in the series of Plaut, Barrow, and Abbott (1945).

Case 9.—Mrs. Sm.: 23; Group O Rh-negative, rr, cde/cde. Mr. Sm.: Group O Rh-positive, R_rR_r, CDe/CDe. 1st: a. and w. 2nd: I.G.N.; recovered, but suffered from kernicterus and is backward. 3rd: Group O R_r, born by Caesarean section; transfused immediately through umbilical vein, 150 ml. Rh-negative blood; became severely jaundiced, but recovered; Hb fell to 55% at 5 weeks of age; a second transfusion given with great improvement. Infant fed on heated breast milk obtained by expression.

The mother's serum contained an anti-Rh titre. 1:16. This child was almost certainly saved by immediate transfusion.

Case 10.—Mrs. B.: Group O Rh-negative, rr, cde/cde. Mr. B.: Group A Rh-positive, R_r, probably CDe/CDe. 1931: F.; f.-t.; a. and w.; Group O R_r, cDe/cde. 1932: F.; f.-t.; a. and w.; Group O R_r, cDe/cde. 1934: F.; f.-t. S.B. 1935: F.; f.-t. S.B. 1936: M.; f.-t. S.B., jaundiced. 1937: F.; f.-t.; born jaundiced but recovered; A R_r, cDe/cde. 1938: M.; f.-t.; a. and w.; O R_r, cDe/cde. 1941: 6/12 miscarriage. 1945: F.; hydramnios; accidental haemorrhage; macerated hydropic foetus.

This case presents several remarkable features. The history strongly suggests that the stillbirths of the third, fourth, and fifth children were due to haemolytic disease; the sixth child, although jaundiced, recovered, but the seventh child did not appear to be affected; the sixth and seventh children are Rh-positive. Three years later the eighth pregnancy miscarried, and four years thereafter the ninth pregnancy ended in the birth of a macerated hydropic foetus, following severe accidental haemorrhage, for which transfusion of plasma was given.

When the maternal serum was tested six days after delivery a powerful anti-Rh, (anti-D) was found, which gave agglutination in saline dilutions up to 1:1,600. Four days later a pint (568 ml.) of blood was removed for use as a reagent; but, surprisingly, this sample, while failing completely to produce agglutination in full strength, gave a marked prozone effect, agglutination appearing at 1:128, increasing to 1:512, diminishing at 1:800, and vanishing at 1:1,200.

Case 11.—Mrs. He.: Group A Rh-negative, cde/cde. 1935: F.; f.-t.; a. and w. 1937: F.; f.-t.; a. and w. 1941: F.; f.-t.;

a. and w. 1945: Termination of pregnancy by abdominal hysterectomy on account of *severe toxæmia*. The foetus was thought to be hydropic and the placenta was unduly large. Subsequently the blood was examined and found to be Rh-negative, with a moderately good anti-Rh, titre, 1:16. Had this patient been given a transfusion of Rh-positive blood the effects might have been disastrous.

Case 12.—Mrs. McR., aged 39: Group A Rh-positive, Rh,rh. Mr. McR.: Group A Rh-positive, Rh,Rh, 1936: f.-t.; unexplained S.B. 1938: f.-t.; jaundiced at birth, lived 24 hours. 1942: f.-t.; a. and w. 1944: f.-t.; jaundiced at birth, lived 24 hours. 1946: f.-t.; a. and w. Group A Rh,rh. The patient's serum was tested at intervals during her last pregnancy, and a trace of anti-E agglutinin was detected, but the titre did not alter. In view of the history of two neonatal deaths, and also because she lived in the Outer Hebrides, the patient was transferred to Glasgow by air for confinement in the Glasgow Royal Maternity Hospital. Arrangements were made to transfuse the infant, if its genotype included Rh, (i.e., Rh,Rh, or Rh,rh), with blood of type Rh, or Rh-negative (rh,rh), but examination of the cord blood sample immediately after birth showed the genotype to be Rh,rh and therefore likely to be unaffected; there was no erythroblastæmia, and the infant remained well without treatment.

The Pathogenesis of Haemolytic Disease

If we take into account both agglutinating and blocking antibodies the majority of the mothers of infants suffering from haemolytic disease are found to show evidence of iso-immunization. All recent investigations have confirmed that iso-immunization of the mother is the fundamental cause of haemolytic disease. In some cases agglutinating antibodies are found, in others agglutinoids or blocking antibodies; and in a proportion in which neither of these can be demonstrated the infant's red cells are observed to be sensitized when the Coombs test with rabbit anti-human-globulin serum is applied (Coombs, Mourant, and Race, 1946).

In our series of 114 cases of haemolytic disease 98 of the mothers have been found Rh-negative, and 86 of these had antibodies. Among 16 Rh-positive cases only two had antibodies recognizable by the ordinary saline-dilution method, but most of these were encountered before the recent more sensitive methods, such as Diamond's slide test or Wiener's "conglutination" test, were known. It is probable that the more sensitive methods would have raised the number with recognizable antibodies still higher.

It is reasonable to suppose that the passage of these harmful substances through the placenta and consequent damage to the haemopoietic system of the foetus constitute the fundamental pathology and that, as Parsons, Hawksley, and Gittins (1933) first maintained, it is essentially a haemolytic disease. The iso-antibodies so far revealed are mainly concerned with agglutination, and haemolysins acting in association with complement *in vitro* have not been demonstrated. There is reason to suppose that the "blocking" antibodies are even more harmful than the Rh agglutinins first observed; they generally appear in the later-affected pregnancies, and their appearance is often followed by the birth of a macerated hydropic foetus. Diamond and Denton (1945) refer to them as the "mature" type of antibody and to the simple agglutinins as the "immature" type. Much is still obscure about the mode of action of blocking antibodies *in vivo* and the production of such dramatic results immediately after birth. The absence of jaundice at birth in most of the affected infants may be explained by the excretion of the excess of foetal bilirubin through the placenta, and it may be that other harmful substances produced by the interaction of foetal antigens and maternal antibodies are also excreted by this route so long as the foetus is *in utero*. With the establishment of independent existence at birth, such "toxic substances" might perhaps accumulate and attain a concentration sufficient to damage the foetal tissues. Certainly many infants show severe liver damage and the occurrence of cerebral necrosis with kernicterus is well recognized.

Time of Occurrence of Haemolytic Disease in Affected Families

Haemolytic disease rarely appears in the first pregnancy; in some the second conception is affected, but in others several healthy children are born before the disease declares itself, as has been illustrated in the cases presented. In our 98 affected families with Rh-negative mothers the average parity of the

mothers when the disease first appeared was 3.2 in families with hydrops foetalis, 3.6 in families with icterus gravis, and 4.8 in families with congenital anaemia. Average figures, however, give only an imperfect view of the facts, for the range of variability is remarkable. Thus in only four families was haemolytic disease proved in the first pregnancy, and one of these was a dizygotic twin pregnancy. On the other hand, we have numerous records of families, such as No. 5 (above), in which haemolytic disease appeared only after ten or more pregnancies; and I have previously (Cappell, 1944) recorded data showing 37 Rh-negative multiparae who had lost not a single child; these included two mothers with Rh-positive husbands and 13 and 14 living children respectively.

It is difficult to say at which conception haemolytic disease first occurred, for in many families one or more miscarriages are recorded before the existence of haemolytic disease is proved. Where a succession of miscarriages culminates in icterus gravis or hydrops foetalis the earlier disasters may also have been due to the same process. In other cases one or more normal Rh-positive children are born between the early miscarriages and the frank haemolytic disease, which then seems a less probable cause for the miscarriages. I have not personally encountered a single case where a normal healthy Rh-positive child has been born to a Rh-negative mother after haemolytic disease has been proved in her earlier offspring; but families such as No. 10 in the above series are very striking, and it is difficult to avoid the conclusion that the third, fourth, and fifth foetuses suffered from fatal haemolytic disease. The sixth was affected but recovered, and while the seventh appeared to escape harm, it may have suffered from anaemia which was not detected.

However suggestive these histories may be, it is well to point out that the cause of death in the earlier infants was not fully ascertained, as post-mortem examinations were not made. Dr. Stanbury (Leeds) and Dr. Chown of Winnipeg have both encountered cases where a healthy unaffected Rh-positive child was born to a Rh-negative mother who had previously borne a child with severe haemolytic disease, but the ABO groups of mother and family are not available to enable an assessment of the influence of homo- or heterospecific pregnancy.

We do not yet know why some Rh-negative mothers react so quickly to the Rh antigen of the foetus while others appear to ignore it, but clearly there are important factors concerned other than the mere Rh difference between the father and mother. The observation that the transfusion of Rh-positive blood into Rh-negative recipients may also fail to excite any immunological response indicates that individuals vary greatly in their capacity to respond to the Rh antigens. There is some evidence that this aptitude to become immunized may also be an inherited character (Race).

Influence of Heterospecific Pregnancy

We have long suspected that iso-immunization in pregnancy against the Rh factor occurs more often when the ABO group of the foetus is compatible with the mother's blood than when it is incompatible. Such an incompatibility is designated "heterospecific pregnancy," and may be expected to occur in normal families in about 20 of every 100 random matings. To ascertain the influence of heterospecific pregnancy we require the ABO groups of mother and child, but where the child's group is unknown, as is likely to occur in stillbirths and miscarriages, the father's group may be helpful. When the father belongs to Group O he cannot transmit an ABO antigen which the mother lacks, and also, if his ABO group is the same as the mother's the pregnancy is bound to be homospecific. From our first series of 50 well-authenticated cases of haemolytic disease it appeared that the Rh-positive child of a Rh-negative mother was more likely to be affected with haemolytic disease where the father's ABO group was compatible with the mother's than where it was incompatible; but satisfactory analysis was impossible owing to the gaps in our information due to the absence of so many of the fathers on service. The recent figures of Plaut, Barrow, and Abbott (1945) show a significant deficiency of Group O mothers and an excess of Group A mothers, whereas among the husbands there is an excess of Group O and a deficiency of Group A. Further analysis of their table shows that, among 103 families for which sufficient

data are given, 92 pregnancies were homospecific and only 1 heterospecific, and of these no fewer than 7 were in Rh-positive mothers.

The figures for our own cases in proved Rh-negative mother 90 in all, in which the groups of mothers and children at known or in which a heterospecific pregnancy is known to be ruled out by the father's group, show a striking deficiency of heterospecific pregnancies among the Rh-negative mothers—viz., only 8 heterospecific to 82 homospecific, whereas the expected random distribution among 90 pregnancies would be approximately 18 and 72 respectively.

The meaning of this difference in susceptibility is not at all clear. Wiener (1945c) has also observed the difference in incidence, and suggests that it may be due to what he terms the "competition of antigens." In a heterospecific pregnancy, the Rh-negative maternal tissues are subjected to the influence of A or B substances as well as Rh. Wiener suggests that A and B are better antigens and that the development of anti-A or anti-B takes precedence over the development of anti-Rh. Smith (1945) has shown that in heterospecific pregnancy the maternal iso-agglutinin corresponding to the incompatible group of the infant rose in 40 out of 46 cases, and that in the six cases in which a rise failed to occur the infant was found to be a non-secretor. This suggests that the rise in maternal iso-agglutinins may be due to the diffusion of soluble A or B substance from the foetus into the maternal circulation, and that escape of foetal red cells is not usually concerned. The relative absence of soluble Rh substance in the plasma has, however, led to the general acceptance of the view that escape of foetal red cells into the maternal blood is the probable mechanism of iso-immunization against Rh. Diamond (1944) has shown that rapid and powerful regeneration of anti-Rh substances may be induced in previously iso-immunized volunteers whose agglutinin titres had fallen by repeated intravenous injection of minute doses (0.01–0.05 ml.) of human red cells of the appropriate type, and this has been confirmed by Callender and Race (1946) and by Stanbury (1946). It is clear, therefore, that repeated minute doses may be effective, and pregnancy offers conditions in which the antigen may have prolonged access to the recipient. Stratton (1943) has shown that Rh antigens are present in the red cells of a 48-mm human embryo, and Dr. McFarlane and I have confirmed this in the cells of several foetuses of 10 to 12 weeks' gestation who were strongly Rh-positive. The Rh factor is therefore well developed at a period of gestation when the A and B agglutinogens are yet imperfectly formed. Clearly, however, heterospecific pregnancy in a Rh-negative mother does not give absolute protection against the development of Rh antibodies—e.g., family above. We have shown that when the mother is of Group Rh-negative and the husband of Group A or B Rh-positive haemolytic disease is encountered less often than is to be expected on the frequency of these matings. In affected families, however, when the husband is heterozygous for A or B i.e., genotype AO or BO—it is not apparent from published work that the incidence of haemolytic disease is any greater among the O children than among the A or B children. Few of the family studies, however, give enough details to enable a proper estimate of the situation to be made.

Management of a Case of Haemolytic Disease

It is convenient to consider this problem under two heads: (a) when a child is affected in a family already known to be afflicted with haemolytic disease, and (b) when a child born alive develops icterus gravis or congenital anaemia without previous warning of this possibility.

(a) Procedure when Haemolytic Disease is Anticipated

When a child has been shown to suffer from one of the forms of haemolytic disease—e.g., hydrops foetalis, icterus gravis, or congenital anaemia—in addition to such steps as may be necessary to save the child, if alive, information should be collected in anticipation of a repetition of the disease in future pregnancies. Much of this information will be gathered if treatment of the affected child is undertaken, but where the child is stillborn or dies, it is still important to prepare for the future by examining the blood of the mother and father for

their ABO group and Rh factor, and for the presence of anti-Rh in the mother's serum. Assuming that the mother is Rh-negative and the father Rh-positive, as is likely in a true case of haemolytic disease, the genotype of the father should be determined if possible. If he belongs to phenotype Rh, (70%) it can be shown whether he is homozygous (Rh,Rh, or Rh,Rh₂) or heterozygous (Rh,rh); if, however, he belongs to phenotype Rh₂, (15%) the distinction between the homozygous Rh,Rh, and the heterozygous Rh,rh can be made only by Mourant's serum (anti-e), with which the homozygotes are negative. Supplies of this serum are unfortunately not generally available. If the father is homozygous all subsequent children are likely to be affected; if heterozygous, each pregnancy has a 50% chance of resulting in a Rh-negative foetus which will not suffer from haemolytic disease.

When the mother again becomes pregnant her serum should be examined at monthly intervals from the sixth month onwards; if anti-Rh agglutinins are present a rising titre suggests that the foetus is Rh-positive and will be affected, but failure of the titre to rise does not mean that the foetus is unaffected, and in some the anti-Rh agglutinins disappear owing to the development of the blocking form of the antibody. This is usually a serious prognostic sign, and is often followed by the birth of a hydropic infant or macerated foetus. A sample of maternal serum is preserved in readiness to perform cross-matching tests in case the mother herself should require a transfusion, for the consequences of giving an incompatible blood are likely to be very serious. Arrangements should be made to have readily available Rh-negative blood of the appropriate group or of Group O, and to give the child a transfusion within the first few hours if it should prove to be affected.

If the foetus suffers from the most severe form of haemolytic disease—viz., hydrops—the pregnancy will probably terminate prematurely in the birth of a macerated hydropic foetus, and the large size and unhealthy appearance of the placenta will probably attract attention. With icterus gravis, however, the outlook is more favourable, and the pregnancy usually goes to about full time.

In some families there is a history of repeated intrauterine deaths between the 37th and 40th weeks, and it is therefore tempting to induce labour a few weeks before term in the hope of securing a living child. We have observed, however, that affected infants are unduly prone to intranatal death from asphyxia, and it is therefore essential that induction should not be followed by a prolonged labour. Where the mother is desperately anxious to secure a living child Caesarean section about the 37th week and immediate transfusion of the affected infant probably offer the best chance.

It is rarely possible to say from the external appearance of the infant at birth whether it is normal or affected, but in the latter we have observed that the umbilical cord may look abnormally yellow; jaundice is only occasionally present at birth, as during foetal life the excess bilirubin derived from haemolysis is excreted through the placenta and is removed by the maternal circulation. Discoloration of skin and mucosae usually appears within a few hours; petechial haemorrhages in the skin also develop, and sometimes haemorrhagic manifestations dominate the clinical picture. It is of the utmost importance not to wait until clinical signs of the disease appear, but to try to establish the diagnosis immediately and institute treatment without delay. As soon as the umbilical cord is cut a sample of blood is collected from the maternal end into a sterile bottle containing anticoagulant, preferably heparin. When centrifuged immediately, the supernatant plasma is, in affected infants, usually jaundiced to a pronounced degree, and this is a valuable sign which can easily and quickly be detected without waiting for clinical evidence of jaundice. Care must be taken to prevent admixture of the cord blood with Wharton's jelly, as this interferes with agglutination; contamination with maternal blood must of course be avoided. When there is a clear history of haemolytic disease in a previous child it is probably wisest to establish at once whether the child under consideration is Rh-positive, and if so, on the assumption that it will be affected, a transfusion should be given immediately, without delaying until the results of the full blood examination are known. These can be carried out at leisure on its heparinized cord blood.

(b) Procedure when a Child Develops Icterus Gravis without Previous Warning

Haemolytic disease should be suspected when jaundice appears within a few hours of birth, though it may be delayed up to 48 hours. Physiological jaundice, on the contrary, rarely appears earlier than 48 hours, but no absolute time limits can be laid down. Rapidly deepening jaundice accompanied by drowsiness and failure to feed satisfactorily is highly suspicious, and if the child is at home it should be sent into hospital as an emergency case for diagnosis and treatment. Along with the child 10 ml. of the mother's blood must be sent to the hospital to establish whether she is Rh-negative and what kind of anti-Rh is present, as this determines what sort of blood should be transfused into the child. If cord blood is not available a sample of the child's blood should be taken from a heel puncture; the haemoglobin estimation, red and white cell counts are performed; and films are made. A few drops of the blood are also used to make a suspension in 3 ml. of glucose-citrate saline for grouping and Rb tests.

In the laboratory the bloods of mother and child are grouped and Rh tests are started at once. The mother's serum is also put up against a panel of known Rh-positive and Rh-negative Group O cells, and against the infant's blood if the ABO groups permit. If not, the α and β of the maternal serum are neutralized by the addition of one part of boiled saliva from an A,B secretor to two parts of maternal serum, and after fifteen minutes the mixture is set up with the infant's cells. Tested saliva should be kept on hand in the laboratory for this purpose.

In haemolytic disease the haemoglobin is usually, but not invariably, below the normal birth level, the red cells are reduced, but reticulocytes are abundant. The nucleated cell count is often over 20,000, but nucleated red cells may comprise the majority and are of all kinds; normoblasts, megaloblasts, and primitive cells are all present. We regard the occurrence of primitive cells as especially significant, and while a nucleated red cell count of over 6,000 is usually an indication of haemolytic disease, lower figures or even an absence of erythroblastæmia do not rule out this diagnosis. By the time the counts have been done and the films examined the Rh tests can usually be read. If there is a history of proved haemolytic disease in a previous child the finding that the infant under consideration is Rh-positive from a Rh-negative mother is a definite indication for immediate transfusion, since it is highly improbable that a subsequent Rh-positive child will remain unaffected. If, on the other hand, the child under consideration is the first to be suspected, we require additional proof, clinical or haematological, of haemolytic disease before instituting treatment. This is important; for the development of routine antenatal Rh-testing will reveal many Rh-negative mothers whose infants will prove to be normal. Confirmatory evidence is found in the occurrence of erythroblastæmia, of rapidly deepening and severe jaundice, or of pronounced anaemia, but the absence of any of these signs does not controvert the diagnosis. Caution is necessary, for so-called physiological icterus may occur in the Rh-positive children of Rh-negative mothers and, as usual, is without grave significance; it does not require treatment by transfusion.

Treatment of Haemolytic Disease of the Newborn

With better understanding of the aetiology of haemolytic disease the rational treatment is clearly the transfusion of blood which is not susceptible to the action of the maternal iso-antibodies, and in most institutions this has improved the prognosis greatly. Accordingly, in about 90% of cases Rh-negative blood of a homologous group or of Group O is required, and should be given in amounts up to 150 ml. More than this quantity in a single transfusion is inadvisable, and the blood should be administered slowly, preferably as a drip by a gravity method rather than by a two-way syringe, as this commonly leads to too rapid administration. The dangers of rapid transfusion and consequent circulatory overloading are not sufficiently realized; the normal blood volume of a 7-lb. (3.175 kg.) baby is about 250 ml., and 150 ml. to a newborn infant is roughly equivalent to three litres to an adult; yet it is not uncommon to find that paediatricians administer 150 ml. or more in 15 to 20 minutes by a two-way syringe method. The infant with haemolytic disease generally shows considerable

hypertrophy of the heart, and it is hardly surprising that acute cardiac failure from circulatory overloading sometimes leads to death at the end of a transfusion by this method. It is preferable, therefore, to give only a moderate quantity of blood, and to repeat the transfusion later if necessary.

Experience has led me to believe firmly in early transfusion; it is a mistake to await the onset of symptoms, and transfusion should be administered at the earliest possible moment, giving 120 to 150 ml. of Rh-negative blood of the child's group or of Group O. The absence of marked anaemia is not an indication for withholding transfusion, for a high haemoglobin and red cell count may be an expression of excessively active haemopoiesis from abundant extramedullary centres. If the clinician is afraid of plethora from the administration of 150 ml. of blood to an infant whose haemoglobin level is 120%, it is worth removing blood from the infant before transfusing with Rh-negative blood. For this reason where the disease is anticipated no attempt should be made to secure the return of blood from the placenta to the baby, but the cord is clamped as soon as possible to prevent the reflux of placental blood. The rationale of administering a relatively large transfusion to the non-anaemic infant is that the Rh-negative blood persists unaffected by the irregular antibodies, and thereby helps to inhibit rapid regeneration of the infant's own Rh-positive and therefore susceptible cells. By thus suppressing haemopoiesis the severity of the jaundice is diminished and the risk of severe liver damage and of kernicterus seems to be lessened. When transfusion has been carried out within the first 24 hours the jaundice may fail to deepen and may disappear more rapidly than in infants transfused only later.

We prefer the intravenous route, using the internal malleolar vein, but do not cut across or tie off the vein; a limited experience of intramedullary transfusion of blood has not been very encouraging. The infant's Hb level is watched daily, and sometimes a second transfusion is necessary after a few days, for by this time a large part of the child's own Rh-positive blood may have been destroyed, so that life is maintained on the Rh-negative transfused cells. Two transfusions have usually sufficed, but in infants not transfused until the fourth or fifth day more may be required. It cannot be too strongly emphasized that speed in diagnosis and treatment is essential if the best results are to be obtained, and that the longer transfusion is delayed the greater the chance that it will have to be repeated. No other treatment is usually necessary. Where laboratory facilities for carrying out the tests are properly organized the tests can be completed and the transfusion begun within an hour.

In a family previously affected but with a heterozygous father, examination of the infant's blood may show it to be Rh-negative (rr, cde/cde). In this event treatment is unnecessary, since there is no reason to suppose that a Rh-negative child will be affected. Our experience here has been perfectly clear. In a study of 650 antenatal cases Dr. McFarlane observed 90 Rh-negative mothers, 31 of whom gave birth to normal Rh-negative children, including two Rh-negative normal children in families whose previous Rh-positive children had been affected. She also examined, soon after birth, the blood of 52 Rh-positive children from the same group of Rh-negative mothers without a previous history of haemolytic disease: 48 of these were normal and no treatment was given, but 4 were found to suffer from haemolytic disease and were immediately treated. All survived and have remained well.

It must be remembered that occasionally an affected child will appear to be Rh-negative owing to the saturation of the D receptors of its erythrocytes by "blocking" antibody. Tests with anti-C and anti-E serum will make the child seem to belong to the R' or R'' subgroup, but in such cases the Coombs test with rabbit anti-human-globulin serum reveals that the infant's cells have been sensitized by the action of the maternal antibody *in vivo*.

If anti-Rh agglutinins are present in the mother's blood they will also be excreted in the milk, but at somewhat lower titre. It is not advisable to allow the infant to suckle the breast, but if the mother's milk is abundant it may be withdrawn by pump, heated to destroy the agglutinin, and fed to the child. After a few weeks the agglutinin content usually falls to such a low level in the milk that it ceases to be dangerous and breast feeding may then be allowed.

After the first recognition of haemolytic disease in a family the blood of the father should be investigated for the Rh factor to determine whether he is homozygous or heterozygous for Rh. On this depends the future prognosis—a matter about which the parents are often more anxiously concerned than about the fate of a child recently lost. In our experience, parents are often ready to face the 50% chance of a normal child, but are less ready to produce a child if they know that haemolytic disease is almost inevitable. Where the father is known to be homozygous the prognosis is bad; a large number of subsequent pregnancies terminate in miscarriage or premature birth of a macerated foetus, for which no prophylactic treatment is of any avail. One cannot comfort the parents beyond expressing the hope that transfusion may save a proportion of such children if they are born alive, but the dread sequel of kernicterus must also be borne in mind, for in some cases it occurs in spite of early and repeated transfusion.

Haemolytic Disease where the Mother is Rh-positive

In about 10% of cases of haemolytic disease the mother is Rh-positive. There is no proof that there is any cause of this disease other than iso-immunization, and in such cases the aetiology usually lies in iso-immunization against one of the elementary Rh antigens which the mother herself lacks, but occasionally incompatibility of the ABO groups may be concerned. It is also certain that there are hereditarily transmitted red cell antigens other than those of the ABO, MN, P, and Rh systems, and on rare occasions such factors may be responsible for iso-immunization, but knowledge of these is still fragmentary (Callender and Race, 1946).

Two clearly defined types of iso-immunization in Rh-positive mothers may, however, be recalled—viz., the production of iso-antibodies of type anti-E (anti-Rh'') by mothers of genotype Rh,rh (Boorman, Dodd, Race, and Taylor, 1944) and the development of sera such as St (anti-c) by mothers of genotype Rh,Rh, (McCall, Race, and Taylor, 1944). In the 10% of Rh-positive mothers of affected infants, however, such antibodies are only rarely detectable, and failure to demonstrate iso-antibodies is the rule. In the majority of cases the husbands' blood groups are such that iso-immunization is theoretically possible. Thus in 12 of our 16 cases of haemolytic disease in Rh-positive mothers for whom sufficient data are available the fathers' blood contained a Rh antigen absent from the mother's cells in 8, and in four of these also an incompatible A or B antigen. In the four remaining cases without demonstrable Rh incompatibility the pregnancy was heterospecific in three, and in the fourth case, where both parents were Group C Rh,rh, the mother's serum contained an unknown irregular agglutinin (Cappell, 1944; Case 10) acting on the cells of the husband and affected child. In one other case the mother's serum contained an unknown irregular agglutinin, but in the remaining 14 cases irregular iso-antibodies could not be detected. In two cases of heterospecific pregnancy, the mother being of Group O and the baby of Group A, the maternal anti-A titre was unusually high in one (1:2,048), and in the other an active haemolysin was detected. Proof that the foetus suffers damage from the increase of maternal iso-agglutinin in heterospecific pregnancy is difficult, and with increasing knowledge of the complexity of the Rh groups fewer cases are now attributed to this cause. It is pretty certain, however, that ABO incompatibility was responsible for haemolytic disease in the cases reported by Boorman, Dodd, and Molliso (1944), in some of the cases in Rh-positive mothers reported by Plaut, Barrow, and Abbott (1945), by Polayes and Ohlbaur (1945), and by Austin and Smith (1946).

The direct application of Coombs's anti-human-globulin serum will in future enable us to detect *in vivo* sensitization of the cells of affected infants, and the indirect test will probably reveal iso-antibodies in maternal sera which do not yield irregular agglutinins. Thus Coombs, Mourant, and Race (1946) have demonstrated *in vivo* sensitization of the cells of an infant suffering from haemolytic disease, the infant and parents being all of Group O Rh,rh, and have shown that the mother's serum contained an unknown antibody against the husband's cells (the Kell antigen-antibody system).

In the treatment of the affected children of Rh-positive mothers the maternal blood group is the guide, and the child is given blood similar to the mother's on the supposition that

It will be unaffected by any kind of anti-Rh or other irregular agglutinin which the mother may have produced. The mother's whole blood should not, of course, be used, as its content of antibodies would aggravate the haemolytic disease. It is rational, however, to use the mother's red cells after centrifuging and thorough washing with saline to remove all traces of plasma. In most cases it is simpler to submit a sample of the mother's serum to the Blood Bank or Regional Transfusion Officer and receive a supply of carefully matched blood; but occasionally, when the nature of the iso-immunization is obscure, the use of the mother's washed red cells may be necessary to save the child. In such cases it is unimportant that the mother's cells may be of Group A or B and the child's cells of Group O; owing to the absence of the natural iso-agglutinins in the newborn child, other than small amounts derived from the mother, the maternal red cells, whatever their group, are always compatible with the serum of the child. It is very much more important to examine the mother's blood for its Rh type than the child's, for in all cases due to Rh incompatibility the infant if affected is Rh-positive. When a suspected case is sent into hospital a sample of the mother's blood must always go along with the affected infant, for if she is Rh-positive it depends upon her genotype what kind of anti-Rh she is likely to have made. Anti-d and anti-e have not yet been detected in association with pregnancy, but Rh-positive mothers have been found to make either anti-c or anti-E. Accordingly the routine transfusion of infants suffering from haemolytic disease with Rh-negative blood will occasionally fail to give the best result, for in those with anti-c such blood would be susceptible to the irregular antibody and would be less effective. It is for this reason that a sample of the mother's blood should always be sent to hospital along with the infant. The mother's serum is used to perform a careful cross-matching test with the blood to be administered to the child, both at room temperature and at 37° C., and with further experience of Diamond's open slide test this method may be helpful in detecting incompatibilities not readily demonstrated by other methods.

Summary

An account is given of the development of knowledge about the Rh blood group. The different types of human iso-antisera have been described and the consequent deductions as to the antigenic structure of the Rh factor have been pointed out. The nomenclatures applied by different workers in this field have been correlated and the need for clearer definition of "Rh-positive" and "Rh-negative" has been emphasized. While in the present state of knowledge Fisher's synthesis affords the most satisfactory explanation of the antigenic structure and mode of inheritance of the Rh group, it is suggested that Fisher's Greek letter terminology for the antibodies might advantageously be replaced by one based more directly on the hypothetical elementary antigens of the Rh complex—e.g., anti-C instead of Γ , anti-D for Δ , etc.

The types of clinical disorder resulting from iso-immunization by transfusion and in pregnancy have been presented and the pathogenesis of haemolytic disease of the newborn is discussed. Attention is drawn to the relative infrequency of haemolytic disease in heterozygous pregnancy. An outline is given of the management of a case of haemolytic disease, and the principles of treatment for the affected infant, both of Rh-positive and of Rh-negative mothers, are described.

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THE FENESTRATION OPERATION FOR OTOSCLEROSIS

BY

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Search for the solution of the problem of middle-ear deafness can be said to have begun in 1876, when Kessel demonstrated a transient improvement in hearing after extraction of the stapes. This was confirmed by other workers, and various attempts were made, by opening the labyrinth in different places, to prolong the improvement gained. The promontory was used by Kisch, and the semicircular canals by Bárány and others.

The modern operation was first suggested by Jenkins in London in 1913, for he appears to have then made an opening in the horizontal canal and covered it with a pedicle flap taken from the postero-superior wall, including the membrana flaccida. This is in principle the operation carried out at the present time. Fraser, of Edinburgh, experimented along the same lines, but he, like many other workers, was discouraged by the temporary nature of the results, and abandoned the operation on account of this and also because of the dangers involved. It was not till about 1917, when Holmgren of Stockholm started his work, that the operation was developed along modern lines and took its place as a recognized surgical procedure. To Holmgren must go the credit of having, by exhaustive and painstaking research, stimulated the interest of those surgeons who are to-day bringing fresh hope and happiness to many who have been pronounced incurably deaf. Following Holmgren a number of workers took up the study, including Sourdille in France, and Lempert, Kopetzky, and Shambaugh, to mention only three of many, in America. Owing to the exigencies of war opportunities for research have been curtailed in this country, so that the volume of work done in America has been very much greater, and large series of cases have been recorded there.

The present account records the results and impressions of ten years' work on several variations of the fenestration operation.

Principle of the Operation

The operation is believed to be applicable to cases of otosclerosis chiefly, for this disease, by causing fixation of the stapes, prevents the free movement of sound waves within the labyrinthine fluids. As the stapes becomes increasingly

immobile in the oval window the normal recoil of the fluid is impossible, and deafness of middle-ear type results. It has been found that if another opening is made in the wall of the labyrinth hearing immediately returns, presumably because the fluid within the labyrinth is again free to carry the vibrations of sound. Whether or not this will eventually be found to be the true explanation, the fact, which has been verified by every surgeon who has carried out the operation, is that at the moment of releasing the perilymph hearing returns with dramatic suddenness and intensity. It is this experience of the apparently miraculous which has encouraged perseverance in the face of repeated failure.

Selection of Patients

A great deal has been written on this aspect, and rules have been laid down for when it is justifiable to submit a patient to operation. It is quite evident that in the case of young people with only moderate hearing loss operation is the treatment of choice and should be advised, because a very high percentage of successful results can be obtained.

As age increases and other factors are introduced which tend to reduce the possibility of restoration of normal hearing, the problem of advising the patient becomes one of considerable complexity and one which cannot be solved by reference to a set of rules. The reasons which cause older people to seek help are economic, psychological, and social, and each of these factors must receive due consideration in weighing up the necessities of the case. Every worker of any length of experience in this operation has at some time or other been surprised and gratified by success when little was expected, so that it is to be doubted if anyone can state categorically whether in these borderline cases help can or cannot be given. And, further, so long as there is evidence, as there seems to be, that operation can retard or for a time prevent further deterioration of hearing, great benefit can be given to those of poor hearing by keeping them just within an economic level. We see, therefore, that there are many whom we can accept for treatment without hesitation and many whom we can judge are better served with a hearing aid, but there are also those who can be advised only after the most careful and sympathetic consideration of every aspect of their problem.

So long as these doubts and problems remain selection of a certain number of patients for purposes of observation must be made, even though it may mean that tables of results will not look as favourable as they otherwise might. For the best results the patients should be young—preferably under 25 years—there should be neither sign nor history of middle-ear disease, there should be no nerve deafness, and the hearing loss within the speech range should not be greater than forty to fifty decibels. Under these conditions the operation should give over 80% of immediate success.

Preparation and Anaesthesia

The general preparation of the patient is the same as for any major operation, while the local preparation is that used for a mastoidectomy. The only addition to the usual routine is that great care is taken to cleanse and sterilize the external auditory meatus.

The operation can be done under general anaesthesia or local analgesia, according to the preference of the operator. The advantage of local analgesia is the comparative bloodlessness of the field; the chief disadvantage is the extremely heavy premedication which is necessary if the patient is not to suffer from the very unpleasant symptoms induced by the opening of the labyrinth. The use of a general anaesthetic as the main agent gives the operator complete freedom of action and an immobile and indifferent patient, while the added tendency to bleeding can be minimized by haemostatic injection. After trying many forms of anaesthesia the one now used is morphine-atropine premedication with intratracheal cyclopropane-and-oxygen insufflation. This is varied on occasion with light ether or gas-oxygen administration, or with intravenous pentothal infusion. Anaesthesia by methods such as these can be prolonged as required without detriment to the patient.

A great deal will be found to depend upon the skill available for administering the anaesthetic, and every operator will have to suit his method to the conditions under which he works.

Apparatus

Apart from the usual instruments required for a mastoidectomy there must be a means of cutting an opening measuring in millimetres, and for this a dental drill is most commonly employed. A magnification of at least three times is needed and more if possible. With the apparatus at present employed a magnification of six times and more is used, through a dissecting microscope, which allows greater power for any special part of the operation. Illumination is obtained from a lamp fixed to the microscope, and it is important that the light should be good. Irrigation, either continuous or intermittent as desired, is used to wash away any bone dust, to keep the field clear of blood, and to act as a sterile barrier between the open labyrinth and possible infection from the air.

Technique of Operation

The operation follows the lines of the modified radical mastoid procedure in the exposure of the labyrinth, except that, as suggested originally by Jenkins, a flap is cut from the posterior and superior aspects of the external meatus such a manner that it remains attached to the membrana flaccida forming a pedicle flap with the lower edge of that membrane as its hinge. This flap is eventually turned over the attic floor and made to cover the new opening into the vestibule.

The formation of the flap is of the greatest importance; if it is torn seriously, so that there is doubt whether the opening will be properly covered, then the operation will have to be abandoned. Happily this does not mean complete failure, for at a later date the operation can be completed as a two-stage procedure, without prejudice to the final result. The incus and the head of the malleus are removed to complete the exposure of the vestibule just as they are removed in the mastoid operation, when found to be diseased.

The method of approach to the middle ear has been a subject of some discussion, but the conclusion has been formed that it is immaterial whether the post-auricular or the external canal route is used. In either approach the soft parts can be moved and manipulated to give equal access to the attic floor. The factors which control the approach are the angle which the external bony meatus makes with the drum membrane and the height of the attic roof, which as a rule is equivalent to the position of the dural plate of the middle fossa. Problems of lighting, magnification, and irrigation lend themselves more easily to solution by the post-auricular route.

After exposure of the vestibule the new opening is made as far forward on the horizontal canal, where it enters the vestibule, as the thickness of the bone will permit. The object is to make the opening over the ampulla, but as the angle of the vestibule varies within quite wide limits and the depth of the bone causes considerable variation in the position at which the new fenestra can be made, it is not possible to determine within fine limits where the opening will be made until the canal is opened. With various burrs the bone is thinned until the vestibule is defined, and finally the bone covering with the endosteal layer is fragmented and removed, exposing the membranous tube of the horizontal canal as it passes downwards into the body of the vestibule. It is customary to polish the saucer-like depression, and to remove all fragments of bone and endosteum, with specially designed instruments resembling dental excavators. The removal of the endosteum is probably of much greater importance than polishing, as the regeneration of bone takes origin from the endosteal layer, starting from the canal and passing forward over the roof of the vestibule. This has been seen clearly in revising fenestrae which have closed by new bone formation. It is the prevention of this closure which is the crux of the operation, as the gradual disappearance of the fistula usually means progressive loss of the regained hearing.

When the new opening has been made to the satisfaction of the operator the flap is spread over it, with care to prevent the insertion of cartilage or other substance designed to prevent closure by bone. The flap is fixed by means of sutures and the wound is closed as in any mastoid operation. The after-treatment follows the usual lines—that is, the dressing is carried out after about a week and the cavity is irrigated to maintain sterility and obtain the most rapid epithelialization of the cavity. Complete healing is of the utmost importance.

continued discharge or infection will go far to ruin a successful operation. Healing occurs in from six to twelve weeks—often the latter.

Progress after Operation

In the successful cases there is an immediate and dramatic increase in hearing the moment the labyrinth is opened: this can be demonstrated when the operation is done under local anesthesia. This improvement has on occasion been so great that the noise has distressed the patient and sedatives have been required until adjustment to the new conditions was achieved. The average case the hearing deteriorates on the second or third day to its previous level, to improve again slowly up to a time when the ear is completely healed, when as a rule it is at its best.

Signs of labyrinthine disturbance are immediate from the time of opening the canal and may be severe, but they are not likely to persist for more than three days, unless the patient improves quickly. Thereafter readjustment proceeds steadily, although it varies greatly in different individuals. Some take many weeks to reach the stage of complete confidence, while others have little or no disturbance. Those accustomed to mental and physical exercise have much less difficulty than those of more sedentary habits.

Other Sequelae

Apart from the effects upon hearing and balance several other interesting phenomena have been observed. Confusion of sounds is the rule, and the patient has to undergo a re-education to distinguish speech in the volume of noise with which he or she is surrounded; but in some instances this confusion becomes a complete reorientation of sound, so that there is reversal of the normal, and footsteps, street cars, and the like are heard behind the patient when the origin of the sound is in front. On occasion this may prove a frightening and disturbing experience.

Difficulty in accommodation has been a complaint on several occasions, and lack of co-ordination has been greater in some patients than could be accounted for as a normal effect of a serious operation. Happily all these effects have disappeared without any sign of permanent disability.

Causes of Failure

Failure to bring about any improvement may be due to selection of unsuitable cases. Technical failure probably plays some part, but it must be very small, for in this series there was only one case, and in this the complete failure of the electrical supply probably contributed to lack of success. Hitherto undiagnosed disease was present in one patient, in whom appearances within the labyrinth were strongly suggestive of previous inflammation. Infection of the cavity was formerly one of the most dangerous conditions so far as hearing was concerned, but since the introduction of sulphonamides and penicillin its importance has greatly diminished.

Acute otitis media has been encountered, but experience has shown that it is not necessarily disastrous. Pregnancy has occurred in several patients, and its effect has been variable: in some cases there has been a definite fall in hearing, but others have been unaffected. In all cases of late failure the most important cause has been closure of the new opening, evidenced by the gradual disappearance of the fistula sign.

When the fistula becomes more difficult to identify the hearing wishes, and where the fistula sign cannot be obtained the hearing as a rule has returned to its former level. To combat closure of the fistula many expedients have been devised, particularly by Holmgren. One of the most promising suggestions is the use of a cartilaginous implant, or "stopple," and from Lempert of New York. My experience of this method extends to about ten months only, so I can give no opinion on the final value of this idea. The impression gained, however, of the immediate results is that they are as good as in cases done without cartilage. As no considerable improvement more than two years' duration appears to have been made, final judgment will have to be postponed. The statement that the usual post-operative loss is lessened by the use of this implant has not been confirmed here. Should this method stand the test of time and experience it will prove to be the solution to the main problem.

Results of Operation

The total number of operations performed is just over 200, and of these 118 consecutive cases have been selected for analysis. This group excludes the earliest operations and the most recent ones, for it would be of no value to include cases performed with primitive equipment in a series done with modern methods; and as it is found by experience that a certain number of patients suffer an early deterioration of hearing, those operations carried out during recent months are also excluded. Although five months is the period usually allowed, in this series more than eight months has been taken, and no case is included which has been operated upon during the year 1946.

Of the 118 cases 82 are still improved, giving a total percentage of 69. As this figure includes patients of all ages—suitable and unsuitable cases and some accepted purely for observation purposes—it means very little, and does not give a true picture of what can be done. The following table of results according to age groups is more informative:

Age ..	-19	-24	-29	-34	-39
Improved ..	80%	77%	70%	62%	61%

This demonstrates the diminishing probability of success as age increases. It is noteworthy, however, that in the "over 40" group a higher proportion of success has been obtained—nearly 80%—owing to very great care in selection, but as this is not representative of what can be done with the general run of cases of progressive middle-ear deafness at this age it is not included in the table.

There is no doubt that with increasing knowledge of the factors affecting success and failure, and by confining the operation to the favourable groups only, a high figure of success could be produced. To so limit the application, however, would be, at least in the present state of our knowledge, to inflict hardship upon many who might obtain benefit, while included among the failures are some who are proved by the audiometer to have remained stationary at the level at which they were before operation. This is a result of great importance to the patient in a disease which is almost always progressive.

There has been one case of facial paralysis which recovered completely, and there have been no cases of labyrinthitis. Two fatalities occurred in this series: one patient, an elderly woman, died of acute cardiac collapse shortly after the operation was completed; another, a man aged 43, died of acute morphine poisoning some hours after the operation on receiving the usual post-operative sedative. Although neither of these occurrences can be attributed to the operation itself, it must be emphasized that it carries all the dangers of a major surgical procedure and should never be embarked upon without every precaution being taken for the patient's safety.

If the patient therefore can appreciate the risks and the uncertainties involved, he alone must make the decision for or against operation. To enable him to do this all available information must be laid before him frankly and fully.

Summary

The purpose and the indications for the fenestration operation are described.

The method of carrying out the operation is briefly given and reference is made to the equipment necessary for its performance.

The effects of the operation are discussed and the results in a series of 118 consecutive cases are detailed.

It is considered probable that, with an increasing knowledge of the subject, a high percentage of successes could in suitable cases be obtained.

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PITUITARY HYPOTHYROIDISM WITH IMPAIRED RENAL FUNCTION

BY

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In 1943 Beaumont and Robertson described a syndrome called "pituitary hypothyroidism with impaired renal function." The term was applied to a patient who had signs and symptoms of thyroid deficiency and a subnormal urea clearance, impaired water elimination by the kidneys, and inability to pass a high-specific-gravity urine. So far as can be ascertained, there has been no previous record of such a syndrome in medical literature. After this syndrome was recognized, it was proved experimentally that hypopituitarism produced in dogs by ablation of the anterior lobe of the pituitary was followed by a diminution in the urea clearance (Pickford and Ritchie, 1945).

The development of hypothyroidism is dependent upon a degenerative process in the thyroid gland or a pathological condition of the pituitary body. If it be the latter, the lesion may be a neoplasm or degenerative process of the hypophysis, or secondary to a space-occupying lesion in any part of the brain. The clinical picture of the resulting hypothyroidism is one of inertia and retardation of all mental and bodily functions; the individual appears indolent and expressionless, although his intellectual capacity is only slightly impaired, if at all. The hair becomes scanty, the skin dry, the eyelids puffy, and the palpebral fissures narrow. The patient complains of being persistently cold, and his body temperature is as a rule subnormal, basal metabolism low, blood circulation retarded, blood cholesterol high, and heart enlarged (Zondek, 1944).

The first known account of pituitary hypothyroidism with impairment of renal function due to a head injury is reported below, together with a differential diagnosis and discussion.

Case Record

A soldier aged 23 was wounded with shrapnel on Feb. 15, 1945. The shrapnel produced a large right fronto-temporal skull defect, destroyed most of the underlying frontal pole of the brain, and rendered him deeply unconscious, mentally confused, or disorientated in time and space for four months. Shortly after he became cognizant of his whereabouts his intellectual capacity was above the average, but his mental processes were retarded and he lacked initiative and interest in his surroundings. He preferred to sit in a hot atmosphere to get warm rather than to lead an active existence. His general health was fairly good, but his appetite was poor, and his weight fell 3 stone (19 kg.) during the first few months of the illness. There was no evidence in his history of other bodily disease.

Physical examination throughout the first nine months of illness showed the following abnormal features: a temporary subnormal temperature, a right fronto-temporal skull defect which was made good with a tantalum plate on Aug. 9, 1945, and scars on the forehead, the right side of which also showed impaired sensitivity to pinprick. He had right-sided hyposmia and his right eye was absent. On the left side the eyelids were puffy and the palpebral fissure narrow. There were no other abnormal signs at the time of his discharge from hospital in December.

Tests showed that he had no albuminuria or glycosuria, and microscopically and bacteriologically his urine was normal. The specific gravity of the urine was 1004 to 1030, but was higher during the day than at night. His water secretion (Dec. 5 and 6) in two hours after drinking two pints (1.14 l.) of water was 12 to 13 oz. (340-368 ml.). In December, 1945, his urea clearance was 48% normal, and blood urea 29-35 mg. During the same month his glucose-tolerance test was normal, but his basal metabolic rate was subnormal (-21).

Differential Diagnosis

In the above case the abnormal signs, symptoms, and laboratory tests are compatible with the diagnosis of hypothyroidism due to a head wound. As there was no evidence of thyroid deficiency or any other disease prior to the localized injury to the head, an intracranial lesion involving the pituitary body is believed to be responsible for the hypothyroidism. No other intracranial lesion is known to give a similar picture.

Although pathological conditions in many parts of the body, such as heart failure, nephritis, Addison's disease, etc., may

also show a low basal metabolic rate and impaired retention, their characteristic features were lacking in the case history, physical examination, and investigations possible, however, that Simmonds's disease may have been present during the early months of the patient's illness, certainly not later on, for at that time there was no hypogonadism, low blood sugar, or increased sugar tolerance.

Discussion

The features in the preceding case record which explanation are the rate of water elimination and the clearance by the kidneys. Investigations of these features were made during the eighth and ninth months of the patient's illness. Between Oct. 24 and Nov. 14, 1945, the volume of each specimen of urine was measured and the specific gravity taken. The amount of urine passed in 24 hours was found to be within normal limits and the quantity secreted during the day was almost invariably less than at night, which is the reverse of normal (Kolmer and Boerner, 1938). This suggests that the patient ate or drank between 10 p.m. and 8 a.m. As this did not occur an alternative explanation of abnormal output of urine is that it is due partly to failure of pituitary hormonal control, and to some extent to change of posture.

The part played by hormones in the production of oliguria and nocturnal diuresis in pituitary hypothyroidism is perhaps analogous to the effects of pregnancy upon renal function. In the pregnant woman the rate of urine flow is more than half that of healthy women who are not pregnant. The blood volume in pregnancy is increased. Water is held by the tissues and not presented to the kidneys for excretion during the day, but at night the water stored in the tissues is excreted (Theobald, 1946). The hormones which could produce the diuresis are the trophic, elaborated by the anterior pituitary, and the thyrotrophic secreted by the thyroid gland (Beaumont and Robertson, 1943). As it is not possible to explain the alternating oliguria and polyuria on a hormonal basis an additional factor must be sought. The one applicable in the present case of pituitary hypothyroidism is change of posture.

The influence of posture upon urine output has been observed in normal people after they have drunk a litre of water. They will pass an equal volume of urine quicker when they are lying than when they are standing still (Theobald, 1944). The same is not true should the individual be up and physically active. The upright posture is also partly responsible for oliguria in patients with congestive heart failure because from the systemic circulation accumulates in the lower extremities as occult oedema and is not available for excretion by the kidneys (Fishberg, 1940). Therefore it is probable, that the abnormal rate of water excretion by the kidneys in pituitary hypothyroidism is due to an endogenous dysfunction and variations in posture.

As a rule a van Slyke urea-clearance test of 48% normal is due to renal disease, but in the case under discussion there is a history suggestive of illness referable to the urinary system. There was no polyuria, albuminuria, or abnormal constituents in the urine deposit. The specific gravity of the urine was from 1004 to 1030, and the blood urea and blood pressure were normal. In view of these findings the subnormal urea clearance is almost certainly extrarenal in origin (Fishberg, 1940) and could be accounted for by pituitary hypothyroidism (Beaumont and Robertson, 1943), which was the dominant feature in this case. The action of thyroid upon the urea clearance has been demonstrated by Beaumont and Robertson (1943). They showed that thyroid administration to myxoedematous people resulted in an improvement in the urea clearance. The fact that thyroid therapy cannot remedy the impaired urea clearance in cases of myxoedema shows that an additional factor is responsible for the poor clearance, and it is suggested that the oliguria in the present case may play a part in producing this effect.

The third abnormality in renal function is the high specific gravity of the urine during the day and the low at night. The figures were arrived at by measuring the specific gravity of every specimen of urine passed, including those at 1 and 4 p.m. The inverted day/night ratio for the specific gravity of

rine is in keeping with the inverted day/night ratio for urine output. Why the highest specific gravity urine was passed during the day and the lowest at night remains obscure, but the cause is probably the same as for the daytime oliguria and nocturnal diuresis.

Summary

A case of pituitary hypothyroidism with impaired renal function due to a penetrating wound of the brain is here reported. The renal abnormality consisted of a diminished urea clearance and an inverted day/night ratio for urine specific gravity and urine output.

Discussion was devoted to the abnormal renal function, which was considered to be partly due to hormonal dysfunction and partly dependent upon change of posture.

I am indebted to the Medical Director-General of the Army for permission to publish this paper and to Col. Roche, who allowed me to study the recorded case in his hospital. I would also like to acknowledge Dr. Ritchie Russell's encouragement and assistance in writing the article.

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INCIDENCE OF ULCER IN HAEMATEMESIS

BY

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It is generally accepted that the most common cause of haematemesis is peptic ulceration, either gastric or duodenal. In a series of 382 cases reported by Natvig, Römcke, and Svaar-Seljesaeter in 1943 radiographic confirmation was obtained in every case; 230 cases were of duodenal ulcer and 152 of gastric ulcer. McCrae (1938), although he gives no figures, states that "in medical practice haemorrhage from the stomach occurs most frequently with ulcer of the stomach or duodenum and from oesophageal varices."

In a small series of cases admitted to this hospital during the last three years, primarily for acute haematemesis, whatever the underlying pathology, only 7 (39%) of 18 patients were found to have radiographic confirmation of peptic ulceration.

Immediate treatment adopted in each case was along the customary well-established lines—i.e., the treatment of acute post-haemorrhagic shock. Morphine gr. 1/4 (16 mg.) with atropine gr. 1/100 (0.65 mg.), both repeated four- or six-hourly as necessary, elevation of the foot of the bed, covered hot-water bottles, half-hourly recording of the pulse rate with repeated blood-pressure estimations, blood counts and blood grouping at the earliest possible opportunity, were some of the immediate measures adopted. Small drinks of sweetened fluids were allowed in most cases if vomiting ceased soon after admission. Where it was apparent that bleeding had stopped, as evidenced by the return to normal of temperature, pulse, and blood pressure, the recognized Wits (1937) modification of the eulengracht two-hourly dietetic regimen (so far as wartime conditions would allow) was instituted, together with full doses of iron, phenobarbitone, magnesium trisilicate and belladonna tincture, and adequate vitamin dosage. The iron was administered in the form of ferri et ammon. cit., gr. 30 (2 g.) thrice a day, and was continued long after the patient was discharged as out-patient "follow-up" department. It is interesting to note that this quite simple medication was all that was necessary to produce the desired haemopoietic effect, and the clinical picture improved steadily week by week.

cases did well on this routine, and the average duration of admission in hospital was about five weeks. Three months after a barium meal was taken, the patient being screened, the radiological conclusions were as follows: chronic gastric ulcer, 5; chronic gastric ulcer (confirmed by gastroscopy); 1; anastomotic ulcer (confirmed by operation), 1; a total of 7 (39%). Two cases (11%) gave histories

suggestive of peptic ulceration, but no radiographic evidence of this could be obtained. In these circumstances I feel it is reasonable to assume that the diet, rest in bed, and medicines were responsible for complete healing of the ulcer and subsequent negative skiagrams. Two further cases (11%) proved later to be due to cirrhosis of the liver, where it is probable that the haematemesis were the result of ruptured oesophageal varices or congestion consequent on portal obstruction. One patient in the series had hypertension with severe epistaxis, and it must be concluded that some of his haematemesis, if not all, was caused by swallowed blood.

Gastric Erosion as a Cause of Haematemesis

The most interesting proportion is that of six patients (34%) from whom no history of dyspepsia could be elicited and who were perfectly fit up to or just before the time of haematemesis. In all these cases, after an uninterrupted recovery when treated along the above lines, a later x-ray picture revealed a perfectly normal stomach and duodenum. Fractional gastric analyses also performed at a later date showed no gross abnormalities, although some hyperchlorhydria was recorded in one case. In the absence of any other positive clinical or pathological findings it was concluded that these must have been acute gastric erosions. Avery Jones (1944) has stated, "Of 337 patients admitted for haematemesis and melaena, over half of whom were gastroscopied usually in the first week, seven were thought to have active gastritis to account for their bleeding." Jennings Marshall (1944) has expressed the view that "haemorrhage is an occasional manifestation occurring from superficial erosions. It may be brisk but is never severe or prolonged in such cases." Our small series tends to confirm this observation in that not one of our six "erosions" required a blood transfusion.

Horace Evans (1944), in discussing the treatment of duodenal ulceration, states that "the diagnosis of duodenal ulceration is in most patients relatively easy and confirmation by x rays satisfactory. The frequency with which complications, such as haemorrhage, perforation, and even stenosis, occur in patients who have minimal symptoms of indigestion is surprising, though no doubt in some this is due to the ulcer being of the more acute type. This type of ulcer or superficial erosion may heal with very little residual deformity, and so reveal no x-ray change soon after a haemorrhage."

In such a relatively small selection of cases one can hardly regard these conclusions as being of particular significance, especially when the primary treatment of haematemesis due to acute erosion remains identical with that due to chronic ulceration. It would, however, be most instructive to learn whether the incidence of acute gastric erosion is actually as high (34% of all cases) in larger hospitals as it has been found here. The proportion of admissions for acute haematemesis in this hospital is approximately 1 in 50, and it would therefore take many years to collect a comprehensive enough series to be worthy of consideration. If this could, however, be undertaken at hospitals where the number of admissions for haematemesis is higher, further light may be thrown on this interesting observation.

I wish to thank Sir Philip Manson-Bahr, senior physician to the hospital, for permission to use his cases, and for his kindness and assistance throughout the preparation of this paper; and Dr. F. G. Wood, honorary radiologist to the hospital, for the radiological reports.

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The latest report of the Royal Hospital for Sick Children, Glasgow, states that 6,000 in-patients were treated during the year, and 70,000 out-patients, but adds that the work done was not up to what the hospital is capable of doing in normal times, with proper facilities, towards meeting the needs for medical, surgical, and specialist treatment of children in the centre and west of Scotland. "The infantile mortality rate in Glasgow is terribly high. It is the business of such a hospital as this to investigate the causes and find a cure."

Medical Memoranda

A Case of Clicking Ears

Though subjective sensations of noises in the ears are common enough, the emanation of sounds audible to others seems a phenomenon worthy of record.

CASE REPORT

The patient, a British soldier aged 22, was sent into an Indian psychiatric hospital because of nightmares in which he flung himself about and called out for a rifle. They had occurred for twelve months, and appeared to be related to experiences under shell-fire and V.I. bomb attacks in 1944. They ceased following two pentothal sessions and other psychotherapy. He also drew attention to a clicking noise which was audible to himself and others, and which he first noticed three months ago, 24 hours after a football had hit him on the cheek. The noise was heard when the observer placed his ear a few inches from the patient's; it resembled the soft crackle of an electric spark. Each click was a short distinct noise which was repeated at slightly irregular intervals at an average rate of from 24 to 32 a minute. The clicks were synchronous in the two ears, and bore no time relation to the pulse, respiration, movement of the mandible, or swallowing; the drums were never seen to move, and the clicking was unaltered when the meatal pressure was raised or during Eustachian catheterization. Major Clark, otorhinolaryngologist, examined him, and reported that the hearing, the appearance of the drums, and the Rinne and Weber tests were normal. The nasal airway was clear, though there was slight deviation of the septum to the right. The Eustachian tubes were patent. Over a period of two months' observation the sound was never absent when listened for except under pentothal or during sleep, when it ceased; the patient said that he could always hear it if he directed attention to it, though he noticed it chiefly at night. Complete physical examination and radiography of the skull were normal.

The patient gave the history that when he was 6 he developed a facial tic; he blinked his eyes, and screwed up his nose to one side. The condition lasted two years. When he was serving in B.L.A. he noticed that he was blinking excessively.

COMMENT

Spasmodic contraction of the stapedius or tensor tympani muscles analogous to facial tic appears the most likely cause of the phenomenon.

ELLIOTT EMANUEL, B.M., B.Ch., D.C.H.

A Case of Infectious Mononucleosis Requiring Tracheotomy

Shirley Smith and Shaw (1945) have reported dramatic improvements in several cases of anginous glandular fever after injection of neoarsphenamine. In the case reported below the rapid disappearance of fever, angina, and adenopathy after the injection strongly suggested a specific effect. The asphyxia attack—presumably due to oedema of the glottis—occurred twelve hours after the injection. It is felt that it may have been precipitated by a process analogous to the Herxheimer reaction.

CASE REPORT

A previously healthy soldier aged 20 was admitted to hospital on Nov. 17 complaining of sore throat and malaise of three days' duration. On examination he was febrile but did not look unduly ill. The throat was generally inflamed, and there was a patchy exudate on both tonsils. The most striking feature was a gross enlargement of all the cervical lymph glands, producing an appearance of "bull neck." A tentative diagnosis of glandular fever was made, but it was felt that antidiaphtheric treatment should not be withheld. Accordingly, 48,000 units of antidiaphtheria serum were given intravenously, and a course of intramuscular penicillin begun, with an initial dose of 50,000 units followed by 20,000 units three-hourly for three days. A throat swab taken on admission grew only non-haemolytic streptococci.

During Nov. 18 and 19 there was no response to specific treatment. Nasal obstruction developed with a mucopurulent discharge from the right nostril. The cervical lymph glands became even larger, and in addition tender glands appeared in the axillae and groins. The spleen was not palpable. Fever persisted, the temperature rising to 103° F. (39.4° C.), and the patient became restless and confused. The urine now contained a gross amount of albumin but no casts. Throat and nose swabs taken on the 19th grew only non-haemolytic streptococci. A white blood count done on the same day gave a total of 11,500 (polymorphs 53%; lymphocytes 20%; abnormal cells of mononuclear origin 22%, showing pseudopodial projections and indentation of the nucleus).

During Nov. 20 and 21 there was little change in the physical signs, but the patient's general condition deteriorated, and he became disorientated and incontinent of urine. A further blood count gave the following results: R.B.C., 5,100,000; Hb., 15.4 g. per 100 ml.;

W.B.C., 15,400 (polymorphs 37%; lymphocytes 16%; al cells 47%, showing a foamy cytoplasm, coarse granules, pseud etc.). On the 21st there was little change in the patient's condition. Breathing was not unduly laboured, and it was decided to give an intravenous injection of neoarsphenamine, 0.45 g., at 5.3 the urine then contained only a faint trace of albumin and no There was no immediate reaction.

At 5 a.m. on the 22nd the patient developed respiratory and rapidly became completely obstructed. Emergency tracheotomy was performed by Lieut.-Col. Jelly, R.A.M.C., at 5.45 a.m. at which time breathing had ceased and the pulse was scarcely perceptible. After artificial respiration had been performed condition of the patient rapidly improved, and within six he was conscious, rational, and could breathe easily past the tube. The cervical glands subsided rapidly and were noticeably softer the touch. On the morning of the 24th the tube was removed. Temperature and pulse had dropped to normal and remained so. The throat was clear of exudate and the adenitis was resolving. Thereafter recovery was remarkably rapid and complete. Serum taken sixteen days after the onset gave a positive Paul-Johnson reaction to a titre of 1/256/trace/512.

Thanks are due to Col. J. J. Biggam, M.C., late R.A.M.C., Officer Commanding, 84 Military Hospital, B.A.O.R., for permission to publish the case. Lieut.-Col. A. C. Dornhorst, R.A.M.C., Officer Commanding, Medical I 84 Military Hospital, for his help and interest.

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Acute Appendicitis and Direct Inguinal Hernia

An acutely inflamed appendix lying in any hernial sac is quite infrequent occurrence, but still more rare is its association with the uncommon type of direct inguinal hernia.

CASE REPORT

A healthy man aged 40 was admitted to the Royal Infirmary, Edinburgh, in June, 1943, with a history of five days' general intermittent abdominal pain and nausea. The day previously it had become worse and settled in the right iliac fossa, but the pain was acting regularly. A firm, rounded, tender swelling about (2.5 cm.) in diameter was palpable on the right side 1½ in. (3.8 cm.) superior to the inguinal ligament and near the internal inguinal ring. It could be grasped between the finger and thumb except for its site, resembled a small strangulated femoral hernia. It did not pass as far down as the external ring and was irreducible. There was slight tenderness in the right iliac fossa, the tons slightly furred, and temperature, pulse, and respirations were normal. The diagnosis was not certain: appendicitis, inguinal hernia, Richter strangulation, and glandular enlargement were possible.

Operation was performed under spinal analgesia, and the skin incision for an inguinal hernia was made. When the sac was adequately exposed it was found to be unconnected with the internal inguinal ring, lying medial to the deep epigastric artery. It was a short, congested, direct inguinal hernial sac. A small amount of omentum was found adhering to the fundus of the sac, which was wrapped around an acutely inflamed appendix. This was removed via the sac, which was then excised. The herniation had placed through a localized opening with firm edges (about 2 cm. diameter) in the transversalis fascia. An uneventful recovery took place.

COMMENT

Ogilvie (1937) was probably the first to describe a rare type of direct inguinal hernia, which consists of a tubular hernia of peritoneum emerging through a circular deficiency with tendinous margins in the transversalis fascia medial to the epigastric artery. Gill (1939) reported three cases and a fourth, the bladder wall being present in some and a Richter strangulation in one, while MacLeod (1939), Warren (1939), Dodd (1939), Wimberger (1939), Dorling (1939), and (1943) recorded about a dozen more. The occurrence of appendicitis in a hernial sac has been recorded more often than forms about 1% of all herniae (Wakeley, 1938). This illustrates the association of two uncommon conditions and a reference to a previous case has been found.

Edinburgh.

J. F. CURR, M.D., F.R.C.S.

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Reviews

WORLD HUNGER AND F.A.O.

The World's Hunger. By Frank A. Pearson and Floyd A. Harper. (Pp. 90. 11 50 or 9s. 6d.) New York: Cornell University Press; London: Oxford University Press.

The first aim of the Food and Agricultural Organization of the United Nations is "food and a health standard for all the people of the world." There are difficulties in the achievement of this aim that we may feel have not been examined fully. The Hot Springs Conference declared that the first cause of hunger and malnutrition is poverty. The fundamental problems are to raise the purchasing power of consumers and to apply the capital for developing agriculture in backward areas. hitherto purchasing power in the more developed countries has not kept pace with production. It is questionable whether any of the social schemes that have been proposed will raise purchasing power sufficiently. Unless the proposed World Food Board adopts a restrictive policy it may well become saddled with ever-growing surplus stocks that it can dispose of only through an expanded U.N.R.R.A. The improvement of backward types of agriculture involves investments which may well be unremunerative to the investors and the possibility that the investors may be able to dominate the economy of the countries in which agriculture is developed. We have, however, felt little doubt about the possibility of producing the food necessary to maintain a satisfactory level of nutrition.

The authors of *The World's Hunger*, Professors of Prices and Statistics and of Marketing at the New York State College of Agriculture, Cornell University, have attempted "to present some facts about the food habits of the world's two billion people, about their differing habits, about the production of food and the prospects for its increase, and about the possibility of upgrading food habits." About half the book is occupied with surveys of production, trade, and consumption (including food habits), of the physical conditions which make land suitable for agriculture, and of physical geography (not excluding the age of the earth) which are, inevitably, superficial. Their sole value is in showing that a great increase is needed in order to attain the scales of consumption that are recommended and that the area available for the production of food is limited. The authors mention the risks of investment in irrigation and tell us that much of the land that has been irrigated has not paid its original cost and gives no promise of doing so, and leave it at that. It would be useful to know what is the proportion of this land to the total that has been irrigated and whether causes such as the underconsumption and resulting depression of 1929 and the early thirties have not contributed to the failure.

At the end of the chapter on production, trade, and consumption the authors state: "There is no shortage of schemes and plans for upgrading the world's diet. There is shortage of programmes containing down-to-earth methods of attaining this laudable aim." This is flatly untrue. Many practical methods of increasing the amount of food produced have been worked out and are being applied. In the second half of the book the authors mention some of these without, however, making any attempt to calculate how much each or all together might add to the world's food supply. They make no mention either of the control of pests and diseases or of the restoration of and damaged by erosion; yet the methods and organization that have been developed in recent years, with these objects, promise to add considerably to our supply of food. Livestock give a poor return in terms of calories for the food that they eat; the authors fear, therefore, that if the supply of animal products is increased the total calories will fall below requirement. They have missed the point that when land is devoted to the production of cereals its fertility declines, and that mixed farming may give a better yield even in terms of calories. Nor do they take into account the enormous amount of food that is at present consumed by non-productive livestock, from the cattle in India to rats and locusts.

In connexion with the possibility of increasing the production of food the authors might study the report of the U.S. Agricultural Department: "The increase in total production

from 1939 to 1944 was twice as large as during the entire 20-year period from 1919 to 1939. This wartime record was accomplished without a significant expansion in acreage, and despite insufficient supplies of labour, machinery, and other materials." Thirty years or more ago yields of wheat in Montana and the Dakotas oscillated between 3 and 60 bushels to the acre. There has now been a long interval without a crop failure, owing to the conservation and good use of water and the use of improved varieties of wheat. This is an example of the down-to-earth methods which are being used all over the world.

This book makes no contribution to the solution of the world's food problems. The authors adopt a hostile attitude towards those who wish to raise the standard of nutrition which is not justified nor even explained by any erudition that they display.

PAPWORTH FAMILIES

The Papworth Families: A 25 Years' Survey. By E. M. Brierley, M.D. With a preface by Sir Arthur MacNally, K.C.B., M.D. (Pp. 674. 45s.) London: William Heinemann.

Preventive action with a child born into a tuberculous family may take three courses: separation, BCG vaccination, or improvement in the home environment. The Papworth Village Settlement has provided experimental conditions that help in answering the question: Can a high standard of home environment and hygiene (affecting resistance of the individual and intensity of contagion) offset the effect of the presence of an infective source, and possibly also of hereditary predisposition? The germ of Dr. Brierley's painstaking survey is the elucidation of this relationship, but there is a wealth of general information upon the contact-factor in tuberculosis. After an historical introduction on this factor in the pathogenesis of the disease, there comes the survey proper, based upon the records kept by Dr. L. B. Stott from 1922 to 1938 (the detailed family case-histories occupy more than half the book) of 260 children born before the entry of their families to the settlement, and of 108 born in the settlement. Special interest attaches to the group of 50 Village-born children of sputum-positive cases, none of whom, up to an average age of 5 years, had developed active childhood tuberculosis, though latent benign changes, including calcification, were evident in some. A similar freedom from serious disease was found in the Village-born children of sputum-negative cases. The conclusion is that "in these Village-born children, Papworth has apparently succeeded in securing an environment on which exposure to intra-familial infection has not succeeded in producing active lesions." Furthermore, "a comparison of the incidence of lesions in Papworth-born children with the incidence observed in admitted children, exposed before the age of four years and prior to admission, showed that the Village-born children have to be classed in a specially privileged group with regard to contact infection" (p. 148). So it would appear that, within limitations, the question posed above is answered in the affirmative. The limitations are the small numbers, the low average age of the children to date, and the consequent lack of opportunity to study the possible incidence of adult-type phthisis, and the absence of recent tuberculin tests. The continuation of this survey on the lines indicated by Dr. Brierley's work is thus desirable, and as the end-date of his review is 1938, the further work might well be started forthwith.

The findings, if confirmed on larger numbers and for longer periods of observation, will not only show what a well-run village settlement can do for the children of a very small part of the tuberculous community; they will underline the importance of general schemes of social assistance to tuberculous families—as in the "266/T" regulations now in danger of annulment under the National Insurance Act. Dr. Brierley is to be congratulated on his contribution to our knowledge of the epidemiology of tuberculosis.

RADIOGRAPHY OF THE SMALL INTESTINE

Radiologic Examination of the Small Intestine. By Ross Golden, M.D. (Pp. 239; illustrated. 36s.) London: J. B. Lippincott Company.

The small intestine (other than the duodenum) has too often in the past been somewhat of a "blind" area to the radiologist, apart from such gross lesions as obstruction, tuberculosis, and regional enteritis. The time is therefore ripe for an authoritative

survey of the subject from the x-ray point of view. It is a pleasure to welcome Prof. Ross Golden's monograph and to pronounce it a work, from an authoritative pen, of first importance to radiologists and gastroenterologists.

The author's survey of the subject is very complete. He begins with a general introduction describing the indications for a small intestine study, and the technique both of the small intestine meal and the small intestine enema. Then follows an account of the embryology, anatomy, and physiology of the jejunum and ileum; and in discussing the physiology an account is given of the chemical mediator theory of nerve transmission and its application to the movements of the small gut. The author then describes the x-ray appearances in the normal small intestine, including the appearances in the infant—a subject that has received too little attention in the past.

In the section on obstructive and paralytic ileus there is a complete and informative account of the use of the Miller Abbott tube in diagnosis and treatment, which will be of great value to all who attempt this technique. One of the most important chapters is that on the x-ray picture of the intestine in disorders of nutrition: the physiological mechanism is discussed, and the nonspecificity of the changes wisely emphasized. Diseases of the mesentery, allergy, inflammation, neoplasms, congenital abnormalities, the effects of drugs, and miscellaneous conditions are described in later chapters, and the book ends with a bibliography of 200 references.

The print is readable, the book is free from padding, and the illustrations are well chosen and reproduced. It is a monograph to be recommended to all who are interested in this comparatively unexplored region. They will find in it much of interest and help in their work.

CLINICAL ELECTROCARDIOGRAPHY

Electrocardiography in Practice. By Ashton Graybiel, M.D., and Paul D. White, M.D. With the assistance of Louise Wheeler, A.M., and Conger Williams, M.D. Second edition, revised. (Pp. 458; 323 illustrations. 35s.) London: W. B. Saunders Company, 1946.

For the clinical exploration of the heart muscle the conventional limb lead electrocardiogram is no longer always sufficient. This fact is well demonstrated by Graybiel and White in the second revised edition of *Electrocardiography in Practice*. They show that, in general, an acute myocardial lesion may be inferred from the analysis of limb leads but that in some cases it will only be registered when the precordial leads are paired with one arm, the left foot, or the Wilson central terminal. The authors have given a readily understandable and fully illustrated account of this matter. While in this country the chest lead paired with the right arm is the technique in routine use, Graybiel and White consider that the Wilson central terminal will prove more satisfactory as it shows less potential variation than any single extremity. Errors of electrocardiographic interpretation are as likely to arise from lack of familiarity with the range of the normal as from failure to recognize an actual abnormality. This very real problem is excellently dealt with in Part II of the work. Later sections are devoted to the arrhythmias and the types and patterns of electrocardiograms in relation to aetiology. All the well-known aetiological groups are surveyed, and, in addition, the acute infections, nutritional and endocrine disorders, and the *cor pulmonale* to which the authors have made important clinical as well as cardiographic contributions. The presentation of a number of electrocardiograms for practice in interpretation will help readers to assess their own knowledge of the subject. Whatever is the result of this test there is no doubt that study of Graybiel and White's work will make many obscure points plain and fill some lacunae in the knowledge of almost every reader.

Notes on Books

Reconstruction by Way of the Soil, by G. T. WRENCH, is published at 12s. 6d. by Faber and Faber. In elaborating the title of his book, Dr. Wrench develops the thesis that farming is an art and something infinitely wider than scientific agriculture. It is a "Way of Life" itself. The family as a group is but a human complement of the soil itself, both family and soil recreating life. In the first three chapters he deals with the intensive personal agriculture which gave to the early Romans their physiological vigour and virile character. Although the carcass feeding of Polar Eskimos plays

almost the same prominent part as in beasts of prey, the lacto-vegetarian diet, wholemeal grain, fruits, vegetables, milk and its products are referred to as the food of many of the healthiest and strongest peoples of the present day. War and history depend much upon man's attitude to the soil. The author shows that although this attitude is ignored by historians it will give rise to a greater knowledge of the causes of devastating war and its prevention. Nomads and speculators who lead an ill-balanced life by not following the "rule of return" which is the only stable rule of living regard the soil as something to be exploited—even plundered—for their own gain, as a means to mastery and wealth. A more true valuation of the soil and its effects would be a powerful factor in the maintenance of peace. After dealing with the economics of soil, the proper and wrongful use of urban and rural waste, and the wonderfully successful methods of primitive farmers, Dr. Wrench has an interesting chapter on the effects of the dominance of money. The subject of this book is world wide: it calls for a means of action in reconstruction via the soil.

The Association of Special Libraries and Information Bureaux ("Aslib") has issued a *Catalogue of Films of General Scientific Interest in Great Britain* compiled by the Scientific Film Association. The classified subject index has five columns of entries under the general heading "Medical and Para-Medical Sciences," with a number of sub-headings. The catalogue can be obtained for 5s. 3d. post free from Aslib, 52, Bloomsbury Street, London, W.C.1.

General Bacteriology Laboratory Manual, by L. S. McCLEUNG of the University of Indiana, consists of instructions for 61 sessions of practical work in general bacteriology, with spaces for recording results. Though teachers of medical bacteriology rarely have time for dealing with the fundamentals of the subject in so extensive a way as this, they may nevertheless gain some useful ideas for the practical teaching of bacterial morphology and physiology. The publishers are W. B. Saunders Company, and the price is 6s. 6d.

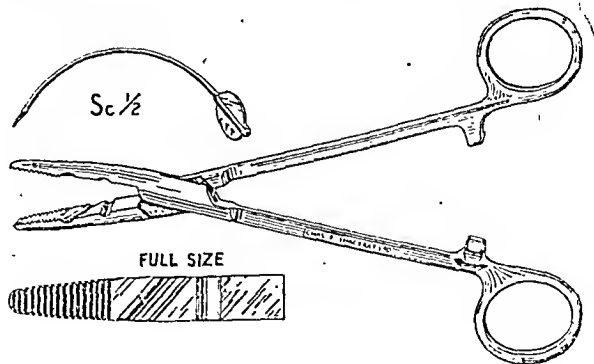
Correction.—We regret that the name of the publishers of *Principles of Dynamic Psychiatry* by Jules H. Masserman was incorrectly given in our issue of Oct. 19 (p. 579). Messrs. W. B. Saunders Company Ltd. are the publishers of this book.

Preparations and Appliances

COMBINED HAEMOSTAT AND NEEDLE-HOLDER

Dr. J. S. LAURIE (Pontefract) writes:

Since the description (*B.M.J.*, Sept. 9, 1944) of my use of a hollow curved perineum needle for obstetric work, it appears that very widespread interest has been aroused in this simple little instrument. Messrs. C. F. Thackray, of Leeds, who made the original needle for me, have kindly designed a combined



haemostat and needle-holder in stainless steel, with grooves in the jaws permitting the needle to be gripped at either of two angles without damaging its lumen.

I have found this instrument very useful in giving more purchase and thus minimizing still more the discomfort to the tired mother, while the variation of angle covers most of the awkward positions in which one may have to work in domestic midwifery. It is of interest to note also that stitches with the round needle have much less tendency to cut out than those with a cutting needle as normally used.

The haemostat end saves duplication of instruments in an already crowded bag.

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CONTROL OF LEPROSY

Up to thirty years ago the only method in common use for the control of leprosy in the British Empire and elsewhere was the Biblical and Middle Ages plan of compulsory segregation. For want of any effective treatment of the advanced cases, which alone filled the old type of leper asylums, that method nearly always meant lifelong imprisonment without hope of recovery. A prospect of an improved outlook was aroused when in 1916-17 Leonard Rogers reported better results in early cases treated as out-patients with injections of soluble preparations made from the ancient Indian remedy, chaulmoogra oil, in place of the oral administration of the nauseating whole oils. Early confirmation and extension of this work were furnished by E. Muir in India and by American workers in Hawaii and the Philippines, though it is of little value in advanced cases. Rogers therefore advocated large-scale clinic treatment of early cases, together with voluntary isolation of highly infective ones in agricultural colonies under expert treatment, which suffices to attract as many of them as can be accommodated. In India scores of thousands of out-patients are being treated every year at hundreds of dispensaries under trained experts; but funds are still lacking for the essential complementary colonies for advanced cases.

It soon became evident that compulsory isolation had become worse than useless, because it led the sufferers to hide their affliction for years until it had become too late for effective treatment. Rogers therefore made a comprehensive study of the literature of leprosy and formulated a plan of campaign to enable early cases to be discovered and treated and the more infective ones to be isolated with little or no compulsion—as described in a recent paper in our columns.¹ The essential points are that leprosy is mainly a house infection; that children are far more susceptible than adults; that the incubation or latent period after exposure to infection before the first symptoms appear is rarely over five years; and that neural cases—which constitute three-fourths to four-fifths of the sufferers in most countries—are little if at all infective, so these need not be isolated. It followed that close contacts of all discovered cases of leprosy should be examined at least every six months for five or more years to enable the great majority of new infections to be traced in a very early and, for the most part, recoverable stage. This plan has proved to be of value in the serious South Pacific Nauru epidemic; and in British Guiana and Ceylon, the

first British colonies to modify their compulsory laws to permit of its trial. Moreover, in South Africa bacteriological examinations of the 2,501 compulsorily isolated cases revealed that one-third of them were uninfected. Their release, together with the provision of agricultural colonies and improved treatment, soon resulted in most of the admissions being early voluntary cases. In twenty-five years 4,502 patients—two-thirds of the known total—had been released recovered, and three-fifths of them had remained free from active symptoms for five years and upwards.

In 1924 the British Empire Leprosy Relief Association (B.E.L.R.A. for short) was founded, with a daughter association in India. Working in close co-operation with the Colonial Office and Colonial Governments the successive secretaries, Mr. Oldrieve and Drs. Robert Cochrane and E. Muir, have made repeated tours through our Empire to organize the work. The most difficult problem was presented by Nigeria, with leprosy rates of from 1% to 10% and 70,000 cases in a single province. Here, through the combined efforts of the Government, B.E.L.R.A., and missionary societies, provision has been made of doctors, Toc H lay workers, and a trained indigenous staff; and agricultural colonies with numerous surrounding clinics have been organized. At two of these alone 25,000 patients are receiving regular treatment, with results that led the Nigerian Government to take over and extend the work with the help of liberal grants from the Colonial Development Fund. At the last annual meeting of B.E.L.R.A. Dr. Davey described the system of voluntary isolation of infective cases in model villages, built at the cost of the chiefs, together with village house-to-house surveys to find and treat the early cases at clinics—all with the essential cordial co-operation of the people. He is now able to report that in some areas the turning point has been reached and the incidence of leprosy is on the decline. At the same meeting the chairman of the Executive Committee, Sir Bernard Bourdillon, ex-Governor of Nigeria, announced that his memorandum clearly defining the respective roles of Colonial Governments and the Leprosy Association has been accepted by the Colonial Office.

The present position, then, is that the modern methods of control of leprosy have proved to be of value wherever they have been efficiently carried out, and machinery is available for their gradual extension to other affected areas. Progress must be slow in view of the fact that cases in the British Empire are estimated at about two million. In order to accelerate progress the most urgent need is the discovery of a more efficacious treatment of the more advanced and infective type of cases. Here, too, new hopes have been kindled by recent reports of more favourable results from the intravenous use of the sulphones, promin and diasone, respectively by Fite and Gemur² in the United States and by E. Muir³ in Trinidad. Further trials of these and other available preparations, which have already shown promise against the closely allied tubercle bacillus, should be carried out. Altogether the outlook for sufferers from leprosy has greatly improved during the last three decades.

¹ *British Medical Journal*, 1946, 1, S25.² *Sthn. med. J.*, 1946, 39, 277.³ *Intern. J. Leprosy*, 1944, 12, 1.

PENICILLIN IN THE TREATMENT OF SINUSITIS

The value of chemotherapy in securing the rapid resolution of acute sinusitis must be accepted with caution. Cases in which inflammation does not extend beyond the mucous membrane generally get well with the usual conservative treatment, but progress is more rapid under treatment with penicillin—provided that the infecting organism is penicillin-sensitive—and in cases which prove resistant to ordinary treatment penicillin administered systemically is of great value. A more difficult problem is the conservative treatment of chronic, subacute, or acute on chronic sinusitis. Rüedi¹ has classified chronic sinusitis for this purpose as follows: (1) Simple infection of one sinus, usually the antrum; (2) a small group of cases of chronic pansinusitis combined with bronchiectasis; and (3) a large group of cases of "pansinusitis chronica polyposa" in which an allergic factor also is concerned. In general the treatment of chronic sinusitis with penicillin, whether by local instillation through ureteric catheters introduced into the antrum, or by systemic injection, or by a combination of the two, has proved disappointing, probably for three reasons: the penicillin does not affect organisms secluded in fibrous tissue and bone; there is often a component of the mixed chronic infections which is insensitive to penicillin (e.g., Friedländer's bacillus); and there may also be an allergic factor.

The experience of Bettington and Vincent² of military cases agrees with this. They found that acute sinusitis as such responded readily to chemotherapy with sulphamerazine, but that many of the acute cases seen were really acute reinfections, and some had already undergone operations for drainage of the antrum. Where drainage was good the cases responded well to treatment with sulphamerazine and lavage. For those without drainage openings sulphamerazine and lavage by puncture repeated four times was the routine; and if after this course had been repeated the result was not satisfactory penicillin was instilled through the cannula used for lavage. In spite of this they found that out of fifty-five patients with subacute or chronic sinusitis fifteen required radical operation; twenty-eight were cured by sulphamerazine, and ten by penicillin; and in two more operation was recommended but not performed. The fifteen who underwent radical operations all had nasal polyposis, which was regarded (as it was by Rüedi) as a condition particularly unfavourable for chemotherapy alone. Priest³ found that in chronic sinusitis, whether associated with bronchiectasis or not, treatment by penicillin was disappointing and that permanent improvement could seldom be obtained without operation, even though the penicillin was given systemically as well as by local instillation. Only two out of eight cases of chronic suppuration associated with bronchiectasis benefited from treatment with penicillin. Crowe,⁴ also, found that penicillin did not benefit chronic cases in which the infection had become inaccessible to local treatment.

The situation is different, however, in those severe and desperate cases where spreading osteomyelitis supervenes on chronic suppurative frontal sinusitis or pansinusitis, usually of the type associated with polyposis. In such cases, which previously responded only occasionally to drastic removal of bone, and then only if extradural and subdural abscesses had not already formed, the effect of systemic penicillin is dramatic. Rüedi has reported clinical details of ten such patients saved by the combination of operation with penicillin. The removal of bone need not be so extensive as was formerly practised, because of the great efficacy of the drug. Fortunately these cases are not very common, and no doubt more will be reported.

It was generally considered that in osteomyelitis arising spontaneously from chronic sinusitis the prognosis was less unfavourable than in post-operative osteomyelitis, which was almost always fatal after a prolonged illness. It now seems that more importance must be attached to the bacteriology. Bettington and Vincent found that the predominant and most constantly present organism in chronic sinusitis was a haemolytic *Staph. aureus*. Williams,⁵ however, has reported from the Mayo Clinic that in cases of osteomyelitis in which this organism is the infective agent there is a tendency for the osteomyelitis to localize, with a fair prospect of recovery after a radical removal of bone; but that when the organism is an anaerobic (or micro-aerophilic) short-chained streptococcus a malignant slowly spreading type of osteomyelitis is very likely to be fatal. Williams and Heilman⁶ showed that though this organism was fastidious as well as anaerobic it could be grown on dextrose-brain broth, and that an "autogenous antiviral" prepared from it was valuable in treatment. More recently, however, Hempstead⁷ has shown that this dangerous streptococcus is sensitive to penicillin, and the prognosis in osteomyelitis caused by it is therefore much improved. He refutes the view formerly held that *Staph. aureus* is responsible for the fatal form of infection. By the isolation of this type of streptococcus at the Mayo Clinic much that was mysterious in the course of the dreaded complication of sinusitis is explained; and the importance of bacteriological investigation is emphasized once more.

MATERNAL MORTALITY IN HOSPITAL PRACTICE

The last twenty years has seen a progressive rise in the number of women going into hospital for delivery. In England and Wales the number of institutional live births, which was 15% in 1927, had risen to 35% in 1937. This tendency is more noticeable in urban areas. In 1938 the number of births taking place in hospital or nursing home was 69% in the County of London, 49% in Liverpool, and 50% in Manchester. During the war there was a further steep rise and in some of the larger cities the percentage figure went up by as much as 15 or 20. In 1944 the Royal College of Obstetricians and Gynaecologists⁸ suggested that planning for the future should be based on the expectation that about 70% of all births will take place in hospital. If the facilities were available and properly distributed

¹ Schweiz. med. Wschr., 1946, 76, 189.

² Med. J. Aust., 1946, 33, 358.

³ Ann. Otolaryng., 1945, 54, 786.

⁴ Ibid., 1943, 52, 541.

⁵ Proc. Mayo Clin., 1944, 19, 373.

⁶ Arch. Otolaryng., Chicago, 1937, 25, 196.

⁷ Proc. Mayo Clin., 1944, 19, 480.

⁸ Report on a National Maternity Service, 1944. Issued by the Royal College of Obstetricians and Gynaecologists. London.

roughout the country it would look as though this figure could be reached quickly. The trend away from domiciliary midwifery is even more evident in the U.S.A., where already in 1944 70% of confinements took place in hospital against 53% five years earlier.

With this in mind it remains to be asked how safe is institutional midwifery under modern conditions. All are agreed that where the nursing home or hospital and its aff are inefficient the risk to the patient is greater than she were delivered in her own home, but that where equipment and staff are adequate institutional midwifery is remarkably safe. The maternal death-rate in most of the large obstetrical teaching hospitals in this country is somewhat higher than that for the population as a whole and might be higher still if such hospitals regularly admitted cases of abortion, a condition which accounts for a considerable number of maternal deaths (0.4 per 1,000 total births in 1944). The figures as published, however, can be misleading. In many of these hospitals a large proportion of admissions are emergency cases, among which most of the deaths occur. The maternal death-rate of booked cases, even when these are selected principally for the reason that they are abnormal and likely to require operative delivery or other special treatment, is as a rule much better than that for the whole country—often two or three times as good. Moreover the hospital statistics usually include deaths from fortuitously associated conditions such as heart disease, whereas these are classified separately by the Registrar General.

The high degree of safety which now attaches to midwifery in a well-organized hospital is borne out by M. E. Davies and T. G. Gready,⁹ who have examined the records of all the maternal deaths which occurred in the practice of the Chicago Lying-in Hospital during a 13½-year period, 1931–45. There were eighty-one deaths among 47,945 patients, an over-all mortality of 0.17%. The maternal death-rate was over 4 per 1,000 live births in 1931 and gradually fell until it has been less than 1 per 1,000 since 1942, running parallel with and below that for the white population of the United States. The primary factors causing death were genital infection 23.5%, extra-genital infection (including pneumonia, phthisis, etc.) 16%, haemorrhage and shock 16%, heart disease 16%, toxæmia of pregnancy 7.4%, pulmonary embolism 7.4%, anaesthesia 3.8%, transfusion reactions 3.7%, and hyperemesis gravidarum 2.5%. The deaths due to genital infection all occurred before 1939, giving a subsequent five-year period free from fatal sepsis. Among 271 cases of placenta praevia there were only two deaths, and both are classified as avoidable. Two out of 237 patients suffering from abruptio placentae (accidental ante-partum haemorrhage) died. The incidence of post-partum haemorrhage, generally reckoned at 5–6% of all deliveries, was reduced to 1.1% during the years 1940–3. There were thirty cases of ruptured uterus, seven proving fatal. The frequency and risk of heart disease complicating pregnancy, which is now becoming one of the main causes of death, remained unchanged during the period under review. Delivery by Caesarean section was carried out 1,824 times, the lower-segment technique being employed in 1,704, the Porro operation in 98, and the classical incision in 22. The total mortality rate was 0.6%, but it was only 0.3% from the lower-segment operation.

Good as these results are, Davis and Gready conclude that two out of every three deaths could have been avoided. Preventable factors are charged either to the obstetrician, the institution, or the patient. They emphasize a fact which is not always appreciated—namely, that one of the chief

functions of a teaching institution such as the Chicago Lying-in Hospital is the training of young obstetricians: and no matter how well they may be supervised by the senior staff that always involves an increased hazard. The teaching of the future specialists is done at a cost; the greatest care is necessary if this is to be kept down to a minimum.

NEED FOR RESEARCH IN RHEUMATISM

The Empire Rheumatism Council has during the past week been celebrating its tenth birthday, and coincident with this is the announcement that the Nuffield Foundation has made a grant of £100,000 to be spread over 10 years for the establishment of a rheumatism centre in the Manchester Royal Infirmary. The importance of this step and the need for attracting research workers into rheumatism was referred to by speakers at the dinner of the Heberden Society held last week to welcome the official Swedish delegates—Prof. J. A. Höjer and Dr. B. Strandell. Dr. C. W. Buckley, who was in the chair, said that the Empire Rheumatism Council had its origin in earlier efforts to control the rheumatic diseases. The first was the appointment by the B.M.A. in 1931 of a committee on the causation and treatment of arthritis and allied conditions. Subsequently the Royal College of Physicians set up a committee and published the results of its work in four annual reports, the successor to which is the *Annals of the Rheumatic Diseases*, now published by the B.M.A. Then the Empire Rheumatism Council had been formed, and “almost side by side” the Heberden Society. Heberden with his nodes and Haygarth with his nodosities had been prominent figures in the history of rheumatism; and, Dr. Buckley added, Lord Horder, who had been so active in the campaign conducted by the Empire Rheumatism Council. Their problem, he said, was to educate the public and also the profession in the numerous problems of this disease.

Prof. L. S. P. Davidson developed the same theme, observing that during the past 20 years they had spent much time in trying to persuade central and local authorities of the importance of rheumatism from the standpoint of both economics and health. In 1937, for example, it was found that out of 2,000,000 incapacitated persons in Scotland 50,000 had suffered from rheumatism. Apart from small and private efforts he claimed that the matter had not yet been tackled at all. In the past the medical profession had been complacent about the problems presented by rheumatism. “We have run away from it.” But he was optimistic about the future. There were signs that general physicians who were not specialists in the subject were nevertheless becoming impressed by its great importance. If the efforts of Government Departments and the medical profession could be combined something, he thought, could be done to give the young man encouragement to undertake the research that was so badly needed. Dr. L. T. Swaim, of the U.S.A., and Dr. B. Strandell, of Sweden, both stressed that in their countries rheumatism also bulked large as a health problem, and a problem especially of general medicine.

Sir Wilson Jameson, speaking to the Empire Rheumatism Council on Monday, said the Ministry planned to have centres for research and diagnosis linked with university medical departments, “peripheral centres,” and beds for long-stay cases in institutions. The Ministry was going to make rheumatism one of the big problems to be tackled in the National Health Service. If it was to be properly studied in these centres they would need young people adequately trained as general physicians and also in the study of rheumatic diseases. He hoped they would come forward and take advantage of the opportunities available in the field of

⁹ *Amer. J. Obstet. Gynec.*, 1946, 51, 492

rheumatism. Sir Wilson ended by saying: "None of these official schemes for National Health Services and the like will thrive in the absence of first-class voluntary effort, and if the Empire Rheumatism Council will go on in the same way during the next 10 years no one will be better pleased than the Ministry of Health."

FIELD-MARSHAL MONTGOMERY ON MORALE

The subject of morale was chosen for the Lloyd Roberts Lecture delivered on Monday before the Royal Society of Medicine, Lord Montgomery said, for two reasons. The first was because high morale was a quality without which no war could be won; and the second: "I thought it would be of interest to the medical profession because morale is a mental quality, being essentially a product of the mind and conscience." He held strongly that the soldier was a citizen and not chiefly a military figure. As a citizen he would reflect the national character. "The national character is therefore of great importance, and anything that weakens it weakens the Army." In war the moral stature of some men would increase. Others, under the stress of battle, surrendered to fear and to fatigue and allowed their characters to disintegrate. "In such cases there has been a loosening of the character due to a partial surrender to fear." Lord Montgomery stressed that all through the question of morale there was the problem of dealing with fear. High morale was that quality which maintained human dignity at all times and developed man's latent heroism; it was not contentment, nor was it fitness or healthiness or happiness; nor was it toughness. "High morale implies essentially the ability to triumph over all difficulties, dangers, and discomforts, and to get on with the job." Lord Montgomery laid down four fundamental factors for morale: leadership, discipline, comradeship, and self-respect. He did not believe that devotion to a cause was basic or fundamental, although he subsequently observed that no nation could fight an unpopular war. Discussing leadership, he said that human beings had certain common characteristics and that in battle the most common of these was fear. All men were afraid at one time or another to a greater or less extent, and in fear men banded together and looked for guidance. "At such moments they are not capable of standing alone; they find the burdens too great to bear. The leader accepts the burdens of others and earns their gratitude thereby and the right to lead them." The quality men recognized in their leader was decision. Fear made a man sluggish and indecisive. The leader's power over his men was based on his ability "to cut through that fear paralysis" and so help others to escape from it. The leader's greatest asset was his ability to act normally in abnormal circumstances and to continue to think rationally when his men had ceased to think.

The object of discipline was the conquest of fear. The basis of fear was the awareness of danger. "A man becomes aware of danger when he thinks he is opposed by something more powerful than himself." Discipline helped a man to lose his own identity and created a corporate sense. Discipline also implied a conception of duty; but such conception, Lord Montgomery thought, did not embrace abstractions such as freedom, democracy, empire. A man's sense of duty extended to the friends round him. This brought the speaker to his third factor, comradeship: "Morale cannot be good unless men come to have affection for one another." Comradeship was the great antidote to fear because it gave a man friends. Self-respect, Lord Montgomery's fourth fundamental, was a quality which developed if the other three fundamentals were present. Men had to take pride in their ability to carry out any job. "A man who feels he is trusted will feel he is efficient and will begin to respect himself and have confidence in his

own ability." A powerful contributory factor to high morale was success; it was not possible to maintain it during a long period of defeat.

Returning to his theme that the soldier is first and foremost a citizen, Lord Montgomery said that nothing weakened a man more than trouble at home. The soldier had to have good living conditions and always good food, but there was a danger of considering welfare as an end. "It will never produce high morale by itself, because it is essentially soft." Hardness and privation, he said, were the school of the good soldier, and idleness and luxury his enemies. It was not for nothing that one of the great rallying calls of the English race had been the cry, "Blood, toil, tears, and sweat." Lord Montgomery ended a memorable lecture by referring to the strain on the leader whose men had a high state of morale: "They think that they can do no wrong, and they think that you can do no wrong; but it might stage a come-back on you."

D.D.T. FOR TROOPS

From statements in the press and on the radio and films it is well known that British troops in the recent war were protected from lice by shirts impregnated with D.D.T.—a procedure suitable for soldiers, whose uniform clothing can be treated *en masse* and issued as required. Such impregnated garments give longer and more reliable protection than the powder applied with a dusting gun, which was the rapid, simple treatment given to refugees and prisoners.

The biological testing necessary before this large-scale use could be instituted has been described by Musgrave recently.¹ (During the war the work was secret, and subsequently a considerable delay in publication was made inevitable by the spate of papers describing formerly secret research.) The biological assessment of effectiveness in killing lice was compared with independent chemical estimations of the percentages of D.D.T. remaining in undergarments after various periods of wear and numbers of launderings. A number of garments tested were distributed, as shown in the table.

Biological Assessment	Chemical Analysis: % D.D.T. wt./wt.				
	Less than 0.04	0.04-0.08	0.09-0.19	0.2-0.5	More than 0.5
Not effective ..	8	2	1	0	0
Slightly effective ..	2	2	1	0	0
Moderately effective ..	0	1	1	0	0
Effective ..	0	0	3	3	1
Very effective ..	0	0	0	1	2

The author concludes that 0.1% wt./wt. of D.D.T. on a garment is approximately the lowest limit for prevention of persistent lousiness. Garments originally impregnated with 1-2% fall to this level after four or five weeks' wear and four or five launderings.

Of interest is the time of contact required for the louse to receive a lethal dose. Lice were allowed to wander on impregnated clothing for various periods and then removed to a clean environment. It was found that all lice were killed some hours after one hour's contact with 1.75% impregnated fabric and that there was a high subsequent mortality among those which had crawled for three hours on fabric with as little as 0.1% D.D.T. Adult lice were observed to show clear signs of D.D.T. poisoning after four to six hours on 0.1% fabric and after two hours on 1.75% fabric at 30° C.

Sir Heneage Ogilvie will deliver the Bradshaw Lecture before the Royal College of Surgeons of England on Thursday, Nov. 14, at 5 p.m. Subject: "Surgical Handicraft."

¹ *Bull. entom. Res.*, 37, 43.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

The first postwar meeting of the Council and of delegates of the Medical Women's International Association was held in London from Sept. 19 to 22 under the presidency of Miss Louisa Martindale, F.R.C.O.G. Representatives were present from Belgium, Denmark, Finland, France, Great Britain, Holland, India, New Zealand, Norway, Sweden, Switzerland, and the United States.

Women Doctors in the War

On the first day, the subject for discussion was the work of medical women in the Armed Forces and the Resistance Movement. Members were welcomed by Dame JANET CAMPBELL, president of the British Medical Women's Federation. She stressed the fact that medical women had a special contribution to make towards reconstruction and the establishment of peace and harmony in the world. She felt that an International Association of Medical Women supplied a valuable background and organization from which this work could develop. Miss LOUISA MARTINDALE pointed out that this meeting was being held in conditions of perfect freedom; that, for the first time or many years, everyone could speak openly and without fear. She hoped that members would maintain an international rather than a national outlook. She emphasized the serious effect of the war on the youth of all countries involved and felt that one of the most important functions of medical women would be to help in the redemption of youth.

Dr. S. LANOTTE (France), assistant physician to the Parisian hospitals, said that French medical women won an uncontested place in the Army during the later campaigns. The occupation of France made it impossible to set up an officially recruited force, and so it was entirely due to individual initiative that a body of women doctors got together and worked with the French Army in France, North Africa, Italy, England, Alsace, and Germany. The Women's Auxiliary Army Force, formed in North Africa in 1944, contained a Women's Medical Corps of over 150. This corps would persist, and had established for itself an honoured and privileged position in France.

Dr. LETITIA FAIRFIELD (one-time medical adviser to the A.T.S.) spoke of medical women's work with the R.A.M.C. They had complete equality of status and conditions with their male colleagues and worked in most of the theatres of war, not only in the care of the A.T.S., but in many cases in hospitals and casualty stations where the troops were treated. There were 600 women doctors in the Army before the end of the war.

Miss JOSCELYN MOORE (specialist in gynaecology lately employed in the R.A.M.C.) spoke of her work among wives and children of regular soldiers in 1940, and later with the A.T.S. The incidence of illegitimacy and of V.D. in the A.T.S. was remarkably low. The commonest disorders were associated with menstruation, though these were relatively mild. Dysmenorrhoea was worse in sedentary occupations and in a proportion of cases was an escape-phenomena, for the most part unconsciously produced.

Dr. DOROTHY FENWICK (former squadron leader, R.A.F. Bomber Command) said that women doctors were given important work in the Air Force and were well received by their male colleagues. One of their most interesting jobs was lecturing on personal hygiene and V.D. to all newly joined women in the W.A.A.F. She herself travelled 22,000 miles a year on visits of inspection. Every airwoman could consult a woman medical officer if she wished and a large proportion of them availed themselves of this opportunity.

Work for the Resistance Movement

Dr. FOG (Denmark) said that in the resistance movement in Denmark medical men and women worked together without discrimination. Medical women took an active part. They secretly received weapons, helped and transported saboteurs, hid refugees and parachutists, and acted as couriers. They were favourably placed for this work because the constant coming and going in their consulting-rooms made them a safe place of rendezvous. Their visits to patients afforded a means of conveying information, they had access to private telephone communications, and often used ambulances and hospitals to

save Jews and others whom the Germans were seeking. They were also able to use their cars to transport many people to safety during the blackout. Their medical and surgical skill was frequently employed in helping wounded saboteurs whom they kept in secret clinics and private houses. Many women doctors were discovered and sent to concentration camps for long periods. It was generally accepted in Denmark that they had done magnificent work.

Dr. DROEVER BONNET (Holland) stated that medical women played a similar part in her country. There was a strong resistance organization. One woman doctor was a leader of the whole movement, another who used her house as a centre of the resistance was arrested and killed by the Germans. Yet another became chief doctor in a German internment camp, as the German doctor left all the treatment to her. She was thus able to give great assistance to her fellow internees, and even to help some to escape.

Dr. ASTRID GULDBERG (Norway) told a similar story of medical women's work and heroism. Ten medical women were imprisoned for their share in the resistance activities, and one, who went voluntarily with her Jewish patients to Germany, had never been heard of again. The Norwegian women doctors felt proud that they were able to play such an active part in helping their people and their country.

Dr. DE BLAINVILLE (France) said that French women had also played a most active part in the resistance movement, and she herself was arrested for her resistance activities in 1944 and sent to Fresne prison near Paris, and then to Germany. There was no treatment or care given to the prisoners, and no medical services at all in the French concentration camp, and large numbers died. Transport into Germany was appalling; 125 people were put into cattle trucks, and many died on the way. She herself was sent to Ravensbrück, the biggest concentration camp for women in Germany; there were 16,000 there at one time without any medical attention. All property was taken from them, huts were densely overcrowded, and infection was rife. Examination for pregnancy was conducted with no attempt at cleanliness, and prostitutes were mingling with healthy women. Certain camp blocks were reserved for those to be sent to the gas chambers or the crematorium. Experiments were carried out on the prisoners with the greatest cruelty. The influence of the women doctors was mainly to try to comfort the women and raise their morale. This they did with great courage and devotion.

Dr. MICHOTTE-ROUSE (Belgium) spoke of her work in charge of a hospital at Bruges at the time of Dunkirk. A woman doctor had sole charge of the whole Malmédy region during the war and did outstanding work in Belgium. As in other countries, medical men and women gave the most devoted service at great personal risk.

Organization of Medical Care in Wartime

On the second day the subjects dealt with were Organization of Care and Medical Treatment during the war, and the problems of postwar reconstruction.

Dr. DOROTHY TAYLOR (senior medical officer for maternity and child welfare at the Ministry of Health) read a most interesting paper on the arrangements made by the Ministry for the care of mothers and children during the war. Dr. HEISE (Denmark) read a paper on the arrangements which had been made in Denmark. Miss LOUDEN (surgeon, South London Hospital) spoke of the work of the hospital during air raids. They dealt with men, women, and children. One patient had thirty fractures and yet made a good recovery. Dame LOUISE MCLROY spoke of the organization of maternity work in Buckinghamshire. Dr. HARDING gave an account of the life in the London underground tube shelters during the war, and of medical work among the shelterers. She stressed the excellent health that they had enjoyed despite the most unfavourable conditions, and also the high morale of both children and adults.

Dr. ESTHER LOVEJOY (U.S.A.), one of the founders of the Medical Women's International Association, said that the part of American medical women had been that of sympathetic observers, and that they had done what they could by sending money and such other things as they were allowed, both to the medical women of Britain and other countries.

Dr. BERGEROT (France) said that 600,000 arrests were made in France during the war, and there was still no news of

250,000 people who were deported to Germany. In one camp near Strasbourg over 45,000 people were used as subjects for vivisection, or experimental injection; 500 cases a day were used at Belsen for artificial insemination experiments. Among the deportees who were now returning, malnutrition was a great problem. It required a great deal of organization to try to sort out all these people and to re-establish them. There was an order in France that employers must take back their old employees, but this created great difficulties because so many of the returning men were suffering from emotional instability, loss of memory, and physical deterioration.

Dr. ANDREEN (Sweden) said that Sweden's role had been that of trying to help refugees from other nations. Thus 70,000 Finnish children were billeted in private homes and a great number were invalids or tuberculous. In 1944, 30,000 Baltic refugees were received, and in 1945 over 30,000 refugees and displaced persons came to Sweden. The large majority of the women doctors took an active part in this work. They had as far as possible kept up international contacts with other medical women colleagues during the war.

Problems of Relief and Reconstruction

Dr. MARCUS JEISLER (France) spoke about the psychological effects of the war on French children. She said that the peak figures of delinquency and emotional disorder in relation to children were reached in 1942, and had lessened since that date. The war definitely increased psychological disorders in children, but only in those who had already shown such tendencies. There had not been much increase in the numbers of children abandoned by their parents. There were a few cases of children living wild in groups or bands, who were found near the towns at the time of the wholesale deportations. A number were orphans, and were now in the care of charitable organizations. Some of the children who had lost their parents, or had seen them maltreated, wanted to avenge them. Some children were suffering from shock, and there had been a considerable increase of delinquency. Other countries had been very helpful. Switzerland had taken many of these children even during the war. Some had been sent to North Africa and some to Palestine. Sweden helped by sending money, and Great Britain in a number of ways. The question of the Jewish children had been particularly difficult. The surviving children of the deportees were like little savages. They had their own laws and their own chiefs and were brutal, but with patience they were gradually coming back to normal. The children were suffering greatly from lack of education during the war years, but German propaganda seemed to have affected them very little.

Dr. MIDDLEHOVEN (Holland) said that her country had set up an active system of relief units, which had enabled them to combat in a very short time the most cruel consequences of the hunger blockade of 1944-5, and to restore their normal hygienic and medical services. Many of their problems had been wounded soldiers, victims of air raids, and the rehabilitation of the many workers who had been deported by the Germans. Tuberculosis and syphilis had increased alarmingly among these people, and congenital syphilis among infants was not now uncommon. The Dutch population of the Netherlands East Indies, who were all evacuated to Holland after the capitulation of Japan, had lost everything and their physical condition was deplorable. In Holland, they were given material and financial help for six months, and as long after as necessary. Special dispensaries for tropical diseases and nutritional deficiencies had been set up. She was impressed by the marvellous training and education which the children had been given by their mothers in the Japanese camps. They behaved much better than the Dutch children, who practically ran wild during the war years. Those who had collaborated with the Germans presented another grave problem. They were still in camps, their children had been taken from them and placed in children's homes or with foster parents, as camp life was not suitable for them and it was feared that they would become infected with Nazi ideas.

Dr. HOLDERSON (Norway) stated that Norway had a population of only 3,000,000 though it was an extensive country. Their loss in personnel was heavy; 300,000 died in German concentration camps. There was also much material damage.

The medical women of Norway had played an active part in helping their people. America had sent them \$50,000 for relief work, and they were grateful for the help they had had from so many other countries. Dr. RUDINESCO (France) gave a further account of the efforts being made towards reconstruction.

Dr. CHAUSSE (Switzerland) discussed the part that her country had played in helping refugees of various nationalities, and said that though Swiss people had suffered considerable deprivations, and during the early part of the war had lived in great fear of invasion, they realized how fortunate they were to have escaped the horrors to which so many other countries had been subjected, and they felt it was a duty and a privilege to give as much aid as they could in the problems of reconstruction with which the world was faced.

At the Council meeting which took place subsequently, it was decided to hold the next International Congress and Council in Holland in June or July, 1947. The subject for discussion is "The Place of Medical Women in Postwar Reconstruction."

CENTENARY OF ACADEMIE DE CHIRURGIE

On Oct. 9 the Académie de Chirurgie of Paris celebrated its centenary, and invited the Royal College of Surgeons to send representatives. The Académie is, in fact, the successor of the Société de Chirurgie founded in 1843, itself the successor of the Académie Royale de Chirurgie founded by Louis XV in 1731. A party of ten attended the centenary celebrations and was representative of the Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, and the Association of Surgeons of Great Britain and Ireland. On Sunday, Oct. 6, the party travelled to Paris and was met at the Gare du Nord by Prof. Louis Bazy and Prof. Leveuf, who escorted its members to the Hôtel Regina in the rue de Rivoli, where they were the guests of the French Government.

Celebrations in Paris

The centenary of the Académie de Chirurgie coincided with the 49th meeting of the Congrès Français de Chirurgie, which corresponds to the Association of Surgeons in this country, and on Monday afternoon there was the inaugural session of the congress in the great amphitheatre of the Faculty of Medicine. The President of the congress, Dr. Fourmestraux, of Chartres, reviewed the history of the congress in an eloquent address, and was followed by Prof. Roussy, Rector of the University of Paris, who spoke of the happy relations which exist between the University and the medical profession in France. The opening ceremony was followed by a discussion on pulmonary embolism, led by MM. Fontaine, of Strasbourg, and Redon, of Paris. In the evening the British representatives were entertained to a banquet by the French Government in the magnificent rooms of the Maison des Alliés, formerly the house of Henri Rothschild. M. Joxe, Director-General of Cultural Relations in the Ministry of Foreign Affairs, presided, and welcomed the guests in an eloquent oration. Sir Max Page replied for them in a most happy speech in perfect French. Two members of the delegation were presented with the honorary medal of the academy.

On Tuesday a discussion at the Faculté de Médecine on the conservation of the sphincters in operations for cancer of the rectum was opened by MM. de G. D'Allaines, of Paris, and de Vernejoul, of Marseilles. The material for the discussion had been most carefully prepared and covered an important field with thoroughness. New work was brought forward which is worthy of close consideration. In the evening the whole congress joined in a banquet at the Maison des Alliés. On Wednesday the discussion turned on the repair of peripheral nerves and was opened by MM. Wertheimer, of Lyons, and Merle Daubigne, of Paris. An important contribution was made by Prof. Seddon, of Oxford, and Miss Ruth Bowden. In the afternoon the British party were received at the Hôtel de Ville by the Municipal Council of Paris under the presidency of Prof. Basset, President of the Académie de Chirurgie, who reviewed at length the medical services of France and their possible developments in the future, dwelling more particularly on their relations with the Government. There followed the presentation of addresses of congratulation from the many

countries joining in the Congress. In the evening the visitors were invited as guests of the Government to the Opera, where they were delighted by a superb ballet which fully maintained the great traditions of the past. On Thursday a sword of honour was presented to Prof. Leriche on his admission as a member of the Institute of France. It was a happy ending to a great occasion, and a pleasure to all to witness the well-earned honour paid to one of the great leaders of modern surgery.

The members of the delegation were touched by the wonderful reception accorded to them by their surgical colleagues in Paris, by their generous hospitality, both public and private, and by the deep feeling of their friendship. It is hoped that the visit may have some small share in renewing the friendship between France and Great Britain which will surely have a most important bearing on a satisfactory solution of the present problems of European stability.

SCHOOL MEDICAL SERVICE IN SCOTLAND

The Scottish Health and Education Departments have recently issued a joint circular on the School Medical Service and the regulations proposed by the Secretary of State. The Medical Officer of Health will be appointed Chief Administrative School Medical Officer so that the best use may be made of clinics and of medical and nursing staffs, but since in the case of the larger authorities he cannot attend to the details of all the services for which he is administratively responsible, the regulations provide for the appointment of a Chief Executive School Medical Officer, who would have executive responsibility for the Service under the Chief Administrative School Medical Officer. The smaller authorities are permitted, with the approval of the Secretary of State, to appoint a Medical Officer of Health to both positions. A Chief Dental Officer will be appointed to develop the School Dental Service; and dental inspections will be carried out by dental officers instead of, as heretofore, by medical officers.

Medical supervision or treatment will be available under the scheme for pupils found at inspections to require either, and they may be referred to consultants if necessary. Officers will be carefully selected for this work, particularly for the difficult task of assessing mental disability.

Preventive medicine and the promotion of good health will be studied—an aspect sometimes neglected in the past owing to pressure of remedial work. The local authorities will encourage research, obtaining advice from the universities and other responsible bodies when required.

The Secretary of State may prescribe the intervals at which medical inspections of school-children shall take place. They will normally be conducted during the usual hours of attendance at school so that as little educational time as possible may be lost and the co-operation of the teachers gained. Parents will be invited to attend routine inspections.

NATIONAL CENTRE FOR RADIOACTIVE SUBSTANCES

It has been decided to establish a national centre for the processing and distribution of radium, radon, and artificial radioactive substances required for scientific, medical, and industrial purposes.

The centre will be a Government establishment, to be operated by Thorium, Ltd., acting as agents for the Ministry of Supply. As a first step the Ministry will purchase the radio-chemical business (including buildings and plant) owned by Thorium, Ltd., at Amersham, Bucks., with the exception of the manufacture of luminous compound and other secondary industrial products. The extraction of radon, which has, during the war, been carried on at Barton-in-the-Clay, Bedfordshire, under the auspices of the Medical Research Council, will also be transferred to the new centre. In addition Johnson Matthey and Co., Ltd., are voluntarily handing over to the new centre the whole of the business of filling radium into containers which they have conducted for many years.

Additions will have to be made at once to the Amersham premises to enable the centre to meet immediate demands. The Amersham site will not, however, be large enough permanently to accommodate the centre, as it is expected that the work, particularly on the artificial substances, will expand considerably. It is intended, therefore, to remove the centre to new premises when the shortage of building labour has eased and it becomes possible to form a clearer view of the volume and scale of the work. The work of the centre (which will be closely integrated with the activities of the Ministry of Supply in the field of atomic energy) will be controlled by a Council including representatives of the Ministry, of the managing agents and of users of its products.

PRIORITY SUPPLIES OF MILK TO INVALIDS

MINISTER'S APPEAL TO DOCTORS

The following announcement was issued by the Ministry of Food on Oct. 29.

The situation regarding the supply of liquid milk in this country during the coming winter will be even more difficult than has been the case in previous winters. The world shortage of cereals has influenced the supplies of feeding stuffs available for the dairy herds while the demand for milk in the United Kingdom has increased, partly as a result of the rising birth rate, partly from the demobilization of large numbers of Service personnel, and partly from a rapid increase in the number of persons receiving priority supplies on grounds of invalidism. At present the difficulties of the supply situation are such that it will only be possible to maintain the basic ration of 2 pints weekly to the normal consumer by economizing in the milk consumption of other categories. It is, therefore, necessary that there should be a review of the arrangements under which priority supplies are granted.

Through the period of hostilities the consumption of milk by invalids in receipt of priority allowances, although it showed a slight tendency to rise, remained about 900,000 gallons weekly. By December, 1945, it had risen to 1,200,000 gallons, and a further increase to 1,300,000 gallons weekly has occurred since. There is no other evidence that there was a 44% increase in invalidism and in default of this it must be concluded that medical certification for milk priorities has become less strict.

The average consumption of milk by each invalid is 12 pints weekly, that is, 10 pints more than the normal consumer when the basic ration is 2 pints a week. A reduction in medical certification for milk priorities to the level pertaining in 1944 would save 330,000 gallons of milk weekly, an amount which, together with other savings which will be effected, would probably suffice to prevent the allowance to the normal consumer falling below 2 pints weekly.

Three Possibilities

The Minister of Food has consulted with the Food Rationing (Special Diets) Advisory Committee* of the Medical Research Council as to the measures required to effect the necessary economies. There are three possibilities. (1) The allowance of milk to individual invalids in the different categories can be curtailed. (2) The number of categories can be reduced. (3) The present categories and present allowances can be maintained but an appeal to the medical profession can be made to observe scrupulous accuracy in certification as to confine the issue of certificates to patients in the category sanctioned. This committee advised against the first measure because they believed that reduction in the present allowance of milk to invalids would render therapy difficult. They advised against the second because they considered that the present schedule of illnesses qualifying for priority claims cannot be curtailed without excluding patients to whom milk is a therapeutic necessity. They favoured the third measure because the committee had confidence that, when the medical profession had been informed of the present situation of the country's milk supplies, they would endeavour to effect the necessary economies. The Minister has accepted the committee's advice but it will be appreciated that the need for economy that if the measure proposed fails then one or other measures the committee deprecates might have to be implemented.

Realizing the difficulty of adopting stricter methods of certification when doubtful cases are in receipt of certificates, the Minister of Food has decided that after Nov. 30, 1946, no medical certificate for priority milk (whether for milk alone or for milk and other food) dated before Nov. 3, 1946, shall be valid. It is hoped that practitioners will take the opportunity for re-certification provided to explain to applicants for such certificates that the measure proposed is imperative to apply stricter criteria.

* The Food Rationing (Special Diets) Advisory Committee following membership: Sir Edward Mellanby (Ch.), L. S. P. Davidson, Sir Francis Fraser, Lord Hord Lawrence, Prof. R. A. McCance, Dr. M. L. Rosenheim, Prof. J. C. Spence, Prof. H. P. Himsworth (

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Reports of Societies

PROTEIN METABOLISM IN RELATION TO DISEASE

The presidential address in the Section of Experimental Medicine and Therapeutics of the Royal Society of Medicine was given on Oct. 8 by Prof. H. P. HINSWORTH (University College Hospital).

It was a commonplace, said Prof. Hinsworth, that although there were only twenty-two amino-acids for the construction of all varieties of protein, no two proteins were alike. There were subtle differences between the proteins of the same organs derived from different animals. In part the tissue differences could be related to differences in the amino-acid composition, as also could one species difference, that between human and cow's milk, but most species differences were far too subtle to be detected by chemical analysis and called for immunological tests. It was possible with the development of more delicate methods of chemical analysis that species and perhaps tissue differences would be found dependent on attached substances rather than on amino-acid composition. But each protein was characteristic and remained true to type. By altering the amount of dietary proteins the amount of protein might be altered, but not apparently the composition of tissue proteins. Imperfect and unusual proteins never seemed to be produced by the body. This had led to the assumption that the protein in the tissues was a stable structure rather than something on the same plane of metabolism as carbohydrate or fat, yet it appeared that the proteins of the body, far from being stable structures, were in a state of rapid change. Individual amino-acids were continually being broken down and the fragments built into different or similar amino-acids. It seemed as if the whole protein structure of the body at any one time were boiling with activity, yet the tissues retained their characteristic structure, and a dynamic equilibrium must exist to maintain stability of protein composition. This new view, astounding as it was, threw light on the puzzling question of labile body protein. When a starving animal was fed it retained considerable quantities of protein, but on starving it again the protein was broken down to an extent roughly equal to the amount stored. Under the old view of endogenous and exogenous protein, such protein could not be stored, and nobody had been able to demonstrate stores of protein in the body. It was true that certain cells, such as those of the liver, enlarged on repletion and shrank on starvation, but the chemical composition of the cells in respect of protein appeared to remain constant. According to the new view the ingested protein was incorporated into the mass of living protoplasm within the body, which at any particular time was adjusted to the protein intake; with decrease of intake the tissues broke down.

Protein Requirements of the Body

In considering the requirements of the body for protein a distinction must be drawn between the requirements for a particular protein when that constituted the sole source of an amino-acid, and the requirements for a mixture of protein such as occurred in normal diet. Ordinarily this was an academic question, only likely to arise in experiment or perhaps when illness had grossly limited the intake of food, in which case the amino-acid composition of the protein became of importance; but in health the protein requirements were largely independent of such considerations, the differences in the amino-acid composition of the different proteins which made up the normal diet mutually compensating for each other's deficiencies. If protein was the sole source of food it had to only to contribute to the building up and maintenance of tissue but also to serve as fuel. On the other hand, if the diet contained other adequate sources of energy then protein could be turned to its proper use, and of sources of energy in the diet carbohydrate was the best protein sparer. Such conditions apart, the special problem of general protein requirements in health came down to a determination of the extra requirements for growth, pregnancy, and lactation. In Western civilization normal adults required about 1 g. protein per kg. body weight, children up to 3 g., with women in pregnancy and lactation at intermediate figures. What was the justification for the liberal

allowances of protein for the normal adult when many races subsisted on much smaller allowances? It was not a question of absolute inadequacy but of optimal and sub-optimal nutrition. Recent studies of starvation in Europe had shown that when protein intake was greatly reduced it was quite possible to establish lactation, and the milk was normal in composition, but lactation could not be maintained for more than two or three weeks. Reports from the East suggested that races on low protein diet, when injury or infection was incurred, developed complications which were not present, or present only in mild form, in races on a high protein diet. Gross restriction of protein was required to produce illness, but a mild restriction was sufficient to cause illness under strain, the common strains being growth, pregnancy and lactation, infections, injury, and surgical operations.

Biologically speaking, the requirements for amino-acids fell into two groups: those which had to be supplied in the diet and those which had not. These were classed as essential and non-essential amino-acids. By means of tracer elements it had been shown that the body was capable of synthesizing all the amino-acids with the possible exception of lysine, but apparently the rate of production of ten amino-acids was too slow for the needs of the body and these had to be supplemented by the diet. Thus they had come to be regarded as essential, but the remainder must not be considered as optional substances, and any one of the dozen non-essential amino-acids might in the future come to be upgraded as essential. It was not even certain that all the ten were always essential. Their reputation had been based on animal experiments concerning growth. There was some evidence that in man under certain conditions these ten amino-acids would form proteins more effectively on injection than when whole protein was given by mouth, but that had yet to be confirmed. Analyses were available of the amounts of these amino-acids in diets which were normally considered adequate, but it was evident that the requirements varied, both quantitatively and qualitatively, at various stages of development. Closely bound up with the question of essential amino-acids was the conception of the key amino-acid. If an essential amino-acid were removed from the diet the body began to break down protein rapidly and continued to do so until the amino-acid was restored. It appeared that definite proportions of certain amino-acids were required for the construction of any protein; if one was missing that protein could not be constructed and the excess of amino-acid was burnt off and appeared in the urine as nitrogen. The missing amino-acid thus became a limiting factor, a key component in protein synthesis.

Protein Deficiency

It was a truism that a deficiency state arose when the demand for nutriment exceeded its supply. Protein deficiency could be produced either by curtailing the supply of protein to the body or by increasing the utilization of protein by, or loss of protein from, the body. Supplies might be restricted because of inadequate diet or conditions in the alimentary tract; increased utilization might be the result of pregnancy, fever, metabolic diseases such as diabetes mellitus, injury, or operation; excessive loss might occur because of leakage through the kidney or exudates occurring in conditions such as burns. Dietary deficiency did not ordinarily occur in Western civilization. Starling's dictum still held good: "Take care of the calories and the proteins will take care of themselves." Whatever the calorie value of the diet, 10% to 12% of the calories was taken in the form of protein. But there were Eastern races living on diets grossly deficient in protein. There, deficiency states referable to protein deficiency occurred. The development of clinical states due to dietary deficiency seemed to be dependent on the ability of the body to store the particular foodstuffs. Energy foodstuffs could be stored in quantity, but protein and most vitamins only to a limited extent. In famine, therefore, protein deficiency dominated the picture, but in normal conditions it was usually secondary to some illness, which might be a structural lesion of the alimentary tract, a surgical operation on the tract, or anorexia, limiting food intake.

Practically nothing was known as yet about specific amino-acid deficiency in man. It would be difficult for this to occur as a result of direct dietary deficiency although it might be secondary to other illness. Certain poisons combined with

nino-acids and produced pictures which experimentally could be imitated by amino-acid deficiency. Possibly some complications developing in conditions of great protein loss, as in burns, might be related to deficiencies of certain amino-acids. Plasma proteins appeared to be formed, at least in part, by the liver. Plasma albumin and two of the globulins were certainly formed here; the source of the remaining globulins was not settled. Of the plasma proteins the albumin was most susceptible to abnormal conditions. In starvation its blood level fell relatively rapidly. If dietary intake of protein was adequate, and protein as lost from the body or there was failure to synthesize sufficient albumin, the plasma globulin steadily rose, so that the total plasma protein value might reach normal or above normal levels. The reason for this was not clear, but at least it tended to restore the reduced osmotic tension of the blood. Perhaps the most striking objective manifestation of plasma protein deficiency was oedema. Evidently oedema was most closely correlated with albumin. It was possible that when dehydration was present oedema might not be able to form, and it was a common experience that when starving patients with dysentery were brought in they had no oedema but rapidly developed it as soon as fluid was administered. But it had to be remembered that in starvation there were other deficiencies; probably also an increased capillary permeability played a part in oedemas occurring in famine.

Conditions Causing Excessive Protein Utilization

Among the conditions which produced excessive utilization of protein were fever and injury. In febrile illness there was an excessive breakdown of body protein, shown by increased nitrogen excretion and raised basal metabolic rate. Neither the fever nor the increased metabolism themselves caused this excessive breakdown. It had been loosely termed toxic destruction, but the same phenomenon occurred after a simple injury where there was no question of an extrinsic toxin's gaining access to the body. The process seemed to be a reaction of the body itself to trauma. From 12 to 24 hours after a simple fracture the nitrogen excretion in the urine would begin to rise, presently reach a maximum, then slowly return to normal, and during convalescence reach sub-normal levels. Immediately after the injury, therefore, there was an excessive breakdown of body protein, followed by a phase in which the body was taking up more protein than it was breaking down, and at the end of convalescence protein intake equated output. In the stage of active breakdown it was possible to mitigate but hardly to prevent the excessive excretion of nitrogen by increasing the dietary protein, but as the breakdown diminished it became correspondingly easy to promote nitrogen retention.

Nitrogen breakdown was augmented by immobilizing the patient. Several suggestions had been made as to the significance of this phenomenon. That it was by no means negligible was shown by the calculation that in the first ten days after a simple fracture nitrogen corresponding to more than 8% of the total body protein might be excreted—i.e., more than four times the amount of protein contained in the liver. Clearly if all that protein destruction had occurred at the site of the injury it could not have escaped detection, but the body structure as a whole seemed to be involved. It had been suggested that this was to provide the large amounts of amino-acids required for the healing of the injury, and implicit in that suggestion was the idea that certain key amino-acids were required for healing, that these were produced by breaking down of body protein, and that the other amino-acids not required by the tissues were rapidly burnt off and accounted for the increased nitrogen excretion. There was still doubt as to the mechanism of the phenomenon. The practical lesson was, before operation, to remedy any protein deficiency. In acute illness protein intake must be maintained at a reasonable level, but there was no point in pushing it to excess. As soon as the illness began to improve protein should be pushed, because apparently this shortened the period of negative nitrogen balance. Those who had followed high protein regimes during convalescence were impressed by the increased well-being of the patients. He touched on protein metabolism in relation to liver injury; it seemed clear that protein deficiency could lead to liver necrosis. Necrosis produced by lack of cystine was what was called acute yellow atrophy and in survivors went on to a fibrotic condition of the liver.

In concluding his brief survey, which was delivered to an overflowing audience, Prof. Himsworth said that many subjects of clinical interest had been omitted—the effect of protein depletion on the development of immune bodies, the toxic action of excessive doses of amino-acids when given in association with low protein diets, the therapeutic use of protein hydrolysates or mixtures of pure amino-acids—but he hoped he had said sufficient to show that the problems of protein metabolism in relation to disease were now under intensive study and to indicate some progress which had certainly been made.

FOOD POLICY

A conference of the Nutrition Society on "The Work and Aims of the Food and Agriculture Organization" was held on Sept. 21 at the London School of Hygiene and Tropical Medicine. Sir JOSEPH BARCROFT presided.

Mr. D. LUBBOCK, speaking on "Nutritional Aspects of the World Food Picture," outlined the history of F.A.O. since its inception in October, 1945. The first objects had been to raise the level of nutrition of the peoples of the world, to improve the production and distribution of food, and to secure better living conditions for those engaged in the production of food. These demanded a long-term policy, and the first activity of the organization was to seek the guidance of nutrition experts and various official bodies in the collection of data on the amounts of food consumed in various countries before the war. A "yard-stick" would thus be made available for measuring the after-effects of the war, and for assessing future progress towards better standards of nutrition. Early in 1946, however, reports from U.N.R.R.A. and other bodies responsible for finding food for the war-stricken areas indicated that, in addition to the usual chronic deficiency of food in certain areas, the world was about to experience an acute temporary shortage of supplies. In May a special meeting of F.A.O. was held in Washington, and the situation was greatly eased by persuading the wheat-producing countries to increase their exports, and by discouraging the extravagant use of wheat for feeding to animals or for milling into flour of an unduly low extraction rate.

It was realized that the urgent shortage was not merely a 90-days crisis, as had been expected, but that in the spring of 1947 the situation might be even worse. International co-operation was obviously necessary to avoid the farmers' fear of surplus production with consequent collapse in prices, which tended to limit the output of the agricultural community. In view of the urgency of this problem the annual conference of F.A.O. was held two months earlier than had been scheduled, and in September delegates from many nations met at Copenhagen to discuss proposals for the formation of a World Food Board.

Need for Expanding Economy

The choice of policy for food production lay between two alternatives. We might, as before the war, have a static economy, in which production would be limited by the power of populations to purchase food. Future prosperity, however, must depend on an expanding economy, in which production would aim at improving the nourishment of both rich and poor nations throughout the world, with the solution of financial difficulties by international agreement. The amount of surplus which under present conditions would cause a disastrous slump in prices was in reality only a small fraction of the food urgently required by the undernourished populations. A preparatory commission was therefore considering a plan, to be ready before the end of this year, which would have as its main points: (1) the assurance to the farmer of steady world prices for his commodities; (2) the accumulation of world reserves of wheat and other commodities to tide over future periods of emergency; (3) the provision of funds for financing the disposal of surplus agricultural products on special terms to countries where the need for them was most urgent; and (4) the development of food production in backward countries where there was at present severe undernourishment.

It would obviously be impracticable, except in the far distant future, to bring all nations to the same standards of nutrition. Most nations had well-established "food patterns," based on inherited custom and religion, which must be respected in

planning dietary reforms. A survey of national food supplies, covering 70 countries and 90% of the world's population, had indicated that very wide differences existed. Thus the average food intake in Korea was 1,900 calories daily, but 3,300 calories in New Zealand. Moreover, while large amounts of milk were consumed in some countries, such as Britain and America, negligible amounts were available in other countries, such as China. Every country must therefore have its own target for immediate improvement. The consumption of one pint per head of fresh milk might be a reasonable aim in Britain, but the most that could be expected for China was the introduction of a minute "token" amount of milk into the diet, probably mostly in the dried form.

While therefore F.A.O. saw its most urgent task in raising the levels of nutrition in backward regions, it was obvious that in many countries salvation must be sought in increased agricultural efficiency rather than in surplus food produced in other countries. Such increased efficiency must be encouraged by expert advice supplemented by material help, and F.A.O. proposed that missions including an agriculturist, a nutritionist, and an economist should be sent to countries requiring their services. Experience had already shown that when the food supplies of any nation fell below a certain level there was a tendency for organized government to break down. The principles advocated by F.A.O. to secure better nutrition and increased prosperity throughout the world might be our only hope for the prevention of war.

Nutrition Programme of F.A.O.

Dr. W. R. AYKROYD said that the Organization had among its aims: (1) the collection and dissemination of expert information on nutrition, food production, and agriculture; (2) the co-ordination of national and international action; and (3) the promotion of research, education, and the spread of public knowledge on these subjects. A standing committee including eleven members from various nations, with Lord Horder as chairman, had been set up to give advice on nutritional problems. It must be made clear, however, that F.A.O. could not finance research, that it had at present no executive power, and that its staff was necessarily small because of the very limited supply of experts available for service. To obtain results, therefore, it must rely upon its powers of persuasion and the willing collaboration of other interested individuals and organizations.

The various forms of action which F.A.O. could take might be aptly illustrated by considering the problem of school meals. In the first place the organization might pass a high-sounding resolution—e.g., "The nations here represented agree that a satisfactory diet is the birthright of every child, and recommend that immediate steps should be taken to ensure that this problem receives due attention on the part of the educational authorities." In the absence of concrete suggestions and more direct stimulation, however, it was unlikely that much effective action would be taken by the authorities concerned. A second plan might be to summon a committee of nutrition workers to discuss the problem, but few experts were so widely travelled as to be familiar with food supplies and habits in all the countries of the world. Perhaps the most effective action, therefore, would be to make arrangements for investigations into the feeding of school-children to be carried out in different countries, with attention focused on definite points, such as the details of organization, the food supplied, the costs, and the effect on the children's health.

The secretariat of F.A.O. had great responsibility in formulating problems and in preparing material for conferences in a form that would ensure their success. The recent world food survey had shown that much secretarial work was necessary in comparing estimates from different sources, and that great disparities might arise from alternative methods of calculating nutrient values and in the use of different food tables and conversion factors.

Among the special interests of F.A.O. were the milling and processing of cereals, food technology, and the effects which wartime food programmes had had on the public health in various countries. Another activity was the compilation of a list of the world's nutrition workers, which should be of use when it was necessary to recruit volunteers for special F.A.O. missions. Although the organization would draw largely on

the help and interest of other bodies, however, it would not merely act as a "post-box" but would have its own team of technical experts. Since the newly formed World Health Organization was also to have a nutrition division its activities ought to be correlated with those of F.A.O., and a joint committee of the two bodies would deal with such subjects as deficiency diseases, standards of nutrition, and the control of the quality and purity of foods, which were of common interest. Under present conditions the people of some fortunate countries were well nourished on food produced by a small proportion of their population. In others the toil of almost the entire population was insufficient to yield an adequate amount of food.

Need for Processed Milk

Miss E. FAUTZ discussed this special problem. Since F.A.O. had recommended that the world's milk supply should be doubled, it was important to explore the implications of this policy, particularly in countries where all available food was now required for direct consumption by human beings, and could not be spared for dairy cows. In such countries much benefit might be derived from the importation of processed milk, particularly dried skimmed milk. The demand for milk products might well be stimulated by propaganda and by suggestions for their incorporation in manufactured foods, while their purchase in necessitous countries might be facilitated by financial loans or by grants during the next three years from the U.N.R.R.A. Children's Fund. An increase of milk products would improve nutrition in the West Indies.

Sir JOSEPH BARCROFT among other speakers, in an informal discussion, spoke highly of the nutritive value of various forms of dried milk. In his opinion F.A.O. was not sufficiently well known to the general public. More public interest might be aroused if the Organization had executive rather than exploratory powers. The Government was fully pledged to implement its decisions, which would then have immediate and direct effects on our weekly food rations. It could not be denied, however, that some "economic smoothing out" was essential, and he hoped that F.A.O. would soon be able to report progress on the reactions of Soviet Russia to its policy. The Nutrition Society should be told of ways in which it might help the work of F.A.O.

CAUSES AND PREVENTION OF PREMATUREITY

A meeting of the Paddington Division of the B.M.A. was held at the County Hall (L.C.C.) on Sept. 24, with Dr. G. DE SWIET in the chair, for a discussion on "Prematurity: Causes and Prevention." The CHAIRMAN said that in Paddington twelve or thirteen years ago the infant mortality was the highest in London; the spectre still haunted them, and unless constant efforts were made there was always the danger of a return to that position. Prematurity accounted for about one-fourth of infant mortality, for about half the neonatal deaths, and half the stillbirths. Its prevention was a problem of major importance. Mr. R. LOVELL (pathologist to the Royal Veterinary College) discussed certain veterinary aspects. In the dairy industry the mortality of calves resembled infant mortality in the respect that the reduction had obtained at the older ages, while the hard core—nearly half the calf infantile mortality being in first week—in the very young remained.

Obstetric Indications

Prof. F. J. BROWNE (University College Hospital) said that the League of Nations Committee in 1937 recommended that any infant weighing 2,500 g. (5½ lb.) or less should be considered premature irrespective of the duration of gestation. About 5% to 8% of all births were premature, and prematurity accounted for 50% of the 20,000 neonatal deaths. Stillbirths were about ten times as frequent in premature as in full-time deliveries. Study of the case sheets of 100 premature births, in University College Hospital, showed no cause in 53; in 14 there was multiple pregnancy, and in 13 toxæmia. Any serious attempt to reduce the number of premature births must begin with an attack on the high incidence of prematurity from unknown causes. Consideration should be given to social conditions and especially to deficient diet. In the group in which the prematurity was associated with an abnormality in mother or child, little was possible, in the present state of knowledge, in

event of the premature births. A great deal could be done making more antenatal beds available. The admission of patients with ante-partum haemorrhage to hospital as soon as the first warning occurred would result in a great diminution of the premature and stillbirth rate. The early diagnosis of aemia and institutional care would enable many cases to go to term when otherwise intrauterine death and premature labour would result. Instrumental termination of pregnancy should be possible, in those cases in which it was necessary, be delayed until the end of the 37th week as it would make all the difference in the chances of survival.

Eugenic Considerations

Prof. L. S. PENROSE (University College) said that prematurity and mental retardation were correlated and that transcranial cerebral haemorrhage might be the cause. Paediatric authorities were convinced that cerebral diplegia was mainly due to intracranial birth trauma. Observations

Queen Charlotte's (Martin, 1931) showed that the duration of pregnancy averaged 278.3 days (with a standard deviation of 16.4 days) but ranged from 195 to 360 days. There were more than twice as many premature as postmature babies. Some common specific causes of prematurity might be postulated. One of these causes was the occurrence of multiple births; twin pregnancies terminated, on the average, 15 days, and triplet pregnancies 24 days, earlier than the normal. Factors in the paternal sperm were considered as causes of premature delivery. Icterus neonatorum was, in most cases, due to the fact that the foetal blood contained an antigen, received from the father, which the mother did not naturally possess and to which she formed antibodies. Antigenic incompatibility of fetus and mother was undoubtedly a cause of infant mortality, and miscarriages and premature births were part of its picture.

Dr. LETITIA FAIRFIELD said that the fundamental gap in their knowledge concerned the factor which set up the process of expelling the child from the uterus after an average period of nine months. There were so many unknown influences in gestation that its duration was largely in the region of guesswork and not of scientific ascertainment. Dr. C. L. WILLIAMS said it was important that during the later months of pregnancy the woman should do nothing involving physical strain, especially the use of the hands above her head, as it was by attention to small things like that that the 50% neonatal deaths due to prematurity would be reduced. Dr. DE SWIET, in closing the discussion, suggested that the role of the male parent might have to be more emphasized. It might be necessary to deal with the "expectant father" and to enter the realm of preconceptional care, and Prof. BROWNE commented: "A valuable discussion, and it shows that we do not know anything at all about the subject!"

As announced last week, an extraordinary meeting of the members of the Liverpool Medical Institution was held on Saturday, Oct. 19, with the President, Dr. G. F. Rawdon Smith, in the chair. Addressing a large gathering of members, the President stated that the meeting had been called for the purpose of conferring Honorary Membership of the Institution on six eminent members of the medical profession, Dr. Alfred Ernest Barclay, Sir William Allen Daley, Dame Anne Louise McIlroy, Prof. Charles McNeil, Dr. Ivan Whiteside Jagill, and Sir Alfred Webb-Johnson. Dr. Robert Coope acted as orator for the occasion, and introduced the new Honorary Members severally. They were then formally admitted by the President, and each made a brief reply, expressing appreciation and thanks to the members. In the evening, the Honorary Members, together with the Lord Mayor of Liverpool and other official guests, were entertained to dinner at the Exchange Hotel.

The Hunterian Society's programme for the session 1946-7 includes discussion at Apothecaries' Hall on Nov. 18 at 8.30 p.m., "That the vertisement of proprietary medicines is a menace to the public." Dec. 16, at a dinner meeting at 7.15 p.m. at Pimm's, 3, Poultry, "Dr. Geoffrey Evans will open a discussion on "Flatulence." Jan. 20 Prof. Debaiseux, of Louvain, will give the Hunterian Lecture on "Hypotension in Intracranial Injuries" at the Mansion House at 8.30 p.m. On Feb. 24 Mr. V. Zachary Cope will give the Erian Oration on "Literature and Doctors" at the Mansion House at 8.30 p.m. On March 17, at a dinner meeting at Pimm's at 7 p.m., Sir Reginald Watson-Jones and Dr. J. B. Menzell will open discussion on "Sprains and Strains."

Correspondence

Selection of Medical Students

SIR,—Prof. D. H. Smyth's admirable general discussion of problems of selection in the case of medical students, and your comments upon his article (Sept. 14, pp. 357 and 375), make it exceedingly clear that the time has come when these problems must be taken seriously. It is very likely that some agreed methods ought to be put into practical operation without delay, but it is quite certain that the really urgent need is for a well-planned and large-scale investigation in which as many as possible of the medical teaching schools and hospitals would co-operate and in which medical men and psychologists would join, each side with a genuine willingness to understand and appreciate the perhaps somewhat different points of view that are involved.

Prof. Smyth rightly points out that a large amount of valuable experience in regard to selection methods and problems has been accumulated during the war. A brief but definite statement of the main practical conclusions that are generally agreed seems now to be desirable, and it is such a statement that I will endeavour to make.

1. No system of initial selection is likely to get beyond the stage of debate unless its results can be systematically and accurately checked against independently determined proficiency criteria. If possible, obviously such criteria should be capable of objective determination, but some progress has been made towards the establishment of a reasonably reliable technique based upon informed assessment, and there is certainly far more hope that such a plan may be satisfactorily established in suitable cases than could have been predicted six or seven years ago.

2. As things are there is almost no operation, trade, or profession having any major importance in civil life for which adequate proficiency criteria have been established. Prof. Smyth's remarks show that no such criteria are agreed upon in the case of medicine, and that if suitability for the practice of medicine "as a whole" is taken as the aim the chance of ever establishing such criteria in a practical sense is small. His own conclusion seems to be the only possible one—i.e., that a few qualities which offer a reasonable chance of being amenable to test and validation procedure should be picked out and made the basis of the more routine or formal aspects of selection. This does not, of course, ignore the other aspects of selection, but war experience has shown many times over that it lightens and often improves the work of those responsible for their consideration. Perhaps Prof. Smyth goes farther than is necessary when he seems to imply that routine selection should be limited to dealing with intelligence only; but this is a matter for discussion.

3. It is quite clear that the primary function of intelligence tests in relation to the professions is at present that of exclusion. As regards some vocations it has become clear that they will tolerate a range of intelligence above as well as below which prospective candidates are little likely to achieve success. He would be a rash man who would assert that there is an upper limit of tolerance in the case of medicine, but everybody agrees that there must be a lower limit, and though this has not yet been settled it ought to be not difficult to determine it by a well-planned investigation, and meanwhile a rough working limit could be achieved and used. It is essential that such a limit should be used intelligently and in conjunction with the less formalized aspects of selection, because for validation purposes it is obviously necessary that a sufficient number of cases should be available for "follow up" who do not in fact make the proposed grade for formal selection.

4. Every important war investigation has shown that it is impossible to separate selection from training. A good selection scheme can be ruined by a bad system of training. A bad selection scheme can, within limits, be bolstered up by a good system of training. It has turned out with truly astonishing monotony that training schemes can be as completely divorced from subsequent operational success as a plan of initial selection can be. Indeed several times over it has been found that initial selection methods which do not agree with training grades do agree far better with eventual operational success. The importance of this, which can scarcely be exaggerated, is that where good operational criteria are lacking there is an inevitable tendency to judge selection methods by the relation of their results to training grades. This may be extremely misleading and unfair.

So serious did problems of this order become, for example, that towards the end of the war a number of investigation teams in the U.S.A. who had been concerned with primary selection were forced to turn their attention wholly to training methods and training

assessments and examinations. Some astonishing facts came to light. Training methods and courses are very often indeed a hodge-podge of different devices. There may have been a good reason for every one of them when it was introduced, but they have come in at all sorts of different times and for all sorts of different reasons and purposes. Training schemes are far more often overloaded than under-loaded, and it is very common to find candidates kept for a long time learning things that the general run of them can perfectly well master in a short time, and for a short time on things which require more prolonged study. The result is staleness in some directions, under-training in others, and that most curious state of affairs in which it is accepted that a candidate's training must almost begin all over again when he goes from the school to his eventual career. In this country the only case I know of a thoroughly validated selection procedure from first to last was one in which selection and training were treated as a single problem. I can see no hope at all for a really successful issue to primary selection in the case of medicine unless medical authorities are prepared to submit existing training methods to a radical investigation and to take a very open-minded part in such investigation themselves.

5. It has become clear that follow-up technique and testing technique are not the same and in a serious investigation should almost certainly be the concerns of different groups. In general the more any type of investigation requires field study the more important it is that a leading part should be taken by people with interests, knowledge, and skill relevant to the field concerned. Whereas the kind of testing which is now under discussion is very largely a technical psychological problem, the follow-up is mainly a matter which is best directed by medical personnel. Fortunately there are now an increasing number of the latter who have also a satisfactory training in normal and experimental psychology. It is this kind of training which is required. Doubtless there are also psychiatric problems involved in the initial selection of medical students, but on the whole, though there is no complete agreement, the weight of recent experience is heavily against mixing up the psychiatric with the normal problems of selection.

6. Tests of intelligence in a general sense, as distinguished from those which have to do with highly specialized skills whether mental or bodily, must employ a variety of principles and a variety of media. The media commonly used are words, numbers, and visual—usually geometrical—forms. All three are required. The principles must include both structural and relational factors, and these have to be treated both analytically and constructively or synthetically. No set of tests which are merely repetitions of the same pattern of problem presented in varying complexity can be regarded as satisfactory.

7. There is impressive evidence, not as yet given much publicity, that the type of intelligence which deals efficiently with the symbols of words, numbers, and visual forms has no necessary relation to another type which deals directly with complex situations in terms of the immediate data of those situations. It seems highly probable that the latter type of intelligence may be very important for certain aspects of the practice of medicine, especially in regard to clinical skill. Any long-term investigation of the value of intelligence tests in initial medical selection should give due regard to this.

These are, I think, the main principles that have emerged from the work of the last few years. There are in addition a great many details which need attention and trial. It is not improbable that several of the conventions which, for very good reasons, are usually observed in the design and presentation of intelligence tests may undergo change. Some of these, for example, are the arrangement of test items in a regularly increasing order of difficulty, the use of one-way questions and answers only, and current practices about time and speed setting. These and other matters, including some of the statistical measures commonly demanded, should not be taken as settled.

Smyth is certainly incautious in one respect, that coaching and practice make no difference to the results runs a long way beyond established facts. But he does yet know for certain what exactly are the implications which the undoubted results of training and practice may have for intelligence test scores.

The practical conclusion seems to me to be this: the time is ripe for setting up a small but influential body of medical doctors and of psychologists with the necessary resources to implement any decisions they may make after discussion. This body should aim at a long-term policy of investigation and also at a short-term policy for immediate, but provisional, application. The latter ought not to be at all impossible provided the probable ratio of candidates to places in those medical schools which would take part in it is known.—I am, etc.,

The Psychological Laboratory, Cambridge.

F. C. BARTLETT.

Classification of Psychological Disorders

SIR,—Instead of criticizing each other on the problems nomenclature would it not be better if we frankly admit that it is not possible to pigeon-hole every patient neatly under some simple diagnostic label? This is not the fault of psychiatrists but is due to the complexity of human nature, which exhibits infinite variations. The unique individuality cannot be stretched so as to align accurately upon one of a limited number of Procrustean patterns. By all means let us test students the distinguishing features of "typical reactions" depressive, hysteric, anxiety, and so forth—but let us also insist that in a considerable number of cases we have to deal with "mixed reactions," because personalities are mixtures of many artificially separated types.

With the neurotic it is far more important to obtain a complete record of his biographical development than to label a small cross-section of his life. A psychiatrist who is able to say, for example, that the patient is reacting to frustration of occupational ambitions and a state of marital disharmony in accordance with certain behaviour patterns conditioned by various childhood and adolescent experiences is being more practical, and will be able to do something far more useful for his sufferer, than any pundit who is happy only when he can exhibit a clear-cut diagnosis. It is unfortunate, therefore, that some of our over-enthusiastic E.C.T. exponents seem to consider it more important to attach hastily a diagnostic label to their patients than to make a painstaking study of their histories; hence the statistical fallacies concerning which I Dillon very rightly issues a timely warning (Oct. 19, p. 58)—I am, etc.,

Basingstoke.

I. ATKIN.

Goitre without Bias

SIR,—Few there are, I think, who would deny that surgery as performed by an expert is the method of choice in the treatment of thyrotoxicosis. Nevertheless there are some features which call for discussion. In the first place I am sure that the average doctor would require a lot of convincing if he were told that all the mild adolescent colloid goitres seen should be submitted to surgery. He would look back across the years and ask himself how many of these goitres have really become toxic, and how few indeed have become malignant. In support of this idea Garlock¹ states that about 2% of thyroid enlargements are malignant, and he informs that Smith, Pool, and Olcott² emphasize that it may be the undue weight is being attached to the probability of cancer developing in an adenoma. He remarks trenchantly:

"As one reviews the statistics of three or four decades ago when goitre operations were unusual and patients harboured adenomata did not accept surgical intervention as freely as to-day one is impressed by the fact that few cancers of the thyroid were noted, far fewer than would be expected did adenomata present the marked tendency towards malignancy which is generally assumed to-day."

Turning back the pages, we find that in Allbutt and Rolleston's *System of Medicine* it is stated that 50% of patients recovered completely on rest and sedatives, while Osler³ informs us that "Statistics are misleading, as only the severe cases come under hospital treatment. Probably 65% of the patients make a good recovery, and 10% to 12% die." It is well perhaps to remind ourselves that a majority of patients did recover by various methods of treatment, while admitting that the results did not compare with good modern surgery.

With regard to thiouracil, and the new methyl and propyl derivatives which are much less toxic than the former, it is surely too early to condemn them out of hand. It is true to say that many patients have shown complete remissions, which have lasted so far under the administration of these compounds combined with rest in bed for a few weeks at the outset. Admittedly it does require a lot of experience to determine which patients may be suitable for medical measures, and also all when to advise operation so as to give the surgeon a fair chance. Much could be said did space permit on the question

¹ Nelson's *Lower Leaf System of Medicine*.

² Smith, L. W., Pool, E. H., and Olcott, C. T., "Malignant Disease of Thyroid Gland: a Clinicopathological Analysis of 54 Cases of Thyroid Malignancy," *Amer. J. Cancer*, 1934.

³ *Text Book of Medicine*, Osler and McCrae.

of diagnosis, but the all important thing is to bear the condition in mind, especially where there is undue nervousness with restlessness, unexplained wasting, or diarrhoea, or the presence in mid-life of tachycardia or an abnormal rhythm. The difference in the response to iodine and methyl-thiouracil on the one hand and sedatives on the other may be strikingly suggestive; and lastly in the few as yet undetermined cases we should remember Osler's dictum, "Diagnosis in the borderline cases depends more on careful study and observation than on any single test."—*I am, etc.,*

Clifton, Bristol.

FREDERICK SUTTON.

Carbon Dioxide Absorption

SIR,—Mr. A. Charles King (Oct. 12, p. 536) gives an interesting historical survey of anaesthetic apparatus, in the course of which he states: "In 1932 the first apparatus proper in this country was made for Frankis Evans, and this was followed by alternatives designed by Shipway, Harris, Halton, Primrose, Gillies, and others."

On reading this, I referred to my own records on this matter and find that I have a patent specification applied for in Oct. 16, 1931, No. 391,176, covering circuit breathing combined with an inflatable pharyngeal tube. A further patent specification, No. 419,679, dealing with to-and-fro breathing was applied for on June 30, 1933. Messrs. Barr and Stroud made my third machine, which was ordered from them on April 8 and delivered on May 20, 1932. The fifth machine of my series, home-made, was described at a meeting of the Anaesthetic Section of the Royal Society of Medicine, I think in the spring of 1934, while a subsequent machine was that used at the Annual Meeting of the British Medical Association held at Bournemouth in 1934.

I offer these facts as supplementing what Mr. King has given from his records, and should it turn out on investigation that a prior claim has been established through these facts, then the Glasgow Royal Infirmary must be regarded as the home of carbon dioxide absorption technique as at present practised.—*I am, etc.,*

Glasgow Royal Infirmary.

W. B. PRIMROSE.

Recent Advances in Anaesthesia

SIR,—In Dr. Langton Hewer's most interesting article (Oct. 12, p. 531), I note that he dates recent advances as those occurring between 1914–18 and the present time. He is thus able to do full justice to the advances in premedication, to the new volatile anaesthetics, to technique and apparatus, and even to the most recent adjunct to anaesthesia, curare. It is therefore all the more surprising that no reference whatever is made to intravenous anaesthesia, which has almost supplanted the older methods in certain types of operation—for this great advance was made within the period specified.

Jarman and Abel (*Lancet*, 1933, 2, 18) appear to have been the first in this country to describe the use of evipan; Dickson Wright (*Lancet*, 1935, 1, 1,040) drew attention to his apparatus for giving intravenous anaesthesia; and finally Jarman and Abel (*Lancet*, 1936, 1, 422 and 600) give an account of the action of pentothal sodium in over one thousand cases. I feel that to complete your account of recent advances in anaesthesia these facts should be added.—*I am, etc.,*

London, W.1.

J. JOHNSTON ABRAHAM.

John Snow—Anaesthetist and Epidemiologist

SIR,—In praise of Snow's perspicacity your contributor (Oct. 12, p. 535) writes, "Where Snow was in advance even of Farr and Simon was in his firm conviction that the ingestion of water polluted with a presumably living contagium was the only method of epidemic dissemination." I fear that the emphasis given by the italics may tend to deprive Snow of credit for that other remarkable and original, but less well known, inductive inference relating to the epidemiology of cholera which H. Harold Scott in *Some Notable Epidemics* records as follows:

Yet another shrewd observation of Dr. Snow. A friend told that, having placed in his room in summer when flies were abundant an infusion of quassia to kill them, he could often taste bitter quassia on his bread-and-butter. If then flies could convey

quassia from a saucer to food they could as readily transfer fragments of cholera dejecta present on linen. He cited this as another possible mode of contracting infection."

—*I am, etc.,*

London, S.W.5.

IAN E. MCCracken.

SIR,—“It may not be generally realized how profound were many of Snow's views” writes Mr. Charles King (Oct. 12, p. 536), and the otherwise excellent *Anaesthesia* Number of the *Journal* does little to remedy this. In the column written on John Snow, only half a paragraph refers to his work in anaesthesia. Of the pioneers, none contributed so much, in observation or theory—the first to record the sign of intercostal paralysis and the first to postulate interference with oxygenation as the cause of narcotic action; in practice—the expiratory valve, wide-bore tubing, warmed ether bath, and “safety” chloroform inhaler; and in experimental work—forty-two pharmacological animal experiments, using, besides ether and chloroform, ethylene, amylene, refrigeration, and even endotracheal intubation. Again quoting Mr. King: “The idea of the carbon dioxide technique had entered the fertile brain of John Snow.” Yet he died in 1858, only twelve years after Morton's demonstration.

By reprinting *Snow on Cholera* America has made sure that his fame as an epidemiologist will live. In this centenary year, could not a British house be persuaded to republish the all too rarely seen *On Chloroform and Other Anaesthetics*?—*I am, etc.,*

London, S.W.16.

JOHN IVES.

Penicillin Injections and the Boiling of Syringes

SIR,—One is alarmed at the letter by Dr. P. Finch (Oct. 19, p. 589) who, because he is informed that ethyl alcohol does not inactivate penicillin, states that he is employing industrial spirit for syringe sterilization as boiling wastes a lot of time. One of the lessons that should have been learnt from World War II is that syringes cannot be sterilized adequately by fluid disinfectants and that when such methods are used syringe-transmitted hepatitis becomes rife, especially when intravenous injections are being employed. By early 1944 the jaundice rate in syphilis patients attending Service venereal disease clinics had reached a very high percentage and was only controlled when the boiling of syringes was made compulsory. The incidence of syringe-transmitted jaundice is much lower after intramuscular injections, but cases following penicillin therapy are far from unknown and will become more frequent if the precaution of boiling is in any way relaxed.—*I am, etc.,*

A.M.D. 10, War Office, S.W.1.

R. R. WILLCON.

Potency of Penicillin

SIR,—Penicillin has now become a commonplace and is used by thousands of doctors. It is admittedly the greatest advance in treatment of many bacterial infections that formerly were regarded as almost hopeless, and in lesser degrees of infection markedly shortens the period of recovery and convalescence. But there is one snag. There is no test that the ordinary practitioner can use to determine whether any given sample of penicillin has or has not lost its potency. We are told that under certain conditions of temperature watery solutions will remain active for 3–4 days and that oily solutions will last a week. But this is not definite enough and I am convinced that much inactive penicillin is being both injected and inhaled, thus often causing great disappointment. I hope some simple test of efficacy will soon be discovered and described.—*I am, etc.,*

London, S.W.1.

DESMOND MACMANUS.

Transmesenteric Hernia

SIR,—Dr. R. B. Leech's letter (Sept. 7, p. 339) on the subject of mesenteric hernia adds yet another example to the ever-increasing list of reported cases. With the cases of Peter Martin (*British Medical Journal*, 1946, 1, 238) and James Moroney (*Ibid.*, 329), the views I expressed on the aetiology (*Brit. J. Surg.*, 1944, 31, 275) are confirmed in that all three patients showed a defect of the mesentery near the caecum,

with smooth and regular margins, and apparently without the surrounding vessels' showing evidence of previous thrombosis or injury. This is the "Treves's field," as described by him in 1885 (*British Medical Journal*, 1885, 1, 470). Mr. Martin states that trauma and inflammation are aetiological factors, but this is very much a minority view, the general opinion being that the hole results from a developmental fault, and that intestinal movements ultimately, though not inevitably, cause a knuckle of bowel to pass through and initiate the obstruction.

Neither Mr. Martin, Mr. Moroney, nor Mr. Leech mentions any relevant previous history of abdominal injury or disease in any of their patients, which again supports the view of a congenital origin. I am quite sure that trauma sufficient to cause a breach in such a thin yet strong membrane would have to be (a) localized and crushing, and (b) of considerable force, with inevitable severe injury to surrounding tissues—such as bowel rupture and vascular damage. Again, I can conceive of no tearing injury applied to the mesentery which, if sufficient to cause a localized tear, would not also result in widespread mesenteric rupture with accompanying haemorrhage. Inflammation could only cause such a defect by localized adherence of some inflamed organ to the mesentery, followed by sufficiently violent peristaltic movements or trauma to tear the viscus off either with a small attached portion of mesentery or leaving behind a slit. Again, this has to occur without vascular damage, and has to leave a smooth margined defect with no thickening or irregularity of its edges, and without surrounding adhesions or bands, to concur with the conditions found at operation in all these cases.

Careful consideration therefore of trauma or inflammation in a causatory role leads us to reject both as quite impossible, and I submit that all such mesenteric defects are congenital in origin. I feel that this opinion is confirmed by the occasional finding of such defects without other related pathology in post-mortem examinations of persons dying from other causes—e.g., Watson's 3 cases in 1,600 necropsies. May I point out to Mr. Martin that his case is not the 49th on record but at least the 78th.—I am, etc.,

Woking.

E. G. DOLTON.

"Cord Round the Neck"

SIR.—The recent correspondence on this controversial topic justifies a report of yet another case of stillbirth attributable, presumably, to "cord round the neck."

I was called in by a midwife because of delay in the second stage of labour. The patient was a primipara, 27 years of age. Antenatal supervision had been adequate and periodic B.P. and urine tests revealed no abnormality. There was however some oedema of both ankles during the later weeks of her pregnancy, but the patient was otherwise in excellent health. There was no obvious pelvic disproportion, and the presentation was a vertex. She went into labour on the calculated date of delivery. When I saw her she had been nearly five hours in second stage. She was having good pains and strong contractions every five minutes, but once the head reached the perineum its subsequent progress was slow. Time after time a good contraction caused the *caput* to appear, only to disappear tantalizingly on the cessation of the pain. It seemed as if something was hindering the downward progress of the head, and when the neck was palpated a single loop of feebly pulsating cord was found tightly wound round it and incapable of being slipped off. A finger was insinuated with difficulty between the neck and the cord and the latter immediately divided between ligatures. The child was delivered shortly afterwards. The foetal heart rate just prior to delivery was 120 per minute. Despite the adoption of the usual methods of resuscitation, the child never took a breath, though the heart continued to beat for at least 30 mins., 100 per minute at first and then gradually less. There was no mark of constriction round the neck, and the face and body were pale. There was no congenital malformation of the upper respiratory passages. The cause of death was presumably pressure on the cord and consequent asphyxiation of the child before delivery. The cord was of average length, and the placenta and membranes normal and complete. There was no perineal tear.

It is unjustifiable on the basis of a single case to attempt to lay down hard and fast rules regarding the early recognition of this anomaly, but three suspicious signs may be of value, namely: (1) Undue delay in the second stage of labour in an apparently straightforward case. (2) A diminishing foetal heart rate. (3) The appearance and disappearance of the *caput* with but little downward progress when the head is well down on

the perineum. The early recognition of "cord round neck" and the application of forceps might conceivably the child, but one feels that, for the occasional obstetrician at any rate, once the diagnosis is made it is probably too late to do anything except sever the cord and deliver the child speedily as possible, with or without instrumental assistance.—I am, etc.,

Glasgow.

LESLIE R. C. AGNE

Smallpox in the Vaccinated

SIR,—In regard to smallpox in the vaccinated, Dr. F. Beaumont's (Sept. 21, p. 437) and Dr. C. Killick Millard (Oct. 12, p. 552) comments seem to me most helpful and so the latter proposes annual revaccination for those in repeated contact with smallpox cases. May I support this out of experience of eight years with Europeans in India?

In a population of some 500 Europeans living in an Indian industrial town, where smallpox was as everyday and as common as a sore throat, it was our practice annually to revaccinate the whole population at risk. There was no case of smallpox in these people, not even modified smallpox, but the war brought imperfectly protected vaccinated persons to England among us these unfortunates were in grave danger and there were some appallingly bad clinical cases of smallpox. One such case, of confluent smallpox, was vaccinated in infancy (scar not visible) and had a certificate of three negative results from vaccination done before leaving England.

It is of course not practicable to vaccinate and revaccinate the whole population of Britain annually, but I suspect to follow the modified course of doing it every five years would end the worries of the public health people about introduced epidemics.—I am, etc.,

Edinburgh.

J. ROSS INNES

SIR,—It is refreshing to find Dr. Killick Millard advocate more frequent vaccination. In the early days of the ceremony he was claimed by the Anti-Vaccination Society as their supporter in the medical world, although I remember hearing him at that time open a meeting against compulsory vaccination with the words: "I want you first of all to agree vaccination does protect against smallpox."

We public vaccinators did not receive much encouragement from the Local Government Board. If we revaccinated a person within ten years of the last revaccination we could charge a fee for it. We were instructed to obtain four vesicles in revaccination. I refused to do more than three and put forward the suggestion that infant vaccination should be done in stages—the first the "minimum-of-trauma" method, to be followed a year later by a more "vigorous" vaccination. This suggestion was turned down, partly, I suspect, because of double fee.

I endorse Dr. Killick Millard's recommendation "little often": recent vaccination protects not only against smallpox but against a sore arm. To the question that was frequently asked, "Is it necessary for me to be vaccinated again now?" my answer was, "I can only answer that question by vaccinating you."—I am, etc.,

Leavesden.

H. ANGELL LANE

Legal and Medical "Insanity"

SIR,—The letters and article are of importance in trying to assess correctly where one condition passes into the other, the correct treatment in each case. The diagnosis of "psychopathic personality" is now so frequently, lightly, and dangerously made by young psychiatrists that it could easily be applied in some way or other to a large proportion of the nation, including not a few psychiatrists. Once thus labelled a psychiatric patient is at the mercy of any malicious or ignorant person who may wish to exploit the patient or any particular situation to his own advantage. Thus the patient's condition gets worse and will continue to get worse under the present system, where cause and effect are so often confused.

A nervous breakdown may be due to intrinsic or extrinsic causes. In the cases which are due to extrinsic causes, we must be very careful to distinguish between those extrinsic causes which the patient is unfortunately exposed through no fault

s own, and those which are deliberately brought in to play against him by interested parties. The importance and numbers of this particular type of case are not sufficiently appreciated. This type the people who are the causal factors in the events which specifically cause the breakdown of some unfortunate person are far more dangerous than any so-called "psycho-athic personality," and treatment or other measures should be directed towards them rather than towards the patient. Undoubtedly, psychiatrists accomplish a tremendous amount of good in their psycho-analysis of the nervous breakdown due to ordinary extrinsic causes; but, in the type of case I wish to emphasize, the best thing that the patient can do is to keep far away as possible from a psychiatrist and disentangle himself from a procession of psychiatric platitudes, otherwise he will never get better.

Most doctors, whether they be specialists or general practitioners, know when they have made a mistake. But what check, at all, except in particular cases, is there on the mistakes of young psychiatrists, and are they even conscious of the mistakes they make? That is why sometimes a man may get a truer verdict, and in the final analysis better treatment for himself, by the consensus of opinion of twelve impartial members of a jury, who have all the material facts before them, including the medical evidence. The case of Heath as quoted in your correspondents' letters is obviously a very far-fetched one, but the mind of the ordinary person the verdict cannot but have been received as logically just.—I am, etc.,

London, N.W.11.

A. LIONEL ROWSON.

Recruits for Medical Missionary Work

SIR,—We wish to ask publicity for the presentation of an appeal to young doctors, men and women, to consider medical missionary work as a career. We feel convinced that a large proportion of those now entering the medical professions are not aware of the vast opportunities offered by the work sponsored by the Christian Churches over-seas. The thrill of adventure has perhaps worn a little thin in medicine as practised in this country, but such is not the case in a mission hospital in Africa, China, or India. There the medical man of resource and initiative will find an opportunity for his every latent ability. The call of untouched suffering is still as strident as when it stimulated his predecessor 75 years ago; the wealth of clinical material is still as exuberant. But the medical missionary to-day is not called upon to work in a dark lean-to against the mission bungalow, with no trained assistants and tragically restricted equipment; he is not forced to leave half his cases undiagnosed for want of a microscope, nor to lament the inevitable sepsis following each surgical procedure.

The medical missionary of to-day has a wide choice of types of practice into which he may put his life. There is much pioneer work to be done in the front line of the attack on disease, where a high degree of initiative and much improvisation will be demanded in the rough-and-tumble of professional activity. On the other hand, he may be asked to work in an institution which structurally can compare with hospitals at home; he will be assisted by nurses trained as carefully, and with hands as skilful, as those staffing English hospitals; to operate in a theatre where aseptic ritual is understood and practised, with available those drugs and most of the equipment which would be found in, say, one of the smaller provincial hospitals in his own country. Moreover he will almost certainly be asked to co-operate in the teaching of nationals—either nurses, technicians, or, in certain picked institutions, internes; he will find his work naturally integrating with local government schemes.

To the medical worker who has the vision to show through his profession his evangelical faith, who would speak to men and women, through the medium of the healing art, his Master's words of Eternal Life, there is open to-day a door of unbelievable opportunity. Writing on behalf of the Medical Advisory Board of the Conference of British Missionary Societies, we would be delighted to supply further information to any doctors wishing to consider this realm of work.—

c: are, etc.,

C. C. CHESTERMAN, M.D., M.R.C.P., Chairman.

H. G. ANDERSON, M.D., M.R.C.P.

RALPH BOLTON, M.R.C.S., D.O.M.S.

burgh House, 2 Eaton Gate, London, S.W.1.

Medical Experiences in Japanese Captivity

SIR,—One effect of the authoritative and restrained contribution of Lieut.-Col. E. E. Dunlop (Oct. 5, p. 481) will almost undoubtedly be the production of still more and more hate for a nation whose people could sink to such atrocities. It is because I fear for a world where hate seems to be flourishing so luxuriously that I am driven to mention a relatively small experience. I too was a medical officer in a Japanese internment camp, where 615 British civilians were imprisoned from March, 1942, until August, 1945. We suffered no brutality; we were forced to no labour except that of feeding and running the camp. The Japanese authorities supplied the camp hospital with a not inconsiderable portion of its equipment, and facilitated our acquisition of that major portion which came from the Shanghai British Residents' Association, the International Red Cross, and the American Red Cross. The Japanese personnel frequently "requested" drugs and treatment, and even if this was often unreasonable, the news that the commandant had "requested enough sleeping pills for three nights" was NEWS of the best order to the camp, as his insomnia was invariably and correctly regarded as being due to the reception of bad news from Tokyo.

The normal reaction to such a document as that of Lieut.-Col. Dunlop is one of horror, followed by a mental indictment of the whole nation. Nothing is to be gained from refusing to see and admit the large areas of depravity represented by the records of Japanese treatment of prisoners. Yet even if the less sordid pictures are presented in the press less frequently, it is surely as well that they too should be recorded, still good to "think on these things," rather than occupy memory exclusively with horror.—I am, etc.,

London, N.W.1.

RALPH BOLTON.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a Congregation held on Oct. 19 the following medical degrees were conferred:

M.D.—E. Hinden, W. B. D. Maile, H. L. Ellis.
M.B., B.Ch.—E. L. McDonald, M. G. Cox, *M. Q. Birbeck, *E. A. D. Boyd, *R. Finlayson, *B. O. Reed, *P. F. C. Jackson, *J. H. Jacobs, *I. M. Ramsden.
M.B.—J. L. Morgan.

* By proxy.

The Vice-Chancellor announces that Eli Lilly and Company have undertaken to provide £3,500 for a period of one year for research on the relation of radiation to chemotherapy. The research will be carried on in the Department of Radiotherapeutics under the direction of Dr. E. Friedman.

UNIVERSITY OF LONDON

Regulations for the Postgraduate Diploma in Psychological Medicine, revised to September of this year, are obtainable from the Director of the Department of Extra-Mural Studies, University of London, Imperial Institute Road, South Kensington, S.W.7. The examination is held twice a year: Part A in March and October; Part B in April and November. It is open to any candidate whose name is in the *Medical Register*, or who is registrable therein, provided that before being admitted to Part B the candidate produces evidence that he has had the clinical experience and made the attendances specified in the Regulations.

The following candidates have been approved at the examinations indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN CLINICAL PATHOLOGY.—G. C. T. Burns, V. V. Gharpure, J. Gluckman, S. W. A. Kuper, R. Polakow, R. Serpou.
EXTERNAL DIPLOMA IN CLINICAL PATHOLOGY.—E. M. Barker, W. G. Davis, J. B. Eulacknap, P. N. Meenan, W. P. Stamm.

St. George's Hospital Medical School

Clinical demonstrations in oenurology and psychiatry will be given in the Medical School on Thursdays, at 4.30 p.m., by Dr. Anthony Feiling and Dr. Desmond Curran, and are open without fee to all practitioners and senior students of medicine. The first lecture of the renewed series will be given by Dr. Feiling on Dec. 5.

Arrangements made by the Ministry of Supply will ensure that at present any oil-wax suspension of penicillin produced will conform with the formulae of the *British Pharmacopoeia*, or with some other formulae previously approved by the Ministry of Health. These other formulae will include preparations using ethyl oleate.

Obituary

T. WARDROP GRIFFITH, C.M.G., LL.D.,
M.D., D.Sc., F.R.C.P.

We regret to announce that Dr. T. Wardrop Griffith, emeritus professor of medicine in the University of Leeds, died at his home in Stainbeck Lane on Oct. 21. He had been for many years a leading figure in the medical world of Leeds and the West Riding of Yorkshire.

Thomas Wardrop Griffith, eighth son and last surviving child of Charles Fox Griffith, J.P., of Aberdeen, was born in that city in 1861; he was educated at Aberdeen Grammar School and University, graduating M.B., C.M. with highest honours in 1882, and then held a demonstratorship of anatomy. He came south a year later to take up the post of resident medical officer at the General Infirmary at Leeds, which he held for four years, and was then appointed part-time professor of anatomy at the early age of 26. Next year he took his M.D. degree at Aberdeen with highest honours. Wardrop Griffith identified himself with the interests and development of the Leeds Medical School, and it was largely due to his efforts that the present fine building replaced the humbler one in Park Street. He held the chair of anatomy until 1910, when he became professor of medicine, having been full physician at the General Infirmary since 1905. As a clinical teacher he showed the lucidity and mastery of style that had distinguished him in anatomical science. He founded the dermatological clinic, and later placed the study of heart disease in Leeds on a truly scientific basis. During the war of 1914-18 he served with the 2nd Northern General Hospital at Beckett Park and was put in charge of the cardiac centre in the Northern Command. For his war service he was created C.M.G. He became emeritus professor in 1925. Aberdeen University conferred on him the honorary degree of LL.D., and Leeds the honorary D.Sc. He had been a Fellow of the Royal College of Physicians of London since 1908 and represented Leeds University on the General Medical Council for nine years. After retiring from the headship of the Department of Medicine he continued to serve as honorary consultant for cardiac affections to the Ministry of Pensions in Yorkshire. He wrote numerous articles on diseases of the heart and circulatory system, and acted for a long time as local correspondent of this *Journal*.

Throughout his career Wardrop Griffith was distinguished by the highest personal integrity and loyalty to the ideals of our profession and by devotion to the School which his scientific attainments did so much to adorn. He was a past-president of the Leeds and West Riding Medico-Chirurgical Society and a member of the B.M.A. for 63 years. A memorial service was held in the chapel of the General Infirmary on Oct. 24.

The death on Oct. 14 at the age of only thirty of IAN M. DAVIDSON of Carlisle has caused a gap that might have been left by many an older man, for Davidson packed so much into his short life. From Rugby he entered Glasgow University and graduated in 1938. After a period as house-surgeon in the Glasgow Victoria Infirmary, he went as ship's surgeon to the Far East. At the outbreak of war he volunteered for service in the R.A.M.C., but was shortly discharged on medical grounds. He came to the Cumberland Infirmary, Carlisle, in 1940, first as house-physician and then as house-surgeon; spent a few months away from that institution in 1941, during which he wrote his M.D. thesis, and returned later that year as surgical registrar. During his tenure of that office he obtained the Fellowship of the Royal College of Surgeons of Edinburgh. In 1943 he was appointed honorary assistant surgeon to the Cumberland Infirmary, and subsequently surgeon to the E.M.S., consulting surgeon to the Victoria Cottage Hospital, Maryport, and surgeon to the City General Hospital, Carlisle. He was also an examiner in surgery for the General Nursing Council. Ian Davidson was blessed with unusual gifts of mind and body, and his engaging charm and genuineness won him many friends. He was a sound surgeon, with a deftness of hand that reflected a quick and steady brain, and the maturity of his judgment belied his youth. His young widow, Dr. Josephine Cartwright,

D.R.C.O.G., of Edinburgh, and their year-old daughter, sur him, and it is hoped that they and his parents (Mr. Nori Davidson, O.B.E., F.R.C.S., and Mrs. Davidson, of Glasg may be fortified by the good will of so many others who sh their sorrow and their loss.—T. MCL. G.

Dr. SIDNEY JOHN STEWARD died on Oct. 15, after about years of ill health, at Babbacombe, Torquay; whither he retired after about thirty years' work at Guildford, Surrey. was the son of John Alfred Steward, twice Mayor of Worces where he was born in 1879. He was educated at the Ki School, Worcester, and at Downing College, Cambridge, h ing scholarships at both those foundations; at Downing was captain of the Boat Club. Proceeding to St. Thom Hospital, London, for his clinical studies, he qualified M.R.C.S., L.R.C.P. in 1904 and took the Cambridge M.B. the same year; in 1909 he graduated as M.D., and later to the D.P.H. As an undergraduate he volunteered for ac service in the South African war with the 1st Battalion Suff Regiment, to which the Cambridge University Rifle Corps a contingent. After qualification he was house-surgeon at Brighton and Hove Hospital and then served a term as sh surgeon in the Union Castle line, after which he took an appo ment in the Colonial service as Government M.O. at Trinid Then he was assistant medical officer to the Devon Met Hospital, after which he became medical adviser in mei deficiency to the Surrey County Council and mental specia to their Education Committee; from these posts he retired 1944 after about thirty years' service. He held a tempor commission in the R.A.M.C. throughout the 1914-18 v mostly with the 1st Division, and was awarded the D.S.O. gallant behaviour in action during the retreat from Mons; retired with the honorary rank of major. He married M Edith Emma Murillo in 1910—she predeceased him early year; their only son died in infancy, one daughter survi them. He was a member of the British Medical Association to 1944, but held no office.

The death of Dr. CHARLES JAMES ROYSTON, who practi in the Moordown and Winton wards of Bournemouth, grieved countless numbers of patients and friends. Only few days before he was carrying on his busy day's work cheerily as ever. Dr. S. Watson Smith writes: Forty-six ye of age, Royston had crowded into his useful life an enorm amount of work. He was dominated by a high sense of du as a general practitioner he gave entire devotion to serving community, wielding an immense influence for good where he went. His cheerfulness, his humour, his gentle friendli and his sympathetic nature were an inspiration to all w knew him. With an evenness of temper that nothing seeme disturb, and a fine common sense, he addressed himself to e day's work with zest and zeal; making use of every minut and his working day lasted sixteen or eighteen hours, someti even longer. Royston was trained at Aberdeen under the Sir Ashley Macintosh, a great clinician whose memory cherished; there he had acquired his grasp of fundamentals o of first principles which guided him surely and successfully his bedside work. The means he employed were wisely simp though up-to-date in his knowledge of drugs, he fully appr ated the value of the old well-tried remedies, which he m use of every day. Gentleness towards the suffering marked Royston did. His life was packed with good deeds, and is to measured by these rather than by the length of years gi him; no life was more worthily spent. Alas, Royston wor himself to death. He was little interested in himself, alw thinking last of his own comfort and interests. He wor harder than most in the hardest-worked profession, a seemed never to tire or become jaded. Royston was driv to exhaustion by an over-large general practice that demand all his time and attention day after day without intermissio rest and enough leisure-time he never got, but he did complain. Any who relied upon him in sickness, and numb less others who knew him, will, now that he is gone, have o one thing left—a grateful heart. His name and fame will b be remembered in North Bournemouth and far beyond.

News has been received of the death of Mr. GEORGE VERN LOCKETT, of Kingston, Jamaica. He studied medicine at a University of Edinburgh, graduating M.B., C.M. in 1890, a obtained the F.R.C.S.Eng. in 1895. He had been senior resid medical officer in the Public Hospital at Kingston and v elected honorary consulting surgeon to that institution in 19 He joined the B.M.A. in 1891, represented the Jamaica Bra at the Centenary Meeting in London in 1932, and was elec president of his Branch in the same year, afterwards serving the Branch Council. He received the distinction of Fellows of the American College of Surgeons in 1914.

Medical Notes in Parliament

HEALTH SERVICE BILL

Committee Stage Completed

When the Committee Stage of the National Health Service Bill was resumed in the House of Lords on Oct. 22 Lord AMMON intimated that it had been agreed to complete this stage on the following day. The Report stage would be taken on Oct. 28.

On Clause 20, discussing the provision of services by the local health authority, Lord HENLEY moved that any counter-proposals made to the Minister by voluntary organizations, councils, boards, or other authorities should also simultaneously be transmitted to the local health authority.

For the Government Lord LISTOWEL said it was inconceivable that the Minister would modify the local health authority's scheme in the light of objections lodged by other authorities in the area without giving the county council or county borough council a fair chance of commenting on the views of its critics. Lord HENLEY withdrew his amendment, and the House agreed to Clause 20 as also to Clause 21 and Clause 22.

Lord MUNSTER moved an amendment to Clause 23 (Midwifery) which would enable the local health authorities to make arrangements with maternity and general hospitals as well as with voluntary organizations to secure that the provision of midwives for attendance on women in their homes was adequate.

Lord ADDISON said he would look into this in a friendly way before the Report stage. The teaching hospitals had arrangements for attending cases in their own homes, sometimes with students and sometimes without. It was likely that arrangements might have to be made with respect to the boards of governors of teaching hospitals. The amendment was withdrawn and the House agreed to Clause 23.

Clause 24 was approved after Lord MAUGHAM had moved and withdrawn a drafting amendment on the duties of health visitors. Lord LLEWELLIN, during the discussion of this amendment, said the view was widely held that the words of the Clause as they stood might be held to justify a presumption that persons who were not duly qualified medical practitioners should be appointed to look after those suffering from illness. In answer to this Lord JOWITT gave an assurance that there was no intention that health visitors should come between the doctor and the patient. Health visitors had no right to force their way into a house. The Committee then agreed to Clause 24 and to Clause 25 (Home Nursing).

On Clause 26 Lord LISTOWEL moved an amendment to ensure Ministerial approval for the exercise by the local health authority of power to arrange for vaccination or immunization against diseases other than smallpox and diphtheria. The Committee agreed to the amendment and to the Clause as amended. Clause 27 (Ambulance Services) was accepted without amendment.

Lord AMULREE on Clause 28, relating to the prevention of illness, and care and after-care, moved to insert the care of the aged among the purposes for which the local health authorities could make arrangements. He said if Parliament attempted to separate old people who were sick from old people who were healthy, they would get into great difficulty. In the next five or six years the number of persons over 65 in this country would increase to about 8,000,000, and of these many would need to be taken care of in some sort of home. There was a danger that the hideous Poor Law infirmary might reappear.

Lord LISTOWEL said the amendment went far beyond the limits of a Bill which dealt with public health. Care of the aged who were not sick would be dealt with in forthcoming legislation for the abolition of the Poor Law. On this assurance Lord AMULREE withdrew his amendment.

Lord MUNSTER moved to amend the list of persons for whom the local health authority could provide by leaving out "persons suffering from illness or mental defectiveness or the after-care of such persons" and inserting "of mental defectives or the after-care of persons who have suffered from illness." He said that under the Clause as it stood the local authority might and if directed by the Minister must make arrangements for the care of persons suffering from illness. It would be possible for that obligation to be fulfilled by the introduction of a whole-time salaried medical service side by side with the general practitioner service.

Lord LISTOWEL said it was not the intention of the Government to introduce a full-time salaried medical service, and the Clause as it stood could not give effect to such a purpose. Lord MAUGHAM said that again and again in this Bill very

wide clauses put into the hands of the Government or local health authorities powers which they were not intended to have.

Answering Lord LLEWELLIN, Lord LISTOWEL said the expression "after-care" in this Clause meant care involved after hospital treatment, not care after a patient was finally cured. A number of things were essential to speed up recovery and prevent the spread of infection. An instance was the provision of bedding for a patient suffering from tuberculosis who was waiting for a place in a sanatorium. This would be provided by a local authority and not by the doctor. Lord ADDISON instanced the provision of hot-water bottles. The words which had been challenged were intended to secure that services of that kind were made the duty of the general health scheme. Lord MUNSTER withdrew his amendment and the House agreed to Clause 28 as amended. It also approved without discussion Clause 29 and Clause 30.

Executive Councils

On Clause 31 Lord LUKE moved to provide that in constituting a council the proportion of the whole number of members of the council to be appointed by bodies representing medical practitioners, dental practitioners, and persons providing pharmaceutical services should not be less than the corresponding proportion under paragraph 1 of the Fifth Schedule.

Lord JOWITT said there were liable to be exceptional cases where, owing to the smallness of an area or the sparseness of its population, it was difficult to get an effective council of twenty-four. The effect of the amendment would be that the Minister would always have to deal in multiples of twenty-four. In a council of 16 it would be impossible to have one and a quarter chemists, the proportion provided by the Fifth Schedule. Lord LUKE withdrew his amendment.

Lord ADDINGTON moved and withdrew an amendment designed to ensure that every executive council and joint committee should submit to the Minister a scheme for the exercise of its functions under Part 4 of the Act and that a copy of this scheme should be sent to every local authority in the area with power to the authority to make representations upon it to the Minister. The House then agreed to Clause 31 and also to Clause 32.

Medical Certificates

On Clause 33 Lord HENLEY moved to provide that regulations might be made for the purposes of complying with any requirements arising out of a contract of employment. He said the Clause provided that the executive council should make arrangements with medical practitioners for personal and medical services for potential patients in their area and should make regulations as to what these personal medical services were to be. A subsection of the Clause related to the issue to patients of certificates "reasonably required by them under or for the purposes of any enactment." He explained that the amendment was based on the assumption that these medical certificates would be issued to patients free of charge. The object of the amendment was to extend the issue of free certificates to patients covered by the provision of conditions of service in their employment entitling them to continue on full wages for the periods during which they were incapacitated.

Lord JOWITT said doctors' obligations in national health insurance work were limited to giving certificates required in that connexion. The Bill widened the doctor's obligations to the provision of certificates reasonably required under any enactment, which would include regulations. A certificate would be obtainable free of charge, for instance, for an expectant mother to obtain priority food. The amendment required the doctor to give a certificate for a private purpose which had nothing to do with any Act, any insurance scheme, or any regulations. Where they were not dealing with public enactments he did not see why the doctor should not be allowed a reasonable and proper charge. Under the Insurance Act which was to replace the workman's compensation scheme the case would be covered where a county court judge asked for a doctor's certificate. Lord HENLEY withdrew his amendment.

Terms and Conditions for Practitioners

On the same Clause 33, Lord LLEWELLIN moved to add the following subsection:

"Regulations prescribing the terms and conditions upon and subject to which any service would or could be required to be rendered by any medical practitioners under or in pursuance of the provisions of this Act shall be made not less than 3 months before the day which is the appointed day for the purposes of subsection (1) of section 34 of this Act."

Lord Llewellyn said this was an important amendment. Clause 34 (1) provided that every medical practitioner other than a paid assistant who wished to provide general medical

services should be entitled on making an application at any time before the appointed day in the prescribed manner to be included in the lists of medical practitioners. It was reasonable that these men should have an adequate opportunity of being told what the conditions were going to be when they came in. There was a strong desire in the medical profession to know these terms a reasonable time in advance so that they would be able to decide whether or not they should come into this service.

The LORD CHANCELLOR (Lord Jowitt) said that the words of the amendment were defective. It would extend to hospital services, whereas the House was dealing with medical services. That point could be put right. He sympathized with the substance of the amendment. It was only right that the medical profession should know the terms and conditions for a longer period even than three months, but he did not wish to tie himself down in the Bill. After all, the terms would be negotiated with representatives of the medical profession, who would keep their constituents acquainted with the matter as it proceeded. He would do his best to see if he could get the negotiations through to provide more time than three months. In reply to Lord CRANBORNE, who appealed to the Government to accept this amendment, the LORD CHANCELLOR said he had heard April 1, 1948, suggested for the appointed day. There would be very difficult negotiations, but he thought the Government could give at least six months' notice. It ought to aim at this as a minimum.

Method of Payment

Lord LLEWELLIN withdrew his amendment. He then proposed another subsection to run:

"The remuneration to medical practitioners undertaking to provide general medical services in pursuance of the provisions of this Act shall be fixed by the capitation method except in any cases where the Minister on the recommendation of the Medical Practices Committee considers that exceptional circumstances necessitate remuneration on a different basis."

He said the amendment went to the root of whether the doctor should be paid by salary, as some members of the Labour Party had wanted, or by a capitation fee or by a mixture of salary and capitation fee. No indication had been given in the House of Commons of what proportion was to be by salary and what proportion by capitation fee. The Conservative peers believed that the right way was to pay by capitation fee but realized there were areas where the capitation fee did not meet the case. Where the Medical Practices Committee recommended to the Minister that it was necessary to attach a salary in order to increase the number of medical officers in an area, the Minister could under the amendment approve, and the salary would automatically come in. But where the service could be worked without the new departure of trying to make a State salaried medical service, then the independence of the doctor should be kept as in the past. With a salaried service the doctor became more the servant of the State than a servant of the patient.

Lord MORAN said this question roused the misgivings of many doctors who like himself were satisfied, generally speaking, with the hospital provisions but had misgivings about what would happen to the general practitioner. His friends always asked two questions. The first was whether, when the Bill became law, the medical profession would be able to attract the exceptional man in competition with the other professions. The second was whether, when the Bill became law, the medical profession could provide conditions so that a man entering medicine could be as good and as efficient as any in the past and would remain keen. The proposal to pay a basic salary required more justification than had been given. It was said that any practitioner entering medicine might have financial difficulties in his first year or two and that a basic salary of £300 or £400 per annum would give some security. Would the basic salary really act in that way? Was it proposed that the Ministry of Health should go on paying doctors basic salary if they did not get any patients in their first year or two? If that was not the intention of the Ministry then it was clear that if the doctor secured patients to an amount equivalent to the basic salary this measure of security was no longer necessary. There was a good deal to be said for the alternative of a capitation fee. In past years he had been asked to advise the Services how they could get keen men and keep them keen. His investigation showed that it was impossible, with brilliant exceptions, to keep the men as keen in whole-time salaried service as in general practice where the competitive stimulant was present all the time. It was sometimes said there was something derogatory in competing for patients; he was sure the Lord Chancellor would not subscribe to that.

Lord HORDER said it had been reported during the previous two days that the Minister of Health was on better terms with the British Medical Association than he had formerly been.

He thought Mr. Bevan got some satisfaction out of this. It were true he could do nothing more likely to take the good relations a stage further than by accepting this amendment. Statements that there was no intention in this Bill to nationalize the medical profession could be made *ad nauseam* but there would remain fixed in the minds of members of the profession the idea that that was the final intention of the Government and of the Ministry of Health. There was equally strong feeling against this method of paying the doctor in part by a basic salary and in part by a capitation fee which decreased with the number of patients whom the doctor treated. A ceiling was fixed above which no doctor could rise by energy, by genius, or by any other quality which Parliament wished to encourage in members of the profession. Doctors had it fixed in their minds that this was the most vital spot at which the Government could attack the independence of the doctor. It had been stated by Mr. Herbert Morrison that this was the first step toward a complete policy. What was that complete policy if it was not to make all doctors whole-time salaried servants of the State? It had been said in the Commons that the time was not yet ripe for a full-time salaried service for every doctor. The remark implied that the Government intended to pluck the fruit when it was ripe. He suggested to Ministers that it would be wise to assure themselves of extra confidence in the minds of the medical profession by accepting the amendment. Mr. Bevan had said that without the doctors' co-operation the scheme must fail, but the doctor wanted it to succeed and believed there were good points in the Bill. He thought the Bill a bad one but would like to make it less bad and had committed himself to the belief that the doctors would do their utmost to make it work. Doctors could not strike. They must continue their work and they must have State support in continuing their work. It was for the State to help the doctor and not so much for the doctor to help the State. One other word. The doctor was not an altruist when he started in his profession. He was an altruist in proportion to his professional success. The Government must not expect from the young practitioner entering upon a career, which was notoriously expensive both for his parents and for himself, the grade of altruism which it got from those members of the profession who had "arrived" and were therefore able to go to the counsels of the Government. Doctors agreed that it was the duty of the State to improve the machine, and that when the State had improved it the doctor must work it. An unwilling worker would not even give the scheme the trial which deserved.

Lord ADDISON agreed that the amendment affected an element vital in the whole scheme of the Bill. He recalled that 34 years ago he had been involved in the same controversy when medicine went up and down the country heard speeches telling them the dreadful things that were to happen. They did not happen and he himself had been one of those who said they would not happen. He disagreed now with Lord Moran as much as he had done with the critics at that time. He thought Lord Moran's faint praise would not stimulate the hearty assistance in working the scheme which he said he desired. Lord Addison said that he himself had been largely in charge of the negotiations relating to the original capitation fee. Frankly he had been exceedingly disappointed at the way in which it had worked. In contradiction to Lord Moran he emphatically thought there was something derogatory in competition for patients. The whole tradition and practice of the medical profession was to frown on unnecessary competition for patients. The profession was right in that matter. There had been a number of cases when men had enlarged their list not because of their skill but by doing other things which attracted people to them. There were good reasons for the system proposed in the Bill. In the first place nobody wanted inflated lists. An inflated list meant that a man could not give the detailed personal attention to his patients which he ought to have. The Government had on that account adopted the system proposed in the Bill and not because it had sinister designs. A second reason for the system was that it would be necessary to try to attract young doctors to country districts where there were relatively few people. The right way to do that was to let these young men know that they would have something to live on. Further, there were areas inadequately served by medical men, and in those areas the attraction of a basic salary would be influential in helping the Government to get the service it desired. The method of payment could not be prescribed in the Act, it must be left to negotiation. It was not even prescribed in the original Health Insurance Act. Nobody envied Mr. Bevan in the negotiations he would have to conduct on this matter in the next year or two. The precise procedure would have to be negotiated and so would the relation between the basic salary and the capitation fee. Lord Addison did not think it would be possible to devise a system whereby these could be standardized. In remote districts the

basic salary would probably have to be higher than in other places. There would still be an element of competition, which, so far as it was wholesome and proper, none of them would wish to damage. The Government could not accept the amendment.

LORD CRANBORNE said the Government had been wise not to put up the Lord Chancellor to speak on this amendment, for he would have been embarrassed in dealing with the argument that competition was of value in a profession. The House contained many of the greatest authorities on all questions and listened to their advice. Speaking for himself he had come to the conclusion, taking into account the experience of Lord Horder and Lord Moran and their knowledge of the individual members of their profession, that the case they had made out was unanswerable. For that reason the Opposition felt obliged to take the matter to a division.

LORD READING said that in his own profession he had seen too many young men obliged to abandon their career in the early stages because they had no means of going on with it. He knew of others who desired to enter the medical profession but had been similarly barred. Perhaps they had been able with Government grants to take the necessary qualifications but had been left with nothing to enable them to embark upon the profession afterwards. For these reasons his friends did not feel disposed to oppose the Government. He suggested that the Government should give an assurance that it was not in their mind, in the present condition of affairs, to embark upon a wider scheme of State medical service and State control of service. LORD ADDISON said he could and did give that assurance.

On a division the amendment moved by Lord Llewellyn with regard to the remuneration of medical practitioners was carried by 53 to 37.

Certificates: Partnerships

LORD MAUGHAM moved to insert a subsection to provide that nothing in the Act should be deemed to debar and no regulation should be made to debar any medical practitioner from giving or issuing any certificates under this or any other Act in relation to or for the purpose of any of the service provided under this Act on the grounds that such medical practitioner was not included in any particular list of medical practitioners undertaking to provide general medical services. He said the amendment was brought forward to relieve the anxiety of doctors who did not at present intend to go on the list and feared that regulations made under the Clause might preclude an independent doctor from giving certificates which were necessary under Acts of Parliament. The LORD CHANCELLOR said that under the Bill there was no distinction between the independent doctor and the doctor who was operating under the public service. That assurance had been carefully checked. LORD MAUGHAM withdrew his amendment and Clause 33 as previously amended was agreed to.

On Clause 34 (distribution of medical practitioners providing services) the House accepted an amendment proposed by Lord LISTOVEL to ensure that an appeal by a doctor against a decision of the Medical Practices Committee must be decided, as well as heard, before the successful applicant was allowed to take up a new practice. LORD MUNSTER then moved to add two new subsections in the same Clause. The first provided that the Medical Practices Committee and any Executive Council, as also the Minister, in determining appeals, should have regard to a desire expressed by the members of a family to work together and to a desire expressed by a medical practitioner to succeed to the practice of his father or other near relative. The second draft subsection proposed that in considering candidates for a vacancy among medical practitioners practising together as a partnership the Medical Practices Committee and any Executive Council should consult the remaining members of the group before selecting the candidate to fill the vacancy. LORD MAUGHAM supported the amendment and said that unless it was clear that a son had a fair chance of succeeding to his father's practice practitioners with children who they hoped would become doctors would be disposed not to come on the list.

LORD LISTOVEL said that the existence of family or group relationships would be a material factor which the Executive Council could not fail to take into account in advising the Medical Practices Committee about an application to practise, and it would also be considered by the Minister in the event of an appeal. The competence of the doctor himself would be an important consideration, but it was obvious that other things being equal preference would be given to an applicant having ties of this kind. He offered to consult Mr. Bevan about the amendment and see if it was possible to devise a form of words which could be put in the Bill. LORD MUNSTER withdrew his amendment and Clause 34 as amended was agreed to.

Sale of Goodwill

On Clause 35 (prohibition of sale of medical practices) LORD MAUGHAM moved to amend in subsection 2 the words "any person who sells or buys the goodwill or any part of the goodwill of a medical practice which it is unlawful to sell by virtue of the last foregoing subsection shall be guilty . . ." by inserting the word "knowingly" after "who." He said this amendment was necessary to carry out the intention of the Clause as it stood. Under subsections (3), (4), (5), and (6) certain transactions were deemed to be a sale of the goodwill for the purposes of subsection (1) of the Clause. The consequence was that there might be people who committed what was made a crime by subsection (1) without knowledge of the circumstances in which that crime had resulted. There might be a sale under which a medical practitioner who was retiring sold his furniture or medical equipment, some of which was now very expensive, to a new practitioner who was coming in. The vendor could not know whether he would be able to establish or whether the purchaser would be able to establish that no part of the consideration was given for goodwill or part thereof. Similarly a tribunal might at some subsequent date say that the consideration for the sale, letting, or other disposition of premises for the purposes of a practice to another medical practitioner was substantially in excess of what might reasonably have been expected if the premises had previously been used for purposes of medical practice. Then both parties were held to have committed a crime. LORD MAUGHAM said his opinion was that the provisions of Clause 34, except so far as they related to the sale of goodwill by medical practitioners who were on the list on the appointed day, were ill-considered and went much too far. He had very strong grounds for asking the Government to insert the word "knowingly."

The LORD CHANCELLOR noted that no one was attacking the general principle of the prohibition against the sale of medical practices. The House would agree that if a man was getting full compensation from public funds under Clause 36 it was undesirable that he should also get compensation or payment for the sale of his practice from private sources. In subsection (2) the word "knowingly" was unnecessary because it was obvious a man would never sell or buy the goodwill of a medical practice unless he knew what he was doing. That sort of thing was not done when suffering from some mental aberration, or at least not often. In subsection (3) the Bill was dealing not with a direct and obvious sale of goodwill but with premises. There the Government had put in the word "knowingly," and in some of the later clauses it had again put in words enabling the defendant to answer a charge by saying that remuneration was not fixed by reference, for instance, to the taking of a new partner. His observation about compensation applied to existing people. Every form of evasion had to be stopped if possible and the clauses had to be stringent. There were two safeguards. Anybody in doubt who did not want to run his neck into a noose could go before the Medical Practices Committee. If he revealed the facts and they said "that is all right" then their certificate was complete protection. In the second place the Bill said the prosecutions could only be brought by the Director of Public Prosecutions and the Director could get a report from the Medical Practices Committee. He believed there was adequate protection to prevent an innocent person from getting into trouble about this thing.

The amendment proposed by Lord Maugham was negatived. The House accepted an amendment moved by the Lord Chancellor to correct a clerical error and make it clear that a fine could only be levied after conviction.

In the same Clause, subsection (3) commencing "where any medical practitioner or the personal representative of any medical practitioner knowingly sells or lets premises previously used by that practitioner for the purposes of his practice," LORD MAUGHAM moved to leave out "or the personal representative of any medical practitioner." He said in an ordinary goodwill the name was a great element, but in the case of a doctor goodwill had nothing to do with the name because the incoming practitioner had to carry on the business under his own name. He got very little advantage from the premises *per se*. Goodwill meant nothing more than that the man who was selling was required to give some assistance which might be great or small to the man who was purchasing. In the ordinary way the practitioner who was selling went round with the new practitioner and introduced him to the patients. If he was a celebrated surgeon there was no goodwill at all. The eminent medical practitioners who sat in the House of Lords had absolutely no goodwill they could sell because their business was connected with their own skill or genius. But the ordinary country doctor who agreed to help with an introduction might give some sort of benefit. Of course an Act of Parliament could say that a widow who sold the premises in

which she had lived with her husband for 20 years was liable to be treated as if she had committed a crime if somebody thought she had got substantially too much for them.

The LORD CHANCELLOR said that where a widow received compensation out of public funds in respect of a practice she should not get compensation for the same practice out of private funds. Lord Maugham was wrong in arguing that because a doctor had died there was no sale of goodwill. The fact that a place had been used as a doctor's surgery and consulting room for a long time, that patients had been accustomed to come there, and that it was fitted up might enable a higher price to be secured for those premises if sold to a doctor. One of the most important features in a sale of goodwill was the transfer of the case books. That constituted a very valuable element. It had to be proved against the widow to convict her that she was selling at a price substantially in advance of the price she would have received had she been selling to a person who was not a doctor. He could not see why Parliament should not prevent her doing that, and he maintained that the words "or the personal representative of any medical practitioner" ought to remain.

Lord MAUGHAM repeated that he was dealing with the case of the personal representative of a medical practitioner who had died after the appointed day. He had never heard anyone suggest that the handing over of a case book was a sale of goodwill. He asked the Lord Chancellor to reconsider what had been said.

The LORD CHANCELLOR said he would go into the matter again with his legal advisers, and Lord Maugham withdrew his amendment.

Clause 35 as amended was agreed to, as were Clauses 36-39. Pharmaceutical services, general dental services, and supplementary ophthalmic services are covered in Clauses 38-41. An amendment moved by Lord TWEEDSMUIR to Clause 40 was withdrawn and the Clause was agreed to. On Clause 41 (supplementary ophthalmic services) Lord CECIL had down amendments designed to secure provision of treatment for the deaf as part of the hospital and specialist services, "putting ears on the same footing as eyes." He moved the first of these, and was supported by Lord HORDER, who said that defects of hearing had never been given the same prominence as defects of sight, partly because the study of the ear had not the same fascination as study of the eye. There was a great opportunity in the new medical services for research and study of the deaf person. He warned the House against confusing the aural medical practitioner and the maker of hearing aids. Lord LISTOWEL said the service which Lord Cecil desired for the deaf would be better carried out by Part II of the Bill, by the hospital and specialist services. He believed the deaf numbered about 400,000 against 4,000,000 who suffered from defective vision. Lord Cecil withdrew his amendment and Lord LISTOWEL moved a series of amendments to make clear in the Bill the distinction between ophthalmic opticians and dispensing opticians. The House agreed to the amendments and to Clause 41 as amended.

Disqualification of Doctors

On Clause 42 (disqualification of practitioners) Lord LISTOWEL moved drafting amendments which were accepted. Lord READING moved to leave out subsection (4) which runs:

"An appeal shall lie to the Minister from any direction of the Tribunal under the last foregoing section, and the Minister may confirm or revoke that direction."

He moved to substitute:

"(4) Any person aggrieved by a direction of the Tribunal either under the preceding subsection or under subsection (8) of this section may within one month after the date on which notice is given to him by the Tribunal of their direction appeal against the direction in manner provided by Rules of Court to the High Court, and in any such appeal the High Court may make such order or give such direction in the matter as it thinks fit."

The Tribunal itself, Lord Reading said, consisted of three persons, of whom one only was a person of legal experience. If it decided that the continued inclusion of an individual in a list would be prejudicial to the efficiency of the service it could either exclude him from a particular list on which his name appeared or it could exclude him from any list anywhere in the country of practitioners employed under the National Health Service Act. These were formidable powers to entrust to any tribunal where only one member had legal experience, because as the service grew and embraced a greater proportion of the medical practitioners exclusion from it was going to mean professional death to the person concerned. The next step under the Bill was that the person on whom this sentence of professional death had been imposed could appeal to the Minister who employed him for this purpose and came into this hearing to all intents as a party. The Minister could depute the hearing of the appeal to some person on his behalf.

The House knew nothing about this person. He might be a Civil Servant who himself was subject to the Minister. In that event the Minister was master not only of the appellant to the Tribunal but also of the judge as well. That must be an intolerable position.

Lord SIMON asked the Lord Chancellor whether he thought that the argument of Lord Reading could reasonably and properly be withstood.

Lord MESTON said there were certain things that a doctor must not do, and if he did them he was liable to be found guilty of gross professional misconduct and in the normal event would appear before the General Medical Council. This Bill had nothing to do with the G.M.C., and the Government had stated in the House of Commons that gross professional misconduct did not come within the words "prejudicial to the efficiency of the services." The Bill, however, did not say so; it made no such limitation. A doctor might do many things which might not be professional misconduct. They might be on the borderline or might concern his medical duties as apart from his moral conduct. He might have a tendency to absorb too much alcohol. He might prescribe the wrong medicines or be negligent or lazy. All these things came within the words "prejudicial to the efficiency of the services." Was it really suggested that a man who had devoted his whole life to medicine should be professionally destroyed by the report of an inspector which was probably not read by the Minister?

The LORD CHANCELLOR said the House was fighting over a well-trampled battleground. The matter had been very closely considered, and it was one on which the Government was bound to stand. The Bill was a development of the old National Health Insurance Act, under which the removal of a doctor from a list was a matter for the Minister and for the Minister alone. Lord Jowett said he had been closely connected with that Act and had never heard a single complaint from any doctor about the way it worked. The Government did not want the doctors to become Civil Servants; but they were in some sense in public employment, and the analogy between employer and employed was obviously there. If the Minister were entrusted with the duty of securing a service which he considered to be efficient it was impossible to ask him to deprive himself of the right of dismissal.

Lord CRANBORNE said he did not know whether there was a demand for an appeal to the High Court from the doctors, but he had come across a demand for greater protection than was given under the Bill as it stood at present. On this point the doctors were extremely nervous. It was essential that in the early inquiries the doctors should be given the benefit of counsel and of calling evidence. He asked the Government to consider before the Report Stage if something of that kind could be done. The LORD CHANCELLOR undertook to see if he could find a solution to that point.

Lord READING said he did not think that the matter had been advanced much further, and with reluctance he withdrew his amendment.

Miscellaneous Clauses

On Oct. 23 Clause 42 as already amended was agreed to. On Clause 43 (powers of Minister where services are inadequate) Lord ADDISON recognized the misgivings which the comprehensive words in the Clause promoted. He said the intention was that the Minister should be able to take action to deal with a particular shortage or emergency which had been discovered. He thought the Government should consider whether it could frame words which would meet the needs of the emergency instead of being of general application. Lord Llewellyn withdrew an amendment, and the House agreed to Clause 43. It also accepted Clause 44 (recovery of charges in respect of certain appliances and dental treatment) after Lord Llewellyn had withdrawn an amendment. Clauses 45-47 were agreed to without discussion.

On Clause 48 (provision of courses for medical and dental practitioners) Lord READING moved an amendment to authorize the provision of refresher courses for nurses employed in connexion with services provided under any part of the Act. Lord HORDER supported the amendment. He said there was totally inadequate reference to the work of nurses throughout the Bill. In the House of Commons Mr. Bevan had said the matter would adjust itself because the nurse could always go back into a hospital. That was a totally inadequate means of dealing with the postgraduate training of nurses. Lord ADDISON said that in this clause for the first time the State went out of its way to provide for medical men to have postgraduate training and to get refresher courses, but not one noble lord said "Thank you." This was amazing. There was no place in the world which had equal facilities to London for postgraduate training, and the Government intended to do whatever it could to help the medical profession and the teaching colleges so to develop. Nurses were different from the practitioners dealt with in Part IV of the Bill. They were whole-time servants and not

paid as he hoped the doctors would be—partly by capitation fee. It was to help men who were not whole-time servants to get this training that the provision in the clause was inserted. Those who were whole-time servants, such as nurses and medical men employed whole-time, would be provided with facilities and would be expected to undergo regular refresher courses. LORD READING withdrew his amendment.

Clause 48 was agreed to, as were Clauses 49-52. Clause 53 (grants to local health authorities) was approved after discussion. Clause 54 was agreed to, and so, after discussion, was Clause 55. Clauses 56-59 were agreed to; also Clauses 60-65. On Clause 66 (superannuation of officers) LORD LISTOWEL, for the Government moved in subsection (2) to leave out "so employed who leaves his employment" and to insert "who leaves employment in Scotland or Northern Ireland entitling him to participate in superannuation benefits (whether provided under the said Act or otherwise)." He said the amendment was to confirm the pension rights of health officers which would otherwise be prejudiced. Suitable entrance to the health services in England might come from the Scottish local government service. The amendment had been drafted to cover them. The amendment was agreed to, and Clause 66 as so amended was accepted. Clauses 67-71 were agreed to. After discussion the Committee agreed to Clauses 71, 72, and 73. On Clause 74 (regulations) LORD MUNSTER moved that no regulations should be made to determine the areas for which the regional hospital boards were to be constituted unless a draft had been laid before Parliament and had been approved by each House. The LORD CHANCELLOR said the regulations about the regions would be made separately, and Lord Munster withdrew his amendment. Clauses 75-77 were agreed to.

On Clause 78 (interpretation) the House accepted an amendment proposed by LORD LISTOWEL stating that a dispensing optician meant a person having the prescribed qualifications for the fitting and supply of optical appliances. It also accepted an amendment that ophthalmic optician meant a person having the prescribed qualifications in optics, including the measurement of errors of refraction, in orthoptics, and in the fitting and supply of appliances. LORD MAUGHAM suggested that the word "specialist" should also be defined. It occurred constantly in the Bill, and in practice there would often be a necessity to know whether a man was specialist or not. There should be some definition making it reasonably clear that only if they did not undertake general practitioner work were they to be treated as specialists. LORD MORAN said what Lord Maugham suggested would not be practicable, because there were only half the specialist consultants who were needed for the purpose of the Bill, and during a long period—it might be ten years—a man might be both general practitioner and consultant. The General Medical Council had gone closely into a suggestion that there should be a register of medical consultants, but he did not think that was likely to be pressed. He considered it impracticable. Clause 78 as amended was agreed to and the remaining clauses agreed to.

Hospital Committees

The first schedule was agreed to, as was also the second schedule. In part two of the third schedule (regional hospital boards, hospital management committees, and boards of governors of teaching hospitals) LORD MUNSTER moved to change the provision that a hospital management committee shall include persons appointed after consultation with the senior medical and dental staffs. He desired to substitute consultation with a committee representing this staff. LORD MORAN said he thought the amendment really meant that the medical staff as a whole should be consulted. A medical staff was a democratic body and did not recognize any distinction between junior and senior members. The LORD CHANCELLOR agreed that where there was a medical committee the whole body ought to be consulted. The Minister intended to encourage the formation of these committees everywhere. Where there was no committee the Minister's intention was to consult with the consultants and specialists—not the housemen. He gave an undertaking that where there was a medical staff committee that would be consulted as an entity without picking out the older and distinguished members. Lord Munster withdrew his amendment. The Lord Chancellor accepted an amendment proposed by LORD LUKE to provide that before making appointments to fill vacancies the board should also consult the committee. LORD MORAN moved that on the board of governors of a teaching hospital not more than two-fifths of the members appointed by the Minister shall be nominated by the University with which the hospital is associated. The proposal of the Bill was for one-fifth to be so appointed. The LORD CHANCELLOR thought that the amendment would overweigh the teaching proportion. Another fifth were to be appointed by the medical and dental teaching staff. A teaching hospital had the threefold function of treatment of patients and of research and of teaching hospitals. For the future there must not be an undue emphasis on the teaching side.

LORD MORAN said it was admitted in the whole profession that the patient's interest must always be looked after. In the last 25 years he had seen a weaning of public opinion from the idea that a teaching hospital did not exist for the care of the sick but for the teaching of knowledge. The amendment was withdrawn, as was an amendment moved by Lord Moran to provide that not more than one-fifth of the personnel of the board of governors of a teaching hospital should be nominated by the medical staff committee of every hospital in the group. He recalled that in the provinces a teaching hospital often comprised two or three institutions. The LORD CHANCELLOR promised to see whether suitable words to deal with the point could be inserted on the report stage. He refused an amendment to provide that before making appointments to fill vacancies the Minister should consult the board.

The third schedule as amended was agreed to, as was the fourth schedule after rejection of amendments dealing with the constitution of health committees. The fifth, sixth, and seventh schedules were agreed to with a consequential amendment in the seventh. The eighth schedule was agreed to. On the ninth schedule (amendment and appeal of enactments relating to persons of unsound mind and mental defectives) LORD LISTOWEL moved an amendment to enable the medical superintendent of a resident hospital to allow to be sent out on trial a patient received there under contract. The amendment was accepted, as were other consequential amendments moved by Lord Listowel, and the schedule as amended was agreed to. Consequential amendments were made in the tenth schedule, one of which substituted the words "Minister of Health" for "Board of Control" in Section 92 of the Children and Young Persons Act, 1933. The tenth schedule was then agreed to, and the Committee Stage was concluded.

REPORT STAGE

The National Health Service Bill was considered on the Report stage in the House of Lords on Oct. 28.

On Clause 7 the LORD CHANCELLOR moved an amendment—which was agreed to—to ensure that any gifts made to voluntary hospitals between the date of the passing of the Act and the appointed day should be used according to the wish of the donor.

The LORD CHANCELLOR moved a further amendment to provide that every board of governors and hospital management committee should ensure, so far as was reasonably practicable, that the objects of an endowment and observance of any conditions attached to it, including, in particular conditions intended to preserve the memory of any person or class of persons, were not prejudiced. He said that he felt very strongly that it would be wrong to interfere more than could be helped with the wishes of people who had given money to hospitals, although there must of course be a certain amount of latitude.

LORD MAUGHAM, who had tabled an amendment in the same sense, congratulated the Government on having found a means of meeting the general wish of the House. LORD LLEWELLIN thanked the Government for having met the Opposition in the amplest possible way. The amendment was agreed to.

Clinical and Research Facilities

An amendment to Clause 12, inserting in the Bill the duties of hospital management committees, was agreed to. The amendment consisted of the following new subsection:

"(2) It shall be the duty of the hospital management committee of any hospital or group of hospitals, subject to and in accordance with regulations and such directions as may be given by the Minister or the Regional Hospital Board, to control and manage that hospital or group of hospitals on behalf of the Board, and for that purpose to exercise on behalf of the Board such of the functions of the Board relating to that hospital or group of hospitals as may be prescribed."

The amendment also added the following new paragraph: "(a) to provide for the university with which the hospital is associated such facilities as appear to the Minister to be required for clinical teaching and research."

LORD ABDINGTON moved an amendment to Clause 19 to secure the delegation to non-county boroughs of a substantial part of the control of the day-to-day duties in connexion with their health services, if they applied for that authority. LORD O'HAGAN said he hoped it would also be possible to include urban district councils. LORD LLEWELLIN said that as an amendment had been accepted making mandatory the delegation of certain powers by the L.C.C. to London boroughs, he thought it right that the counties should be similarly treated.

The LORD CHANCELLOR said that his colleagues in the Coalition and in the present Government felt strongly that where there was a local authority service in any area there must be

one local authority and not several. The proposal that partition of the service should be permissive impinged on another vital principle. A decision must be taken that the thing should be done one way or the other, and not left to be a matter of bargaining or political agitation in the future. The amendment was withdrawn.

Terms of Service

On Clause 33 Lord LLEWELLIN moved that medical practitioners should be given at least three months' notice of the conditions of the medical service before having to decide whether they should enter it or not. The LORD CHANCELLOR said that he could not accept the amendment, but he gave an assurance that the period of notice to be aimed at should be six months. The amendment was, by leave, withdrawn.

The LORD CHANCELLOR accepted an amendment to Clause 34, moved by the EARL OF MUNSTER, to enable effect to be given to a desire by any practitioner to practise in partnership.

Lord CECIL moved an amendment to Clause 41, on arrangements for general dental services, requiring that provision should be made in the new health service for the treatment of deafness. Lord ADDISON, for the Government, said that the provision desired by Lord Cecil could not be made on the Clause before the House, but he gave an assurance that before the Third Reading of the Bill he would do his utmost to see whether reference to treatment of deafness could not be inserted in an earlier clause. He would not, however, give any pledge on the matter. On this understanding the amendment was withdrawn.

Disqualification of Practitioners

Lord LLEWELLIN moved an amendment to Clause 42 to make certain that a practitioner should have proper representation, that he could call witnesses and other evidence on his behalf, and that he could, if he wished, have the hearing in public. Lord READING, supporting, said that it ought to be made quite clear that the person appointed by the Minister to hear an appeal should possess legal qualifications capable of enabling him to take a proper judicial view of the evidence. The amendment was agreed to.

The LORD CHANCELLOR moved a new clause to ensure the preservation of associations of denominational hospitals. He agreed that such steps should be taken in the appointment of a resident surgeon, or the matron, but he could not extend it, as Lord Idlesleigh wished, to the staff. The Lord Chancellor said that for himself he would not care two little bits, if he were to be operated on, whether the surgeon possessed sound doctrines on the question of the justification of faith or not. He thought the hospital management committee could be depended on to see that the appointments they made conformed to the considerations of the clause.

Lord IDDESLEIGH said that so far as the Roman Catholic faith was concerned, they did not base their appointments on the faith of the candidates. He was a little more anxious about the staff, because there was the more important moral consideration a patient might have in regard to what a doctor believed about euthanasia. Lord READING said the matter intimately and deeply concerned the Jewish community, and he was grateful to the Lord Chancellor for this happy solution. The new clause was read a second time and added to the Bill.

An amendment by Lord LLEWELLIN to the Seventh Schedule to ensure that the chairman of the tribunal should be a practising barrister or solicitor of not less than ten years' standing was agreed to.

The Report stage was concluded.

Medical News

At the bicentennial celebrations of Princeton University honorary degrees were conferred on Sir Henry Dale, M.D., F.R.S., and Sir John Boyd Orr, M.D., F.R.S.

Prof. N. Hamilton Fairley, M.D., F.R.S., has been appointed honorary consulting physician in tropical medicine to the Ministry of Pensions.

The annual spring graduate course in ophthalmology and otolaryngology will be held at the Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia, U.S.A., on April 7-12.

A course of lectures on recent advances will be given in the House of the Royal College of Obstetricians and Gynaecologists (58, Queen Anne Street, W.) on Fridays, Nov. 1, 15, and 29, Dec. 13, and Jan. 10, at 5 p.m. Admission is free, by ticket, for which early application is necessary, to the secretary of the College. Applicants should state for which lectures tickets are required. Details will be published in the diary column of the *Supplement* for the appropriate weeks.

A conference of clergy, doctors, and nurses on collaboration in the service of the sick will be held in the library of the Royal National Hospital, Ventnor, on Monday, Nov. 4, beginning at 10.30 a.m.

Dr. H. Mandiwall will address a meeting of the Medical Group of the Royal Photographic Society on "Dental Photography" at the Society's house, 16, Princes Gate, S.W.7, at 6.30 p.m., on Thursday, Nov. 7. The address will be illustrated.

The Board of Control (Lunacy and Mental Deficiency) is returning from St. Annes on Sea to London and as from Monday, Nov. 11, its address will be 32, Rutland Gate, Knightsbridge, S.W.7. Telephone: Kensington 3456.

The Chelsea Clinical Society will hold a meeting at the South Kensington Hotel, 41, Queens Gate Terrace, S.W.7, on Tuesday, Nov. 12, at 6.30 for 7 p.m. A discussion on backache will be opened by Mr. B. H. Burns, Mr. Charles Read, and Dr. M. Bewley.

The British Council for Rehabilitation (32, Shaftesbury Avenue, London, W.) has arranged a short course on rehabilitation to take place in London from Nov. 12 to 14 inclusive. The course, which is one of a series to be held in various centres during the next twelve months, is intended to provide an opportunity to study the various phases of rehabilitation as one unified service. It is open to members of the medical profession and the ancillary medical services, to representatives of industry, social workers, and others specially interested in the subject.

At a meeting of the Medical Society of the L.C.C. Service to be held on Wednesday, Nov. 13, at 4.30 p.m., at the County Hall, Westminster Bridge, S.E., a discussion on "Penicillin in the Treatment of Disease" will be opened by Dr. J. Alston, Dr. B. Young and Mr. J. Jemson.

The annual meeting of Fellows and Members of the Royal College of Surgeons of England will be held at the College in Lincoln's Inn Fields, on Wednesday, Nov. 13, at 5.30 p.m., when a report from the Council will be laid before the meeting. Fellows and Members can obtain copies of the report on application to the Secretary, and a copy of the agenda will be issued on or after Nov. 8 to any Fellow or Member who applies for one.

The Royal Dental Hospital of London will hold its annual clinical "At Home" at 32, Leicester Square, on Saturday, Nov. 23, at 3 p.m. Cases of clinical interest illustrating the scope of the work undertaken at the hospital, especially the treatment of children and the young, are to be shown by members of the staff, and the various departments of the hospital and of the School of Dental Surgery will be open for inspection. On the same evening, at 7 for 7.30 p.m., the dinner of past and present students will be held at the Savoy Hotel, with Mr. E. D. D. Davis, F.R.C.S., in the chair.

A David Anderson-Berry Silver-Gilt Medal, together with a sum of money amounting to about £100, will be awarded during 1947 by the Royal Society of Edinburgh to the person who, in the opinion of the Council, has recently produced the best work on the therapeutic effect of x rays on human diseases. Applications for this prize are invited. They may be based on both published and unpublished work and should be accompanied by copies of the relevant papers. Applications must be in the hands of the general secretary, Royal Society of Edinburgh, 22, George Street, Edinburgh 2, not later than Jan. 31, 1947. It should be noted that an extension of the period allowed for the receipt of papers has been made.

The 50th anniversary of the foundation of the British Mycological Society was celebrated in London from Oct. 20 to 25. On Oct. 22, at the Royal Institution, the president (Dr. J. Ramsbottom) gave an address on "Mycology Then and Now," and papers on "Medical Mycology: Mould Products" were read, with Sir Alexander Fleming in the chair. The conference was continued on the following day. International delegates to the jubilee meeting were entertained by the British Council. The last item in the programme was a dinner in the refectory of the London School of Hygiene and Tropical Medicine.

Dr. Fred Grundy, barrister-at-law, medical officer of health for Luton, has been appointed chairman of the executive committee of the British Social Hygiene Council in the place of the late Dr. Otto May.

The branches of the General Register Office which were evacuated to the New Cumberland Hotel, Blackpool, at the beginning of the war returned to Somerset House on Sept. 30. While the Registrar-General and a small staff remained at Somerset House throughout the war, the general work of the Office has been carried out at Blackpool, the records of births, deaths, and marriages being arranged and indexed there and then sent to Somerset House to be kept in the vaults. The staff at Blackpool dealt also with all correspondence in connexion with the records. With the return of these evacuated branches the whole of the Office will be housed in London, except a part of the Statistical Branch and the whole of the Central National Registration Office, which remain at Southport.

EPIDEMIOLOGICAL NOTES

Paratyphoid in Sheffield

Our cases of paratyphoid fever were notified in the City of Sheffield on Wednesday, Oct. 16, and 4 more on Oct. 18. A letter was sent by the medical officer of health to general practitioners on that day, and a further 66 cases were notified Oct. 25.

The outbreak is due to paratyphoid B, and Dr. A. Felix reported that organisms isolated from 7 cases were all Phage type 2. The symptoms at onset in many cases were vague or misleading. Diagnosis was difficult until the recognition of rose spots and enlarged spleens in a few cases prompted the use of agglutination tests and stool culture. The majority of cases have shown malaise, fever, and gastro-intestinal disturbance, but in a few occipital headache with some stiffness of the neck have been the presenting symptoms. Splenic enlargement and rose spots have appeared in most cases. So far the disease has not been of a serious type and the incidence in the sexes is about equal. The age distribution up to Oct. 25 is interesting:

Sex	Age in Years					Total
	0-5	5-10	10-15	15-20	20 plus	
Male ..	15	11	4	1	1	32
Female ..	22	11	—	3	6	42
Totals ..	37	22	4	4	7	74

Up to the present the source of the infection has not been found. By Oct. 29 the number of cases involved had risen to 94.

Discussion of Table 1

In *England and Wales* there were further rises in the incidence of measles 224, and scarlet fever 27; the notifications of both diseases have increased by two-thirds in the past few weeks. A rise was also recorded for whooping-cough 51, following a continuous decline over seven weeks. There was a fall in the notifications of diphtheria 50 and of dysentery 19.

No local variations worthy of note were observed in the trends of scarlet fever or whooping-cough. Lancashire was mainly responsible for the fall in the incidence of diphtheria: this county the cases fell from 94 to 53. The increase in cases of measles was confined to a few counties, notably Durham 97, Middlesex 48, and Devonshire 48; the only decrease of any size was Lancashire 43. The returns for dysentery were the smallest for over five years.

In *Scotland* a decrease was recorded in the notifications of acute primary pneumonia 22, diphtheria 17, and scarlet fever 16. Increases were reported for whooping-cough 40 and cerebrospinal fever 9.

In *Eire* the notifications of diphtheria declined by 8 and of measles by 6. The incidence of diarrhoea and enteritis remained unchanged with 58 cases, of which 47 were recorded in Dublin C.B.

In *Northern Ireland* the returns for scarlet fever showed an increase of 22 and for diphtheria 5. Of the 54 cases of scarlet fever 23 were notified in Belfast C.B.; the remaining cases involved 15 areas.

Statistical Review for 1942

The publication of the Registrar-General's *Statistical Review for 1942* shows that the mortality in that year improved compared with the earlier war years. The death rate was 12.3 as against 13.5 and 14.4 in the two preceding years. Infant mortality recovered from the setback in 1941, when a rate of 60 was recorded, and fell to 51 per 1,000 live births, which qualified the lowest previously recorded rate. Maternal mortality (including abortion) was 2.02 per 1,000 total births. The death rate from diphtheria, 192 per million children under 15, was the lowest ever recorded.

Deaths from tuberculosis began to increase in 1940. The deaths during 1939-41 were 21,523, 23,470, and 23,339. In 1942 the number of deaths fell to 20,730, the lowest figure ever recorded. Cases, and fatal cases, of cerebrospinal fever rose in 1940 to about ten times the pre-war level. A small decrease was noted in 1941, and in 1942 the cases fell to 5,286 with 143 deaths, which were little more than half the corresponding totals of the previous year. There were 3,891 civilians killed in air-raids compared with 22,215 and 19,543 in 1940 and 1941. A decrease in the number of suicides was recorded.

Week Ending October 19

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,048, whooping-cough 375, diphtheria 278, measles 2,385, acute pneumonia 407, cerebrospinal fever 30, dysentery 57, acute poliomyelitis 20, paratyphoid 22, typhoid 5.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Oct. 12

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	37	3	19	1	2	36	4	20	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	269	21	88	36	15	565	44	155	96	20
Deaths	5	1	1	2	—	10	—	1	—	—
Dysentery	44	7	29	1	—	286	40	84	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis, acute ..	1	—	1	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	43	8	2	—	—	37	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	44	2	8	58	1	50	5	23	54	6
Deaths	—	—	—	17	—	—	—	—	19	—
Measles*	2,005	72	104	46	14	446	48	61	45	2
Deaths	1	1	—	1	—	—	—	1	—	—
Ophthalmia neonatorum ..	69	2	12	—	—	61	6	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	6	—	1(B)	—	—	6	—	14(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	351	31	1	3	1	415	21	5	—	5
Deaths (from influenza) ..	9	3	1	—	—	11	2	—	1	—
Pneumonia, primary ..	—	143	21	7	7	—	25	151	15	3
Deaths	23	—	—	—	—	—	—	4	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	22	3	1	6	1	45	2	1	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	1	15	—	1	—	3	15	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia† ..	156	13	20	1	—	145	5	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,106	94	202	39	54	1,849	126	341	32	42
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	2	2	25	10	2	2	7	—
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	1,362	108	136	36	15	970	80	39	36	3
Deaths	12	—	—	—	—	3	11	—	2	—
Deaths (0-1 year) ..	327	39	59	41	12	320	23	52	47	18
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	3,846	579	507	179	106	4,112	655	539	176	132
Annual death rate (per 1,000 persons living) ..	—	—	11.2	11.5	—	—	—	12.2	11.4	—
Live births	9,532	1,477	1,160	414	269	6,865	879	869	424	284
Annual rate per 1,000 persons living ..	—	—	23.3	26.5	—	—	—	17.4	27.4	—
Stillbirths	258	35	31	—	—	206	26	23	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	26	—	—	—	—	26	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales, and Eire.

Letters, Notes, and Answers

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ANY QUESTIONS?

Bathing after a Heavy Meal

Q.—Is it true that bathing in cold water soon after a heavy meal carries the risk of sudden death?

A.—This belief is widely held, and the Royal Life Saving Society's handbook warns readers "on no account to bathe shortly after a hearty meal"; however, it does not describe the consequences of transgression. Cramp, which is a painful muscular spasm, cannot of itself be fatal, though it is possible that a bather so afflicted might drown. Even this is uncertain, for many of the authorities on swimming regard the dangers of cramp as greatly exaggerated. Thus, Dr. Hunter Barron, himself both a noted swimmer and a frequent sufferer from cramp, wrote in 1886 that cramp seldom killed and most of the alleged instances were examples of heart failure. The cause of cramp in swimmers is itself debated. Winmann, in *Colymbetes sive de Arie Natandi*, published in 1541 and the first known book on the subject, attributed it to cold. Although this is still currently believed, recent authors regard it as mere superstition. Cramp is more rationally presumed to be a symptom of muscular fatigue, although the blood supply to the muscle and a disturbed salt metabolism are of importance in some cases. That cramp occurs more readily after a heavy meal than at other times is unproved, although it would be easy to give physiological reasons for its doing so. Inability to move the limbs would presumably be a symptom of cramp.

Medico-legal authorities speak of the possibility of shock from the sudden application of cold to the skin causing reflex stoppage of the heart. Crookshank (*Trans. med. leg. Soc.*, 1909-10, 7, 11) believed that one-third of the fatalities apparently due to drowning were the consequence of this reflex inhibition. There is again no evidence that such an occurrence is more common after a meal. In short, there is evidence, albeit unsatisfactory, that very occasionally immersion in cold water may cause sudden death, but none that this rare accident is more common after a heavy meal. It is easy to see that such a tradition could arise from occasional instances of coronary thrombosis, to which both sudden exertion and a large meal are recognized predisposing factors.

Trichomonas Vaginalis and Streptococci

Q.—Can you give me any information about a non-haemolytic streptococcus which is said to be found in conjunction with *Trichomonas vaginalis*?

A.—This question probably refers to the claim by Hibbert (*Amer. J. Obstet. Gynec.*, 1933, 25, 465) that *Trichomonas vaginalis* can produce vaginitis only when there is present in the vagina a non-haemolytic streptococcus the characters of which are not specifically defined. In support of his claim Hibbert maintained that *Trichomonas vaginalis* may be present in the vagina unassociated with evidence of infection; that in most cases of trichomonas vaginitis a non-haemolytic streptococcus is present, often as the predominating organism; that cases of vaginitis may occur in which the non-haemolytic streptococcus is apparently the causative organism; and that treatment with a broth filtrate of the organism produced cure or amelioration of the mixed infection with disappearance or reduction in the numbers of non-haemolytic streptococci but not of the trichomonas. In addition, three volunteer patients in whose genital tract *Trichomonas vaginalis* was implanted

without producing clinical infection developed vaginitis a culture of the non-haemolytic streptococcus was added, claims have not apparently been substantiated, and in the discussion that followed Hibbert's paper there was much comment on his findings.

Notification of Gastro-intestinal Diseases

Q.—Please define "dysentery" and "diarrhoea and sickness syndrome (gastro-enteritis)" in relation to notification (a) the Public Health Regulations and (b) under the Food and Drugs Act.

A.—In the Public Health (Pneumonia, Malaria, Dysentery, 1919, and the Public Health (Infectious Diseases) Regulations, 1927 (S.R. & O., 1927, No. 1004), it is stated "dysentery includes amoebic and bacillary dysentery." There is no "clinical" definition or description of the disease. The absence of clinical description is common to all the notified infectious diseases, with the exception of puerperal pyrexia.

By the Food and Drugs Act, 1938, Section 17, it is the duty of a registered practitioner to notify the medical officer of health of the district of any patient who is suffering or suspected of suffering from food-poisoning. In the Act "food" is defined as "any article used for food or drink for human consumption other than drugs or water, and includes (a) any substance intended for use in the composition of or preparation of food; (b) any flavouring matter or condiment; (c) any thing intended for use as food. Food-poisoning means poisoning caused by the partaking of any substance which comes under the given definition of food."

The "diarrhoea and sickness syndrome (gastro-enteritis)" which has many synonyms—is not generally notifiable, but so in some areas by local order with variations in the age limit. In one area it may be notifiable only in children up to 2 years old; in another area the age limit may be 5 or even 10. If, therefore, a child is found to be suffering from diarrhoea and vomiting in an area where gastro-enteritis is notifiable it is possible to notify the case under the Public Health (Infectious Diseases) Regulations if dysentery is suspected; under the Food and Drugs Act if food poisoning is suspected; and under the local order if gastro-enteritis is suspected. The final decision would rest on the history, and on the extent and nature of the clinical and bacteriological evidence.

Radiotherapy of Hodgkin's Disease

Q.—What is the prognosis in cases of Hodgkin's disease treated by radiotherapy?

A.—Radiotherapy is not a cure for Hodgkin's disease. It will abolish local enlargement of lymph nodes, but subsequently other groups are affected. Finally the patient reaches a stage of cachexia in which there is little response to further irradiation. It is doubtful whether life is prolonged by this treatment, although symptoms are temporarily relieved. Few patients survive more than four years.

Adrenaline Secretion and Asthma

Q.—It is commonly stated that psychological imbalance is one of the most important aetiological factors in spasmodic bronchial asthma, and that an attack is often determined by an acute increase of apprehension or anxiety. In such an event one might expect the endogenous secretion of adrenaline to be correspondingly increased, and this would go far to counteract any tendency to bronchial spasm. Is there any evidence that the production of adrenaline is deficient in asthmatics, or that their over-anxious temperament is responsible for a sub-clinical state of adrenal exhaustion? If not, how may this apparent paradox be explained?

A.—No evidence has been found that the production of adrenaline is deficient in asthma, and the absence of other signs of lessened sympathetic activity supports the view that there is probably no type of asthma caused by a deficiency of natural adrenaline secretion. Also there are no pathological changes in the adrenals in asthmatics. The paradox referred to in the question exists only if the psychological factors that precipitate asthma lead to an increased output of adrenaline. In anxiety states and neuroses generally it cannot be said that an increased secretion takes place, and, while there is possibly an enhanced sensitivity to adrenaline in some cases, this is not to be taken as indicative of any well-defined humoral change.

It is possible that the psychological factors which precipitate asthma may in fact give rise to a parasympathetic overaction and thus facilitate the onset of an attack. It has recently been suggested that the emotions of anger and elation are associated with parasympathetic excitation, and that of fear with sympathetic excitation. In this last connexion it has been noticed during conditions of prolonged fear, as in air raids, that thymatic subjects have not had attacks in circumstances here they might have expected them. Here it is possible that increased adrenaline production has prevented the onset of bronchial spasm in the manner suggested in the question; it seems highly probable that, in so far as psychological factors play a part in asthma generally, they do so by increasing the parasympathetic sensitivity to a greater extent than the sympathetic sensitivity of the bronchial musculature.

Benzyl Benzoate Dermatitis

Q.—Can you suggest treatment for a skin affection apparently due to prolonged application of benzyl benzoate? The patient suffers a severe irritation when he gets warm in bed, but has no discomfort during the daytime.

A.—It is assumed that the patient referred to has developed chronic dermatitis from the prolonged use of benzyl benzoate emulsion for scabies, and is not suffering from an independent itching dermatosis. The dermatitis is thus exogenous and would respond to rest, avoidance of baths, and simple greasy applications, such as oily calamine lotion or boric-zinc ointment to which a small amount of arachis oil has been added. Sedatives given at night are helpful, and whole-blood injections, if the skin permits, assist in allaying itching.

Pituitary Extract in Obesity

Q.—What is the present-day teaching as to the oral administration of whole-gland pituitary extract? In treating obesity how much pituitary whole gland administered?

A.—There is no experimental or clinical evidence in favour of the view that whole-gland pituitary extract given orally exercises a hormonal influence in man or other mammals. Some clinicians still hold the view that it augments the effect of thyroid in cases of obesity, and others prescribe pituitary gland because the patient has already received thyroid alone without appreciable benefit. If so administered, tablets of 1 or 2 grains (65 or 130 mg.) of pituitary whole gland or anterior pituitary gland (dried extract) are often prescribed.

Quite apart from the probable ineffectiveness of pituitary gland by mouth, it is doubtful if any available pituitary hormone given by injection has any influence on obesity. Some years ago Collip described an extract of pituitary gland which increased the metabolic rate and lowered the respiratory quotient, indicating metabolism of fat, and some initial clinical work with this hormone was published. However, nothing further has been heard of this latter work for several years, and it therefore seems doubtful whether any positive results have been sustained.

Leuco-erythroblastic Anaemia

Q.—Should leuco-erythroblastic anaemia be differentiated by reason of the stimulating or irritating effect of certain lesions on the bone marrow or by the blood picture? If by the blood picture, should not familial acholuric jaundice, von Jaksch's syndrome, and the erythroblastic anaemias also be considered leuco-erythroblastic?

A.—It is important when discussing leuco-erythroblastic anaemia to agree upon a definition of the term. It refers not to a "disease" but to certain changes in the peripheral blood. These changes are: anaemia, which varies in degree but may be insignificant, with erythrocytes usually of normal size; reticulocytosis; the presence of nucleated red blood cells; a total leucocyte count ranging from 2,500 to 30,000 per c.mm. or even higher; and a characteristic alteration in the differential leucocyte count. This alteration is not simply "the presence of immature cells" but a "shift to the left" of the granular series, with a regular gradation decreasing from large numbers of fully segmented neutrophils, through regularly diminishing proportions of cells of all grades of immaturity, to a small percentage of myeloblasts. In some cases the "shift" does not extend as far as the myeloblast. Defined in this manner

a leuco-erythroblastic anaemia may accompany a large variety of disease processes, from carcinomatosis of the bone marrow to acute haemolytic anaemia.

This is equivalent to saying that, as leuco-erythroblastic anaemia is a symptomatic blood change and not a "disease," the label should be applied to those cases in which the blood change exists, irrespective of the underlying pathological process. It is true that there is a tendency to limit the use of the term to cases in which this blood picture is associated with carcinomatosis of the bone marrow, myelosclerosis, and related disorders. It is also true that in these affections leucopenia and thrombocytopenia are common, while in others leucocytosis is the rule, but the restriction is illogical. The question illustrates the pitfalls of haematological nomenclature and the need "to define one's terms."

Corneal Herpes

Q.—What are the earliest signs by which one can recognize corneal herpes, and what is the treatment? Does it cause corneal scarring?

A.—Corneal herpes is a rather indefinite term. Presumably it refers to corneal lesions of the herpes simplex or herpes zoster type and not to mere vesicle or bulla formation. The difficulty arises from the fact that recognizable vesicles suggestive of herpes simplex or zoster are rare in the cornea in these affections, while vesicle formation which has nothing to do with these affections is not uncommon. Taking the aetiological rather than the morphological sense of the question, it is again difficult to be unequivocal, for there are a whole series of corneal lesions which are regarded as herpetic in origin, the commonest being dendritic ulcer, superficial punctate keratitis, disciform keratitis, and some varieties of keratitis profunda. In all these affections diminution or loss of corneal sensation is the most striking early feature, and this is most marked in the corneal complications seen in herpes ophthalmicus. Generally an associated herpetic lesion is absent, and the assumption that these corneal lesions are herpetic in origin is based on rather inconclusive laboratory findings.

The treatment of corneal herpes depends largely on the type of corneal lesion. In all cases two drops of atropine 1% are instilled three times a day, and the eye protected either by dark glasses or by a bandage. In dendritic ulcer the denuded epithelium may be touched with pure carbolic or a 30% solution of sodium sulphacetamide, and such treatment may have to be repeated frequently, even daily. In superficial punctate keratitis no local medication, apart from the instillation of atropine, is of any value, and this probably also applies to disciform keratitis and to keratitis profunda. Immune serum has been suggested for superficial punctate keratitis, but results are conflicting. There is no treatment known to abort an attack of corneal herpes, and the prognosis depends on the type of lesion. In superficial punctate keratitis recovery is the rule after six to twelve weeks, and dendritic ulcers run almost as protracted a course. In both conditions corneal scarring is unusual, but dendritic ulcers tend to recur. Occasionally disciform keratitis clears remarkably well. More frequently both disciform keratitis and keratitis profunda leave extensive and marked corneal opacities.

Air Travel for a Baby

Q.—Is there any contraindication to a journey by air to New Zealand for an infant of 7 weeks? Should the baby be protected by inoculation against yellow fever?

A.—A full-term normal infant would probably tolerate the flight satisfactorily, but it would be essential to provide an infant's oxygen tent (which can be improvised from an infant's gas mask) in case of cyanosis, or in the event of any part of the flight being at an altitude of over 7,000 ft. (2,100 m.). In the case of a premature baby or of one who has shown evidence of atelectasis or intracranial haemorrhage the journey by air would be contraindicated. The risk of failure of the heat-control system in the plane should also be considered. Under these circumstances there is a very great drop in temperature if the plane is travelling at 10,000 ft. (3,000 m.) or higher.

Infants and small children stand protective inoculations against yellow fever well, and do not appear to be upset by these injections. Inoculation is compulsory, as in adults travelling by air.

LETTERS, NOTES, ETC.

Amoebic Dysentery

Lieut.-Col. C. CROPPER (Keighley) writes: With reference to the question and answer on amoebic dysentery (Aug. 10, p. 215) I should like to make two constructive comments. I have found that in very many patients phenobarbitone by no means prevents the emetic effects of emetine bismuth iodide. The simple precaution, however, of "washing down" the capsule with an iced drink, so that it reaches the duodenum before it melts, works admirably. The capsule of E.B.I. must not be taken until four hours after the last meal of the day. This method renders phenobarbitone quite unnecessary. Secondly, retention enemata will be neither effective nor tolerable without close attention to the details of technique. I have found "bowel washouts" ill-advised, as they tend to bring down into the lower bowel the contents of the ileum, thereby defeating the object of the manoeuvre and incidentally causing an unpleasant gripping pain. A bicarbonate enema of the smallest effective volume is in my experience, both as patient and physician, the maximum preparation called for; at least four hours thereafter the chiniofon is introduced. The evacuant enema is given in the morning at any time that suits the nursing staff, and the retention enema at any time in the afternoon; and the latter is usually retained indefinitely—i.e., until the next morning's evacuant enema. If not, 1/2-1 dr. (1.8-3.5 ml.) of tinct. opii may be added to subsequent retention enemata. Restriction of meals is unnecessary. On the above lines the desired result is achieved—viz., the maintenance of the chiniofon in contact with the ulcerated mucosa in the maximum concentration for the maximum time. It is essential that treatment be carefully supervised, with deliberate study of the individual patient's reactions; otherwise all that is achieved is the subjection of the patient to a prolonged and trying ordeal. My own impression is that the best results are given by a combination of chiniofon enemata with oral diodoquin, but many cases still defeat all attempts at cure.

Milk "Priority"

Dr. G. L. DAVIES (Hove) writes: The daily papers show that the public is again becoming restive about milk priorities, and rightly so. Doctors, with some reason, had hoped that by this time the irksome task of deciding who in every case was entitled to extra milk would have been a thing of the past. However, as the food situation continues to deteriorate, people will look round for some ailment which they may put forward to entitle them to extra milk, and by now they have got to know the ropes. Holders of priority milk certificates—and some have now held them for a matter of years—are as a whole a selfish race of people, and any determined suggestion on the part of a doctor that they are now better and should give up their claim to priority only produces some exhibition of rudeness and a mild fracas in the surgery. Some have had certificates on the strength of symptoms suggestive of peptic ulcer, and they resolutely refuse to go and have their symptoms verified or disproved by x rays, usually contriving to find some excuse to delay this inconvenient matter. It is now time that the last word in this business was taken out of the hands of the family doctor and entrusted, may one suggest, in every large centre of population, to a small panel of medical men and women who are, preferably, not in general practice. The family doctor should be asked to submit a few written details about each case and add his private opinion, and the final decision should rest with the referees. Meetings at which applications for extra milk (i.e. for those cases which present some difficulty) are considered might take place once a month, so as not to take up too much of the time of the doctors concerned. Adequate payment per session should be made to each doctor by the Ministry of Food. To some all this will appear like trying to make a mountain out of a molehill, the sort of small campaign which a Prussian general once said wasn't worth the bones of a single grenadier. As a doctor in a numerous working-class practice, striving each day to cope with ill-defined ailments which are unresponsive to ordinary medical treatment, one is forced to the conclusion that the human body is beginning to rebel against synthetic vitamins, and little enough of those. Until the war ended we heard much about the writing on the wall. What we hear in our surgeries and what our wives hear in queues is writ far larger than any fictitious writing on the wall. Let our rulers ignore it at their peril. [See also p. 661 on this subject.]

Scorpion Sting

Dr. B. V. RAMASWAMY (Bangalore, South India) writes: In the *Indian Medical Gazette* of Nov., 1939, and Jan., 1940, there were two small notes about scorpion sting. (i) "Fresh leaves of *Acalypha indica* when rubbed well at the site of the sting relieve the pain and cure the patient in about five minutes." (ii) "A few whiffs of chloroform inhalation almost immediately cure the pain. About 2 dr. (7 ml.) may suffice for nearly 50 persons." Since then I have tried chloroform inhalations for scorpion stings with great success. There are two types of pain experienced by such patients. One is a local, throbbing pain at the site of the sting, and the other a rapidly spreading, shooting pain. If the patient gets the treatment

within 5-10 minutes of the sting both the pains disappear in about 5 minutes. In cases where the treatment is begun after some time—more than half an hour after the sting—the shooting pain appears in 5 minutes, but the local pain persists though in a lesser degree. To eliminate that pain I usually inject a local anaesthetic all round the site of the sting, which gives complete relief. *Treatment*.—A few drops of anaesthetic chloroform are sprinkled on a small piece of cotton-wool and held near the patient's nostrils. It is then asked to inhale deeply a number of times. Most patients if treated early find relief of pain in 2-5 minutes. I would very much like others to try this simple treatment and report their experience. I would also like to know how chloroform neutralizes the toxins of the scorpion.

Varicose Veins

Mr. R. ROWDEN FOOTE (London, W.) writes: This all too common condition has received scant notice from the statisticians in the past. A few months ago inquiry at the Ministry of Health produced the answer that no figures were available. In fact they had no knowledge as to how many of the population suffered from the condition or how much invalidism was caused by varices and the complications. My attention has recently been drawn to morbid figures in a Ministry of Health publication *On the State of Public Health during six years of War (1946)* which seem to give confirmation to the unproven prevalence of this disease in the community. I need only quote a few statements from this book taken at random in order to bring out my points, the figures being quoted per 1,000 of the admissions to E.M.S. hospitals during certain of the war years. The total number of diseases of veins in males treated as in-patients in E.M.S. hospitals in 1945 shows the astonishing figure of 86 per 1,000 in England and per 1,000 in Scotland; in 1943 this figure was reduced to 75, 1,000. This figure, reaching nearly 10% of hospital admissions only exceeded by one other group of patients—those suffering from diseases of the skin and cellular tissues. Under the heading "Periods of Disablement for Men from the ages of 15 to admitted to E.M.S. hospitals from the Services during 1942-1943" we find that out of approximately 2,000 cases of varicose veins

	213 are incapacitated for	10 days
654 "	"	" 14 "
122 "	"	" 21 "
227 "	"	" 28 "
198 "	"	" 42 "
313 "	"	" 56 "
110 "	"	" 91 "
6 "	"	" 182 "

In other words varices, forming 10% of all hospital admissions, and being the second largest group of complaints treated by the E.M.S., present a very high figure as far as duration of incapacity is concerned. A further point brought out by these statistics is that in the diseases of veins men's rates were much higher than those for women. It has been said that statistics can "prove anything, even the truth"; but even so, here is serious food for thought. Why is it that the humble varix receives so little consideration in this country? In many hospitals it still serves as practice for the student or recently qualified surgeon. Varicose ulcers, which should become rare with adequate treatment, still tend to multiply and to be relegated to the dark corners of our hospitals. Phlebitis is treated by immobility and hypostatic eczema by unguents. The "set up" of the average varicose department is reminiscent of the state in which many fracture clinics functioned in my early student days. It is to be hoped that in the process of time this prevalent disease may receive the same expert care as is now being given in our orthopaedic departments. One hundred years ago, standing by the bedside of a sufferer from varicose ulceration, Sir Benjamin Brodie said to his students: "Here is a case of a very distressing nature, and such an one as may meet you at every turn of your practice; and your reputation in early life will depend more upon understanding a case of this kind than on your knowledge of one of more rare occurrence. . . ." (*Lectures on Pathology and Surgery*, 1846.) What has been done to put the treatment and care of the varicose patient into any better state than it was when these words were spoken a century ago?

Correction

Prof. S. LEITIS, of Moscow, wishes to correct two sentences in the translation of his article "The Importance of Autoregulation in Nitrogen Metabolism" published in the *Journal* of June 8. On p. 875, column 2, line 16 from the end the words "increase in the nitrogen metabolism" should read "increase in the nitrogen content." On p. 376, line 9 from the top, the following words should be added: "after introduction of protein or nitrogen metabolites."

Allen & Hanburys, Ltd., announce that from Nov. 4 they are adopting a 5-day working week. The offices and warehouses at Bethnal Green will be closed on Saturday mornings, but their West End branch at 7, Vere Street, W.1, will be open to deal with orders for urgent medicines.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 2 1946

ANNUAL PANEL CONFERENCE

THURSDAY, OCTOBER 24, 1946

ACCEPTANCE OF MINISTER'S OFFER COMING DISCUSSIONS ON CAPITATION FEE

The Annual Conference of representatives of Local Medical and Panel Committees was held in the Great Hall, British Medical Association House, London, on Thursday, Oct. 24. Dr. J. A. BROWN (Birmingham), who in the course of the proceedings was, without a contest, elected Chairman of the Conference for another year, presided, and was supported by Dr. E. A. Gregg, Chairman of the Insurance Acts Committee, Dr. Charles Hill, Secretary of the Association, and Dr. J. W. Bone, Treasurer of the National Insurance Defence Trust. The agenda and the expected length of the Conference were modified as a result of the Minister's new offer fully to apply the Spens Report to the current capitation fee and inviting the Insurance Acts Committee to enter into discussions on the report forthwith; several amendments were withdrawn in view of the altered situation, but the discussions on the capitation fee, the attitude of the Minister, and the possibility of further contest before a satisfactory outcome is reached occupied fully half the time of the Conference. There was a full attendance of representatives from all parts of Great Britain.

Application of the Spens Report

Dr. E. A. GREGG, who was greeted with cheers, proposed as a recommendation from the Insurance Acts Committee:

That the Minister's offer, in the letter of Oct. 18 from Sir William Douglas, be accepted.

[The letter of Oct. 18 from the Permanent Secretary of the Ministry of Health appeared in the *Supplement* of last week (p. 103) and read as follows: "The Minister is willing fully to apply the Spens Report to the current capitation fee from Jan. 1, 1946, the increase of 2s. being regarded as a payment on account. To this end he invites the Insurance Acts Committee to enter into discussions on the Report forthwith, with special reference to the current capitation fee. The discussions will be conducted expeditiously."]

In presenting this recommendation Dr. Gregg said that it was unnecessary for him to explain that the Conference met that day under conditions considerably different from those anticipated when the agenda were prepared. It was unnecessary for him to enter upon any lengthy review of the history—the very unsatisfactory history—of the capitation fee. He would go back only to the days when Mr. Ernest Brown was Minister of Health. The I.A.C. had discussions with Mr. Brown, and eventually succeeded in convincing him that the conditions concerning the capitation fee were completely unsatisfactory. Mr. Brown agreed, and stated plainly that there was only one way of dealing with the question, namely, to open discussion "from the ground up" and to determine what would be reasonable payment for doctors doing health insurance work. That undertaking was given by Mr. Brown, and as soon as circumstances warranted they pressed for the fulfilment of his promise. In due time the Spens Committee was appointed and set about the task of investigating the remuneration of practitioners engaged in a public service. When the Spens Committee Report was issued the Insurance Acts Committee approached the Minister and asked that its recommendations be implemented. The Minister met them with the requirement that in such discussions over the Spens Report consideration must also be given to the remuneration in another service which

had not yet been passed into law, which had not been approved by the medical profession, and in which the profession had not signified its intention of taking part. It was pointed out to the Minister that the I.A.C. represented the insurance practitioners of the country only and that it was concerned with obtaining a satisfactory remuneration for doctors engaged in that service and with nothing else. The Minister, however, still insisted on his conditions that the two things—namely, the current insurance remuneration and the remuneration in any future service—should be discussed together. Finally they arrived at the state of affairs expressed in a motion which it had been intended should be brought forward by the I.A.C. and which would have authorized that committee at its discretion to put in the resignations of insurance practitioners unless the Minister was willing fully to apply the Spens Report to the current capitation fee with effect at least from Jan. 1, 1946, or failing agreement, to refer to the Spens Committee or a representative section of it, or other agreed independent body, the interpretation of the Spens Report in relation to the current fee. The line the I.A.C. had taken had been endorsed by an overwhelming majority of Panel Committees and their constituents throughout the country.

Dr. Gregg thought that there must have been echoes of these events in Whitehall because he could not otherwise explain the invitation received from the Ministry that representatives of the Insurance Acts Committee should go there again—an invitation accompanied by the remark that there had been some misunderstanding. He was prepared to believe that there had been a misunderstanding on the part of the Ministry concerning the real temper of insurance practitioners. However, four representatives of the committee, together with the Secretary, attended at the Ministry and the matter was reopened, and after much discussion they arrived at a form of words which expressed in general terms the opinions of those participating. That form of words—which did not wholly satisfy the representatives—was brought back to a full meeting of the committee, and, after discussion, Sir William Douglas was invited to attend and came at very short notice. It was explained to him that the committee felt grave misgivings concerning one phrase in the proposed procedure:

"Discussions . . . on the factors common both to current insurance remuneration and to remuneration in any future service."

After further discussion the procedure set out in Sir William Douglas's later letter of Oct. 18, already quoted, was accepted by the I.A.C. as a recommendation to the Conference. There might be arguments about this communication, but the committee believed that a sufficiently precise undertaking had been given to justify them in entering upon the discussions. They had in fact enough here to enable them to "get on with the job." He therefore asked for the authority of the Conference to accept the Minister's offer as stated in the letter of Oct. 18.

Talk of "Victory"

Dr. R. W. COCKSHUT (Hendon) said that a great victory had been won by insurance practitioners and Mr. Bevan had sustained a defeat. The victory was due without doubt to the fact that the practitioners had stood solid behind their representatives. He hoped in future they would talk less about what happened in 1911 and more about what happened in 1946. He knew that there were people who deprecated any talk of victory, but the fact ought to be put on record that

Mr. Bevan had in effect said to the profession, "My patience is exhausted. Here is 2s. Take it or leave it," and the profession had left it. Mr. Bevan had now agreed to enter upon further discussions on the basis which the I.A.C. had laid down. This victory had been won by the ordinary insurance doctors, and, moreover, it was a victory for the British Medical Association.

Dr. GORDON WARD (Kent) said that he was not going to reply to Dr. Cockshut but he wanted a little more information to take back to his own Panel Committee. The exact form of words which the I.A.C. had refused to accept might reveal the Minister's mind. He also desired to know whether the committee had in view any sort of figure to which they were prepared to stick in the forthcoming negotiations. It was inaccurate to say that the Spens Report promised 15s. if 40,000,000 people were in the service. He would like the committee to say, "Fifteen shillings or we go back to a special Conference." The sum of 15s. might be 15s. in the new service, and that would be, presumably, less the basic salary, if any, less payments to practitioners who were taking assistants, and less anything else the Minister cared to include. The profession had obtained an advantageous position and he was not so churlish as to withhold praise from the Insurance Acts Committee, but this was not a victory yet.

Dr. J. A. IRELAND (Shrewsbury) said that he too did not look upon this as victory as yet. It was misleading to talk of victory. Loose statements had been made in the press that the doctors were going to have a capitation fee of 15s. given to them by the Minister. There was no foundation for this whatsoever. The implementation of the Spens Committee Report depended upon para. 19 of that report, in which it was stated that the 15s. referred to a 100% service for the whole population, and that was taken on the basis of the 1939 figures, to which betterment must be added. There was one thing of vital importance, namely, that the proposed discussion now to be opened should not be long delayed. The Minister had often said to representatives of the profession, "I know that you are divided." There was very little division apparent in the present temper of the profession, as shown by the willingness of between 95 and 100% of practitioners to place their resignations in the hands of the committee—a unity never attained before. But the discussions should be speeded up. In other important trade disputes matters were settled often within a week. Although the Minister's undertaking must be accepted, one month should be ample time in which to complete the discussions.

Dr. W. JOPE (Lanark) agreed that a word of caution was necessary. He did not like to hear talk of victory when the battle had only just started. It was true that a break-through had been made, but victory had by no means been won. He hoped that before the Conference broke up the I.A.C. would be given some power to deal with any situation which might develop in the immediate future. He added that the present favourable position had been reached notwithstanding a very ill-timed communication by a body other than the B.M.A.

Dr. GREGG said that for his part he did not think there was any reason why they should not have the terms of the communication received originally from the Minister with which the committee was not satisfied. They were:

"Discussions to be begun immediately with the Insurance Acts Committee on the factors common both to current insurance remuneration and to remuneration in any future service so as to apply the Spens Committee report to insurance remuneration. Every effort will be made to complete the negotiations expeditiously. The capitation fee decided upon will be paid retrospectively to Jan. 1, 1946—the 2s. increase being a payment on account."

That was the communication which the committee considered at its meeting a week ago and with which it was not satisfied. On the question of the 15s. which had been mentioned, such a figure did not exist. They were faced with a position in which they had a report from a responsible body stating that practitioners' incomes were too low before the war. They had to relate that report to the payment received under National Health Insurance. There was subsequently brought into insurance in 1942 a class of people who were able and accustomed to pay fees considerably higher than the fees of the lower-paid industrial class, namely, those non-manual workers whose incomes reached £420. They had also to remember that there was a betterment figure to allow for the diminished value

of money. With those points before them they had to put out from the Spens Report what figure ought to be paid 15s. mentioned in the Spens Report was related to another of circumstances altogether.

He agreed that the term "victory" might be open to some criticism, but, after all, it was a victory when it was a responsible Minister, who at first had refused to talk in the way they wanted to talk, being obliged to turn and say that he was willing to adopt a different proposal. He knew no other name for what had been achieved victory. But it was a victory that had to be devoted to Alamein was not the winning of the war but it was the turning point, and this was their Alamein. (Cheers.) He agreed with Dr. Ireland that speed was essential, and he was prepared to move a later resolution to give a certain power to the committee to exercise pressure in the way of getting up as much speed as possible.

The motion accepting the Minister's offer as contained in the letter of Oct. 18 was put to the Conference and unanimously.

A rider was moved by Dr. W. LIVINGSTONE (Stoke-on-Trent) to the effect that in accepting the Minister's invitation they should make clear to him that his phrase "with special reference to the current capitation fee" must not be construed as suggesting that the negotiators had any mandate in matters pertaining to the future national health service was agreed to.

Dr. GREGG said that he did not think that the Conference need have any doubt regarding the firm position which the I.A.C. would take up with the Minister. They had on many times that they had no intention of being forced into a position of discussing anything in relation to some future

Expeditious Application

Dr. GREGG further moved:

That this Conference authorizes the Insurance Acts Committee to take any necessary action to secure full and expeditious application of the Spens Committee Report to the current capitation fee, and to include, if the Committee considers it necessary, the collection and use of the resignations of insurance practitioners.

It was essential that the Minister should realize that the committee had behind it a firmly united profession. The resolution was carried unanimously.

A Solid Profession

The SECRETARY (Dr. Charles Hill) announced the results of voting on the Insurance Acts Committee's recommendation to insurance practitioners to place their resignations in the hands of the committee unless the Minister was willing fully to apply the Spens Report to the current capitation fee. He said that up to the previous day reports had been received from 146 Panel Committees. In 63 areas the voting was unanimously in favour of the I.A.C. recommendation; in 29 areas there was one dissident; in 14 areas 2 dissidents; and in 40 areas more than 2, though in most of these areas the number of dissidents did not exceed 5. Over 95% had expressed their willingness to resign if called upon.

Time Limit for Negotiations

Dr. PARKER (Swansea) moved that there should be a time limit to negotiation and suggested Jan. 1, 1947, thus leaving no loophole for long-drawn-out discussions. Dr. J. A. IRELAND moved to substitute Dec. 1, 1946. He thought that five weeks from the termination of the present Conference was ample time. Dr. A. V. RUSSELL (Wolverhampton) and Dr. W. WOOLLEY (Bristol) spoke to the same effect. Dr. W. D. STEEL (Worcester) thought that with every desire to get these discussions through expeditiously they ought to be careful before fixing a definite date. This matter must be looked at from a practical point of view. After all, to say that the discussions must be concluded by Dec. 1 left them with only five weeks.

Dr. GREGG said that the Insurance Acts Committee was anxious to see that this matter went through quickly and by the resolution just passed the Conference had given the committee power to expedite it. But the question of betterment might involve considerable investigations, and it might be necessary

ry to call in the evidence of people who were specialists in at line. He asked that the committee should not be bound by any actual date. Moreover, they might remember that whatever fee was ultimately determined it would be back-dated to Jan. 1 of the present year.

The motions to impose a time limit either of Dec. 1, 1946, or Jan. 1, 1947, were lost by an overwhelming majority.

In reply to a question the SECRETARY read from the first schedule of the Regulations:

"A practitioner is entitled at any time to give notice to the Insurance Committee that he desires to withdraw his name from the Medical List and his name shall be removed therefrom at the expiration of three months from the date of such notice or of such shorter period as the Committee may agree."

to this there was a proviso:

"If such notice is given by the practitioner within one month after the issue to him by the Committee of a notice informing him of the proposed alteration in the terms of his service, including any amendment of the allocation or distribution scheme, two months shall be substituted for three months as a maximum period for which he may be required to continue to undertake insurance practice."

In the position contemplated by this notice the period would be three months from the day the notice had been put in.

National or Regional Action

Dr. F. C. COZENS (Kent) moved that should it be necessary or any withdrawal of service it should be by way of national and not regional action. National action would show the unanimity of the whole body of practitioners. Dr. BREACH (Kent) said that his constituency was somewhat concerned as to how withdrawals would operate along the margin of regions if the doctors in one region were practising normally and those in the adjacent regions were withdrawing. Dr. S. WAND (Birmingham) hoped the Conference would not pass any resolution concerning a particular method of carrying out a fight should it be necessary. They could not discuss the machinery of carrying out a fight in a Conference of that kind, and he suggested that this resolution and others of like tenor should be referred to the I.A.C. Dr. GREGG said that regional withdrawal had never been seriously pursued. There had not been any suggestion that withdrawal of service should be other than national. It was agreed to refer this motion to the committee.

Public Relations

Dr. E. M. TUSTIN (Somerset) moved that, if the necessity for direct action arose, notices explaining briefly the reasons for the action of the doctors be sent to all insurance practitioners for exhibition in their waiting-rooms. Dr. C. F. R. KILLICK (Somerset), supporting this suggestion, said it was important that the outstanding facts of the matter should be published. Dr. GREGG accepted this suggestion on behalf of the I.A.C.

Dr. W. WOOLLEY (Bristol) moved:

That in the event of it being necessary to use insurance practitioners' resignations, the Insurance Acts Committee be asked to take the most energetic action to ensure that the public is fully informed of the necessity for this action; that particularly the methods of the Ministry of Health in its dealings with the medical profession over a period of years be made known in a manner easily understandable by everyone; and that when the resignation forms were sent to practitioners, the accompanying notice will contain the notice that this will be done.

The public, he said, should be informed that this was not a mere political battle. They were not just against this Minister or this Government. Points to be emphasized were the 1941 story concerning the "cash in the pool," the unilateral scrapping of the agreement and the raising of the income limit to £420, and the questionable evidence offered at the Court of Inquiry in 1937.

Dr. D. F. HUTCHINSON (Middlesex) strongly supported the motion. Dr. A. C. DAWES (Smethwick) urged that the Public Relations Committee of the B.M.A. should undertake a special press campaign to bring the doctors' case before the public.

Dr. H. H. D. SUTHERLAND (London) said that the section of the I.A.C.'s report (*Supplement*, Sept. 28) headed "Insurance Capitation Fee" had the essentials of a "best seller," and with

an appropriate introduction might be offered to the public as a statement of their case.

Dr. GREGG said that they were well represented on the Public Relations Committee of the B.M.A. in Dr. Dain, its chairman. There were many factors to be taken into consideration in adjusting the figures, but it was abundantly clear that insurance practitioners in general were solidly behind them. Dr. M. J. MURRAY (Dundee) said that he and his partner were on the panel in three insurance areas. In their principal area they both voted for the I.A.C. recommendation, but in the other two areas neither of them voted, thus accounting for four of the "missing." Dr. WOOLLEY's motion was carried.

Dr. J. MCCREA (Berkshire) proposed a motion deploring the fact that the publicity given to the matter had failed to make it clear that the Minister had already refused to carry out his promise to apply the Spens Report to the current capitation fee and that the unity of insurance practitioners had eventually compelled him to do so. The press notices, he said, were meagre and misleading. It ought to have been made clear to the public that what practitioners had asked for was not a given capitation fee but the implementation of the Spens Report. Dr. DAIN said that the Public Relations Committee had been steadily at work for two or three years. Its members were beginners at this job, but they had now learned a good deal about it, and their relations with the Press had greatly improved and were in the main excellent. It was relatively easy to get their case stated in the national newspapers, but less easy in the local ones, and it was here that Panel Committee secretaries in their own districts could help. The Berkshire motion was withdrawn.

If Resignation becomes Effective

A motion by Lancashire asking the committee to circularize individual doctors with a guide as to the conduct of their practices in the event of their resignations becoming effective was accepted by Dr. Gregg for appropriate action.

Among other motions referred to the I.A.C. was one from Birmingham, suggesting that if resignations became operative, practitioners should treat former insurance patients as private patients, charging them the fee adopted for the district and giving them a receipt on a form centrally supplied, analogous to the present G.P.4, enabling the patient to claim reimbursement to the individual doctor's debit and to be placed on the doctor's list as from the date of his resignation or of the issue of the form consequent upon a national settlement.

Congratulations for the Committee

Dr. WOOLLEY moved a resolution of congratulation to the Insurance Acts Committee on its success so far on the question of the capitation fee. This was no formal proposal but a real "Thank you" to the committee, in which he included Dr. Hill. Dr. F. E. GOULD seconded, and the motion was carried by acclamation.

Dr. GREGG said that he had been on the I.A.C. for 25 years, and this was the first occasion on which he could recall a resolution passed in exactly these terms. His committee was a good one, which knew its job thoroughly. He went on to make an appeal for maintained unity. While he always respected those who put forward a minority view, he begged them, once a majority decision had been taken, to sink their own views and pull with the rest.

The Mileage Grant

Dr. R. W. RAE (Staffordshire) moved that immediate steps be taken to secure the heavier weighting of mileage, as suggested in para. 16 of the Spens Report. Country practitioners felt that if the capitation fee was inadequate, mileage was doubly inadequate. Dr. A. SIMPSON (Roxburghshire) urged a substantial increase in mileage remuneration. The motion was carried.

Dr. J. MCCREA (Berkshire) moved that any consideration of the capitation fee should include a proportionate increase of the mileage grant. The grant was not merely a contribution to car expenses: it was quite impossible for the rural practitioner to have as many patients on his list as his colleagues in the town. Dr. GREGG thought it would be better to leave mileage to be dealt with on its merits rather than to claim that the increase

should be proportionate to an increase granted on something else. The Berkshire motion was withdrawn.

Dr. T. O. JONES (Denbighshire) moved that in addition to the heavier weighting of the mileage grant, the payment for distances over four miles should be steeply increased. A doctor in a rural area with a list of 600 had to work much harder than an urban practitioner with a list of 2,000. The urban practitioner had the further advantage that more of his patients attended at the surgery, and when he visited patients he could cover more in a given time. He had also to attend an unusual number of acute cases which in an urban area would be sent to hospital immediately. This motion was referred to the committee.

NATIONAL INSURANCE DEFENCE TRUST

Dr. J. W. BONE (Treasurer of the Trust) said that the amount now held by the Trust was £315,000, entirely in gilt-edged securities. The Trustees had allocated nearly one-third of this to the Emergency Guarantee Fund, and the proposal that a second £100,000 should be so allocated had been noted. In addition the B.M.A. had guaranteed from its own funds another £100,000, so that a total of £300,000 was in waiting should the emergency arise.

Dr. D. L. S. JOHNSTON (Halifax) moved to emphasize the need for vigilance and unity in regard to any new service—irrespective of any inducements which might be made to enter it—and for increased financial support for the Trust by all possible means. Their salvation, he said, lay in themselves, not in the public, in spite of all that had been said about public relations, and the best way to back up the I.A.C. would be to provide an even larger fund. Dr. A. V. RUSSELL (Wolverhampton) supported Halifax, and said that his own constituency was making an immediate and special effort to follow the example of West Bromwich, which had actually paid 101% of its quota of the £1,000,000 objective. The motion was carried.

Dr. W. MACMILLAN (Worcester) moved a resolution drawing attention to the fact that from the extra remuneration recently granted on account by the Minister it was possible immediately for Panel Committees to complete their N.I.D.T. quota without undue hardship, and urging that all committees be recommended to do so without delay. The completion of the quota, he said, was of the highest importance. Worcester, which had contributed 33% of its quota, had agreed to raise its contribution from 4d. *per caput* to 6d. *per caput*, to be deducted from the cheques in January of next year. Dr. W. D. STEEL (Worcester) said that practitioners were receiving an extra payment of 2s. per insured person, and it should be easily possible for committees to raise their quota to 6d., equivalent to one-quarter of the additional sum received. The Worcester motion was carried unanimously.

Dr. OSCAR WILLIAMS (Llanelli) moved that as a token of appreciation of the work of the I.A.C., insurance practitioners be asked to guarantee to the Emergency Guarantee Fund, for one year, whatever additional sum was obtained over and above the present 12s. 6d., as a result of the talks with the Ministry. This would be without prejudice to the increase of the contributions to the Trust Fund as urged by Worcester. Dr. W. JOPE dissented. Why send representatives to the Minister to get as much money as possible and then use the money to fight him? Dr. GREGG said that there was a good deal in Dr. Jope's point. It would be a maladroit move for money to be received exactly in this way, but he saw no reason why practitioners who found themselves in a better financial position than they were before should not search their hearts to determine how far they might increase any guarantee they had already given. It was agreed to pass to the next business.

Dr. J. T. DALY (Worcestershire) moved to request the committee to consider what steps should be taken to aid those practitioners who, having borrowed money to buy their practices, found themselves unable to resign from N.H.I. practice because debarred by their agreements with financial agencies. In one part of Worcestershire the greater number of practitioners were under financial obligations to certain insurance companies, and while wholeheartedly in favour of resigning if the I.A.C. requested them to do so, found it impossible in the absence of some guarantee which would allow them to cut adrift from these obligations. The currency of the loans was dependent on their continuance in medical service under the

Insurance Acts. Dr. GREGG said that there was something here which required to be investigated, but the seriousness of the difficulty for the individual practitioner would be very considerably modified if he was one of a large number all taking the same action. It was inconceivable that reputable doctors which had advanced money, when they learned that the action to be taken was not individual but concerned the whole profession, would fail to assist and co-operate. He was prepared to accept the motion; the circumstances set out, affecting certain practitioners, would have to be faced. The motion was agreed to.

Dr. F. GRAY (London) announced that the London Panel Committee had decided that it would give its full support to the National Insurance Defence Trust, and in future would collect contributions for that fund only.

The report of the Trustees was approved.

NEW ENTRANTS INTO INSURANCE

Dr. W. WOOLLEY (Bristol) moved a resolution suggesting that a new contribution card should be provided with a detachable part containing a space for the employer's signature and details at present given on Form Med. 50 (revised), this part to be presented by the insured person to the doctor of choice and the card to take the place of the medical card which the latter had been received from the Insurance Committee. Dr. P. V. ANDERSON said that it was too much to expect the Minister to do such a thing. Dr. GREGG said that they had been trying for years to find some solution of this new entrant problem, but they were now within measurable distance in probability of the end of this particular service, and the Minister would tell them of the large stocks of existing stationery; the extravagance of undertaking such a departure. Nevertheless, he was prepared to lay the suggestion before the Ministry. The motion was referred to the committee.

On the formal motion of Dr. E. F. BARNARDO (Reading) the recommendation of the Insurance Acts Committee that no pregnant woman should be summoned to a centre for examination by a regional medical officer after the thirty-second week of pregnancy was supported by the Conference.

DISPENSING CAPITATION FEE

Dr. W. N. STEVENS (West Suffolk) asked the Conference to express the opinion that the present dispensing capitation fee was totally inadequate. Dr. PARKER (Swansea) said that in Wales in 1945 the average cost per insured person was 55.12d., an increase of 5d. over 1944, and of no less than 22d. over 1935 and 20d. over 1939 figures. The 55.12d. was the average; the highest figures in 1945 were 69d. per insured person in Brecon and 67d. in Carnarvon. In view of the rising costs they ought to aim at least at a dispensing fee of 5s.

Dr. J. C. PEARCE (Chairman, Rural Practitioners' Subcommittee) said that his subcommittee had done its best to get out the figures supplied by the doctors themselves. His subcommittee was desirous of obtaining figures from practitioners who were careful bookkeepers, and then it would go into the matter again. Dr. STEVENS pointed out that chemists could recover their purchase tax; doctors found it extremely difficult to do so. Dr. GREGG said that the committee was not satisfied that the dispensing fee was adequate, but the difficulty was to obtain the information from practitioners. The West Suffolk motion was carried with one dissenter.

Dr. H. W. POOLER (Derbyshire) moved to request the I.A.C. to consider means whereby the dispensing lists of rural practitioners could be very drastically curtailed. He said that certain rural practitioners in Derbyshire wanted if possible to be relieved of the duty of dispensing, and this for two reasons: (1) those who did not keep a dispenser wanted to be relieved of the additional work, and (2) those who did keep a dispenser wanted to be rid of this additional expense. In certain areas there were chemists from adjoining towns or villages who would be glad to establish a dispensing service at specified times in some of the remoter places if given facilities to do so.

Dr. F. GRAY said that the B.M.A. had a joint committee with the pharmacists, and this question of dispensing in rural areas was one of the matters under discussion. No final conclusions had been reached as yet, though he might say that the pharmacists showed a willingness to do more dispensing than at present.

it he did not think he could hold out any hope for any new arrangements coming into force before April 1, 1948.

Dr. J. A. FRIDHAM said that the Dorset Panel Committee was against such a suggestion as Derbyshire had brought forward. The patient should be considered, and no proper service as available for the patient by means of dispensing arrangements for an hour or two in a village. Even in urban areas a good deal of dissatisfaction with chemists' facilities was expressed, the shops closing a considerable time before the average doctor's surgery was finished. Dr. W. N. STEVENS said that many of his patients had to come five miles to see him, and if they had then to wait three hours to get their medicines would be intolerable.

Dr. GREGG, in accepting the Derbyshire motion for consideration by the Committee, said that there was no reason why a panel Committee in any area should not make special arrangements with local pharmacists.

General Motions

The Conference negatived a motion by Ayrshire concerning the Emergency Guarantee Fund. The decision of the B.M.A. Council was that the unexpended portion of the total fund be returned to the B.M.A., the N.I.D.T., and the individual guarantors in proportion to the amount contributed. Ayrshire wanted a refund to be in the first place in full to individual guarantors in proportion to the amounts they had contributed, and then, should there be any residue, repayment should be made to the B.M.A. and the N.I.D.T.

Dr. N. E. WATERFIELD (Surrey) moved to request the committee to consider whether any hardship was inflicted on any doctors being called up for recruitment, either as specialists or as general duty officers, in the Forces, and, if so, whether his hardship was such that steps should be taken to mitigate it, possibly on lines similar to those taken under somewhat similar circumstances during the war. Dr. GREGG said that the number of doctors engaged in general practice who were called up for general service duty was extremely small and was getting less. General service duty officers were being recruited almost entirely from young doctors who had not yet gone into practice. The motion was agreed to.

A motion by Burton-on-Trent that as long as established general practitioners were being called up for service a protection of practices scheme should be continued was referred to the Committee.

The Conference agreed, on a motion by Swansea, to make strong representations to the Minister to secure adequate supplies of liquid paraffin, olive oil, glucose, and Optrex, for the treatment of insurance and other patients.

THE NATIONAL HEALTH SERVICE PROPOSALS

Goodwill in Practices

Dr. A. BEAUCHAMP (Birmingham) moved:

That this Conference reaffirms the decision of the Special Conference of April, 1946, that there must be no interference with the present custom of buying and selling practices.

Dr. H. W. DONOVAN (Birmingham) seconded.

Statement by Dr. Dain

Dr. GUY DAIN, Chairman of Council, said that this proposal rather led them from National Health Insurance into the realm of the new National Health Service, and possibly as Chairman of Council and of the Negotiating Committee he might say something on this subject. The Minister had made no attempt to meet the situation which the profession had placed before him. He had not retreated from his position with regard to the purchase and sale of practices. He had taken the illogical standpoint that the sale of practices was immoral and was tantamount to the selling of blocks of patients, but apparently he was not prepared to stop the sale and purchase of dentists' practices or of the practices of consultants and specialists who, in certain instances, had bought their practices.

It was to be hoped that in the coming weeks the profession would show by its votes in the plebiscite that it was determined to stand by its principles, one of which was the retention of goodwill in practices. He thought they were in a very strong

position at the moment. They had succeeded in winning the first round or, at any rate, on a show of strength had caused the Minister to alter his mind. It was possible, he hoped, on a further show of strength to persuade him to alter his mind again.

In a few weeks the members of the profession would be asked to answer a question, and it was important that the implications of the question should be understood. If they were in favour of retaining their principles and wished to see them established before any new service was agreed they would vote against the carrying on of any negotiations for the building up of regulations. He was satisfied that any agreement on their part to enter into negotiations on detail while their principles were not accepted would be fatal to any prospect of establishing their principles later on. If they were prepared to act together in the way in which it had been shown that insurance practitioners could act together they would not only establish their principles but obtain a proper remuneration for their services as well.

He instanced two or three important principles which the Act failed to include. One of them was that any practitioner who wished to do so might come into the Service. The Minister had not conceded that, although it was in the National Health Insurance Service. The profession also desired to have the right of appeal to the courts before erasure of a name from the list. If the members of the profession thought that these things were of importance they would vote against their representatives' entering into discussion on the regulations for carrying on the service. They had before them the encouraging example of the profession in Australia where a Government had set up a service which, because it failed to satisfy medical opinion, remained a dead letter. In this country they did not want to see any medical service a dead letter, but they wanted to see one in which they could work with satisfaction to the community and to themselves.

The Council had met on the previous day to consider the question of the plebiscite. The question was a simple one: "Do you wish the Negotiating Committee to institute discussions with the Minister on the subject of the regulations?"

The present position of the Bill was that it was almost through the House of Lords, which had made a number of amendments. These would go back to the House of Commons, and if not accepted would come to the Lords again. The session ended on Nov. 6 or 7, and if the Bill had not received Royal Assent by then it would be a dead letter, and the Government would have to introduce it again and carry it through all its stages next session. It was not expected that any support of their case in the House of Lords would be sufficiently vigorous to stop the passage of the Act this session, though the time was short. Their future depended on their own exertions. It was most important that every doctor should understand the position before he voted in the plebiscite, and it was necessary to get the fullest representation of medical opinion.

Asked what was the position if they did not negotiate and the Minister framed his own regulations, Dr. Dain said that if the profession decided by a sufficient majority to take no part in negotiations the Minister's regulations would be useless, because the Act would have no doctors to work it. The profession could perfectly well stand together. Patients would be treated. From the economic point of view the average doctor's income in this country was derived at least to the extent of two-thirds from private practice. They would not be faced with an enormous economic disaster. They would continue to treat the members of the public as private patients, as the majority were treated to-day. He did not think they should enter upon this with trepidation. If they stood firmly together no real harm could come. The Government was by its programme compelled to produce a service, and it was agreed that such a service to be workable must command the willing acceptance of the medical profession. The conditions on which their willing acceptance depended could be readily stated, and by their own solidity he believed they could get them established. It was for them to see that the medical service was satisfactory. They should not have any difficulty in maintaining a reasonable standard of livelihood in the absence of a public service, and he hoped that they would not be terrified for fear of economic consequences into the acceptance of something of which they disapproved. (Loud applause.)

In reply to a further question he pointed out that there was no real parallel between the Minister's refusal to discuss principles and their own refusal to discuss regulations. The two things were not on the same footing.

Dr. GREGG reminded the Conference that the negotiations now referred to concerned the regulations necessary to bring the scheme into operation. The Minister still refused to negotiate in any way concerning what he called the fundamental principles of the Bill.

The motion reaffirming the decision that there must be no interference with the present custom of buying and selling practices was carried without dissent.

It was announced that the following were the six members of the Insurance Acts Committee who had been elected by the Conference (out of 16 candidates): Drs. A. Beauchamp (Birmingham), I. G. Innes (Hull), J. A. Ireland (Shrewsbury), J. A. Pridham (Dorset), F. M. Rose (Preston), W. Woolley (Bristol).

The Conference closed after according a hearty vote of thanks to its Chairman, Dr. J. A. Brown.

HEARD AT HEADQUARTERS

Mr. Bevan with the Students

The Minister of Health spent two hours with the students the other day, talking about the National Health Service Bill. He began with the affable remark that the British Medical Students' Association was a more important body than the B.M.A., "because you and I will have to live together when some of those presiding over the B.M.A. will only be in a position to require your services." He noticed that the students in a questionnaire had approved a comprehensive health service, but some of their other replies were a little contradictory. The majority desired the ownership and administration of voluntary hospitals to remain unchanged. But, said Mr. Bevan, he or his successor in the House of Commons would have to answer for a service which covered everybody in the country, and he could not do that if he had to work through institutions which denied his authority—"a very obvious thing, but a good many do not seem to have grasped it." "A National Health Service cannot be articulated to self-motivated voluntary hospitals." To have things remain as they were was surely hardly worthy of young and adventurous opinion.

On the other hand he noted that the majority of the students were in favour of general practitioners being remunerated partly by salary. There they did not march with some other medical views. Around this question of salary arose all the charges about "State Slaves," "mere Civil Servants," "regimented doctors," "Bevan's boys." "It is really all nonsense, you know." It had been said that with this scheme in operation all sense of adventure would die out of a man when he qualified. "All poppycock!" Apparently the sense of adventure was sustained if the young practitioner was left to the mercies of the moneylender. His idea in providing a basic salary was to ensure the young doctor his bread-and-butter and leave him the inspiration to get his gammon. Moreover, to a salary could be attached additions for postgraduate attainments, whereas such things could not be appended to a capitation fee.

No Direction

"There is no direction in this Bill," Mr. Bevan told the students. The only direction was that if a young doctor wanted to enter the public service he must, like anyone else, enter the public service where the public service needed him to enter it. He read out the usual figures showing inequality of doctor distribution—one doctor to 1,180 people in Hastings, one to 4,105 in South Shields, and so on. It was said that a doctor should be allowed to settle where he liked. Well, he had never heard that squatters were popular in the medical profession; in fact many young doctors came to him complaining bitterly of restrictive clauses in their agreements as assistants. That was what the profession was doing now; all he was doing was to bring about a negative control by a positive distribution of doctors over the country. He added that it was impossible to introduce a scheme of this kind without treading on corns, and medicine was "a very corny profession." One had only to go back to the conflicts of 1911-12, when the principles now being

advocated so warmly by the medical profession were denounced by the very same people, or their predecessors, as outrageous invasions of liberty. Mr. Bevan was boisterously confident about the success of his scheme. It was far less controversial than it seemed. Many of those who opposed it in public thought better of it in private. It was accepted by the great municipal authorities and, on the whole, by those responsible for the best features in the voluntary hospitals, and the best elements in the profession on the specialist side. "We have still to win the British Medical Association." He gave a side glance at his recent concession over the capitation fee—very pleased it had contented them, and, unlike more famous or more notorious men, he did not care an ounce about prestige—only about getting the best atmosphere in the profession.

The Right of Appeal

On one point Mr. Bevan was less happy. It concerned the question of appeal to the courts. He claimed that what he had done in this Bill was to give an additional safeguard to what existed already in national health insurance; in other words, he was putting in a tribunal between the local executive (equivalent to the insurance committee) and the Minister. What would happen if there was an appeal to the courts and a judge reversed the decision which was the result of all this apparatus? It would mean that the doctor concerned would go back into the Service. Thus the judge, in effect, would be the person who selected those who were under contract with the State. That would be, in Mr. Bevan's view, an intolerable position. Nevertheless, surely the same position arises in any successful action over wrongful dismissal or breach of contract.

The students, who bombarded him with questions for an hour and a quarter, seemed to be very anxious about unorthodox practice. Mr. Bevan's answer was that if anyone wanted to practise an unorthodox form of treatment the best way for him to do it was to get himself entitled to practise in the orthodox manner. He was not against heterodoxy, being a little bit that way himself, but in this legislation he had to keep within the "church," and practitioners must keep within the "church," too, if they wanted to be unorthodox. Many questions were fired at him about the right of private practice. He said that he would regard it as a major defect in the whole scheme if fee-paying continued on any large scale. Indeed, salary and capitation payment would be based on the assumption that very few people would pay fees.

Open Diplomacy

Sir William Douglas, Permanent Secretary of the Ministry of Health, created a very pleasant impression when he met the Insurance Acts Committee the other day. His frank, disarming manner helped to resolve a difficult situation. He had been asked to attend the committee at a moment's notice, and he came from Whitehall forthwith, making a jocular protest against this interference with the traditional Civil Service siesta. He showed a complete understanding of the committee's difficulty. Within half an hour or so, thanks to his co-operation, the committee reached agreement on a recommendation to the Panel Conference, although agreement had seemed impossible after two hours' previous debate.

Restrictive Covenants Discountenanced

The Hospitals Committee at its last meeting decided to reverse a previous decision concerning restrictions on future practice to be imposed on hospital house officers on appointment. Earlier this year the committee considered a letter from a district hospital which stated that the medical staff had requested that a condition should be imposed on a resident house-surgeon who was to be appointed that he should not practise within a radius of ten miles of the hospital during the ten years following the end of his appointment. The Committee was asked whether this was a reasonable procedure, and replied that some restriction was not unreasonable, but that a period of ten years and a radius of ten miles were excessive, and that three years and five miles would meet the case. In some quarters, however, any restriction of this kind was objected to, and was taken to be equivalent to the "negative direction" proposed by Mr. Bevan—indeed, worse than his, because the Minister would apply his direction only when he considered that no vacancy existed, whereas such restrictive covenants would apply irrespective of the needs of the area.

The matter has since been before the Central Ethical Committee, and it believes that there is no ethical justification for imposing such a condition. The view given some years ago by the solicitor, when the question arose in connexion with another hospital, was that while it was difficult to see why the hospital should require such a covenant, it would probably be held to be enforceable in law, and that the radius in this case, five miles, was not so wide as to be likely to lead the court to upset the covenant. In 1928 the Association conducted an inquiry into the subject. Out of 52 hospitals circularized, 44 had no restrictive clause in the agreement. The others had clauses in which the radius ranged from two to ten miles and the period from six months to five years. The Hospitals Committee, after considering the matter afresh, decided after a short debate that any such restriction ought to be dropped.

Correspondence

The Capitation Rate

SIR,—Early reports indicate that the profession is resolved to resign from National Health Insurance work unless it is remunerated at a level consistent with the findings of the Spens Committee. Indeed it would be impossible to find any good reason why we should continue to offer our services at a price that has long been, and is now publicly, recognized to be inadequate. The Spens Report has established our contention that for years the Ministry of Health has obtained our services at a grossly unfair rate. Mr. Bevan might well have disclaimed all responsibility for this and hastened to show that it ranked as one of the social injustices his party were determined to abolish. Instead he had the sheer effrontery to offer us a paltry sum more consistent with the attitude of his predecessors than the spirit of the Spens Report.

Possibly in more ways than one this is a foretaste of the shape of things to come; but we must be most careful not to permit Mr. Bevan, the public, or ourselves to confuse this very clear issue with any negotiations over the new National Health Service. There are some who appear to be anxious to divert this culmination of our old unanimity over the capitation rate to the purpose of an eleventh-hour display of unity in the much more controversial matter of the future Health Service. Just as Mr. Bevan hoped to garnish his Bill with our long overdue deserts, these medical opportunists hope to induce us to spew it out with our universal distaste for his failure to redress standing injustice. Probably neither party will succeed in influencing our attitude by such methods, but confusion of the two issues might easily forfeit public sympathy with us in any action necessary to secure just remuneration under the present system. Probably a majority of our panel patients have no particular reason to dislike the new health legislation and would not be sympathetic with any movement which became identified with opposition to the Government's Bill. On the other hand it may be anticipated that panel patients will be prepared to suffer some inconvenience to support our just claim for adequate pay. That is not a new conception to most wage earners. From a publicity point of view it would be a pity to complicate the sordid but simple little story of Mr. Bevan's bad faith with the enormous diversity of facts and prejudices relating to the National Health Bill.

There is another good reason for refusing to allow either Mr. Bevan or anyone else to confuse the issues: it is important that whatever we may claim or receive under the present system, it should not necessarily be considered adequate to meet the requirements of any system that might take its place. Obviously payment must be related to terms of service in each case, but the Spens Report quite rightly does not prescribe for any particular case; and we should be unwise to permit its application to one situation to modify its bearing on another. In fact whatever service we have in future we must insist on the constant application of the findings of the Spens Committee rather than accept it as a basis simply for adjustment of present capitation fees or initial remuneration in a new service. Any system of payment must in future be related by formula to the cost of living, and if the capitation method is to persist, the rate will also have to be related directly to the number of doctors

and inversely to the total population. We must insist on the sanctity of the Spens Report as the financial standard to be preserved for periodic checking of our position. Let us see to it that on this occasion and every future one it is handled with respect and applied simply and directly to the case in point.—I am, etc.,

Etc.

J. SHACKLETON BAILEY.

The Day's Work

SIR,—At the last meeting of the East Riding Panel Committee the Spens Report came up for consideration. It was then pointed out that although there was a figure of how much a general practitioner ought to earn, no one had ever decided how much work a doctor could be expected to do with reasonable efficiency—i.e., how many of the population one doctor could look after.

Taking the Spens Committee figure of £1,300 as a basis, we find that the average expenses of the practitioner are 40% of his gross earnings, and therefore a net income of £1,300 means a gross income of £2,166. With a capitation fee of 15s. this means a list of 2,888 patients. How much work does this entail? Statistics kept in this area in 1938 show that the average attendance on insured persons was 5.5 per annum; therefore 2,888 patients means 15,884 attendances (visits and surgery) per year. Taking 307 working days (i.e., omitting Sundays and the six public holidays) this gives an average of 51 attendances per day. But it is agreed by all practitioners that the amount of attendance on insured persons has increased during the last eight years, so it is quite fair to take a figure of at least 6, which gives a daily attendance of 56.4. With the capitation fee of 12s. 6d. we get a daily figure of 67.7.

Most of the practitioners in this area find that whereas one-third of their income comes from insured persons, these persons make two-thirds of their work. It is therefore fair to argue that when the whole population can get their medical attention without having to consider doctor's bills, the amount of attendance will be proportionately increased (which may be a good thing for the patient, but not for the doctor). This committee has always held that any National Health Service should be the best, so that no one should think that by going outside the Service he could obtain better treatment, but my colleagues all complain that they cannot do as good work as they would like because to make a reasonable income they have to look after more patients than they can treat efficiently.

The point that our negotiators should consider is, how many patients can a doctor see in a working day of reasonable hours, and give them efficient treatment? Can he see an average of 56.4 patients a day? I doubt it, particularly in a country practice, where many miles have to be covered, and which includes midwifery, accidents, dressings, minor operations, etc., in addition to letter-writing, telephone calls, and if he has no dispenser or secretary, making up medicines and keeping records. I know that there are doctors who say that they have done 70 visits and seen a similar number in their surgery, but this is not doctoring. I might mention here that during the war the Central Medical War Committee decided on a figure of 3,000 to one doctor in an urban district, 2,700 in a semi-urban district, and 2,400 in a rural district; and these were the maximum that a doctor could be expected to attend.

My own opinion is that in peacetime no doctor should be asked to look after more than 2,000 of the population if he is to do his work efficiently and have time to read a medical book occasionally, a little leisure, and see something of his family and friends. If I am correct the Minister of Health will have to alter his ideas of what he should pay the doctors. In conclusion, I note that the Spens Committee stated that its findings were in the 1939 value of money.—I am, etc.,

SIDNEY F. FOURACRE.

Chairman, East Riding Panel and
Local Medical Committee.

Witherssea.

A mass meeting of dentists passed a resolution on Oct. 20 refusing National Health Insurance dental patients at the fees imposed by the Minister of National Insurance. They will be treated as private patients at fees recommended by the Dental Benefit Council. The meeting was the last of a series that has been held throughout England, and it took place in London, at B.M.A. House.

H.M. Forces Appointments

COLONIAL MEDICAL SERVICE

The following appointments have been announced: R. B. Baird, M.B., Ch.B., D. P. Burkitt, M.B., B.Ch., F.R.C.S., A. R. Darlow, M.B., B.S., A. M. Best, M.R.C.S., L.R.C.P., Medical Officers, Uganda; A. M. Barnett, M.R.C.S., L.R.C.P., A. C. Franks, M.R.C.S., L.R.C.P., C. L. Hall, B.M., Ch.B., and W. T. Thom, M.B., Ch.B., Medical Officers, Tanganyika; W. L. Barton, M.B., Ch.B., G. C. Bisley, M.R.C.S., L.R.C.P., P. L. Candler, M.B., B.Ch., W. Waterston, L.R.C.P.&S., and J. R. Connolly, L.R.C.P.&S., Medical Officers, Kenya; P. P. D. Connolly, M.B., B.Ch., and J. H. McDonald, M.B., Ch.B., Senior Medical Officers, Tanganyika; S. C. Buck, M.B., Ch.B., Medical Officer (Pathologist), Northern Rhodesia; M. Calvert, M.B., B.Ch., N. W. J. Hctreed, B.M., B.S., M. C. Keter, M.B., Ch.B., P. R. Cooper, B.M., B.Ch., P. B. Siones, M.B., B.S., and N. Leitch, B.M., B.Ch., Medical Officers, Nigeria; A. H. R. Coombes, M.R.C.S., L.R.C.P., D. W. Goud, M.R.C.S., L.R.C.P., R. W. Holloway, M.D., J. S. Willis, M.D., J. R. Handforth, M.B., B.Ch., Medical Officers, Hong Kong; W. S. Dykes, M.B., Ch.B., and R. J. O'Kane, M.B., Ch.B., Medical Officers, Malaya; M. H. Hughes, B.M., R. F. Antonio, M.B., Ch.B., and G. M. Edington, M.B., Ch.B., Medical Officers, Gold Coast; P. W. J. Searle, M.B., Ch.B., Medical Officer, Grade II, Fiji; W. Sheffield, M.B., Ch.B., and A. J. Evans, Medical Officers, Northern Rhodesia; W. L. Cummings, M.B., Ch.B., District Medical Officer, St. Vincent, Windward Islands; P. G. Griffiths, M.C., M.B., B.Ch., Medical Officer, Fiji; C. H. Gurd, M.B., Ch.B., Medical Officer, St. Helena; A. E. E. Hirst, M.B., B.S., Medical Officer (Health) Grade C, Trinidad; O. F. Warner, L.R.C.P.&S., Medical Officer, Grade B, Trinidad; R. E. Barrett, M.B., B.S., D.P.H., Senior Medical Officer, Uganda; R. L. Cheverton, M.R.C.S., L.R.C.P., Assistant Director of Medical Services, Nigeria; A. T. Howell, M.R.C.S., L.R.C.P., and C. R. Philip, O.B.E., M.D., Assistant Directors of Medical Services, Kenya; A. McKenzie, M.B., B.S., Assistant Director of Medical Services, Tanganyika; R. Nicklin, M.B., Ch.B., and N. D. Sanderson, M.B., Ch.B., Senior Medical Officers, Northern Rhodesia; G. Ashe, M.B., Ch.B., Medical Officer, British Somaliland; G. T. Balean, M.R.C.S., L.R.C.P., Medical Officer, Zanzibar; W. H. MacDonald, M.B., B.S., Medical Officer, Grade II, Western Pacific; P. J. Pablot, M.B., B.S., Medical Officer, Grade I, Mauritius; W. J. Shannon, M.B., B.S., Medical Officer (Pathologist) Nyasaland; G. G. Smith, M.R.C.S., L.R.C.P., Medical Officer, British Honduras; J. H. West, Anaesthetist, Uganda; J. R. Barnley, Entomologist, Uganda; J. F. Graham, Supernumerary Entomologist, East African Locust Directorate, Kenya.

Association Notices

AREAS OF SWINDON AND TROWBRIDGE DIVISIONS

Notice is hereby given by the Council of the British Medical Association to all concerned that the municipal borough of Malmesbury has been transferred from the area of the Swindon Division to that of the Trowbridge Division.

CHARLES HILL,

Secretary.

Oct. 19, 1946.

Diary of Central Meetings

NOVEMBER

- 6. Wed. Ordinary meeting of Council, 10 a.m.
- 8. Fri. G.M.C. Committee, 2 p.m.
- 19. Tues. Undergraduate Subcommittee: (Film Committee), 2 p.m.

Branch and Division Meetings to be Held

NUNEATON AND TAMWORTH DIVISION.—At Red Lion Hotel, Atherstone, Tuesday, Nov. 5, 8.30 p.m. Dr. A. E. Carver: The Importance of a Psychosomatic Approach to the Problems of Everyday Practice.

RICHMOND DIVISION.—At Royal Hospital, Richmond; Friday, Nov. 8, 3 p.m. Clinical meeting.

Meetings of Branches and Divisions

MORPETH DIVISION

A meeting of the Morpeth Division was held on Oct. 11, 1946, with Mr. A. A. Bonar in the chair. A letter was read from Sir Arnold Lawson appealing on behalf of the "Christmas Gifts Fund," and it was agreed to postpone discussion of this matter until next meeting.

The chairman then introduced Mr. J. I. Munro Black, who gave a most interesting address on "Otitis Media," dealing mainly with the great advance in treatment brought about by the introduction of the sulphonamides and penicillin. He subsequently gave a short talk on "Hearing Aids for Deaf Persons." A vote of thanks was proposed by Dr. B. B. Noble and seconded by Dr. T. A. S. Brown.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Fri. (Nov. 1), 5 p.m., Prof. C. A. Pannett: Pancreatic Surgery. Mon., 5 p.m., Mr. Terence Miliin: Surgery of the Prostate. Tues., 5 p.m., Mr. C. Price Thomas: Surgical Treatment of Pulmonary Tuberculosis. Wed., 5 p.m., Prof. R. St. L. Brockman: Intestinal Obstruction.

ROYAL SOCIETY OF MEDICINE

Section of Orthopaedics.—Tues., 8 p.m. Short papers by Mr. R. H. Young: Protrusion of the intervertebral disk. Illustrated by a film. Mr. G. K. McKee: Use of the crossed Trislin nail and tibial graft in fractures of the neck of the femur. Mr. M. C. Wilkinson: Intertrochanteric osteotomy for tuberculosis of the hip. Mr. W. Sayle Creer: Some points about Monteggia fracture.

Section of History of Medicine.—Wed., 2.30 p.m. Paper by Prof. J. J. Izquierdo (Mexico City): The neglect of Harvey's *De Motu Cordis* in Spanish-speaking countries and its recognition after three centuries.

Section of Surgery.—Wed., 8 p.m. Discussion: Treatment of acute peritonitis. To be opened by Prof. John Morley, and Mr. C. G. Rob.

Section of Neurology.—Thurs., 8 p.m. Clinical meeting at Maida Vale Hospital for Nervous Diseases, W.

Clinical Section.—Fri., 5 p.m. (Cases at 4 p.m.)

THE LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—Tues., 5 p.m. Dr. R. T. Brain: Electrotherapeutics. Thurs., 5 p.m. Dr. G. B. Mitchell-Heggs: Penicillin in Diseases of the Skin.

MEDICAL RESEARCH SOCIETY.—At University College Hospital Medical School, Gower Street, W.C., Thurs., 5 p.m. Lecture by Dr. W. J. Kolff: The Artificial Kidney.

POSTGRADUATE NEWS

The 20th Annual Lloyd Roberts Lecture will be delivered in the Physiology Theatre of Manchester University by Prof. Michael Poianyi, F.R.S., on Tuesday, Nov. 19, at 4.15 p.m. Subject: "The Foundations of Academic Freedom."

The Fellowship of Medicine announces: (1) Course of six lectures on Clinical Aspects of Psychiatry, on Tuesdays and Wednesdays (afternoons) at West End Hospital for Nervous Diseases, from Nov. 5 to 20. (2) Course in obstetrics and gynaecology for general practitioners, daily, at Queen Charlotte's Maternity Hospital and Chelsea Hospital for Women, from Nov. 25 to 30.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Mr. Thorburn: The Early Diagnosis of Malignant Disease of the Ear, Nose, and Throat.

APPOINTMENTS

LONDON COUNTY COUNCIL.—The following appointments have been made in the mental health services of the Council at the Maudsley Hospital: Assistant Clinical Director; Eric Guttmann, M.D.; Physician, Andrew Paterson, M.D.; Senior Registrars, Marjorie Roth, M.D., and D. N. White, M.B., B.Ch.

ROYAL SUSSEX COUNTY HOSPITAL, Brighton.—Honorary appointments: Consulting Physician, Gladys M. Wauchope, M.D., F.R.C.P., Physician, & Kemball Price, M.D., M.R.C.P., W. A. Bourne, M.D., M.R.C.P., H. O. McOregor, M.D., M.R.C.P., Surgeons, H. J. McCurich, M.S., F.R.C.S., W. R. Forrester Wood, F.R.C.S., Assistant Surgeon, J. C. F. Lloyd Williamson, M.D., F.R.C.S., Ear, Nose, and Throat Surgeons, H. G. Downer, M.B., Ch.B., T. S. Allen, F.R.C.S.Ed., Assistant Ear, Nose, and Throat Surgeon, G. A. Fraser, M.B., Ch.B., Radiotherapist, E. Millington, M.R.C.S., L.R.C.P., Assistant Dermatologist, E. Colin Jones, M.B., B.S., Psychiatrist, A. W. Watt, M.B., Ch.B., D.P.M., Anaesthetist, J. H. Crawford, M.R.C.S., L.R.C.P., R. Binning, M.R.C.S., L.R.C.P.

WILLES, W.H., M.R.C.S., L.R.C.P., D.P.M., Psychiatrist to Nottingham County Borough and Nottinghamshire County Council Child Guidance Centres

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

HEMPHILL.—On Oct. 23, 1946, at Queen Charlotte's Hospital, London, 10 Patricia, wife of Dr. Peter Hemphill, a daughter.

MARRIAGE

THOMAS—HEBERT.—On Oct. 26, 1946, at St. Peter's Church, Llanbedr, Denbighshire, H. Arwel Thomas, County Medical Officer of Health, Wrexham, to Blodwen Herbert, widow of Capt. Reginald Herbert, of Bolton and Winchester.

DEATHS

DAVIDSON.—On Oct. 14, 1946, at Eden Mount, Carlisle, Ian Mackenzie Davidson, M.D., F.R.C.S.Ed., beloved husband of Dr. Josephine Davidson and very dearly loved second son of Mr. and Mrs. Norman Davidson 6, Lynedoch Place, Glasgow, C.3.

FRASER.—On Oct. 8, 1946, at Forthill, Aberdeen (following operation) Roderick Martin Fraser, M.B., Ch.B., aged 47 years, of 2, Bayhead Street, Stormoway.

PEACOCK.—On Oct. 22, 1946, at the East Suffolk and Ipswich Hospital, William Henry Peacock, C.B.E., M.B., beloved husband of Mary Hamilton Peacock, Henry Peacock, Church Street, Shropshire, and formerly of the West African Medical Service.

NAYLOR.—On Oct. 19, 1946, at 49, Longhill Road, Caistor, S.E.6, Maurice Craven Naylor, M.R.C.S., L.R.C.P. (late of Rammarsh), aged 80.

TETRA-ETHYL LEAD POISONING

BY

DAVID A. K. CASSELLS, M.D., M.R.C.P.Ed.

AND

E. C. DODDS, M.V.O., M.D., D.Sc., F.R.C.P., F.R.S.

Director of the Courtauld Institute of Biochemistry, Middlesex Hospital, London

Tetra-ethyl lead is the active ingredient of ethyl fluid, an anti-knock compound which for many years past has been widely used by the oil industry for addition to petrol. The toxic properties of tetra-ethyl lead are well known and have been very completely investigated and described—notably by Kehoe—following the occurrence of cases of poisoning when the manufacture of this substance was begun on a commercial scale in the United States in 1924. The absence hitherto of any cases of tetra-ethyl lead poisoning in this country has probably distracted attention from the possibility of its occurrence, and it may be timely to show how it can occur and to recall the symptoms, diagnosis, and treatment of the condition.

Properties of Tetra-ethyl Lead.—Owing to its ready miscibility with fats and oil, tetra-ethyl lead can be absorbed through the intact skin. The vapour given off is readily absorbed through the pulmonary epithelium, and though the substance is of low volatility its vapour pressure is of great significance toxicologically, since it is chiefly from inhalation of the vapour that poisoning is liable to occur. Air saturated with its vapour at ordinary temperatures contains approximately 5 mg. of lead per litre. Its toxicity is a function of the lead content and not of any peculiar qualities characteristic of the compound, but its fat-soluble character allows selective localization in the nervous tissues of the body, and for this reason tetra-ethyl lead poisoning is essentially a central nervous system intoxication (Kehoe, 1925, 1927).

Aetiology

The risks of tetra-ethyl lead poisoning occur, first, in the manufacture of tetra-ethyl lead and of ethyl fluid, the latter containing 60% by weight of tetra-ethyl lead and being the form in which the compound is added to petrol; and, secondly, in the blending of ethyl fluid with petrol. These processes, however, are so well controlled and their hazards so fully understood and so vigilantly guarded against that the occurrence of other than the mildest manifestations of lead absorption is very rare in the manufacture of the product and virtually unknown in lead-blending (Kehoe, 1934; Kehoe and Machle, unpublished data, 1936).

In addition the hazard involved in the cleaning of storage tanks which have contained leaded petrol has long been recognized. A sediment which can be likened to a muddy sludge is deposited on the bottom of every bulk-petrol-storage tank after a period of time. When leaded petrol is stored this sludge contains organic lead compounds and as a result is highly toxic in the same way as is concentrated tetra-ethyl lead, and may, from inhalation of its vapour during cleaning operations, give rise to similar acute and fatal illness. Machle (1935) reports 11 out of 17 cases of lead poisoning as occurring in this way between 1930 and 1935 in the United States.

The possibility of the occurrence of lead poisoning in the distributive and allied trades and among the general public

from the use of leaded petrol, where the concentration of lead has not exceeded approximately 1 in 1,300, has been widely investigated and uniformly discounted (Kehoe, Thamann, and Cholak, 1934, 1936; Final Report of Departmental Committee, 1930; Lind, 1936). Thus in the consideration of tetra-ethyl lead poisoning it is important to distinguish between contact with the concentrated products which are potentially toxic and the diluted leaded petrol which in normal concentrations is relatively innocuous.

In this country up to 1940 the only opportunity of contact with the concentrated product was in the blending of imported ethyl fluid with petrol. Blending was carried out in several refineries and depots throughout the country by a group of some 300 men. The process of blending was a standardized one, and in addition the men were under careful medical supervision. No cases of lead poisoning or any clinical evidence of lead absorption were noted among this group up to 1943. Laboratory workers were similarly controlled, and were equally free from toxic effects (Boldero and Robertson, personal communication).

After the outbreak of war the opportunities of contact with tetra-ethyl lead in this country increased. The manufacture of tetra-ethyl lead and of ethyl fluid was begun in 1940, and has been carried on ever since; but, under the most carefully controlled plant conditions and with very complete medical supervision, including regular laboratory investigations, no cases of poisoning have occurred. The workmen, tested before employment, showed a mean urinary lead excretion of 0.0328 mg. per litre. With exposure to lead this had risen a year later to 0.0774 mg. per litre, but with improvement in technique and with experience it had fallen in a further year's time to 0.0562 mg., and has remained in this region for the past four years, the latest figure being 0.0493 mg. per litre. Furthermore, the amount of ethyl fluid blending increased for a time, but laboratory analysis of urine samples from 1943 onwards showed no evidence of lead absorption attributable to this operation, nor did medical examination reveal any clinical evidence of lead intoxication.

Thus experience in this country followed that of the United States in the absence of toxic sequelae from the manufacture and handling of the concentrated products once the dangers were understood and the hazards controlled.

Throughout the war all aviation petrol contained tetra-ethyl lead, and from approximately the beginning of 1942 all petrol used by the Armed Forces, and to a large extent by the civil population also, contained that substance. During the war, however, many operations involving the handling, packing, and distribution of such petrol—much of it in small containers—had to be carried out under conditions which would not have been tolerated during peacetime. Much of the work was done by hand under security conditions of black-out precautions and

blast protection, which seriously interfered with the basic safety measures of effective ventilation.

Can-filling; Can-washing

Reports from abroad of certain cases of lead poisoning, characterized by the sudden onset of cerebral symptoms and occasionally ending fatally, drew attention to the possible hazards connected with the filling of very large numbers of petrol cans under conditions of operation described above.

Although it was realized that the absence of tropical conditions and the intermittent nature of the work rendered less likely the occurrence of such cases in this country, an investigation of can-filling was carried out in two localities in Britain. No cases showing clinical signs or symptoms attributable to tetra-ethyl lead poisoning were uncovered, but laboratory analysis of urine samples from a random selection of male and female can-fillers and can-washers showed that lead was present in such concentration as to point to a possibly hazardous lead exposure (Table I). Furthermore, estimation of the

TABLE I.—Frequency Distribution of Can-fillers and Can-washers According to Milligrammes of Lead per Litre of Urine

Mg. Lead	Nov. to Jan.		Jan. to March		March to May	
	Fillers	Washers	Fillers	Washers	Fillers	Washers
0-0.025 ..	—	—	—	—	—	—
0.026-0.050 ..	—	—	—	—	—	—
0.051-0.075 ..	1	1	—	—	2	6
0.076-0.100 ..	2	5	1	5	4	7
0.101-0.125 ..	3	3	4	1	5	7
0.126-0.150 ..	7	4	7	3	7	4
0.151-0.175 ..	5	1	1	—	1	1
0.176-0.200 ..	5	4	3	3	1	3
0.201-0.225 ..	2	3	3	2	2	—
0.226-0.250 ..	3	4	2	2	2	1
0.251-0.275 ..	1	3	1	1	2	—
0.276-0.300 ..	2	3	—	3	—	—
0.301-0.325 ..	3	4	1	—	—	—
0.326-0.350 ..	1	—	1	3	—	—
0.351-0.375 ..	1	1	—	—	—	—
0.376-0.400 ..	—	2	—	—	—	—
0.401-0.425 ..	1	—	—	—	—	—
0.426-0.450 ..	—	—	—	—	—	—
0.451-0.475 ..	1	—	—	—	—	—
0.476-0.500 ..	—	—	—	—	—	—
0.501-0.525 ..	—	—	—	—	—	—
0.526-0.550 ..	—	1	—	—	—	—
0.551-0.575 ..	—	—	—	—	—	—
0.576-0.600 ..	—	1	—	—	—	—
Total ..	38	40	25	28	27	32
Mean ..	0.2051	0.2267	0.1730	0.1728	0.1417	0.1091
Standard deviation ..	±0.0951	±0.1185	±0.0695	±0.0937	±0.0609	±0.0484
Prob. error of mean ..	±0.0103	±0.0126	±0.0095	±0.0128	±0.0079	±0.0057

amount of lead in the atmosphere showed a higher concentration than was considered desirable for prolonged periods of work in the buildings concerned, being higher than the safe limit of 1.5 mg. of lead per 10 cubic metres of air defined by the American Public Health Association (1943) (Table II).

TABLE II.—Average Concentration of Lead in Atmosphere in Can-filling Buildings in Milligrammes of Lead per 10 Cubic Metres of Air

		Plant X		Plant Y	
		Day	Night	Day	Night
Face level ..	..	11.9	4.78	5.21	2.26
Random point in building ..	..	4.65	3.37	1.2	1.2

Conditions were much improved by the installation of more efficient ventilation, by the introduction of mechanical filling, and by the enclosure of the filling machine, the average amount of lead in air being reduced to 2 mg. per 10 cubic metres. Gradual diminution in the urinary lead concentrations of the operators then occurred, and this was further hastened in the case of can-washers by the substitution of unleaded fuel in washing out the cans—a step which had the additional effect of reducing the amount of lead in the atmosphere of their building to 1 mg. per 10 cubic metres. Urine analysis, continued for a few months after these operations had ceased, showed a further drop in the mean lead urinary concentration to 0.08 mg. per litre.

Thus although there were no clinical symptoms of lead poisoning the degree of lead absorption was potentially too and could only have derived from exposure to leaded petrol.

Other Refinery Operations

It was thought, too, that the conditions under which petrol had to be handled from time to time gave rise to increased lead absorption by other refinery operators, since some men who were giving urine samples on account of occasional ethanol fluid blending, began to show higher urinary lead concentrations than the operation of blending could explain, especially since the amount of blending had by then greatly diminished.

Such men were engaged in tank-dipping, in the filling of road and rail cars, and more especially in attending to pumps in underground or semi-underground pump-houses. Here some leakage of petrol always occurred and the atmosphere smelt strongly of spirit; nor were the men too careful in running the ventilation system, especially in winter-time. Some of these men showed mild symptoms of intoxication as evidenced by disturbance of sleep and the occurrence of fantastic dreams, while at the same time they had urinary lead concentrations as high as 0.275 mg. per litre. Two of the men for a time compared their dreams each morning; another expressed himself as unable to compose his mind sufficient to go to sleep. No more serious manifestations occurred, however, and with the success of the Normandy campaign in the handling of large quantities of such fuel, and consequently in the amount of exposure, diminished very considerably and all symptoms disappeared.

Lead absorption also seemed to be greater in operators of those depots which, for safety's sake, had been built below the level of the surrounding countryside and in which, as consequence, natural ventilation was poor. Thus while the mean urinary lead concentration of all the lead-blenders in the country was 0.0535 mg. per litre (± 0.0338), that of the operators in two such depots was 0.157 and 0.188 mg. per litre.* On clinical examination these men showed no evidence of lead intoxication, and would have attracted no attention had not their urinary lead figures been so much higher than normal.

Tank-cleaning

After the cessation of hostilities a number of tanks which had been specially constructed for war purposes, and notably those which had contained aviation petrol, were no longer required in service. Accordingly it was decided to close them down after they had been cleaned. It was known that the sludge on the bottom of all these tanks contained organic lead compounds and that the operation of cleaning required strict observance of precautions designed to protect workmen from exposure to these compounds. The sludge was present in a storage tanks which had contained leaded petrol, irrespective of the lead concentration of the fuel; it contained organic lead compounds varying in amount from 0.044 to 0.084%, a series where analysis was carried out. The vast majority of the tanks in question were underground, and for this reason they presented far more serious cleaning problems than the normally associated with the usual type of bulk-petrol-storage tank built above ground.

Briefly, the operation of tank-cleaning consisted in sweeping the floor and scraping the sides and supporting pillars of underground tanks of 500, 2,000, and 4,000 tons capacity after the petrol had been pumped out and the air rendered gas-free by ventilation. Men engaged in the work were required to wear an air-line mask and were supplied with a complete outfit of clothing, including boots, gloves, and headgear. A warm bath was provided at the end of the day before the ordinary clothing was resumed.

The programme of tank-cleaning was begun in different parts of the country in the autumn of 1945, and in some instances the regulations governing the cleaning procedure came to be overlooked or disobeyed, with the result that several cases of poisoning occurred, while elsewhere the operation was carried through for months without even the mildest lead absorption resulting.

In all, there occurred twenty-five cases of tetra-ethyl lead poisoning of varying severity, two of them being fatal. Of four very severe cases, three occurred in foremen or charge-hands.

Case Histories

Case 1.—Aged 42. Started tank-cleaning on Oct. 31. After 3 weeks he was suffering from lack of appetite and broken up, and his mates thought he looked ill. He had a long week-end break and resumed work on Nov. 20 for a further week, during which he slept badly and had troublesome dreams, in one of which he had constantly to be brushing rats off his chest while he lay in bed. He felt sick, but couldn't vomit. On Nov. 28 his behaviour became odd in that he interfered with the apparatus used by the other men and complained of a loss of money which he had not in fact sustained. In the evening he became noisy and violent, and appeared to be having fits. He was admitted to hospital in the early morning of Nov. 28, and was found to be in a convulsion, deeply cyanosed, with an almost imperceptible pulse; he died within minutes of admission. At necropsy a few white patches were seen on the arachnoid which were reported as suggestive of lepto-meningitis or of lead or alcoholic poisoning. Sections of liver, spleen, stomach, and brain showed only the general appearances of degenerative change of varying severity. Analysis of the organs for lead showed the following, in milligrammes of lead per 100 g. wet tissue: brain, 0.74; liver, 2.35; spleen, 0.29; kidneys, 0.79. Normal maximum concentrations of lead in these tissues may be taken as brain, 0.09; liver, 0.28; spleen, 0.07; kidneys, 0.16 (American Public Health Association, 1943). Since tank-cleaners at this time were not under medical supervision, no sample of urine was available for analysis, but the quantity of lead found in the tissues, along with the symptoms described, left no doubt that the cause of death was acute lead poisoning.

Case 2.—Began tank-cleaning on Oct. 31, and first complained of "sleeplessness" on Nov. 16. He had a week-end break, during which he was restless by day, slept badly, and suffered from a mild diarrhoea for two days. He resumed work on Nov. 20 and continued to have insomnia. A few days later his letter home to his wife was confused and queer; he contradicted himself in it several times. He continued at work until Nov. 29, when he came rambling in his talk. He said he felt very weak and that he must go off and rest. He was admitted to hospital later on the same day, restless and violent. He was confused, amnesic, and orientated in time and place. He was suspicious, impulsive, violent, and suicidal, requiring continuous strict nursing supervision. His blood pressure was 108/60 while violent, the lowest reading being 94/60 during a quiet spell. The pulse rate ranged from 72 to 84, and his temperature was subnormal. Superficial reflexes were brisk, deep reflexes diminished, plantar responses flexor; cranial reflexes appeared normal. There was some incontinence of urine, and later a double incontinence. Blood examination showed 4.65 million red cells, 94% haemoglobin, 8,750 white cells, and no punctate basophilia or stippling of the red cells. Urine on Dec. 11 showed 0.440 mg. lead per litre, specific gravity 1014; on Dec. 19 0.98 mg. per litre, specific gravity 1020. Blood urea was 65 mg. per 100 ml. on Dec. 11, and 30 mg. per 100 ml. on Dec. 21. He was given glucose-saline and magnesium sulphate intravenously and received strong sedation: 40 ml. hexobarbitone intravenously between Dec. 4 and 6, 127.5 gr. (8.3 g.) "nembutal" (pentobarbitone sodium) between Dec. 4 and 18, and 14 litres glucose-saline with 1 g. magnesium sulphate intravenously between Dec. 4 and 15. His condition gradually deteriorated. He developed frequent muscular twitches and attacks of spasticity and was restless, talkative, and hallucinated. On other days he was quieter, but gradually he became weaker and lost much weight; he was semiconscious by Dec. 24. Next day there was a marked change in his condition. He became entirely rational; the twitches ceased; bowel and bladder control were regained; at night he slept well, and from that day he steadily improved. His blood pressure was 110/70 at this time, but a week later it was 120/80. His weight was only 7 st. 4.5 kg.). March 26 he weighed 12 st. 4 lb. (78 kg.) and his blood pressure was 140/85, pulse rate 72, temperature 98° F. (36.7° C.). His only recollection of the illness was of his dreams, in which he was usually struggling against terrific odds, but always successfully. His urinary lead was 0.086 mg. per litre, specific gravity 1013; and he complained only of slight stiffness in both knees. His condition otherwise, both physically and mentally, was normal.

Case 3.—Aged 43. Started tank-cleaning on Nov. 13, spending between five and six hours daily in the tanks. On Nov. 21 he suffered from nausea and vomiting in the evening and was off work next day. On Nov. 28 he had diarrhoea and vomiting, and was sweating and tremulous; he had difficulty in falling asleep and spent most of the night talking and smoking. He was irritable and excited. On next day by his doctor, he was thought to be suffering from influenza gastro-enteritis. He spent four or five days in bed but could not sleep, or such sleep as he had was broken by frightening dreams. In one of these he was seized by an octopus and had to fight with a knife in order to escape. He twitched during sleep. He then began to be odd in his behaviour, passing strange remarks and quoting scripture, doing everything in a great hurry and

shouting instead of talking quietly, and he seemed very nervous. On Jan. 2 he was seen by a psychiatrist, who found him confused and depressed and to have delusional ideas, and who recommended his admission to a mental hospital. By Jan. 8 he had lost between one and two stones (6-12 kg.) in weight. He was restless and somewhat inarticulate. His colour was good. His pulse rate was 48, temperature 97.2° F. (36.2° C.), and blood pressure 90/55. His superficial and deep reflexes were exaggerated. His movements were clumsy and spasmodic, but muscle power and tone were good. Mental confusion and delusional ideas were still present. Blood examination showed no punctate basophilia or polychromasia. Urinary lead concentration was 0.215 mg. per litre, specific gravity 1014, six weeks after his last exposure. He became violent a few days later and was admitted to a mental hospital in a state of acute delirious mania. During the first 24 hours he received four injections of 2 ml. of "sominifaine." On Jan. 21 he was still a little confused at times and suspicious, but he had made some progress and his blood pressure had risen to 110/60. He improved steadily and was mentally normal by Feb. 8, when his urinary lead concentration was 0.295 mg. per litre. He was discharged on April 1, mentally well and in a much improved physical condition. His urinary lead concentrations gradually diminished as follows: Feb. 18, 0.210; March 20, 0.135; May 2, 0.091; June 28, 0.063 mg. per litre.

Case 4.—Aged 31. Began tank-cleaning on Oct. 31, and had difficulty in falling asleep as early as the night of Nov. 1. He continued at work till Nov. 7, when he felt light-headed and very tired. He saw a doctor on Nov. 8 and was sent home for a week. He continued to sleep badly in spite of sedation, but his appetite was good. He returned to work on Nov. 20 and after one day felt sick and nervous and could not eat his breakfast. He returned home, where his appetite improved, but his sleep was broken by nightmarish dreams. He remained under his doctor's care till Dec. 3, when he was certified fit to resume work. On that day news of the death of a fellow workman was received, and he was re-certified as unfit for work. On Dec. 7 he looked well and had a good colour, but was a little confused mentally and apt to repeat himself. He had a fine tremor of hands and tongue. All reflexes were exaggerated except the biceps jerk, which was only just elicited. Muscle power and tone were good, pulse rate 48, blood pressure 110/55. Blood examination showed no punctate basophilia or polychromasia. The urinary lead concentration was 0.350 mg. per litre, specific gravity 1025, seven weeks after his last exposure. With ordinary convalescent treatment and mild activity in the open air, he made a good recovery and was fit for work a month later.

Case 5.—Aged 33. Started tank-cleaning on Oct. 31 and worked till Nov. 6, when he felt queer about the stomach and bought some stomach powder, after taking which he ate a good tea. He could not sleep that night and lay awake till morning. He could not eat his breakfast. He saw a local doctor and returned home to bed. He stated that he had no recollection of anything thereafter for a week or two. Seen by his doctor on Nov. 7, his case was diagnosed as "gastritis"—his appetite was poor and he had vomited several times. He slept very little even with the help of sleeping tablets until nearly a week had elapsed. He was sent to see a consultant with regard to his stomach, and was referred to a psychiatrist, who found him in a muddled anxious state just as if he was recovering from a hysterical fugue. He showed no sign of mental confusion or of organic change in the central nervous system. The picture was that of a neurosis. Blood examination on Dec. 6 showed 4.8 million red cells, 98% haemoglobin, 7,600 white cells; a few punctate basophils were seen, but not enough to justify a diagnosis of lead poisoning. A further blood examination on Dec. 7 showed no abnormality of any sort. His pulse rate was 78, blood pressure 120/80. Urinary lead concentration was 0.210 mg. per litre, specific gravity 1019, two months after his last exposure. He steadily improved in health and was fit for work a month later.

Case 6.—Aged 38. Began tank-cleaning on Jan. 2 and continued for one week. On Jan. 9 he felt sick, vomited once, and had severe diarrhoea with no abdominal pain. He had difficulty in falling asleep, and his sleep was fitful and troubled by weird, at times terrifying, dreams in which quaint human beings and animals figured. He was certified by his doctor as suffering from gastro-enteritis and did not return to work. The stomach condition settled down within a day or two, but his appetite remained poor and the sleeplessness persisted. During the day he was restless, irritable, and nervy, and wanted to be on the move all the time. On Jan. 15 his doctor thought him neurasthenic, especially as he had difficulty in passing urine from time to time. On Jan. 19 he looked better, though still anxious and apprehensive. Superficial reflexes were brisk, deep reflexes not exaggerated, muscle power and tone both good. There was some coarse tremor of hands and fingers, with some incoordination of movement. Blood pressure 112/60; pulse rate 64; urinary lead concentration 0.455 mg. per litre, specific gravity 1025. On Jan. 21 he was thought to be progressing satisfactorily since he was sleeping better and his appetite had improved. On the morning of Jan. 23 he suddenly became worse with maniacal

symptoms and delusions, trembling violently, sweating profusely, and talking incoherently. He was given 2 gr. (0.13 g.) of "luminal" (phenobarbitone), repeated in four hours, without effect; by evening he was in a state of acute mania, screaming at the top of his voice, and had to be forcibly restrained in bed. He was quite disorientated in time and place. There were no convulsions, and he died soon afterwards. At necropsy there were no changes except a few subserous petechiae in the heart and pericardium. Analysis of the organs showed the following in milligrammes of lead per 100 g. of wet tissue: brain, 0.6; liver, 2.5; spleen, 0.27; kidneys, 1.2.

Nineteen more men suffered ill effects. Nine of these at one depot had a mean urinary lead excretion of 0.249 mg. per litre, with a range of 0.110 to 0.480 mg. Their symptoms, in order of frequency, were: sleeplessness (including difficulty in falling asleep), broken sleep, and troubled dreams; a nasty sweet taste in the mouth and a bad smell to the breath; lack of appetite; diarrhoea with or without abdominal pain; trembling, shakiness, giddiness; complaint of loss of weight. On examination most of the men displayed increased deep and superficial reflexes, a slow pulse, and lowered blood pressure; some showed a tremor of hands and tongue. None showed mental confusion. There was no basophilic stippling of the red cells.

Six men at another depot, after one or two weeks of tank-cleaning, suffered from sleeplessness shortly followed by lack of appetite and, in some cases, bowel movements which were "watery and slimy—not a real motion." Here it was only after one man had consulted his doctor about insomnia and had been advised to have a change of work that mention of this symptom was made, and all discovered they had been having the same experience. They had been explaining away their sleeplessness to themselves in various ways—e.g., lack of exercise in the winter-time. The supervisor had attributed his insomnia to "worrying needlessly about the job and the men." These men, three months after ceasing this work, had a mean urinary lead concentration of 0.143 mg. per litre, with a range of 0.078 to 0.215 mg. Blood examinations at this time showed no stippling of the red cells or any other abnormality.

Four men at yet another depot showed a mean urinary lead concentration of 0.210 mg. per litre, with a range of 0.175 mg. to 0.240 mg. They had shown similar symptoms—viz., sleeplessness, anorexia, and nausea. Two of them had induced vomiting in an attempt to rid themselves of the feeling of sickness. One man had auditory hallucinations in the form of voices talking to him and people walking behind him, and was considered by his doctor to be suffering from an anxiety state, from which he took about six weeks to recover. None showed any red blood cell changes.

By contrast, 15 men who had done this same work continuously for three months under careful supervision showed a mean urinary lead concentration of 0.048 mg. per litre. The range was from 0.016 to 0.073 mg. except for one case where the figure was 0.135 mg. All these men were symptomless, all had put on weight, and their state of health was the envy of their friends and relatives.

Symptoms

The earliest symptoms in 25 cases of tetra-ethyl lead poisoning were disturbance of sleep and symptoms referable to the alimentary tract. The classical signs and symptoms of lead poisoning—viz., abdominal colic, tremors and fibrillary twitchings, myalgia, neuralgia, constipation, pallor, blue line on the gums, paralyses, stippling of the red blood cells, and punctate basophilia—either did not occur or were a very minor part indeed of the picture.

The earliest indication, often coming on within the first week of exposure, was sleeplessness. A healthy man who regularly went to sleep about 10.30 p.m., "as soon as my head touched the pillow," would lie awake till 2 or 3 a.m., sleep for an hour, often with troubled dreams, wake up with a start, and perhaps snatch another hour of restless slumber before morning, or else find the morning arrive without further sleep. Following shortly upon insomnia, only rarely preceding it, came alimentary tract disturbance—lack of appetite, nausea, vomiting, and diarrhoea of varying severity with no abdominal pain. Subjective nervous symptoms were next in evidence—such as irritability, restlessness, nervousness, and anxiety, possibly tiredness.

The signs at this time were a slow pulse, subnormal temperature, low blood pressure, increased reflexes, and a slight loss of

body weight. With longer or more severe exposure the signs and symptoms progressed to increasing tiredness and loss of body weight, tremor, muscular weakness and twitching, oddities of behaviour, and evidences of mental confusion, and then, quite abruptly, came the onset of acute maniacal symptoms with suicidal tendencies, or the occurrence of a convulsion. Machle (1935) states that in general a given patient will manifest a type of mental response characteristic for him, and not related to the severity of his illness or its stage, but apparently dependent on his mental background. We agree that this was so in this series of cases.

Pallor was not a feature of any of the cases, nor did punctate basophilia occur. Some cases had been referred to a pathologist for blood examination, on account of a suspicion that it might be the cause of the illness, and had been reported "not suffering from lead poisoning" because of the absence of punctate basophilia.

Diagnosis

The diagnosis depends upon the occurrence of such symptoms as have been described, along with the history of exposure to a severe lead hazard. Recognition of what constitutes a severe lead hazard is all-important.

Urinary lead concentration will give some idea of the degree of exposure. If this is less than 0.1 mg. per litre at a time when symptoms of the above nature are displayed, tetra-ethyl lead is unlikely to be the cause. Mild symptoms may occur with a figure of 0.15 mg., but generally it is above this level and in severe cases it is more likely to be in the region of 0.3 mg. or more. Kehoe (1942) states that the upper limit of safe lead exposure as defined on the basis of urinary lead excretion of exposed workmen is represented by a mean value of approximately 0.10 mg. lead per litre for samples that exceed 0.15 mg. only infrequently and 0.20 mg. per litre rarely.

If a 24-hour sample of urine is obtained without unduly large quantities of fluids having been consumed previously, the urinary lead concentration figure may be accepted as it stands. If a single sample is analysed, varying in quantity from approximately 75 to 350 ml., its specific gravity should be taken into account in assessing the significance of the lead concentration. A procedure which has some value in this respect is to multiply the "mg. per litre" figure by 24/G, where G=1,000 (S.G. of sample, 1) (Levi and Fahy, 1945). A high lead concentration in a sample of low specific gravity obviously carries more significance than the same concentration in a sample of high specific gravity.

It is essential in collecting a sample to use a chemically clean container—not necessarily sterile—one which has been washed out with concentrated redistilled nitric acid and with doubly distilled water. One is dealing with microgrammes of lead, and unless a properly prepared container is used the figure obtained will be unduly high. In collection, the sample is passed directly into the container without using any intermediate vessel.

Among the lesions which may simulate this condition are encephalitis due to infection, neurosyphilis, unlocalized brain tumour, cerebral arteriosclerosis, uraemia, and cerebral manifestations of pellagra. Other types of cerebral intoxication caused by alcohol, mercury, carbon monoxide, and overdoses with drugs such as bromides and barbiturates must also be considered. It should be remembered that unquestionably severe lead exposure is required to cause lead encephalopathy in the adult (American Public Health Association, 1943).

The absence of stippling does not rule out tetra-ethyl lead poisoning; basophilic stippling of the red cells is common, absent, and was absent in all the cases described in this series.

Prognosis.—Death may occur rapidly within a few hours of the acute onset or may be delayed for some weeks. If death does not occur within this time, recovery is usually complete. There have been no permanent cerebral sequelae in this series.

Prevention

The careful observance of regulations in carrying out operations connected with tetra-ethyl lead will prevent the occurrence of poisoning, since the hazards are well understood and guarded against. Intelligent and unremitting supervision of the men is called for, and should be the responsibility of someone of higher status than foreman or charge-hand. A foreman, who died, neglected to take precautions and

ported to have said that he had worked with petrol all his life and it had never hurt him. One charge-hand, another case, thought that fifteen years of work with petrol solved him from the necessity for taking precautions.

Treatment

All that is necessary in the milder cases is removal from exposure, light exercise in the open air, a normal diet with plenty of fluids, and the relief of sleeplessness by adequate doses of a suitable sedative, preferably one of the barbiturates. The treatment of the severe case calls for strict nursing supervision in view of the impulsive suicidal tendencies sometimes displayed, and for adequate fluid intake and sedation.

Glucose, 5% in saline, may be given intravenously up to litres per day. If given as a drip, hexobarbitone may be added. "Somnifaine" and pentobarbitone sodium are other suitable sedatives, and may be given in repeated full doses to obtain rest. A retention enema of 4 to 6 oz. (110-170 g.) of saturated solution of magnesium sulphate often has a quieting effect when it can be retained. Morphine is contraindicated. Lachle (1935) recommends the intravenous administration of from 2 to 4 g. of magnesium sulphate in 2% solution accompanied by doses of pentobarbitone sodium up to 15 gr. (1 g.) orally by mouth. Reference to Case 2 of this series will give some idea of the amount of sedation which may be required in a severe case.

Ample fluids should be given throughout subsequent convalescence to aid the elimination of lead. After a severe exposure many months may elapse before the urinary lead concentration reaches a normal figure.

Summary

The properties of tetra-ethyl lead are briefly recalled.

The opportunities to develop tetra-ethyl lead poisoning in this country are described.

Twenty-five cases of tetra-ethyl lead poisoning of varying degrees of severity occurred during tank-cleaning operations, and six of the cases are described in detail.

The symptoms, diagnosis, and treatment of tetra-ethyl lead poisoning are discussed briefly.

We are indebted to Dr. R. W. Zeitlin for his help in two of these cases, and especially for his care of one of them throughout its course to a happy conclusion; also to Dr. Stanley H. Coleman, Dr. R. E. Hemphill, and Dr. G. Schwizer for their assistance in the other cases. The chemical analytical work upon which these observations are based was carried out in the Courtauld Institute by Mr. E. R. Smith. The blood examinations were performed by Dr. R. L. Harding, and to both of these gentlemen we wish to express our thanks.

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The first number of *Anaesthesia*, the journal of the Association of Anaesthetists of Great Britain and Ireland, has now been published. It opens with a foreword by Sir Alfred Webb-Johnson, M.R.C.S., wishing the journal every success, and noting that the year of celebration of the centenary of the first operation under general anaesthesia in this country is a most opportune time for founding a journal which will make British teaching and records of discovery and achievement available for the medical profession throughout the world. The editor, Dr. C. Langton Hewer, contributes a note giving the reasons for launching *Anaesthesia*, and this is followed by an article on the inception and purpose of the Association of Anaesthetists written by Dr. H. W. Featherstone, its first president, and another, on the centenary of anaesthesia in Great Britain, by Dr. A. D. Marston, who now holds that office. The rest of the issue is taken up with short practical articles, a review, and some abstracts and items of news. *Anaesthesia* is published quarterly from 24, Thayer Street, W.1.

POST-PENICILLIN JAUNDICE

BY

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During recent years increasing numbers of cases have been reported in which infective hepatitis has been conveyed to patients by means of an infected injection. The cases fall naturally into two groups, the first of these being cases in which infected serum has been injected either intravenously or intramuscularly. Beeson (1943), Morgan and Williamson (1943), Steiner (1944), and other authors have reported the occurrence of jaundice after transfusion with whole blood or blood plasma. Similarly, hepatitis has followed administration of convalescent serum in the treatment of mumps and measles; jaundice has also occurred after yellow fever immunization where the vaccine contained human blood serum. Experimentally the disease has been transmitted to human volunteers by injection of blood or serum from patients in the pre-icteric or early icteric stages; this experimental work was summarized by McCallum (1944).

Into the second group fall those cases in which the disease may be conveyed by an infected needle or syringe. Salaman *et al.* (1944) reported a high incidence of jaundice in patients receiving intravenous injections of arsenic for syphilis at the Royal Victoria Hospital, Netley, and showed that the incidence of this condition could be much reduced by careful sterilization of needles and syringes. Sheehan (1944) reported further such cases, and considered that hepatitis following the administration of neoarsphenamine was due to the transmission of a blood-borne virus from one patient to another by unsterile syringes. Droller (1945) described an outbreak of jaundice at a diabetic clinic due to the collection of blood for blood-sugar estimation, and Sheehan (1944) reported cases following the withdrawal of blood for estimation of the erythrocyte sedimentation rate. It is here of interest to recall that Murray (1930) reported a high incidence of jaundice in patients treated with intravenous acriflavine for gonorrhoea; there can be little doubt from his description that the cases were identical with those at present under discussion.

Case Histories (Military General Hospitals)

During the past few months, while working in military general hospitals in India, it was noted with interest that a large number of cases of infective hepatitis admitted to medical wards gave a history of having received a course of penicillin injections within the previous seven months. A total of 124 cases of hepatitis were seen, and 36 of these were found to have had penicillin treatment. Clinically these cases were indistinguishable from those of infective hepatitis, post-arsphenamine jaundice, and homologous-serum jaundice admitted during the same period; hence it is unnecessary to describe the history of each case separately and in detail.

The initial symptoms were loss of appetite, abdominal discomfort, flatulence, nausea, and occasional vomiting, followed four or five days later by the onset of jaundice. On admission to hospital there were generally a slight fever for a few days, a moderate degree of icterus, and a palpable tender liver; the urine contained bile salts and bile pigments, and there was a moderate degree of granulopenia and also a raised icteric index or bilirubinaemia. One or two of these patients were seriously ill for a few days, but the majority of cases were quite mild; with strict bed rest the fever and other symptoms rapidly subsided, the jaundice cleared, and the patient was fit for discharge from hospital at the end of three or four weeks. There were no fatal cases. Table I gives a more detailed analysis of the cases seen.

TABLE I.—Analysis of Cases of Infective Hepatitis

Total number of cases of infective hepatitis	124
Number of these cases with a history of penicillin injections	
within the previous 7 months	36
Cases of gonorrhoea treated with penicillin*	9
Cases of syphilis treated with penicillin*	15
Cases of gunshot wounds treated with penicillin	2
Dermatological cases treated with penicillin	1
Cases of syphilis treated with penicillin but had had injections of arsenic and bismuth	5
Cases of gunshot wounds treated with penicillin but had received blood or plasma transfusions	5

* One case is included in both these groups, as the patient had gonorrhoea and later syphilis within the relevant period; both these diseases were treated with penicillin.

If the last two groups in Table I are excluded as possible cases of post-arsphenamine and homologous-serum jaundice there are left 26 cases (or 21% of the total number seen) in which the jaundice might be ascribed to penicillin treatment. Further details of these 26 cases are given in Table II.

TABLE II.—Clinical Details of Cases of Post-penicillin Jaundice

Case No.	Age	Disease	Dose of Penicillin (units)	Date Drug was Started	Date Drug was Stopped	Date of Onset of Hepatitis	Interval in Days	
							Min.	Max.
1	23	Syphilis	2,000,000	16/2/45	28/2/45	22/4/45	53	65
2	22	Gonorrhoea	100,000	6/2/45	6/2/45	17/5/45	109	100
3	30	Syphilis	2,000,000	17/3/45	29/3/45	13/6/45	76	88
4	28	"	2,000,000	19/2/45	4/3/45	27/5/45	84	97
5	34	Gunshot wnd.	1,333,300	27/3/45	7/4/45	19/6/45	73	84
6	20	Syphilis	2,000,000	28/3/45	9/4/45	25/6/45	77	89
7	34	"	2,000,000	19/4/45	15/5/45	29/6/45	59	71
8	22	"	2,400,000	10/2/45	17/2/45	29/6/45	132	139
9	23	"	2,000,000	14/4/45	26/4/45	4/7/45	69	81
10	20	Gunshot wnd.	1,000,000	20/2/45	2/3/45	13/7/45	133	143
11	22	Gonorrhoea	100,000	14/12/44	15/12/44	15/7/45	212	213
12	23	Gonorrhoea, syphilis	100,000	3/5/45	4/5/45	3/8/45	34	92
13	21	Furunculosis	2,400,000	23/6/45	30/6/45	13/7/45	68	72
14	24	Gonorrhoea	480,000	2/5/45	6/5/45	10/8/45	83	84
15	23	"	100,000	1/5/45	2/5/45	24/7/45	100	101
16	35	"	100,000	1/5/45	2/5/45	10/8/45	109	116
17	26	Syphilis	2,400,000	22/3/45	29/3/45	25/5/45	74	75
18	23	Gonorrhoea	100,000	11/3/45	12/3/45	16/6/45	42	54
19	27	Syphilis	2,000,000	23/4/45	5/5/45	23/6/45	79	86
20	27	"	2,400,000	29/3/45	5/4/45	2/8/45	141	150
21	24	"	2,400,000	5/3/45	14/3/45	12/7/45	83	91
22	25	Gonorrhoea	2,400,000	12/4/45	20/4/45	19/6/45	154	155
23	31	"	100,000	15/1/45	16/1/45	16/8/45	104	104
24	32	"	100,000	4/5/45	4/5/45	18/8/45	133	135
25	26	Syphilis	140,000	5/4/45	7/4/45	30/8/45	83	95
26	28	"	2,000,000	27/5/45	9/6/45	31/8/45	83	95

In each of the above cases the penicillin was given by intramuscular injection at 3-hourly intervals. Gonorrhoea was usually treated with 5 injections of 20,000 units and syphilis with 100 injections of 20,000 units or 60 injections of 40,000 units.

Comment on the Cases

On questioning an unselected series of 100 patients in the medical wards of the hospital it was found that only 4 of these had been treated with penicillin in the previous 7 months, hence there can be no doubt that the high percentage of jaundiced patients that had been treated with this drug is of statistical significance.

So far as is at present known, penicillin has no toxic effects when used in therapeutic doses. Local pain at the site of injection, venous thrombosis (when the drug is administered intravenously), fever, and urticarial rashes are all occasionally met with, but are considered to be due to impurities. One patient of a further series, reported below, received a total of 23,220,000 units within 48 days without any toxic effects being produced.

Clinically these cases were indistinguishable from other forms of jaundice known to be transmissible—infective hepatitis and post-arsphenamine jaundice. If in fact the disease was conveyed by the penicillin injections the incubation period is closely comparable with that known in the above two types of jaundice. In the present series the incubation period is 34 to 213 days; in post-arsphenamine jaundice the incubation period is about 100 days. Cameron (1943), in his report on the experimental transmission of infective hepatitis to human volunteers by injection of blood or serum from jaundiced patients, stated that the incubation period varied from 30 days to 6 months. The unusually long latent period of 212 to 213 days in Case 11 suggests that the association of penicillin treatment with jaundice may have been coincidental. The most probable explanation is that post-penicillin and post-arsphenamine jaundice are identical, and due to an infective agent conveyed from patient to patient by the injections. This would explain the relative frequency of jaundice after the treatment of syphilis (15 cases) and gonorrhoea (9 cases). In a V.D. treatment centre in this area 135 cases of syphilis and 419 cases of gonorrhoea were treated in a period of 8 months. The higher incidence of jaundice in syphilitics may be explained by the much larger number of injections (either 60 or 100) given and so the much greater possibility of conveying the infection to the patient.

Cases of Jaundice occurring in a Penicillin Research Unit

This unit, which was attached to an Indian Base General Hospital, was investigating the effect of penicillin treatment on

chronic bone infections due to war wounds. The case treated in a ward of 80 beds, in which also cases of the type were being treated by the general surgeons. Many cases had had blood or plasma transfusions and injected penicillin before admission.

During the period of the outbreak 170 cases were in the ward, and 66 of these were given penicillin injected. 10 cases of jaundice occurred, 9 of them in patients who had penicillin since admission. The other—the first case series—had had penicillin at another medical unit two months previously. Table III gives further details of these cases.

TABLE III.—Clinical Details of Cases of Jaundice at a Penicillin Research Unit

Case No.	Date of Wound	Penicillin Given Before Admission		Date Admitted to Unit	Penicillin Given at Research Unit	
		Date Started	Dose (units)		Date Started	Dose (units)
1	18/11/44	21/11/44	950,000	26/1/45	9/2/45	23,220,000
2	3/8/44	—	0	14/8/44	6/9/44	840,000
					22/9/44	1,200,000
					2/1/45	3,220,000
3	16/3/44	—	—	3/5/44	4/1/45	2,340,000
					17/4/45	1,600,000
4	29/5/44	—	0	25/11/44	2/1/45	2,340,000
5	15/1/45	16/1/45	300,000	26/1/45	1/2/45	2,340,000
					6/3/45	4,000,000
6	31/1/45	—	0	17/3/45	23/3/45	800,000
7	11/10/44	18/10/44	1,400,000	5/1/45	16/1/45	2,340,000
					24/3/45	1,440,000
8	16/1/45	16/1/45	300,000	26/1/45	1/2/45	2,340,000
					2/3/45	2,340,000
9	15/5/44	—	0	25/10/44	21/2/45	1,880,000
10	14/5/45	—	0	17/6/45	3/7/45	320,000

With the exception of Case 1, penicillin was given to the above patients in doses of 20,000 units 3-hourly by intramuscular injection while at the Research Unit.

In this small series of cases there was one fatality (Case 1). The patient was a male of 18 years who sustained machine bullet wounds of both legs and a compound fracture of right femur. On May 3, 1945, when convalescent from wounds, he developed infective hepatitis and malaria (Case 1). The latter condition responded to mepacrine treatment, the hepatitis progressed, and he died on May 17. At post-mortem examination extensive liver necrosis was found.

Discussion of Research Unit Cases

In a closed community of this type the possibility of spread by droplet or intestinal infection must always be considered, however, in view of the fact that jaundice was confined to one ward only, and in that ward to the penicillin-treated cases, spread by syringe infection seems a more likely explanation. In this ward great care was taken over the sterilization of needles and syringes. The dose of 20,000 units of penicillin was made up to a volume of 2 ml., a freshly sterilized needle was used to withdraw this from the ampoule, and a second needle to inject the drug into the patient. In some cases a freshly sterilized syringe was employed for each patient, but in some the same syringe was in use for several patients in succession. Needles and syringes were sterilized by boiling for 15 minutes; the needles were handled only with forceps.

It is difficult to attempt to trace the spread of the infection from patient to patient: first, because an unknown percentage of the cases of hepatitis remain non-icteric and undiagnosed; secondly, because the period during which the patient is infectious is still not known. Lisney (1944) states that the patient is infectious for at least one week before the appearance of the jaundice, while Sheehan claims that the patient becomes infectious about one month after the onset of the incubation period. McCallum and Bauer (1944) have succeeded in conveying homologous-serum jaundice to volunteers by injecting serum withdrawn on the seventh day of the jaundice.

If Case 2 was infected by injections in September, 1944, could have transmitted the disease to Cases 3, 4, and 7 means of the course of injections starting on Jan. 2; and Case 4 could have passed the disease on to Case 6 by means of a course starting on March 24. Again, if the patient still remains infectious as long as 14 days after the onset of jaundice, Case 1 may have transmitted the condition to Cases 5 and 10.

Syringe Contamination during Intramuscular Injection

While faulty technique of sterilization or injection might lead to syringe contamination it was felt that this could not be the usual explanation of these cases of jaundice and that the traditional method of giving a series of injections from one syringe (while using a fresh needle for each patient) might well be at fault. Further investigation confirmed this view and demonstrated the frequent presence of blood in the syringe after a single intramuscular injection had been given.

Red Blood Cells in the Syringe after Intramuscular Injection

As it was impossible to detect minute quantities of blood plasma with the apparatus available it was decided to concentrate on detecting red blood cells in the syringe contents after an intramuscular injection. The following technique was evolved.

The needle and syringe were filled with sterile normal saline (0.85% sodium chloride), the needle (with the syringe attached) was inserted into the quadriceps extensor cruris, and 1 ml. of saline was injected. The needle, with the syringe still attached, was then immediately withdrawn, the needle was removed, and succeeding drops of saline from the tip of the syringe were examined microscopically for red blood cells; these were counted in a Neubauer counting chamber.

The syringes used were of the standard Army pattern, 2 ml., 5 ml., and 10 ml. in size; the needles were the usual office sizes 19, 21, and 23 (Birmingham English standard wire gauge), with a length of 50 mm., 38 mm., and 25 mm. respectively. The apparatus was freshly autoclaved before each injection. The results obtained are summarized in Table IV.

TABLE IV.—Red Blood Cells found in the Syringe After an Intramuscular Injection

(A) Injections Given Into a Muscle in a State of Active Contraction

Syringe	Needle	Volume Injected	No. of Red Cells in 0.9 c.mm. of Saline			
			Drop 1	Drop 2	Drop 3	Drop 4
ml.	S.W.G.	ml.				
2	23	1	3	0		
10	23	1	163	6	0	
2	23	1	2	0		
10	23	1	80	0		
2	23	1	57	0		
2	23	1	0			
3	23	1	0			
3	23	1	9	0		
5	23	1	0			
2	23	1	0			
2	23	1	0			
2	23	1	0			
5	23	1	0			
5	23	1	4	0		
2	21	1	0			
2	21	1	0			
5	21	1	72	27	0	
2	21	1	2	0		
5	21	1	0			
2	21	1	8	1	0	
10	21	1	4	0		
2	21	1	0			
10	21	1	0			
2	19	1	204	4	2	0
10	19	1	51	33	3	0
2	19	1	3	2	0	
10	19	1	243	19	13	0

(B) Injections Given Into a Relaxed Muscle

ml.	S.W.G.	ml.			
2	23	1	0		
2	23	1	0		
10	23	1	0		
10	23	1	0		
2	21	1	0		
2	21	1	1	0	
2	21	1	0		
2	21	1	0		
2	21	1	0		
2	21	1	0		
10	21	1	2	11	
10	21	1	0		

Thus contamination of the syringe with red blood cells had occurred in 17 out of a total of 39 injections. This statement, however, needs further comment. It will be noted from Table IV that the red cell count rapidly diminished with each succeeding drop; this suggests that the syringe contents generally are not contaminated, but that the contamination is

confined to the small drop of fluid on or in the nozzle of the syringe when the needle is removed. This fact was further confirmed by the following experiment. A series of five intramuscular injections of 1 ml. was given from the same 10-ml. syringe; drops of saline were examined microscopically until no further red cells were found, and then the remaining fluid in the syringe was ejected into a centrifuge tube and spun for 10 minutes. On examining the fluid from the bottom of the centrifuge tube only one or two red cells could be found. From the above results it is apparent that the frequency and severity of syringe contamination vary according to whether the muscle injected is relaxed or is in a state of active contraction. With the muscle contracted, contamination occurred in 15 out of a total of 27 injections and up to 243 red cells in 0.9 c.mm. of saline were counted; with the muscle relaxed, however, contamination occurred in only 2 out of a total of 12 injections and a maximum of 2 red cells in 0.9 c.mm. were found.

Experiments have shown three possible mechanisms which, either separately or together, might account for this contamination. These are: (a) back pressure, forcing fluid from the muscle into the needle; (b) spread of blood from the tip of the needle towards the syringe; and (c) suction when removing the needle from the syringe, aspirating the needle contents back on to the tip of the latter.

Back Pressure from the Muscle

For some time it has been recognized by the dental profession that, when injecting a local analgesic under pressure into the fibrous tissue of the gum, fluid is forced back and contaminates the syringe. Hence it is customary for dentists to use a clean syringe for each different part of the gum if any evidence of infection is present. Again, when giving an intramuscular injection with a small syringe it is not uncommon to note that the plunger returns for a short distance when the pressure is released at the end of the injection. To demonstrate this more accurately a series of 12 intramuscular injections of 1 ml. of normal saline were given into the contracted quadriceps by means of a 1-ml. vaccine syringe. In two instances fluid was noted to return, to approximately the volume of 0.02 and 0.04 ml.

Further experiments were carried out in which saline was injected intramuscularly, and immediately the injection was completed the needle was switched (by means of a two-way tap) to a manometer, which consisted of a 1-ml. micropipette graduated in hundredths of a milliliter. The results obtained are detailed in Table V.

TABLE V.—Return of Fluid from the Muscle After Injection

Volume of Fluid Injected (ml.)	Muscle Tone	Volume of Fluid Returned (mL)
0.5	Relaxed	0.0025
1.0	"	0
2.0	"	0.005
3.0	"	0.100
0.5	Contracted	0.045
1.0	"	0.010
2.0	"	0
0.5	"	0.010
1.0	"	0
2.0	"	0.035

Thus varying amounts of saline up to a maximum of 0.1 ml. were returned from the muscle into the manometer. These latter results, however, are open to criticism. In the first place, a certain rise of fluid level in a narrow-bore tube can be caused by the surface tension of the fluid.¹ Further experiments suggest that this may partly explain these results, but it is my opinion that this is not the whole explanation and that the return of fluid is in part due to the elasticity of the muscle. Secondly, the conditions of the experiment are not comparable with those existing when a routine injection is given and when returning fluid displaces the heavy plunger of a syringe; it seems possible (although it is not proved) that returning fluid can displace fluid through leaky joints in the syringe without moving the plunger at all.

Spread of Blood Along the Needle Towards the Syringe

If the tip of the needle is contaminated with blood the red cells gradually spread along the needle towards the syringe.

To demonstrate this the following technique was used. An all-glass 2-ml. syringe with a No. 23 needle attached was filled with normal saline and a tiny drop of citrated blood (as used for estimation of sedimentation rate by the Westergren method) was placed on the tip of the needle by means of a Pasteur pipette. After an interval varying from 15 to 60 seconds the needle was cut off at the socket with wire-cutters, the socket removed from the syringe, and the drop of saline on the tip of the syringe examined for red cells. It was found that contamination could occur in 45 seconds, as the results shown in Table VI demonstrate.

TABLE VI.—*Spread of Red Cells Along the Needle Towards the Syringe*

Time Interval between Application of Red Cells and Cutting the Needle	No. of Red Cells in 0.9 c.mm. of Saline in Drop at Tip of Syringe				
	Expt. 1	Expt. 2	Expt. 3	Expt. 4	Expt. 5
15 secs.	0	0	0	0	0
30 "	0	0	0	0	0
45 "	0	4,608	396	0	0
60 "	780	0	0	13,392	13,392

Aspiration of Contents of Needle when it is Removed from the Syringe

That this actually occurs can be very simply demonstrated. A syringe with needle attached is filled with fluid and the plunger pressed until a small drop of fluid appears at the tip of the needle; if the needle is then removed from the syringe the drop is immediately sucked back.

Gross contamination of the syringe by this mechanism was demonstrated with a similar method. The syringe, with the needle attached, was filled with normal saline and a tiny drop of citrated blood was placed on the needle-tip; the needle was then removed from the syringe and the drop of saline at the tip of the syringe was examined for red cells. Contamination resulted, as can be seen in Table VII.

TABLE VII.—*Aspiration of Needle Contents on Removal from Syringe*

Size of Needle	No. of Red Cells in 0.9 c.mm. of Saline in Drop at Tip of Syringe		
	Experiment 1	Experiment 2	Experiment 3
23	105	Too numerous to count	Too numerous to count
21	Too numerous to count	14,544	" "
19	70,560	26,784	" "

Further experiments, which it is unnecessary to detail here, have shown that the amount of fluid which can be aspirated by this means may be as large as 0.1 ml.; this is more than the internal volume of the needles used. Hence it is probable that when the needle is removed from the syringe the whole of the contents of the needle (but not of the socket) are aspirated and replaced by air.

Discussion on Syringe Contamination

From the above experiments it is clear that in a high proportion of cases a syringe is contaminated after a single intramuscular injection of 1 ml. has been given. The limited number of investigations carried out suggests that contamination occurs as follows. A small amount of fluid is forced back into the needle after the injection, or traces of blood are left on the tip of the needle when it is withdrawn; this blood tends to spread slowly along the needle, and on removing the latter from the syringe the needle contents are aspirated, leaving a contaminated drop of fluid on the tip of the syringe. This drop contaminates the next injection despite the changing of the needle. It seems possible that in exceptional circumstances (and particularly when a large quantity is injected) fluid is actually forced from the muscle into the syringe and directly contaminates the syringe contents.

Summary

A series of cases of jaundice following penicillin treatment is reported. It is considered that this condition is transmitted from patient to patient by means of contaminated syringes.

Experiments are described which show that a single intramuscular injection of 1 ml. of fluid may lead to contamination of the

syringe used. The mechanism by which this contamination occurs is discussed.

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PYOGENIC OSTEOMYELITIS OF THE SPINE

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Although pyogenic osteomyelitis of the spine is generally considered to be a rare and fatal disease, a perusal of the literature and a more ready appreciation of the possibility of the condition lead to the conclusion that it is considerably more common than was originally thought and that it is by no means so far as has been considered. Wilensky (1934) and Kulowski (1938) in the United States have described the condition well, and Turner (1938) in this country has added to our knowledge. It is agreed that osteomyelitis of the spine, forming part of generalized bacteraemia, has been almost invariably fatal, and Butler *et al.* report a mortality of 100% in 13 cases, all occurring in children and young adults. It may be that penicillin will brighten this gloomy picture.

These cases are often so acute and fulminating that an antemortem diagnosis is not made owing to the intense toxæmia of the patients; the more hopeful variety of the disease is that where the pathology is limited to one or other region of the spine, and in these cases the mortality rate is somewhere in the region of 25%. There is reason to suppose that cases labelled tuberculosis of the spine, which do so well with an early firm bony fusion, are in reality cases of pyogenic osteomyelitis, will be discussed later, and when these cases are recognized may be that the mortality is even lower.

The disease is approximately three times more common in males than in females, and the age of onset is predominant in the third decade—that is, after the vertebrae are fully formed—thereby differentiating it from osteomyelitis occurring in long bones. This age incidence is no doubt due partly to the fact that there is no true epiphyseal growth in the vertebral bodies and partly to the presence of a cellular bone marrow with sluggish blood flow, thereby encouraging embolism and thrombosis in pyæmic states. Such a condition of bone and blood flow is normally present in the metaphyseal areas of long bones thus accounting for the more usual incidence of osteomyelitis in these bones in adolescence.

Aetiology and Pathology

The influence of trauma as an aetiological factor is doubtful and in Kulowski's series of 102 cases there was a history of trauma in 30%. In the present series Case 4 appears to date from a fall, and Case 3 is of interest as occurring after a lumbar puncture, whether or not that was a factor; but in the remainder there does not appear to have been any injury.

The lumbar region is most frequently involved, and the bodies of the vertebrae are generally affected, usually as a metastatic phenomenon, the primary focus being recognizable in about half the cases as a topical infection such as a boil, whitlow, tooth infection, septic wound, or another focus of osteomyelitis, and the causative organism, if it can be obtained either directly or by blood culture or from the primary focus, is a *Staph. aureus*, less commonly *albus*, or rarely a streptococcus. Direct infection can of course occur.

Pyogenic infection in the early stages gives rise to an abscessing lesion showing a liability to spread to adjacent segments.

This is due to the fact that the vertebral bodies lack a compact outer layer, thus allowing the intervertebral disk early to become subjected to the suppurative process; and the disk substance is rapidly and extensively destroyed by the action of the proteolytic enzymes of the pyogenic exudate and the adjacent body is directly infected. In tuberculous infection, however, the disk substance is not so readily destroyed, and, as it has no vascular or lymphatic connexion with the vertebral bodies bounding it, it offers a formidable barrier to the spread of the disease. For tuberculous infection to attack adjacent segments the process must spread under the anterior common ligament, whence it reaches neighbouring vertebrae by way of their anterior surfaces, and considerable remnants of disk substance may remain after destruction of adjacent segments by disease (Fig. 1).



FIG. 1.—Tuberculous disease of spine. Showing comparative persistence of intervertebral disk, collapse of the vertebra below and rarefaction of the bone of the anterior aspect of the vertebra above, and spread of disease anteriorly to, rather than through, the disk.

Radiologically these changes are of value in the differential diagnosis, as in pyogenic osteomyelitis early narrowing or disappearance of the intervertebral space is evident. Narrowing of the space is also seen in tuberculous disease, and in this case is due to disease-softened osseous or ligamentous tissue allowing the semifluid nucleus pulposus to prolapse into the vertebral bodies above and below, and is neither so early nor so marked a feature as in pyogenic infections. The abundant blood supply, with a local excess of calcium, results in early and massive new bone formation, giving rise at first to a "beaking" of the lower and upper margins of adjacent vertebral bodies, and later to a fusion of adjacent vertebrae by means of these bony outgrowths. Similarly the free blood supply and the cancellous nature of the bone rarely give rise to the formation of sequestra of such a size that they are not readily absorbed. This subperiosteal new bone formation, occurring often within a few months of the onset of the disease, is the exact antithesis of the pathology of tuberculosis of bone, where the essential lesion is destructive and where new bone formation and bony fusion hardly occur. In pyogenic osteomyelitis collapse of the bodies and gibbus formation are not common, as the severity of the symptoms leads to the patient's taking to his bed at an early stage of the disease. Suppuration is common and abscess formation often occurs, sometimes leading to the formation of large abscess cavities, which generally enlarge forwards and are guided in their course

usually by normal cleavage planes. Thus in the cervical region retropharyngeal abscesses may result; in the thoracic region posterior mediastinal abscesses, which may perforate pleural or pericardial cavities; in the lumbar region psoas or perinephric abscesses, and in the sacral region pelvic or perirectal abscesses, may be seen; and sinus formation is not an uncommon complication. Occasionally large abscesses form where the bone focus is minimal in extent and not detectable on x-ray examination. Unusually an epidural abscess occurs, and this results in compression, meningitis, or vascular disturbance in the cord, with a mortality rate of 50%. The onset of spinal symptoms in pyogenic osteomyelitis is sudden and dramatic compared with the slow and gradual appearance of similar symptoms in tuberculous disease, except in those rare cases in the latter condition where paraplegia has a sudden onset due to bone displacement. It is interesting to note that Browder and Meyers (1941) considered that 10 out of 14 cases of epidural abscess resulted as a direct spread from an osteomyelitis of the spine.

Signs and Symptoms

Clinically the onset is often acute, but sometimes subacute or insidious; in very acute cases the local signs may be overridden by the intensity of the toxæmia. Spontaneous intense lumbar pain, often diagnosed as lumbago or fibrositis, which is diffuse at first and later localized, is always present, and is usually of sufficient severity to confine the patient to bed, and often severe enough to render him helpless, fixed, and unable to move. It is accompanied by a marked degree of spasm of the erector spinae, and all movements of the spine are markedly limited and painful. Localized tenderness appears later owing to the original depth of the lesion, but once apparent it is very persistent. Should the disease attack the posterior processes, oedema and tenderness of the back muscles, and later abscess formation deep to or within these tissues, may occur. In the early stages a blood culture may be positive and the primary focus may be seen. Pyrexia and leucocytosis are present in varying degrees, but signs of an acute and severe systemic upset are often not prominent. An increasing leucocyte count indicates progress to abscess formation. When the bone focus is minimal an abscess may present clinically, and in cases of obscure, deep-seated pus pyogenic osteomyelitis of the spine should be considered. Where a sinus is present, injection of scrapings into a guinea-pig is of value in the differentiation of pyogenic from tuberculous osteomyelitis, or a secondarily infected tuberculous disease from an osteomyelitis of pyogenic origin. When the disease process is rapidly limited by the natural defences of the body—which, fortunately, is generally the case—the early tendency to a firm bony union is seen on x-ray examination, and may occur two to three months after the onset of the disease.

Diagnosis

The radiological findings are of great importance in the diagnosis of the condition, although in the fulminating cases no changes will be seen, as these have not had time to develop before a fatal outcome; and in some cases where the bone focus is minimal in extent they may never be evident (Case 1). When the disease attacks the body it may be two to three months before changes are seen on x-ray examination. The first sign is a narrowing of the intervertebral space, with a moth-eaten irregularity of the bodies bounding it. At the same time there is an increased density of the affected vertebrae, sometimes with areas of mottled rarefaction, in contrast to the generalized decalcification evident in early tuberculosis. At about the same time, or shortly afterwards, subperiosteal new bone is formed at the margins of contiguous vertebrae, leading to a beaking which continues to increase in size; these eventually fuse together, resulting in a bony ankylosis. This process is complete at a relatively early date, and in one case was seen seven months after the onset of symptoms in spite of incomplete immobilization in this particular instance.

The diagnosis in the early stages of the disease rests on the severe backache accompanied by pyrexia and a leucocytosis and possibly by rigors. In a number of cases there is a history of a primary focus of infection. Diagnosis is often not completely clear until a later stage, when x-ray changes become apparent. The differential diagnosis of the subacute or chronic

form from tuberculosis of the spine may present difficulties, but the following points should decide without any great doubt.

	Pyogenic Osteomyelitis	Tuberculous Osteomyelitis
Site of disease	Body usually, often appendages	Body almost invariably
Primary focus	Topical pyogenic infection present in 50%	Other tuberculous focus often detectable
Onset	Usually very sudden; sometimes gradual	Gradual
Pyrexia	Variable, often marked	Variable, seldom marked
Pain	Usually intense	Persistent aching
Leucocytosis	May be marked	Not a feature
Vertebral collapse	None	Usual
X-ray findings	Increased density. Subperiosteal new bone formation. Spread through intervertebral disk	Decreased density. No new bone formation. Spread via anterior surface of bodies
Cord involvement	Rare and acute onset	Common and gradual onset
Course	Short to bony fusion	Prolonged to recalcification and fibrous fusion

Treatment

The treatment of the condition consists in immobilization of the spine, preferably in a plaster bed, until the disease process is over and bony fusion is complete. Abscesses, if they form, should be evacuated with scrupulous attention to the prevention of secondary infection, and penicillin both locally and systemically plays an important part in the treatment. Fusion of the affected vertebrae by means of an Albee graft has been suggested, but this is not necessary, as new bone formation leading to bony ankylosis between adjacent diseased vertebrae is an early and constant feature.

Illustrative Cases

Case 1.—A child aged 4 was admitted with a history of being off colour for five days and complaining of a pain in his back. He showed signs of meningitis and there was intense spasm of the lumbar muscles. His C.S.F. contained pus and *Staph. aureus*. Laminectomy of the third and fourth lumbar vertebrae was done, and an abscess was found arising in the body of the third lumbar vertebra and perforating the dura. The arachnoid was intact. The abscess was evacuated; 30,000 units of penicillin were



FIG. 2.—Skiagram of Case 2 three months after the onset of backache, showing narrowing of the intervertebral space, moth-eaten irregularities of the bodies bounding the space, and generalized increased density.

instilled, and a further 60,000 units were injected into the ventricle. The patient made a complete recovery, but at no time were there any x-ray changes.

Case 2.—A man aged 54, on getting out of bed for the first time after treatment for multiple abscesses, experienced a sudden intense pain in the back. This pain confined him to bed, during which time

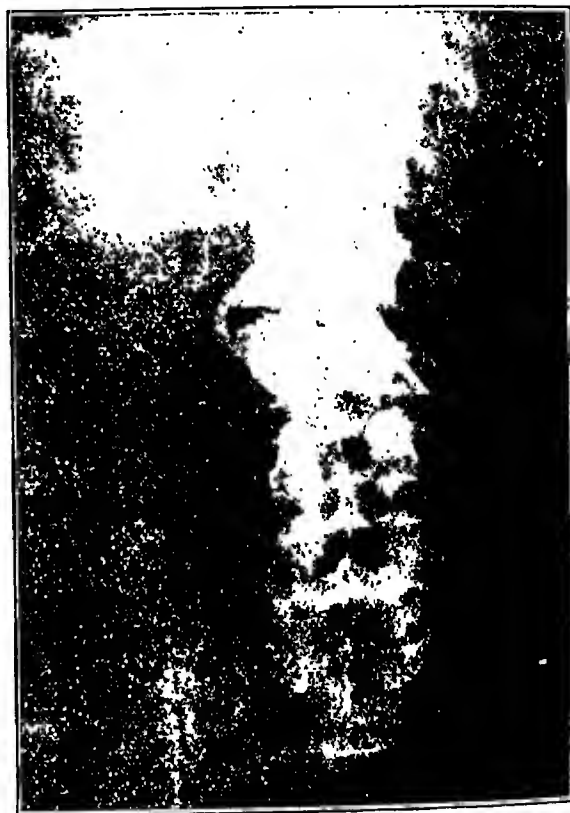


FIG. 3.—Skiagram of the same case 14 months after the onset of backache, showing firm bony union between beaks of affected vertebrae.

he showed a moderate fever with pyrexia up to 102° F. (38.9° C.). He was treated by recumbency, and three months later changes were apparent on x-ray examination (Fig. 2). Five months after the onset of symptoms subperiosteal new bone and beaking were seen, and he was allowed up in a plaster jacket. Bony fusion became apparent 14 months after the onset; this afterwards enlarged and strengthened (Fig. 3), and three months later he discarded all fixation and was symptomless, apart from stiffness of the lumbar spine.

Case 3.—A naval officer aged 32 developed pyaemic cellulitis of each arm following an osteomyelitis of the skull complicating a shrapnel wound. Sequestrectomy was done and the patient became symptomless. A lumbar puncture was performed to investigate the condition of the C.S.F. as a result of the head injury. Two months after this he developed a severe backache, with fever and a slight leucocytosis. He was treated in recumbency, and three months after the onset of backache x-ray examination showed signs of pyogenic osteomyelitis. The condition progressed satisfactorily and a sound bony ankylosis resulted (Fig. 4).

In this case a possible contributory factor is the lumbar puncture, causing a local lesion in the disk or adjacent bone, and leading to a focus of diminished resistance to infection. Alternatively the focus of disease and the lumbar puncture may have been coincidental.

Case 4.—A naval rating, aged 32, ten days after a fall down a pile of bombs developed an intense pain in the lumbar region of the spine. For the next three to four weeks he had a slight fever, the temperature rising to 102° F. (38.9° C.), with occasional rigors and a white cell count of 17,000. A month after the onset of the pain an upper premolar tooth was extracted, and pus containing a staphylococcus was obtained from the socket. He was treated in recumbency, and nine months from the onset firm bony fusion was seen on x-ray examination. He returned to full duty six months later.

In this case it is reasonable to suppose that the fall caused vascular damage in the body of the third lumbar vertebrae

ing up a local focus where staphylococci from the infected th socket lodged.

Case 5.—A naval rating aged 25 was admitted to hospital because a sinus of the posterior chest wall following the incision of an abscess at this site eight months previously. A skiagram showed increased density of the left side of the bodies of the third and fourth thoracic vertebrae, and the intervertebral space between these was narrowed. An oblique view showed beak formation of the



FIG. 4.—Lateral view in Case 3 seven months after the onset of backache, showing massive bony bridging.

lower border of the third dorsal vertebra. The adjacent heads and necks of the third and fourth ribs showed widening and irregular thickening, and a similar appearance was evident in the corresponding inverse processes. Examination of the pus from the sinus indicated a mixed staphylococcal and streptococcal infection, and biopsy of the sinus wall showed no evidence of tuberculous anastomosis.

The records of this case are incomplete, but according to the patient he was feverish at the time of the dorsal backache. The x-ray appearances point to a pyogenic infection, although an original tuberculous infection with a secondary pyogenic infection cannot be ruled out. It is in such a case that inoculation of a guinea-pig with sinus scrapings would be valuable, but this was not done owing to the patient's repatriation to Canada.

Summary

The aetiology, pathology, clinical signs and symptoms, and treatment of pyogenic osteomyelitis of the spine are described.

It is suggested that the disease is more common than has been thought.

It seems that many cases of osteomyelitis of the spine, labelled tuberculous, are in reality pyogenic in origin.

At least in adults the disease is less fatal than has been considered.

The notes of five cases are presented.

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TREATMENT OF OSTEOARTHRITIS BY LACTIC ACID INJECTION

A SERIES OF 26 CONSECUTIVE CASES IN GENERAL PRACTICE

BY

R. MAWSON, M.R.C.S., L.R.C.P.

Stimulated by the work of Grant Waugh on intra-articular injection of lactic acid with procaine into the hip we recently gave his treatment to a series of 26 patients. The series comprised 6 cases of arthritis of the hip, 18 of the knee, 2 of the wrist, and consisted of the following types: osteoarthritis of the elderly; post-traumatic; so-called "menopausal"; post-infective; and residual deformity stage of rheumatoid arthritis. The cases occurred in semirural general practice and were taken from all social strata in our valley community. Economic factors prevented serial radiographs and periodic estimation of the erythrocyte sedimentation rate, and the treatment was domiciliary in all instances but one.

Case records were kept as simple as possible, and notes of progress consisted of statements made by the patient and his relatives, together with my own observations. It was difficult always to assess evidence of progress or deterioration in objective terms except when the patient showed dramatically changed physical signs—e.g., doubled range of movement at the affected joint. A guide to progress in this disease is the distance that can be walked before and after treatment. This criterion was used in most cases. However, clinical medicine in general practice includes sundry observations of patients in the street, in shops, in the village dance hall, and in the public house. I should be more pleased to see an osteoarthritic at the end of a fish queue than a small change in her sedimentation rate. Grant Waugh's assessment of progress was based on the degree of overall disability, expressed as a percentage, taking 90 to 100% disabled to describe patients confined to bed, and 70 to 80% for those able to walk with considerable difficulty.

It is not easy to classify stages of recovery. So often psychological factors distort the clinical picture. It is well known that all forms of rheumatism and neurosis are often closely related, but it is not desirable here to add to the boresome flavour of some of the observations made by certain workers in this field: "The cramped muscle reflects the cramped mind" is an illustration. Reference will be made subsequently to certain features of anxiety which obscure the slighter signs of recovery in this type of patient.

The clinical state before and after treatment was based on inquiry into the following: pain and tenderness; deformity and posture; anorexia and insomnia; maximum walking distance; stiffness and alteration of gait; effusion; mental distress.

Below are given a table showing results of treatment in the series of 26 and records of four typical cases.

Joints Affected	No. of Cases		Age Range	Av. No. of Injections	Results		
	M.	F.			Better	No Change	Worse
Hips ..	4	2	36-67	4	5	1	0
Knees ..	1	17	42-73	4	17	1	0
Wrists ..	0	2	—	2	1	1	0

Case Histories

Case 1.—Mr. D., a landworker aged 36, had suffered from osteoarthritis of the left hip for 7 years, the result of a fractured femoral neck in 1927 (4 months in plaster). His symptoms were pain, stiffness, and insomnia. Examination revealed quadriceps and gluteal wasting, concealed hip flexion, flexion 60°, extension nil, adduction and abduction very small, rotation nil. All movements were painful. Walking distance before treatment: 1/4 mile. (400 metres) in great pain. He was on the point of giving up his employment. Treatment consisted of four injections. The first injection brought a dramatic improvement; the patient could not only walk easily, but was actually able to run—something he had not been able to attempt for several years. The third and fourth injections produced much pain, and work stopped for 10 weeks. He is now back at work, and can walk up to 4 to 5 miles (6.5 to 8 km.) a day. There is still pain in the joint, but he can tie his left shoe-lace. All movements have increased, particularly flexion—almost to 90°. There is no concealed hip flexion. A radiograph

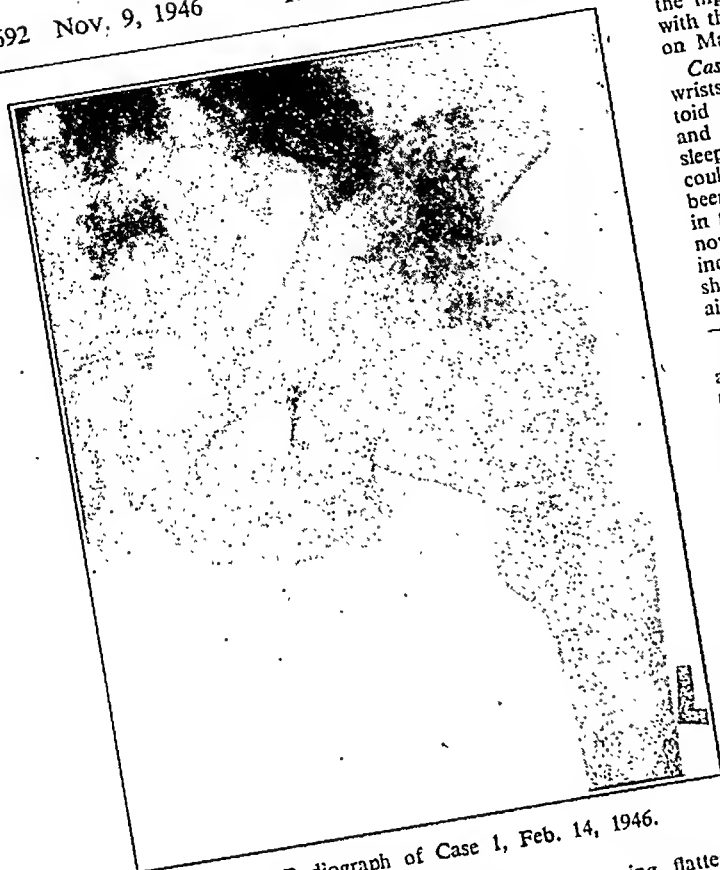


FIG. 1.—Radiograph of Case 1, Feb. 14, 1946.

(Fig. 1) taken on Feb. 14, 1946, reveals loss of spacing, flattening of the head of the femur, sclerosis and broadening of the neck with buttress formation, suggesting an old injury to the neck of the femur and now showing changes of osteoarthritis. From the appearance this buttress should interfere with the movement of

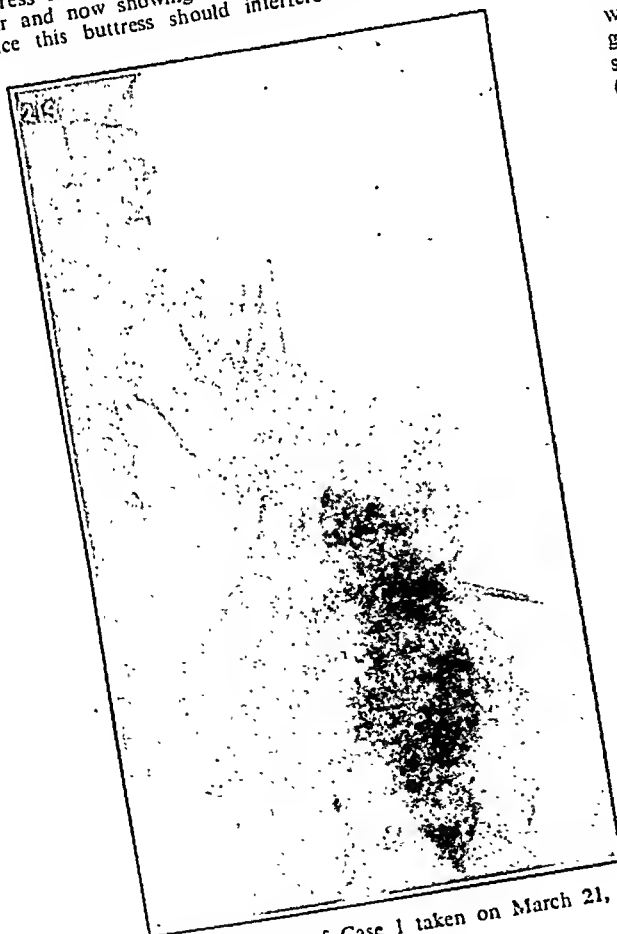


FIG. 2.—Radiograph of Case 1 taken on March 21, 1946.

the hip-joint. It is not quite clear whether the buttress has fused with the lower part of the acetabulum. Fig. 2 shows the condition on March 21, 1946.

Case 2.—Miss P., a housekeeper aged 63, had her hips, knees, and wrists affected during a period of 9 years, the cause being rheumatoid arthritis. She had great pain, particularly in the right knee; and knee movements were almost nil. She suffered from loss of sleep and appetite, and had been taking eight aspirins daily. She could only hobble around with the aid of two sticks, and had not been outside the house for months. She received two injections in the right knee, which was manipulated under pentothal. There is now almost complete loss of pain in the knee, which shows greatly increased movement. She can carry a loaded tea-tray upstairs, and she can walk half a mile (800 metres) to the post office with the aid of a stick. Her general state—colour, appetite, mental outlook—is very much improved. She is almost weaned from salicylates.

Case 3.—Mr. W., a gardener aged 65, had his right hip-joint affected for 8 years. His symptoms before treatment were pain (which made him give up work), stiffness and diminished movement, and he could walk only about 200 yards. He was given two injections. Increased movements at the right hip resulted and there was far less pain. He resumed work after the second injection. Since then (March, 1946) he has worked 8 to 9 hours a day and is able to attend to his own garden in the evening.

Case 4.—Mrs. B., a housewife aged 69, had the shoulders, wrists, and small joints of the hands affected, especially the left wrist. The symptoms were pain, anorexia, insomnia, immobility of wrists, and wasting of the small muscles of the hands. She was unable to feed herself through inability to grip knife and fork. Her bed had been put downstairs because she could not manage the stairs. Her walking distance before treatment was nil. The patient received two injections in the left wrist. Movements at that joint began a few days after the first injection. She can now flex to 70° and dorsiflex 30°, and there is no pain or swelling. Her grip has improved, and she can feed herself and get upstairs.

Technique

From 15 to 20 ml. of a stable solution of 0.2% lactic acid with procaine, having a hydrogen-ion concentration of 5.2, is injected into and around the hip-joint on each occasion. A similar amount may be injected into the knee-joint, but the wrist-joint will only take amounts varying from 2 to 5 ml. Skin sterilization is effected by 1% "cetavlon" or 1:1,000 acriflavine. Skin, subcutis, muscle, and joint capsule are infiltrated with "novutox," the average amount required being 20 ml.; it is greatest in the case of the hip-joint in obese patients, and smallest in injection of the wrist. For the hip-joint a 6-in. (15 cm.) Record needle with wide bore and of high tensile strength is employed. For the other joints sturdy intramuscular needles will suffice.

Approach to the hip-joint is made by two methods. (i) **Anterior:** The needle is inserted midway between the great trochanter and the intersection of the femoral artery with Poupart's ligament; it is directed upwards, parallel with the femoral neck, inwards and backwards. (ii) **Posterior (Fig. 3):** The needle is inserted at a point just posterior to the great trochanter, and in an upward, inward, and forward direction.

In dealing with the knee-joint the needle is inserted 1 in. (2.5 cm.) to the outer side of the patella (Fig. 4).

Approach to the wrist-joint (Fig. 5) may be carried out either (i) immediately distal to the tip of the ulnar styloid process between flexor and extensor carpi ulnaris tendons, or (ii) dorsally between tendons of extensor pollicis longus and extensor indicis.

Miscellaneous Observations.—An intra-articular injection of the hip-joint requires a strong needle with a sharp short bevel, as the capsule in chronic cases of osteoarthritis may be up to 1/2 in. (1.25 cm.) in thickness. The needle must be inserted slowly without undue force. Once inside the joint the solution will run in easily. If much pressure is necessary the fibres of the capsule are probably outside the joint cavity embedded in the more pressure than usual), and this pain increased as the effect of the procaine diminished. Pain of a deep boring character persisted for several days and required the administration of the stronger barbiturates during that time. The thigh was held in the position of rest—internal rotation, semi-flexion, and adduction. After the intra-articular injection the patient is asked to put the joint through all its movements by himself.

Usually it is found that there is an immediate loss of local discomfort after the injection. Gentle passive manipulation of the joint follows the patient's own active movements. For the next 48 hours the patient is advised to remain in bed so that the joint shall not suffer weight-bearing. If the services of a physiotherapist are available the wasted muscles around the joint and elsewhere can be treated. A second injection is given after 7 days, following exactly the same plan as before. Subsequent injections, up to 6, are given if needed.

Manipulation under "Pentothal" Anaesthesia

In certain cases (from whose aetiology tuberculosis can with certainty be excluded) it may be necessary to manipulate the stiff painful joint under pentothal. This procedure was found to be followed by some pain and anxiety. The former responded to salicylates only, and was of short duration. The anxiety

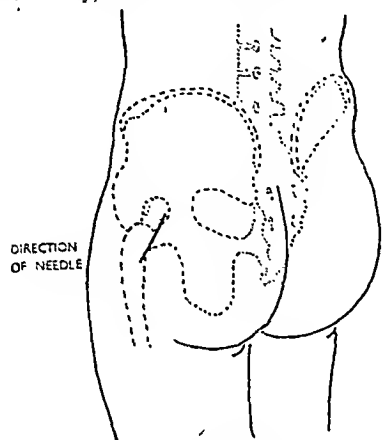


FIG. 3.
Posterior approach to the hip-joint.

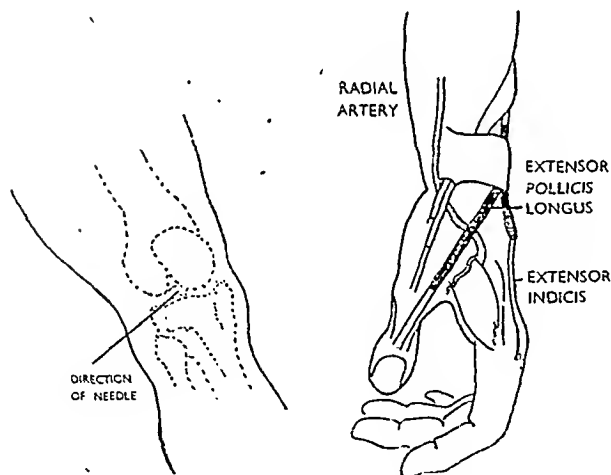


FIG. 4.
Approach to the knee-joint.

FIG. 5.
Approach to the wrist-joint.

has its origin in the belief—so commonly held by the chronic arthritic—that the affected joint will never move freely again. The patient's return to consciousness is awaited and the joint manipulated and flexed to its fullest extent, so that on opening his eyes the patient sees the degree of angulation possible in his joint. Quadriceps weakness makes it impossible for the patient to flex the hip completely at this stage, but there is always an improvement on the original degree of movement. Quadriceps drill, patient masseur, and encouragement from the family will do the rest.

Stages of Recovery

The first symptom to disappear is pain, followed by a changed mental outlook. To patients who previously were lethargic and pessimistic new hope is given. Sleep and appetite improve. As atrophied muscles are stimulated by massage the patient

ventures to do more about the house, and gradually leave is taken of the bedroom. The difficulty of stairs is overcome, and provided progress is maintained the patient is soon in the garden. Fresh air and exercise enhance the sense of well-being, which in turn promotes recovery of the local condition.

Summary

A series of 26 cases of mixed forms of arthritis is reviewed after treatment by intra-articular acid injection. The technique of injection of hip, knee, and wrist is described.

Of the patients, 6 were wage-earners. Recovery was sufficient in all six to enable them to return to their previous employment.

Of the remaining 20, mostly housewives, 18 were able to resume or do much more housework, with considerable relief of symptoms. Of the other 2 cases, one declined to have more than one injection, for domestic reasons; the other, with active rheumatoid arthritis of the wrists, showed no improvement.

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DISAPPEARANCE OF SECONDARY SARCOMATOUS DEPOSITS IN THE LUNGS AFTER STILBOESTROL THERAPY

BY

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The beneficial effects of stilboestrol in the treatment of carcinoma of the prostate are well known, where not only the primary growth but also secondary growths in lung and bone have been kept under control and in several instances have disappeared completely. Less permanent and less dramatic effects have been observed in several cases of carcinoma of the breast treated similarly. Few successes have been claimed in any other type of growth.

In this communication a case of malignant endothelioma is recorded where secondary growths in the lung disappeared radiologically after stilboestrol therapy and where the patient was apparently free of active tumour two years later.

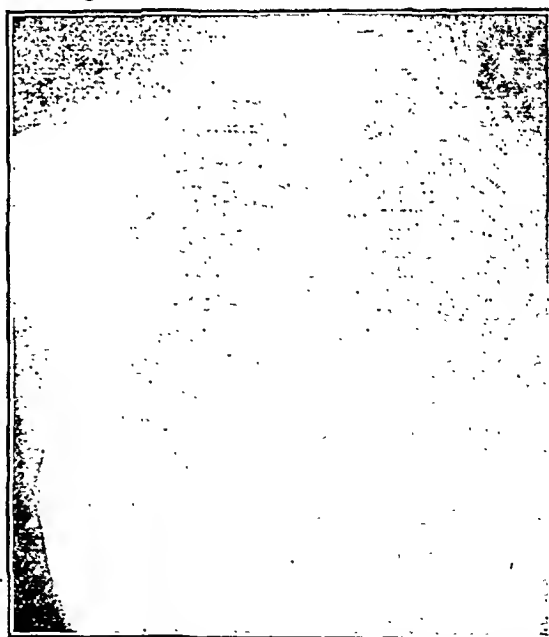


FIG. 1.—Skiagram of chest (June, 1944) showing multiple secondaries in both lung fields.

Case History

A married woman aged 25 was admitted on Oct. 15, 1942, to the wards of the Surgical Unit with a swelling of the left shoulder region of five months' duration. The swelling was situated on the anterior aspect of the shoulder and was obviously attached to the deep surface of the deltoid muscle. Its edges were well defined and it was tender. There was no limitation of the movements of the joint. X-ray photographs of the shoulder and chest showed no obvious radiological abnormality. On the 23rd an exploratory incision was made over the tumour and a large infiltrating growth was found deep to the deltoid muscle; it was adherent to the periosteum of the humerus and extended upwards to the capsule of the shoulder-joint, from which it obviously had its origin. Most of the tumour was removed. Histologically it was diagnosed as a malignant endothelioma (Prof. J. B. Duguid). Because of the nature of the growth a fore-quarter amputation was carried out on Nov. 5.

The patient made a good recovery and was in excellent health until June, 1944, when she began to have severe chest pain; a cough developed and she started to lose weight rapidly. When seen a few weeks later she was obviously cachectic, had lost 2 stone (12.7 kg.) in weight, and was no longer able to carry out her household duties. An x-ray photograph of the chest showed extensive secondaries in both lung fields (Fig. 1). As a palliative measure stilboestrol therapy was recommended. She was given bi-weekly injections for several months by her own doctor, and later had a small maintenance dose by mouth; the exact dosage is not known.

She did not report to the follow-up clinic till November, 1945. By then her general condition was much improved; her cough, lassitude, and chest pains had completely gone and she had made good her previous loss of weight. A skiagram now showed the complete disappearance of the lung secondaries (Fig. 2). When last seen by

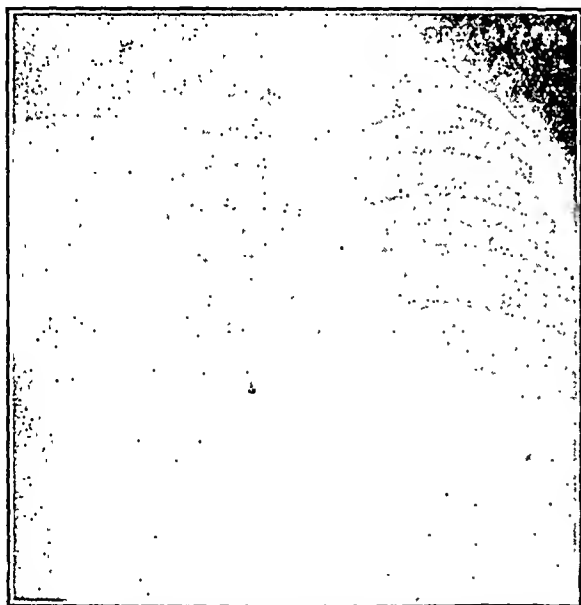


FIG. 2.—X-ray photograph eighteen months later, showing complete radiological disappearance of the secondaries after stilboestrol therapy.

on July 15, 1945, 3 years 9 months after her amputation and years 1 month after the institution of stilboestrol therapy, the patient was in excellent health and was without symptoms. X-ray examination still showed both lung fields clear of metastases.

I am indebted to Dr. J. B. Duguid, professor of pathology at the Welsh National School of Medicine, for the histological report.

With the signing by the President of the United States of the Hospital Survey and Construction Act, an appropriation of 375 million dollars is authorized during the next five years for the provision of hospitals and health centres. Three million dollars is also authorized for State-conducted surveys of need. These must be made preliminary to the granting of Federal funds for construction. The Act provides latitude for each State to develop its own programme of hospital and health centre construction, to be administered by State authorities under standards specified by the U.S. Public Health Service. The Surgeon-General will be assisted in establishing standards by a newly created Federal Hospital Council consisting of eight members to be appointed by the Federal Security Administrator.

Medical Memoranda

Subacromial Dislocation of Shoulder

In view of the rarity of posterior dislocation of the shoulder the following case is considered worthy of description.

CASE REPORT

The patient, a frail but active old lady of 88, was referred to hospital by her doctor, with a diagnosis of posterior dislocation of the left shoulder. The history was that she had slipped while cooking supper, and, being unable to put out her arm in time to save herself, she received the full force of the fall on the anterior aspect of the left shoulder with the forearm held across the body.

On examination the left arm was fully adducted and medial rotated, the forearm being held across the chest and supported by the opposite hand. The history was that she had slipped while cooking supper, and, being unable to put out her arm in time to save herself, she received the full force of the fall on the anterior aspect of the left shoulder with the forearm held across the body.

X-ray examination was carried out in the antero-posterior and lateral planes, and the presence of a posterior dislocation of the shoulder was confirmed. The radiologist's report (Dr. J. D. Brown) was as follows: "Left shoulder. Subacromial dislocation of the humerus. The head of the humerus is displaced upwards and rotated medially, and the neck rests on the posterior rim of the glenoid fossa, nearly the whole of which is uncovered. The conoid tubercle of the clavicle is much enlarged, and there is a false articulation between it and the coracoid process. The conoid ligament is ruptured, and these articular surfaces have separated, the scapula being displaced downwards and rotated, the inferior angle moving laterally."

Reduction by Kocher's method was accomplished without difficulty under gas-and-oxygen anaesthesia. The head of the humerus appeared to re-enter the glenoid fossa at the end of the first movement. The arm was immobilized in a sling for two days, then the sling was discarded and active shoulder movements were started. When seen again one month later the patient had a full range of movement in the left shoulder; she volunteered the information that this shoulder was better than the right one, which was the seat of rheumatism. In the radiographs taken after reduction osteoarthritic changes were seen in the acromio-clavicular and shoulder joint.

DISCUSSION

The rarity of this lesion is emphasized by the fact that no reference to a case could be found in the British literature of the past fifteen years. The present case is unusual in that, owing to the thin atrophic nature of the tissues, the diagnosis was obvious on clinical examination. Again, contrary to the usual finding, there was no difficulty in recognizing the displacement in the antero-posterior radiograph. This was probably due to the large area of the glenoid which was uncovered. Rendich and Poppel (1941) emphasized that clinical diagnosis is difficult, and that posterior dislocation is nearly always missed in the antero-posterior view. This view in the above case confirms their findings that in subacromial dislocation the lesser tuberosity forms the extreme medial profile at the posterior lip of the glenoid fossa, with the head of the humerus directed posteriorly and medially. This appearance may be simulated by a normal shoulder in full medial rotation, but the head of the humerus is directed backwards and laterally, and it is the greater tuberosity which forms the extreme medial profile.

In a similar case described by Patel and Chorton (1941-2) a man of 44 fell from a bicycle on to the anterior aspect of the left shoulder. This case was reduced by traction in abduction followed by adduction. Thomas (1937) emphasized the frequent association of posterior dislocation with fracture of the tuberosities or neck of the humerus, and also its occurrence during epileptic or other convulsions. He encountered only four cases in over 6,000 shoulder examinations. May (1943) reported on three cases treated by the Nicola operation. The first occurred in an epileptic and remained undiagnosed for eleven months; the second was a recurrent posterior dislocation; and in the third, operation was indicated because closed reduction proved unstable.

The common mode of production is backward and outward pressure on the head of the humerus, either direct or through the elbow, combined with adduction of the limb across the chest and medial rotation. Rendich and Poppel produced the lesion in the cadaver by forced medial rotation. In the present case the osteoarthritic changes in the shoulder may have played a part, through atrophy of the labrum glenoidale.

In cases which are not diagnosed, a new fossa forms behind the glenoid, and this false joint is compatible with a surprisingly good functional result. Failure to diagnose the lesion may be due to a misleading history or the presence of an associated fracture which may seem to account entirely for the symptoms.

SUMMARY

case of subacromial dislocation of the humerus is described in which, contrary to the usual finding, both clinical and radiological diagnosis presented no difficulty. Kocher's method was used to correct the deformity, and a good functional result was obtained. It was suggested that osteo-arthritis changes may have been an aetiological factor in this case. The condition should be borne in mind in cases of injury to the shoulder in which radiological diagnosis appears to be negative.

I wish to thank Mr. M. R. Ewing for permission to publish the case and for his help in preparing this article.

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Double Gastric Ulcer with Perforation and Haemorrhage

Double gastric ulcer with perforation and haemorrhage are the most common of the complications of peptic ulceration, rarely do both occur simultaneously, or at an interval of some days, in a case of gastric ulcer. More rarely, two ulcers may coexist, one of which perforates and the other is the seat of the haemorrhage. Such an event one ulcer is in the stomach, the other in the duodenum. The interest in the following case lies in the fact that two separate ulcers were present in the stomach; one perforated and the other gave rise to a rapid and fatal haemorrhage.

CASE REPORT

A man aged 55 was admitted to Lewisham Hospital on Oct. 12, 1946, complaining of acute upper abdominal pain of four hours' duration. The pain "doubled" him up, and it was not relieved by "powder." Although he felt nauseated he did not vomit. He gave a history of "dyspepsia" two to three hours after meals, of many years' standing; he consumed large quantities of alcohol.

On examination he was found to be a well-built man with a low complexion. Temperature 97° F. (36.1° C.), pulse 96, respirations 22. Urine contained a trace of albumin. His abdomen was very tender and rigid in all quadrants, and a diagnosis of perforated gastric ulcer was made. At operation a fairly large pre-pyloric ulcer was found situated on the lesser curvature, with a small perforation. There was a small quantity of free gastric contents present in the peritoneal cavity. The perforation was closed in the usual manner, utilizing an omental graft, and the abdomen closed without drainage. On Oct. 18 he vomited 1/2 oz. (14 ml.) bright-red blood at 15 p.m. At 10 p.m., while using the bed-pan, he had a large haematemesis and collapsed. Temperature now was 98° F. (36.7° C.), pulse 120, of poor volume, and respirations 24. An immediate blood transfusion was given and oxygen administered by B.L.B. mask. On Oct. 19 he had three profuse melana stools in quick succession, his general condition rapidly deteriorated, and he died later that evening.

Unfortunately a full necropsy was not possible, the stomach was removed. Examination revealed the presence of two distinct ulcers: the pre-pyloric ulcer which had perforated, with the perforation firmly closed, and a chronic ulcer, 3 cm. in its largest diameter, situated on the lesser curvature 7 cm. from the oesophageal opening, and covered by recent clot. The upper half of the stomach was filled with blood.

Masson and Simon (1927) reviewed the literature of multiple perforated gastric ulcers. They were able to find records of only 32 authentic cases, covering a period of 50 years. The large majority were of the "kissing" type—one on the anterior and the other on the posterior wall, opposite each other. No mention is made of a complicating haemorrhage from a second ulcer occurring simultaneously or following perforation of the first ulcer. Drury (1929) reported a case of multiple gastric ulcers in which two clean and perforated ulcers, 1 cm. in diameter, were found situated side by side on the greater curvature posteriorly. Gastro-jejunostomy had been performed on a previous occasion for a duodenal ulcer. Decoult and Driessens (1939) described three cases of double gastric ulcers with haematemesis. Anorosi (1931) reported a case of double gastric ulcer in which there was chronic double perforation into the pancreas and the anterior abdominal wall.

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Reviews

CARBOHYDRATE METABOLISM

Carbohydrate Metabolism. Correlation of Physiological, Biochemical and Clinical Aspects. By Samuel Soskin, M.D., and Rachmiel Levine, M.D. (Pp. 315; illustrated. No price given.) Chicago: University of Chicago Press.

For some years now, in England at any rate, there has been a notable difference between the views on carbohydrate metabolism presented at different stages of a student's career. What is taught in the laboratory bears very little relation to what is taught in the wards. This might well result in a hopeless muddle in the student's mind; but perhaps, happily, he has developed an ingenious protective reaction. He forgets at each stage of his training everything learned in earlier stages, and is thus able to accept without blinking the view of the average general physician that diabetes mellitus is due to a deficiency of the islets of Langerhans.

In this volume Soskin and Levine present very fully and at the same time with brilliant clarity all that the intelligent clinician should know of carbohydrate metabolism and its relation not only to diabetes mellitus but to many other disorders of the endocrine and alimentary systems. Beginning with a discussion of the biochemistry and energetics of carbohydrate metabolism which even the reviewer, a clinician, found intelligible, the authors go on to discuss the nature of the breakdown of normal processes which occurs in diabetes and the role of the endocrine glands in the normal and abnormal processes. Very wisely the limelight is deflected from the pancreas on to the liver, the source of the blood sugar. The role of the pancreas, of the pituitary, and of the other endocrine glands is described very largely in relation to their effects on the carbohydrate function of this, the master organ.

At every stage the physiological and clinical aspects of the subject are clearly integrated. There is hardly a paragraph which the clinician can skip without loss, for even in the most theoretical chapters the clinical implications are clear. This is applied physiology at its best. It is to be hoped that copies of the book will soon be procurable without difficulty in this country.

A BOOK ON CANCER FOR LAYMEN

Science versus Cancer. By I. Berenblum, M.D., M.Sc. Sigma Introduction to Science 2. (Pp. 116; illustrated. 6s.) London: Sigma Books Ltd., 7, John Street, W.C.1.

This book is the second in a series of "Introductions to Science" which are intended, as the publishers announce, to explain in simple language the theoretical and practical aspects of modern science, medicine, and technology in such a way that those without previous knowledge of the subject can readily understand its significance. Formidable difficulties confront the writer of a book about cancer within these terms of reference. The layman approaches cancer with an emotion which astronomy or electricity does not arouse. Dr. Berenblum is alive to the almost universal dread of the disease, and where the reader's personal attitude to cancer may be influenced he writes with evident care and a sense of responsibility; but in his enthusiasm he seems to underestimate the intrinsic difficulty of his subject-matter. The book is written avowedly for the layman and in the belief that the bare facts (as presented in the "health propaganda" type of literature) are uninspiring and on the whole ineffective, while an account in non-technical language of the intricate and ingenious devices which the scientist uses in surmounting obstacles to reach his goal can be fascinating and inspiring to the layman as well as to the scientist. The layman, however, may be little wiser at the end unless he starts with a substantial knowledge of biology and a sympathy with the workings of the scientific mind. It is true that biological structures and processes are described for him in non-technical terms, but the simple, brief descriptions of cell, nucleus, mitosis, metastasis, and the like, while clear to those who already know, seem unlikely to dispel ignorance. The omission of technical terms by itself does not smooth difficulties or unravel complexities, and though the individual words be commonplace their association in the phraseology of the ward or laboratory is strange to the layman.

In sum, the reviewer does not think that Dr. Berenblum has made cancer or cancer research intelligible to the layman without knowledge of biology, and questions, moreover, whether anyone else could do so. With that reservation the book can be commended. It contains a wealth of information on various aspects of cancer, and within its limits it is up to date and reliable. Chapters are devoted to the nature of the disease and its frequency (there is a good discussion of the alleged rising incidence), the influence of heredity and of environment, diagnosis, and treatment. The chapter on diagnosis ends lamely, as it must when addressed to laymen, and it is of dubious value, while the remark that "the general position with regard to treatment leaves room for improvement" is surely a sizable understatement. The last portion of the book, about one-third of the whole, is devoted to experimental cancer research, where the author is on his own ground, and gives a good summary of current knowledge and ideas.

The medical practitioner can safely recommend this book to patients who possess an appropriate scientific background, and if he reads it himself he will probably find among much that is familiar a good deal that is new, and in particular he will find the answers to many awkward questions which patients ask.

PULMONARY OEDEMA

Pulmonary Edema and Inflammation. An Analysis of Processes Involved in the Formation and Removal of Pulmonary Transudates and Exudates. By Cecil K. Drinker, M.D., D.Sc. (Pp. 106; illustrations. \$2.50 or 14s.) Massachusetts: Harvard University Press; London: Oxford University Press. 1945.

Though the title of this book may seem recondite, it is addressed, like the lectures on which it is based, to an ordinary medical audience, and it is of great general interest. We must not think of oedema of the lungs and the pleural sacs only in relation to heart disease and hypoproteinaemia. The problems raised by Dr. Drinker cover a much wider field. They bear on the aetiology and treatment of pneumonia, the disposal of dusts from the lungs, the hazards of toxic gases, and the design of oxygen masks and breathing machines. Research in this field has been accelerated by two technical advances—the development of a technique for cannulating the lymph from the lungs and the discovery of a drug which has the specific action of increasing the permeability of the capillaries in the lung—and Dr. Drinker's experiments along these lines form the hard core of the book. One of his main conclusions is the extreme importance of anoxia in the development of pulmonary oedema, and the extent to which anoxia begets anoxia. No clinician will read this book without a better understanding of the local as well as the general significance of a normal alveolar oxygen supply. Dr. Drinker shows that oxygen is still given inefficiently and too late, and what is required from the physician is a sagacious alertness to the early use of oxygen. As a result of wartime developments in aviation medicine Dr. Drinker foresees transparent masks and hoods which will enable the physician to give any concentration of oxygen he wishes, while the patient will be able to converse with his attendants by radio equipment. Equally interesting is the suggestion that the Thunberg barospirator might be used for the treatment of respiratory infections, for this apparatus substitutes pressure changes for volume changes and allows the blood to be completely aerated with an immobile chest.

Dr. Drinker's monograph is clearly written, well illustrated, cheaply priced, and we can cordially recommend it to our readers. They will undoubtedly see their next dyspnoeic patient as it were through the transparent screen represented by the 40 sq. metres of the capillary field of the lungs, and they will reason and act accordingly.

TECHNIQUE OF ABDOMINAL OPERATIONS

The Surgical Technic of Abdominal Operations. By Julius L. Spivack, M.D., LL.D. Fourth edition, revised. (Pp. 710; 682 illustrations on 362 figures. \$10.00.) Springfield, Ill.: Charles C. Thomas. 1946.

It has been said with some truth that the only realm left to the general surgeon of the next generation will be abdominal surgery; even now some parts of this are becoming the territory of the specialist, as witness gynaecology and genito-urinary surgery. Perhaps that is the reason why in the fourth edition of *The Surgical Technic of Abdominal Operations* by Julius Spivack, of Chicago, one finds no reference to genito-urinary operations, though, as is the usual practice in some parts of

the United States, gynaecology is included, albeit very briefly compared with the general prolixity of the book.

In his preface the author points out that whereas a great number of books on surgery deal with "what to do" very little emphasis is placed on "how to do." This may be a doubtful criticism of the ordinary general textbook for students, but could certainly not be applied to the many excellent treatises on operative surgery, including abdominal operative surgery which are available to-day. The author, however, fulfils his promise of telling the reader how to do things; we feel that he has been even too detailed in many instances and is inclined to give the details of too many operations for any one condition. Thus nearly 40 pages are devoted to a description of almost as many different techniques for gastrotomy. Nevertheless we like the idea of giving a short historical summary of the evolution of an operation at the beginning of each chapter, as thereby the student may learn in a vivid manner how important steps in technique were devised to meet certain difficulties or hazards which arose in earlier cases. This is true education in the principles of surgery, and we believe it will be valued by the student. For the more experienced an excellent bibliography at the end of each chapter will enable them to refer to the original articles if they require further data.

There is certainly a plethora of instruction to be found here, our fear is that the ordinary medical student will be bewildered by it and may fail to see the wood for the trees. The illustrations deserve special praise—they are exceptionally clear and to the point; but here again one cannot help speculate whether surgical illustrations may not be too clear, for, we all know, there is perhaps no subject in which there is greater difference between the textbook illustrations and actual practice of surgery as seen in the operating theatre. The student therefore may be misled into a deceptive idea of ease and simplicity. The book is very well produced in a style characteristic of Charles C. Thomas of Springfield.

Notes on Books

Essentials of Clinical Allergy, by Dr. SAMUEL J. TAUB, is published in Baltimore by the Williams and Wilkins Company (London: Baillière, Tindall and Cox; 16s. 6d.). Books on allergy fall from the American printing presses as thick as leaves. Vallombrosa, and this latest one is of the usual pattern. The author is a professor of medicine, and the book is based on a large experience both of teaching and of allergy. The first chapters deal with the basic facts of immuno-chemistry and sensitization, and a interesting in reflecting the modern emphasis on the physical structure and configuration of the proteins. Nevertheless, we would doubt anyone after reading these sections to explain the mechanism of desensitization by the "rush" method of a patient with pernicious anaemia who has become sensitive to liver extract. There follow sections on hay-fever, asthma, and many other types of allergy. The presentation is well balanced, though perhaps less than justice is done to the important topic of drug allergy. It is also not worthy that in a book coming from the country of Alexander and the Society for Research in Psychosomatic Problems there is no discussion of the mental factors in allergy. Evidently New York is not America. Nevertheless this is an admirable book, and anyone who reads it well will have a good working knowledge of clinical allergy. There are accounts of the preparation of material for skin testing, case sheets for medical histories in asthma and allergy, diets and recipes for elimination diets, and so on. Finally the book is written in a lucid style, illustrated with attractive pictures of plants and poisons, and well produced.

Mr. W. H. MAXWELL, A.M.I.C.E., has written *Current Water Works Practice*—a practical treatise on the provision of water supply for urban and rural communities (B. T. Baisford, Ltd.; 18s.). Most of the contents are of technical concern to waterworks engineers and managers, and there is a long chapter of interest to public health officials on current methods of water purification. The volume is well printed and well illustrated. Mr. Maxwell writes with authority and has kept in view the latest aspects of present-day practice. There is an urgent need for an adequate and wholesome water supply for every dwelling throughout the country.

The return to normal conditions is reflected in the restoration of the former title of the *Fire Protection Year Book* (Lomax, Ebsknecht and Co., Ltd., Aldwych House, W.C.2; 7s. 6d. post free). This new edition has been thoroughly revised and brought up to date, much information has been added, and some sections which dealt with air-raid precautions have been cut out.

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THE END OF THE BILL

The Government has accepted a number of amendments that came out of the Debate on the Third Reading in the House of Lords—that the gifts made to voluntary hospitals between the passing of the Act and the appointed day should be used by hospital management committees according to the wish of the donor; that the objects of all transferred endowments should so far as practicable be secured; that hospital management committees should be able to sue and be sued and control and manage hospitals on behalf of the Regional Board; that the associations of denominational hospitals should be preserved; that a practitioner should have proper representation if called before the Tribunal, that he could call witnesses, and that if he wished he could have the hearing in public.

The Lord Chancellor accepted an amendment by Lord Llewellyn to insert the words "whether in an honorary or paid capacity" after the word "serving" in Sub-section 2 of Clause 5: "The Minister may allow any medical practitioner serving [*whether in an honorary or paid capacity*] on the staff of a hospital . . . to make arrangements for the treatment of his private patients either at that hospital or at any other such hospital . . ." The interpretation of this amendment will be watched with interest.

In some instances where the Government could not accept an amendment, assurances were given by the Lord Chancellor; for example, that a medical practitioner should have six months' notice of the conditions of the National Health Service before having to decide whether or not he should enter it. The Government was defeated in the Lords by 35 votes to 15 on the amendment by Lord Balfour of Burleigh that the L.C.C. should have power to delegate maternity and child welfare and ancillary services to the City and Metropolitan Boroughs. It was defeated, too, on Lord Llewellyn's amendment that hospital management committees might sue or be sued and have their own right to make contracts for the daily services of the hospital—an amendment finally accepted by the Government. The most important amendment on which the Government was defeated in the Lords—by 53 votes to 37—was proposed by Lord Llewellyn, as follows:

"The remuneration to medical practitioners undertaking to provide general medical services in pursuance of the provisions of this Act shall be fixed by the capitation method except in any cases where the Minister on the recommendation of the Medical Practices Committee considers that exceptional circumstances necessitate remuneration on a different basis."

In the debate on this, Lord Moran expressed the misgivings of many doctors who were anxious about the impact of the Bill on the state of general practice in this country. One misgiving was the effect of the Bill when it became law on attracting suitable men into the medical

profession. The proposal to pay a basic salary required more justification than had been given. Lord Horder, supporting Lord Moran's view, pointed out that the Government's proposal would fix a ceiling above which no doctor could rise by his own efforts. Doctors had it firmly in their minds that the basic salary was the method by which the Government could attack the independence of the practitioner. In spite of Lord Addison's explanations of the reasons for introducing basic salary into the remuneration of doctors in the National Health Service, the real reason did not emerge until the Lord Chancellor on Thursday last week let the cat out of the bag—certification. "No one," he observed, "could have been, as I have been, Minister of National Insurance, without realizing that the success or failure of all our schemes depends in a very large measure on our getting satisfactory certification," and he went on to say: "If we are going to have lax—still more dishonest—certification, then all our schemes are going to break down on that rock." The Lord Chancellor, nevertheless, admitted that he had come across only some cases of lax certification where there were two competing doctors in a district, and remarked: "If you had abolished this per capita payment altogether and made it a straight out-and-out salary, of course, that temptation would have gone." In the Commons' debate on Monday, Mr. Aneurin Bevan's motion to disagree with the Lords' amendment on payment was carried by 303 votes to 128. Mr. Bevan defended the basic salary because it gave security to young doctors and to some extent would reduce the competition for patients. A basic element, he said, made it easier to give extra pay for special attainments. The Government's intention was that the main source of the doctor's remuneration should be by capitation. It would be difficult to carry out the recommendations of the Spens Report if the basic element were too high.

So the future remuneration of general practitioners in the National Health Service will contain a basic salary largely because of the Government's apprehension about certification. The next step, no doubt, will be for the Minister to invite representatives of the profession to discuss with him regulations and orders to be made under the authority of the Act. The plebiscite will decide what answer is to be given to the invitation.

THE DEPRIVED CHILDREN

Not often in these days does a Command Paper stir a rather tired and much castigated public conscience, but the report of the Care of Children Committee,¹ which was set up by the Government in the early part of last year to inquire into the methods of providing for children who had been deprived of normal home life, has caused uncomfortable reactions which may pave the way to early reform. The British are a children-loving people, whose indignation is fiercely aroused by any case of cruelty. What this report reveals is not active and intentional cruelty but indifference, lack of imagination, meanness of provision, absence of personal interest in and affection for these waifs and strays

¹ *Report of the Care of Children Committee*. Cmd. 6922. London: H.M. Stationery Office. 3s. net.

who have been cast upon a forbidding world. Numerically the problem is not a small one. It concerns 125,000 children. The largest group, some 57,600, consists of those maintained by public authorities under the Poor Law; they are housed mostly in public assistance institutions; some of them are in voluntary homes or are boarded out. The second largest group is of 23,400 children who, by order of a court, have been found to be delinquent or in need of care and protection; these are in approved schools or remand homes. Another 14,500 are physically or mentally handicapped, but not ineducable, and are in special schools; 7,500 more are mentally disordered or defective and cannot be educated, and are in mental deficiency colonies. Then there are a further 5,200, the floism and jetsam of wartime evacuation, who remain billeted in hostels or nurseries because there is no home to which they can return; there are 3,600 war orphans in foster homes, and 2,400 children awaiting adoption. In addition there are 10,000 children "maintained for reward."

The problem of these wards of the State is no less acute because it is largely tucked away out of sight. These children do not cross the common path. The ordinary citizen, if he thinks about them, supposes that Barnardo's or somebody will see to it. It was the same when the new Poor Law came in in 1834. It brought about such a tidying up of the streets, such a disappearance of vagrancy and destitution, that humanitarians like Harriet Martineau and enlightened politicians like Lord Brougham acclaimed it as a great reform; yet within five years Dickens produced his *Oliver Twist* just to show what it was like to be a pauper child. Another genius might base an awakening novel on some passages in this report which make one wonder whether we have advanced very much in a hundred years from Dickensian grotesquerie and squalor. Mr. Bumble has changed his coat but not always his heart, and the ghost of Mrs. Corney still flits about some institutions which are the same gaunt-looking buildings they always were, with dark staircases and corridors, high windows and bare boards, with the traditional chocolate-and-tuff paint and the eternal smell of mass cooking and soft soap. The children, of course, are not like the angelic and sensitive Oliver, who probably never existed in real life. These children are not usually pleasant, appealing little persons: they are often very difficult. Had *Oliver Twist* been pictured as a nail-biting, bed-wetting, destructive, saucy little varmint no Victorian would have shed a tear. But the children are the creation of their surroundings.

"One nursery which was structurally linked to the public assistance institution had sunk to the lowest level of child care which has come under our notice. There were 32 children on the register, eight of whom were sick children. . . . They were in charge of assistant nurses who were at the same time nursing the sick adults in the main ward, in which were aged and chronic sick (one patient had advanced cancer of the face), a mentally defective child, and a child with chicken-pox. In the children's ward was an eight-year-old mentally defective girl, who sat most of the day on a chair commode, because, the nurses said, 'she was happy that way.' . . . There were two babies with rickets, clothed in cotton frocks, cotton vests, and dilapidated napkins, no more than discoloured cotton rags. The smell in this room was dreadful. A premature baby lay in an opposite ward alone. The ward was very large and cold."

The report mentions one public assistance institution which twelve infants were cared for in one room where there was a mongol idiot; a boy of 10 and a girl of sleeping in the same room as a three-year-old hydrocephalic of very unsightly type; healthy children and children suffering from skin diseases of a contagious nature herded together; a public assistance home with a capacity for 45 overcrowded with 75 children. Many more examples could be quoted. On the other side there were places where the relationships and surroundings very nearly approached normal home conditions, and where matrons showed much kindness and understanding; but the Committee gives its general judgment: "We formed the conclusion that in the majority of public assistance institutions the general care of children was of a poor standard. We have no alternative but to paint this very gloomy picture."

A lack of adequate accommodation for mentally defective children is noted. Such children, it is said, are constantly found in Poor Law institutions for adults, remand homes, and, though not physically ill, in the wards of general hospitals. The Committee considers that an immediate census should be taken of ineducable children now in public institutions and children's homes and that the earliest possible steps be taken to provide for them in properly staffed homes and colonies. One phase of this problem concerns epileptic children, especially those who are both epileptic and delinquent or of low intelligence and are markedly unstable. There are not many of these cases but the problem seems to be out of all proportion to the numbers. Provision for this class should be on a national or at least a regional, scale.

Another matter for concern is that a few children regarded by medical superintendents as suffering from mental illness or severe defect are admitted to mental hospitals under the Lunacy and Mental Treatment Act. In these hospitals it has not been possible to make any special provision for them, and they are associated with adult mental patients in the wards and day rooms. It appears that some unstable boys and girls not suffering from any diagnosed mental illness are transferred under legal procedure from approved schools when they become uncontrollable. It is considered that alternative provision should be made for these children. As for the physically handicapped, in many hospitals insufficient attention is paid to education and educative recreation. Even where there are recognized hospital schools the children are left for many hours without occupation, and in some country hospitals no provision for education at all is made. One of the most serious difficulties encountered in dealing with the children in institutions and foster homes is enuresis, a reflection of the child's sense of insecurity. Incidentally the Committee comes down in favour of the abolition of corporal punishment in all institutions. Corporal punishment may be all very well for boys in a happy home with full confidence in life; it is disastrous for a child with an unhappy background, whose self-respect needs to be nourished and who needs to feel that he is regarded with some affection by those in charge of him.

The recommendations number over sixty. An outstanding proposal is that the administrative responsibility for the

re of children deprived of home life should be centralized in one Government department; at present it is spread over five departments. This was also the view of the recent conference of Labour Women, at Hastings, meeting on the day this report was issued. The single department could define requirements, maintain standards, advise and assist those taking immediate responsibility, and act as a clearing-house for progressive ideas. All services of local authorities should be subject to Exchequer grant, so relieving the difficulties arising from straitened financial resources in certain areas. Many recommendations are made for registration and inspection, also for changes in the law relating to adoption.

The Committee, of which Miss Myra Curtis was chairman, and which had among its 16 members two medical men, Mr. Somerville Hastings and Prof. J. C. Spence, carried out its work with great thoroughness. It examined 29 witnesses (including five from the British Medical Association, led by Dr. R. G. Gordon), considered 114 memoranda, and visited, individually or in small groups, 51 institutions. It is understood that the Home Secretary and the Ministers of Health and Education are giving immediate attention to what this critical report reveals and recommends, and that proposals may be laid before Parliament early in the session which is about to open. However crowded the legislative programme may be, this subject calls for high priority. This is demanded in order to deal effectively with what is nothing less than a scandal in some parts of our local administration, to relieve the wretched and hopeless lot of many of these children, and to preserve the next generation from being invaded by an army of the unfit, the witless, the maladjusted, the resentful, the depraved, the criminal, which such surroundings inevitably nurture.

WHOOPING-COUGH VACCINE TRIALS

In conjunction with the Medical Officers of Health of Manchester, Tottenham, and Wembley the Medical Research Council is initiating field trials to assess the protective value of pertussis vaccines. In these three areas parents of children aged 6-12 months have been invited to co-operate by enrolling their children for inoculation within the next few months. The volunteer children are to be divided into two groups, one group receiving pertussis vaccine and the other—the control—anticatarrhal vaccine. Details of the investigation are so arranged that no one engaged in the day-to-day work of inoculation and subsequent follow-up will know which vaccine any particular child has received. The children are to be visited at monthly intervals by specially appointed health visitors, who will take specimens for bacteriological examination from any child with a suspicious cough and arrange for specially appointed medical officers to visit the child and make a clinical diagnosis. The results will be assessed at the end of two years.

In the propaganda to parents—mainly by pamphlets and personal visits by health visitors—all the details are fully explained. The enrolment of children has so far been encouraging. All general practitioners in the areas concerned have had a letter informing them of the investigation and have been asked to co-operate by reporting suspicious coughs in children included in the trial. The

general practitioner will immediately be informed when whooping-cough is diagnosed by the special investigators.

At present American vaccines as prepared for Prof. Sauer, Evanston, and Dr. Pearl Kendrick, Grand Rapids, both of whom have claimed considerable success with prophylactic vaccination, are to be used. Previous results obtained in controlled trials with a British vaccine had proved disappointing; that is why American vaccines are now being tried. If they prove satisfactory further trials will be made with new British vaccines.

UTERINE CANCER AFTER IRRADIATION

From time to time it has been noted that women of premenopausal age treated with radium or x rays for functional uterine haemorrhage sometimes develop carcinoma of the uterus at a later date. Some authorities have regarded this as a chance occurrence; others have suggested that the local effect of the radium favoured the subsequent development of malignancy. In many cases, however, there is little doubt that the patient already had carcinoma at the time of the radiotherapy, and even though curettage was carried out the correct diagnosis was not made. The incidence of malignant disease of the uterus after radiotherapy for innocent conditions has been variously assessed as between 0.3 and 1.46%, but the material and methods used by several investigators have differed so much that it has been difficult to reach any definite conclusion.

J. A. Corscaden, J. W. Fertig, and S. B. Gusberg¹ now report on a follow-up of 958 women subjected to an artificial menopause. The average follow-up period was 6.7 years. Thirty-six patients developed cancer, and in fifteen of these it was situated in the uterus. Presence of the growth at the time of the original treatment was excluded by the long interval before the return of symptoms (four years or more in all cases except one). From the cancer mortality rates for each age group of the female population of the United States as a whole it is calculated that the expected incidence of malignant disease in this group was 17.4, the growth being situated in the uterus in 4.4 women. Although there was no significant difference in the occurrence of extrauterine cancer there were 3.4 times as many cases of uterine cancer as might have been expected. It is further calculated that of all women aged 30-55 treated for uterine haemorrhage by induction of the menopause with radium or x rays 9.6% will suffer from uterine cancer before they reach the age of 80 years.

The carcinoma was situated in the body of the uterus in nine of the fifteen cases, and in the cervix in six. The indication for radiotherapy was always excessive bleeding, and in the majority the original curettage had revealed hyperplasia of the endometrium. The idea that it is the action of the radium which predisposes the woman to carcinoma is dismissed, and it is concluded that it is conditions demanding such treatment—i.e., haemorrhage before the menopause and endometrial hyperplasia—which are the significant factors.

The difficulty of the subject is emphasized by the appearance in the same journal of a report by G. T. R. Fahlund and A. C. Broders² on a study of 236 uteri removed after the menopause, carcinoma being present in 86, and 50 being without any pathological change. They conclude that endometrial hyperplasia does not predispose to malignant disease or play any part in its aetiology. On the

¹ *Amer. J. Obstet. Gynec.*, 1946, 51, 1.

² *Ibid.*, 1946, 51, 22.

contrary, they found that it is the uterus with an atrophic endometrium that is most likely to develop carcinoma. This is directly opposed to the view which has been widely but not universally held in the last two decades, and also to the suggestions put forward by Corscaden and others to account for their findings. Indeed it offers an alternative explanation of the latter. Whatever be the explanation, however, if the analysis of the cases studied by Corscaden *et al.* is not upset on statistical grounds and if further clinical evidence is forthcoming to support their findings as to the incidence of malignant disease, the desirability of treating "menopausal bleeding" by hysterectomy rather than radium must be considered from the standpoint of the prevention of uterine carcinoma later in life.

TUBERCULOSIS: AN EMPIRE RESPONSIBILITY

Sixty million people live in the British Colonies—that is, apart from the great Dominions—and these colonial fellow-subjects of the Crown are obtaining more self-government each year. In the exhaustive plans now being made for their welfare it is curious that tuberculosis seems to be overlooked. Yet it is as much a "tropical" disease as malaria or sleeping-sickness. As Africa and Asia become industrialized, as communications grow and cities swell there is every reason to fear that endemic tuberculosis may be as serious in the less-developed areas as it has become during the past century in Great Britain. A survey on *Empire and Colonial Tuberculosis* by Prof. Lyle Cummins¹ is therefore of timely interest. It begins with a dictum of Robert Koch's asserting that the number of victims claimed by such dreaded diseases as bubonic plague and cholera must rank far behind tuberculosis. The same may be said of the more chronic diseases of the Tropics, which cause more horror among the public and attract more attention among doctors. The booklet gives an outline of native infection and immunity by one who has studied the problem for more than thirty years, ever since, as a young medical officer in the Sudan, he wrote his early paper on disease in that sub-equatorial region. The pioneer survey of Lyle Cummins has been followed by others; Wilcocks, Matthews, and Bardswell have each examined tuberculosis in a different part of the Empire, and a survey of the West Indies by Santon Gilmour has also been published by the National Association for the Prevention of Tuberculosis.²

Though present knowledge does not enable Lyle Cummins to be dogmatic, he thinks that the difference between the European and non-European natives in their reaction to tuberculosis is the difference in the speed at which immunity takes place. In civilized man relative immunity is acquired with fair rapidity. In the primitive it grows slowly, and in the meantime serious and fatal disease may have taken place. The N.A.P.T. *Handbook of Tuberculosis Activities* (1946) contains for the first time an Empire and Colonial Supplement, and it is depressing to look through the references to colonial medical services and find the small attention paid to the disease. In Nigeria, for instance, with its population of twenty millions, there are only fourteen beds specifically assigned for the treatment of tuberculosis. All recent evidence from Colonial Africa and other parts of the Empire suggests that native peoples are beginning to pass through an intensive phase of contact with the tubercle bacillus, combined with those changes from their primitive mode of life which, when applied

together, cause a high death rate from tuberculosis. The Bantu and the Hottentot and the many other races and peoples under the tropical sun are now to experience a transition from simple agriculture to mining and factory life. Can our knowledge of European deterioration during the industrial revolution be used to help them?

The N.A.P.T. has promoted surveys in Cyprus, Burma and the West Indies and now has begun a further survey in the Gold Coast. The problem of colonial tuberculosis it is being realized, is far more urgent than anything in this country but has so far not been matched by any real expansion of medical services. Prof. Lyle Cummins' booklet, which is part of the National Association's programme of colonial research and education in tuberculosis ought to receive attention in places where plans are made for the conquest of social disease.

INTERTRIGINOUS DERMATITIS OF THE FEET

Skin affections about the toes, especially the intertriginous affections, cause much difficulty in diagnosis and treatment; they are often loosely diagnosed as dermatophytosis though fungous infection probably accounts for no more than 30% of such cases. Bacterial infection, trauma, and sweating may produce a very similar clinical picture. This group of diseases constitutes a hazard in some industries and during the recent war it became a major cause of disability in the Armed Forces, more particularly in tropical and subtropical theatres. There is no single treatment of outstanding merit, and recurrence after apparent cure is the rule.

All these points are stressed by Weidman and Glass, who during the winter of 1942-3 conducted an experiment upon 117 men in a penitentiary in America. They chose patients suffering from intertriginous dermatitis of the feet "conceivably due to bacteria or to fungi," with the intention of finding a "blanket form of treatment" not determined by laboratory tests and not requiring close medical supervision, the purpose of which was prophylaxis—keeping "the feet of fighting men in good condition." Though the object was to advise upon treatment suitable for use "in the field" away from laboratory facilities, they did in fact take a single culture in each case and secured the high figures of 37.9% positive results. However, this was secondary to the main purpose of the investigation.

Six medicaments were investigated, including benzoic and salicylic acid ointment, but two proved far superior to the remainder. Metacresylacetate ("Cresatin-Sulzberger"), regarded by the authors as the more valuable, and 5% boric acid powder in talcum each gave apparent cure in 16% of cases and improvement (including the cures) in 75%. No reference is made to recurrences. Benzoic (12%) and salicylic acid (3%) ointment effected improvement in 75% but apparent cure in only 5% of cases. The results leave much to be desired and indicate the need for serious research.

Certain other facts of interest emerge from this preliminary report, as that the incidence of infection did not seem to be influenced by wooden, cement, or stone floors. There was no obvious correlation between the clinical findings and the type of fungus involved and no difference in the response of the different fungous infections to the various medicaments. *Trichophyton purpureum* was the fungus commonly found in the white cases and *Trichophyton interdigitale* in the negro, and there appeared to be a striking decrease in incidence of these disorders after fifty years of age.

¹ National Association for the Prevention of Tuberculosis, Tavistock House, Tavistock Square, London, W.C.1., price 5s.

² *British Medical Journal*, 1946, 2, 303.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

An annual report of more than usual interest is that of the London School of Hygiene and Tropical Medicine (incorporating the Ross Institute) for the year 1944-5. The year is that during which the war, with its many changes in peacetime conditions, ended and a return to more normal working began. The total number of Service medical officers who were given special instruction in tropical medicine and parasitology during the war was 2,259, but during 1944-5 the requests of the Services became less and only four courses were provided for a total of 221 men and women. The total number of students provided with instruction was 436. The intensive courses are now discontinued, and courses for the D.P.H. and for the D.T.M.&H. are already in progress:

An outstanding event has been the gift of over £20,000 from the Rockefeller Foundation to the public health department for the training of picked men who may afterwards reinforce the teaching staff of the School and fill important vacancies in the public health services. The work of the School during the year was very varied and largely determined by urgent need for researches and advice for war purposes. It is a tribute to the high repute of the School that during the period under notice the Foreign Office, the Colonial Office, the Ministry of Supply, the British Council, and important industrial bodies sought the expert assistance of the staff for inquiries and investigations at home and over-seas. Prof. H. Raistrick, who in July, 1944, was appointed honorary scientific adviser on penicillin to the Ministry of Supply, paid two visits to the United States and made useful contacts in connexion with the production of penicillin. Prof. P. A. Buxton visited the Gold Coast during the early part of the year in connexion with the use of D.D.T. and later went to East Africa at the request of the Colonial Office to report on research on tsetse-fly and trypanosomiasis. Dr. George Macdonald, who took up his new duties as Director of the Ross Institute on Jan. 1, 1945, visited and reported upon health conditions in Iran for the Anglo-Iranian Oil Company. Other investigations and researches have been carried out in the departments of parasitology, entomology, biochemistry, epidemiology and vital statistics, applied physiology, and public health. An account is also given of the work of the large and very useful library of the School, of the Agricultural Research Council unit of insect physiology, of the affiliated Institute of Agricultural Parasitology under Prof. R. T. Leiper at St. Albans, and of the Ross Institute. A plea is made for repair of the east wing of the building in Bloomsbury, damage to which has greatly curtailed much-needed accommodation.

THE "SERVANT PROBLEM" IN HOSPITALS

"Hospital domestic work is at present an unpopular occupation, particularly among women used to factory conditions." So stated the Factory and Welfare Advisory Board in requesting King Edward's Hospital Fund for London to examine the question of the employment of domestic staff in hospitals. The truth of the observation was immediately borne out by the Fund's own inquiries. Of sixty voluntary hospitals of all sizes in its area all but five reported a serious shortage of domestic staff. The Fund set up a small committee under the chairmanship of Mr. Malcolm McCorquodale, Parliamentary Under-Secretary for Labour in the last Government, to formulate recommendations; and the recommendations¹ should

go some way to ease the problem as far as it can be eased without touching on payment, which was outside the committee's province. All it states on this point is that hospitals should not feel themselves bound by the minimum rates of the Joint National Council if, in order to compete with other employment in the neighbourhood, it seems necessary to offer something above the minimum. Nearly all the hospitals from which evidence was sought referred to wages as the main factor in the situation.

One of the principal recommendations is that there should be appointed to all hospitals of sufficient size a full-time domestic supervisor and welfare officer of the right personality, who, under the matron, would have charge of recruitment, interviewing, engagement, placement, training, payment, and welfare. Then there is real need in hospitals for guidance in the use of labour-saving appliances and methods of working. The committee had to abandon its intention to indicate a standard complement of domestic staff in a hospital. With the nursing staff a ratio of nurses to patients offers a reasonable basis, but with the domestic staff, who are responsible for the care of premises as well as the service of individuals, so many variants arise that it would be unsound to lay down a ratio of staff or of man-hours to beds. But it is mentioned that one of the very few hospitals which felt that its difficulties concerning domestic staff were below the average was trying an over-all ratio of one member of domestic staff to five beds.

On the vexed question of nurses undertaking domestic duties the committee feels that some training in domestic work is a necessary part of the nursing course if the nurse is to understand the proper care of the patient's environment; but it is a different matter to depend permanently on the nurses in training for a substantial share of the domestic labour of the hospital. Teaching and practice in housecraft should be a recognized part of the nurse's training, but the domestic requirements of the wards should not be dependent on the student nurses to such an extent as to absorb a substantial share of their time and energies.

Another recommendation is that hospitals should consider the greatly increased employment of male domestic orderlies. "We see no reason why, in men's wards at least, there should not be a male orderly for domestic duties." Various other recommendations are made about hours of duty, accommodation and amenities, health, pensions, and, finally, uniform. With the nurses wearing uniform there is not likely to be the same objection on the part of the domestic staff to a "badge of servitude" as might be found in ordinary domestic service, and at one hospital the green overalls and caps provided for the ward orderlies are very popular.

The National Health Service (Scotland) Bill "to provide for the establishment of a comprehensive health service for Scotland and for purposes connected therewith" was presented in the House of Commons on Oct. 31 by the Rt. Hon. J. Westwood, Secretary of State for Scotland. It was ordered to be printed, but will not be debated until the new session of Parliament which is due to begin on Nov. 12.

The next session of the General Medical Council will open on Tuesday, Nov. 26, at 2 o'clock, when the President, Sir Herbert Lightfoot Eason, will take the chair and deliver an address.

¹ *Employment of Domestic Staff in Hospitals.* Published for the King's Fund by Geo. Barber and Son, Ltd., Fumival Street, London, E.C.4. Price 9d. post free.

MORALE IN BATTLE

ADDRESS GIVEN TO THE ROYAL SOCIETY
OF MEDICINE

BY

FIELD-MARSHAL VISCOUNT MONTGOMERY

I have chosen for my talk the subject of morale in battle. High morale is a quality without which no war can be won; it is therefore a vital quality. And since it is a mental quality, because it is essentially the product of a mind and a conscience, it will be of peculiar interest to the medical profession.

We must first understand what we mean by "morale." This is wrapped up in the human factor, since the raw material with which we soldiers have to deal is "men."

The Human Factor

I would like to begin by giving you my general views about the nature of our Army. One great lesson stands out clearly in my mind from the late war, in which we went through some very bad times, but stood up undaunted, and then hit back. It is this. The true and ultimate strength of a nation lies in its people, in their capacity to work, in their virility. It lies, in fact, in the national character. It is this national character that produces the fighting-man—the soldier.

The soldier is not chiefly a military figure; he is primarily a social figure. He is influenced by his home, his upbringing, and his historical tradition. He is only a soldier because military training has imposed a certain fixed pattern of behaviour upon him. The soldier is, in fact, a citizen of the nation. The Army is woven into the social fabric of the nation and is an integral part of the community. No matter what may be instilled into him in the Army, the soldier will retain his individual character, which he derives from his environment. He will reflect, primarily, the national character of his country. The national character is therefore of immense importance. Anything that weakens the national character weakens the Army. An army is not, and never can be, merely a collection of individuals. It is a fighting weapon moulded by discipline and controlled by leaders. The aim of an army is to achieve success in battle against the enemies of the nation. All training must be directed towards this end, and it must never be forgotten even though the country is at peace. Training must from the earliest days concentrate on the selection of leaders and the infusion of discipline. It is by discipline that an army is welded into a fighting weapon; it is by leadership that it is led to victory. These are the fundamental factors which affect the morale of the soldier and lead to success in battle.

The Quality of Morale

In war the moral stature of some men increases, and their characters grow stronger and more closely knit in proportion to the discomforts and dangers they are called upon to face. Such men will occasionally perform in battle remarkable acts of selfless courage and daring, and will endure with extraordinary fortitude and patience the burdens thrust upon them. Other men, however, will under the stress of hardships or dangers surrender to fear or fatigue and will allow their characters to disintegrate. This disintegration will usually take the form of a loosening of the moral fibre, which results in timidity of action and slackness in appearance, while those who have gone to seed will be dirty and their appearance will be even more so. In these latter cases there has been a general loosening of the character due to a partial surrender to fear. The good soldier—the man with high morale—has not surrendered to fear and has maintained his personal standards; the bad soldier—the man with low morale—has become incapable of independent action and has to some extent shed a part of his human individuality.

Morale is a mental and moral quality. It is that which in battle keeps men up on humanity's level. But humanity's level is not enough, because the strongest human instinct is the instinct for survival. Morale is also that which develops man's latent heroism so that he will overcome his desire to take the easy way out and surrender to fear. The quality which maintains human dignity in battle and at the same time develops man's heroism is high morale. It is necessary now to make

clear what high morale is not. It is not contentment or satisfaction bred from ease or comfort of living. Both of these contain a hint of complacency; an acceptance of luxury as an end in itself. High morale is far more than any of these for it implies essentially the ability to triumph over discomfort and dangers and carry on with the job.

Nor is high morale achieved through fitness or healthiness alone. It is important not to confuse the idea of physical happiness with morale. The happy faces of men after a good game of football are not necessarily the faces of men with good morale. Morale is a mental rather than a physical quality, a determination to overcome obstacles, an instinct driving a man forward against his own desires. High morale is not happiness. Happiness may be a contributory factor in the maintenance of morale over a long period, but it is no more than that. High morale is not toughness. Some very tough men in war have turned out to be very disappointing in action. Toughness is a physical and not a mental asset. Tough men will occasionally perform an isolated act of bravery. Morale, however, is not a quality which produces a momentary act. It influences behaviour at all times.

In brief, high morale is a quality which is good in itself and is latent in all men. It maintains human dignity. It enables fear and fatigue to be overcome. It is involved with the idea of conscience, but it should not be confused with fitness or happiness or toughness.

Basic Factors of Morale

We must now consider what factors constitute the morale of the soldier in the heat of battle. Certain factors may be described as essential conditions without which high morale cannot exist. These four basic factors are: (1) leadership (2) discipline, (3) comradeship, (4) self-respect. A fifth factor, devotion to a cause, must exist but need not necessarily influence all the soldiers. Finally, there are numerous contributory factors which are of great importance but are not essential conditions.

Leadership

Morale is, in the first place, based on leadership. Good morale is impossible without good leaders. Human beings are fundamentally alike in that certain common characteristics apply to all men in varying degrees. In battle the most important of these characteristics is fear. All men are afraid: one time or another to a greater or lesser extent. In moments of fear they band together and look for guidance; they seek for a person to give decisions; they look for a leader.

In times of war the leader has opportunities denied to him in peace. The difficulties, dangers, and discomforts inseparable from the battle-field make men cry out for the leadership they can do without in peace. At such moments men are too weak to stand alone; they find the burdens too great to bear on their own selves unequal to the task. The leader himself accepts the burdens of others and by doing so earns their gratitude and the right to lead them. The men recognize in their leader some quality which they themselves do not possess; this quality is "decision." Fear makes men sluggish and indecisive, unable to decide or act for themselves. The leader's power over his men is based on his ability to cut through this "fear paralysis," and in so doing to enable others to escape from it. The rightness of the decision taken by the leader is irrelevant. What matters is that the decision should be taken and that the leader should shoulder the responsibility for the decision. The leader must convince his men of its rightness even though he himself may be uncertain of his own judgment. If the leader will decide, the men will follow and will fight. If there is indecision they will hesitate and will flee. In short "fight and survive," "fear and be slain"; the leader decides.

The leader's power of decision results from his ability to remain imperturbable in the crisis. His greatest asset is his ability to act normally in abnormal conditions, to continue to think rationally when his men have ceased to think, to be decisive in action when they are paralysed by fear. The object of training must be, first, to select those who possess within them the potentialities of leadership, and, secondly, to develop these potentialities. This is accomplished by giving the leader responsibility. A leader's character will develop in proportion to the responsibility with which he has been entrusted. His

osition as the man responsible for the lives and well-being of his men must be impressed upon him. In battle his preoccupation with his men's affairs will give him less time to sink of his own fears. The mere fact of responsibility will increase the leader's powers of decision and make him confident of his ability to handle any crisis. The two vital attributes of a leader are: (a) decision in action, and (b) calmness in crisis. Given these two attributes he will succeed; without them he will fail. Our great problem in peace is to select as leaders men whose brain will remain clear when intensely frightened; the yardstick of "fear" is absent.

Discipline

The object of discipline is the conquest of fear. There are two aspects of fear. Fear can suddenly attack a man through his imagination. A corpse in a ditch or a grave by the side of the road will remind him of the peril of his position. He will suddenly realize that he himself is liable to be killed. It is

function of discipline to fortify the mind so that it becomes reconciled to unpleasant sights and accepts them as normal everyday occurrences. Fear can also creep upon a man during periods of monotony in the line. At such a time he will have the opportunity to appreciate the dangers which beset his life. Fear acting through his thoughts can so reduce the man's hard core of courage that he will become nervous and fearful. Discipline strengthens the mind so that it becomes impervious to the corroding influence of fear. It teaches men to confine their thoughts within certain definite limits. It instills the habit of self-control.

The basis of fear is the awareness of danger. Man becomes aware of danger when he feels himself opposed to something more powerful than himself. It is important for a man to lose his individual feeling and to become an integral part of the battalion, division, and army to which he belongs. It is here that discipline shows its value, for it can help a man to lose his own identity and become a part of a larger and stronger unit. It is in this way that discipline will conquer fear. This corporate sense which discipline creates helps men to face the unknown.

The method by which the conquest of fear is achieved is the unifying of men into a group or unit under obedience to orders. Men require to be united if they are to give of their best. Discipline seeks to instill into all ranks a sense of unity by compelling them to obey orders as one man. This obedience to orders is the indispensable condition of good discipline. Men learn to gain confidence and encouragement from doing the same thing as their fellows; they derive strength and satisfaction from their company; their own identities become merged into the larger and stronger identity of their unit. Men must learn to obey orders when all their instincts cry out for them not to be obeyed. They must learn to obey orders in times of stress so that they will do so in times of danger. They must learn to carry out their tasks under any conditions and despite all difficulties. In this way the mass of loose individuals, with their fears and weaknesses, can be welded into a united whole, ready to act on the word of a leader.

Discipline implies a conception of duty. Nothing will be accomplished in the crisis by a man without a sense of duty. The sentry in an outpost holds his ground in the face of attack because he has a sense of duty to those behind him. This sense is instilled by discipline because it teaches men to obey orders as a matter of course, to know that it is wrong not to obey them, and right—that is, their duty—to do so. For the soldier this conception of duty does not embrace abstractions such as freedom or empire or democracy. In battle a soldier's sense of duty extends only to the friends who are around him. It is the job of the junior leader to encourage this sense of duty. In brief, discipline seeks to conquer fear by welding men into a cohesive whole, united by obedience to orders. It aims to create a body strong enough to carry each of its members through dangers and difficulties which they themselves would be unable to face alone. In this way it promotes comradeship, which is the third factor of morale.

Comradeship

Morale cannot be good unless men come to have affection for each other; a fellow-feeling must grow up which will result in a spirit of comradeship. An army is made up of human

beings, so that however much a leader may inspire his men, however perfect the discipline, the morale will be hard and unsympathetic if the warmth of comradeship is not added to it. War, though a hard business, is not necessarily a grim one. Men must laugh and joke together, must enjoy each other's company, and must get fun out of life even in times of danger. Comradeship is based on affection and trust, which between them produce an atmosphere of mutual good will and a feeling of interdependence. Men learn to have faith in each other and to depend on each other according to the abilities of each. Comradeship is a great antidote to fear because it gives a man friends. If he has friends he will derive strength from their presence and will be anxious not to let them down in battle. All men have within them a streak of generosity and unselfishness—a touch of nobility—and these qualities will be brought out in their attitude to their friends. Friendship causes men to give of their best.

In conclusion, comradeship is vital to high morale because it surrounds a man with an atmosphere of warmth and strength at the very moment when he is feeling cold and weak. It encourages his finest instincts, and the demands of friendship serve to strengthen him in battle. These demands are also a challenge to his self-respect—a quality which must now be considered.

Self-respect

No man can be said to possess high morale if the quality of self-respect is lacking. Soldiers must be encouraged to respect themselves at all times and under all conditions. Self-respect implies a determination to maintain personal standards of behaviour. A man who respects himself will allow neither himself to become slovenly nor his quarters dirty; even in action he will take care to see that his personal appearance suffers as little as possible. It is the job of the N.C.O. to maintain this aspect of discipline; it is the function of the officer to encourage and instil self-respect.

Efficiency is inseparable from self-respect. Men must take pride in their ability to carry out all jobs allotted to them. They must feel that they are good soldiers and are therefore of value to other people. Men can be persuaded of this fact by being trusted. A man who feels he is trusted will feel that he is efficient, and he will at once begin to respect himself. He will have confidence in his own ability to fight. Men who are trusted gain self-confidence. It is the job of the officer to convince his men that he trusts them. Self-respect is a quality which will develop inevitably if the three essential factors already considered are present. It is true to say that without self-respect good morale is impossible; it is equally true to say that if the standards of leadership, discipline, and comradeship are high, the quality of self-respect will also be high.

Devotion to a Cause

It is impossible to make devotion to a cause either a basic or a contributory factor to good morale. It must stand by itself between these two categories. I do not believe that soldiers are greatly influenced by "cause"; they do not advance over dangerous and fire-swept ground in the conscious pursuit of an ideal; they fight for reasons which have little obvious connexion with freedom or democracy. There are of course exceptions. But rhetorical statements which assert that the soldier

"... must know what he fights for
And love what he knows"

must not be allowed to confuse the issue. The fact is that the soldier, instead of baying a "fire in his belly," advances into battle with a cold feeling inside him. These statements must be qualified.

No nation could fight an unpopular war; the war must be accepted by the people, since a democracy cannot oppose the will of the majority of its citizens. The soldier, as a citizen, must therefore be convinced of the rightness of the cause. At least his reaction to the declaration of war must be one of acquiescence, even if this is only passive; he must not be hostile to it. The way to change this passive acceptance to active enthusiasm in battle has already been given in the four basic factors. Nevertheless, nothing which I have said must be interpreted as minimizing the influence of "cause" on those officers and men who are moved by it. For these few, "cause"

will be a sustaining and strengthening factor and may be of greater importance to them than any of the four factors.

Contributory Factors

There are certain contributory factors which powerfully assist morale but do not themselves constitute essential conditions for it. It is possible to have high morale without any of these contributory factors, but it is very difficult; it requires the highest standards of leadership and discipline and the strongest feelings of comradeship and self-respect. In the normal case one or more of these contributory factors must be present. There are many of them, and only a few are considered here.

Success.—High morale is possible in defeat but not during a long period of defeat. On such occasions confidence in the leaders will inevitably wane and the first basis will be undermined. Success will aid good morale by creating confidence in the leader and in the command.

Regimental Tradition.—The regimental spirit can be a powerful factor in making for good morale. The more a soldier feels himself to be identified with his regiment the higher will be his morale if the four essential conditions have been fulfilled. There is a difference between comradeship and regimental spirit. Comradeship is the spirit of fellow-feeling which grows up between a small group of men who live and work and fight together. Regimental spirit is the soldier's pride in the traditions of his regiment and his determination to be worthy of them himself. Nothing but good can result from this spirit, which should be constantly encouraged; it is not, however, a basic factor of morale, because in the crisis of battle the majority of the men will not derive encouragement from the glories of the past but will seek aid from their leaders and comrades of the present. In other words, most men do not fight well because their ancestors fought well at the Battle of Minden two centuries ago, but because their particular platoon or battalion has good leaders, is well disciplined, and has developed the feelings of comradeship and self-respect among all ranks on all levels. It is not devotion to some ancient regimental story which steels men in the crisis; it is devotion to the comrades who are with them and the leaders who are in front of them.

Personal Happiness.—A man should be happy in the sense that his personal life should be in order. Nothing weakens a man more than trouble at home; it encourages him to think of home, and all that it implies, when he should be occupied with the enemy. It turns his mind to peace and his desire to live at the moment when it is necessary for him to steel himself to face the possibility of death. He must never be allowed to forget that his job is to fight. His function is to kill the enemy, and in so doing he must expose himself to danger.

Administration

A man's ordinary day-to-day life must be well organized. Thus, hard conditions imposed on him in training to inculcate discipline do not rule out the desirability of good living-quarters; and in the line a soldier's morale will be much improved if the administrative arrangements are good and if he is assured of proper conditions, with a reasonable amount of leisure and comfort when he leaves the front. But here warning must be given. There is a danger to-day of "well-being" being considered as an end in itself and not as a means to an end, one of the means of maintaining morale. Welfare itself will not produce good morale because it is essentially a luxury and it has already been stated that morale cannot be good unless it contains a quality of hardness. Hardness and privation are the school of the good soldier; idleness and luxury are his enemies. Men will endure great hardships if they know why and are convinced of the necessity. "Blood, toil, tears, and sweat" is not for nothing one of the great rallying calls of the English race. Goering's cry, "Guns before butter," expressed the same truth. If men believe in the need, hardships are in themselves a stimulant to morale. But the opposite is also true. Let there be any suggestion that butter can come before guns and some men will at once choose the butter. If this happens there will be no morale in the sense of this definition.

Propaganda.—The uplifting effect of modern propaganda a soldier is perhaps a new development. A man's morale raised immensely by feeling that his efforts are appreciated and applauded, not only by his comrades and his officers but by the world at large. Remarkable results can be achieved by the use of modern publicity methods. These results will be achieved only if the fighting soldier is differentiated from the soldier who serves behind the fighting line. The latter often works at dull, monotonous jobs and lacks the stimulus of battle conditions; it is good for his morale that his work should be publicized in the press. But it is no good writing of the Bren gunner and the G.H.Q. clerk in the same terms. The sharp distinction between those who risk their lives in actual battle with the enemy and those who do not must not be blurred. A fighting soldier thus glorified will soon become convinced of his own importance. This artificially stimulated feeling of self-importance is a quality lower and less lasting than that of self-respect, but it is none the less of momentary value.

Conclusion

In brief, high morale has been defined as the quality which makes men endure and show courage in times of fatigue and danger. The cultivation of morale depends upon the training of leaders, the inculcation of discipline, the encouragement of comradeship, and the infusing of self-respect. The leaders must have a belief in their cause, and they must pay attention to numerous contributory factors of considerable but secondary importance.

We live to-day in a scientific age. But we soldiers have to remember that the raw material with which we have to deal is "men." Man is still the first weapon of war. His training the most important consideration in the fashioning of a fighting army. All modern science is directed towards his assistance but on his efforts depends the outcome of the battle. The morale of the soldier is the most important single factor in war.

CENTENARY OF ANAESTHESIA CELEBRATION DINNER

As part of the centenary celebrations of the first administration of ether the Association of Anaesthetists of Great Britain and Ireland held a dinner in the Great Hall of Lincoln's Inn, Oct. 31 under the Presidency of Dr. A. D. Marston. Proposed to the toast of the association Sir Alfred Webb-Johnson said that the centenary marked the beginning of the most brilliant phase in the history of British medicine. He praised the anaesthetists for having raised the standard of their specialty by insisting on a diploma and recognition of the status of anaesthetists. "You are," Sir Alfred said, "practising physicians. You administer drugs of very high potency." In reply, the President thanked the College of Surgeons for the facilities granted to his association. As an example of the increased scope of the anaesthetists' work he observed that in Birmingham anaesthetists were responsible for anti-shock and resuscitation work. The position of the specialist anaesthetist was becoming recognized, and "we now have a Group within the B.M.A." To the toast of the guests was proposed by Dr. John Gillies, and in reply Dr. Charles Hill referred to the two-way links of the Association of Anaesthetists—in the academic sphere with the Royal Colleges and in the medico-political sphere with the B.M.A. The B.M.A. would see that in any future National Health Service the anaesthetists would be assured of the proper role and status. As a profession, he said, we seek to quarrel with established authority, but we have a treasure to preserve in the freedom and integrity of the profession. Dr. Wesley Bourne, of the Department of Anaesthesia at McGill University, also replied for the guests. He represented the American Society of Anaesthesiologists and the Canadian Anaesthetic Society, as well as his own university. By the three he had been charged to congratulate the Association of Anaesthetists on this occasion. He also conveyed the thanks of the anaesthetists of the fighting Forces of the U.S.A. and Canada for the courtesy extended to them during this war. Two weeks ago, he observed, a meeting of anaesthetists, dentists, surgeons, and physicians was held in Boston to celebrate the 100th anniversary of the use of ether in a surgical operation.

COMBATING RHEUMATISM IN SWEDEN

Prof. J. A. Höjer, chief medical officer of the Royal Swedish Health Department, recently described at a meeting of the Empire Rheumatism Council the campaign against rheumatic diseases in Sweden. The latest development was the building of a research institute in Stockholm which it was hoped would be opened early in 1948. The Swedish Research Council, analogous to the M.R.C. in Great Britain, had elected a sub-committee on research in rheumatic diseases. The various hospitals in Sweden devoted in whole or in part to rheumatic diseases worked to a central plan. Planning first began about 1934, when 656 beds were specially set aside for rheumatic patients; in 1941 a further 1,300 beds were provided, and in 1945 a further provision of 2,000 new beds was made. The basis of the latest plan was the reports of practitioners on all the rheumatic cases of which they had had knowledge in 1943. Nearly 1,400 doctors responded (80% of those expected to do so); the total number of cases reported was some 56,000. A calculation was made of the number of these requiring hospital care, the patients being divided into four categories: (1) acute arthritis, (2) chronic arthritis, (3) arthrosis, and (4) sciatica and miscellaneous rheumatic conditions. It was considered that a 60 days' stay in hospital should be allowed on the average for cases of acute arthritis, 90 days for chronic arthritis, and 40 days for the cases falling into the third and fourth groups.

It was proposed to relieve the hospitals by provision for convalescence and, especially in view of the increased longevity and the liability of old people to develop rheumatism, to increase the accommodation for chronic cases in the aged. A Swedish Association for Combating Rheumatism had been formed recently and worked in co-operation with the employers' and labour organizations, with the Swedish Medical Association, and with bodies of social workers.

CONFERENCE ON MENTAL HEALTH

The National Association for Mental Health is now being incorporated by the formal amalgamation of three voluntary organizations, the Central Association for Mental Health, the Child Guidance Council, and the National Council for Mental Hygiene. These three bodies, during the past few years, have been provisionally amalgamated, and most of their work has been carried out by the Provisional National Council for Mental Health. With incorporation the whole field of voluntary mental health services in England and Wales will be brought under one head. To signalize this event a conference on mental health is being held at Caxton Hall, Westminster, on Nov. 14 and 15. It will be attended by many representatives of local authorities and voluntary organizations from all parts of the country. The first morning session will be devoted to the application to the civilian population of war-time experience of neurosis and backwardness in the Forces, and the employment of the mentally and emotionally handicapped, the speakers being Dr. J. R. Rees and Dr. T. F. Main, with Prof. J. M. Mackintosh in the chair. At the afternoon session the Minister of Health will give a short address, and Prof. Aubrey Lewis will speak on community care in relation to the extended powers of health authorities under the new National Health Service Bill. The subjects for the morning session on Nov. 15 are the care of the homeless child, and juvenile delinquency (Miss Lucy G. Fildes and Miss Margery Fry). At the afternoon session Miss Norah Gibbs and Dr. John Bowlby will speak on the integration of the psychological services under the new Education Act, and on the future role of the child guidance clinic in education and other services. Applications for tickets and all correspondence should be sent to the Conference Secretary, 39, Queen Anne Street, London, W.1. (Telephone: Welbeck 1272.)

Blood donors in Scotland gave 7,888 pints of blood in the quarter ending June 30, 1946. This was an increase of 657 pints compared with the previous quarter and sufficed to balance the output of blood and plasma requested by hospitals from the Scottish National Blood Transfusion Association. Increased demands were made on the Blood Transfusion Service, particularly by the general hospitals, for liquid plasma, and the amount issued rose from 839 to 1,448 pints. The amount of whole blood used was 4,136 pints compared with 4,094 pints in the previous quarter. During August the Glasgow and West of Scotland Blood Transfusion Service despatched to hospitals in the area 637 pints of whole blood and 471 pints of plasma (representing 1,000 pints of blood)—a total of 1,657 pints.

Reports of Societies

UNDERGRADUATE TRAINING IN OBSTETRICS AND GYNAECOLOGY

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on October 18 Mr. JAMES WYATT, the President, delivered an address from the chair on the future training of the undergraduate. At the beginning of the meeting a tribute was paid to Sir Comyns Berkeley and Dr. Watts Eden, former Presidents of the Section, who had died since the previous session.

Mr. Wyatt said that obstetrics and gynaecology was much more compact than medicine and surgery. Those specializing in it had been remarkably drawn together by the formation of the Royal College of Obstetricians and Gynaecologists, and it would not be difficult with the aid of that College to arrive at an agreed scheme of training which would bring in all the schools. The aim of undergraduate training was primarily to make a good general practitioner. If in the course of his training the student discovered that he had specialist aptitudes any special training should not be started until he was thoroughly grounded in general medicine. Specialists who set examination papers were often inclined to forget that the student ought to have a good general knowledge. In future a certain amount of notice would be taken of reports on the student's ability during his period of training by the chief under whom he had been trained. Mr. Wyatt thought also that there should be a standard textbook for undergraduates. This would not prevent students who wished to do so from applying themselves to the full literature of the subject, but it would save the less learned from absorbing a great amount of unnecessary knowledge at this stage of their career.

Obstetric Teaching Beds

In his own student days there were no obstetric beds in the hospitals for teaching, and not until after the first World War was it decided that all students must spend a month in a lying-in hospital or in the lying-in wards of a general hospital before they went on the district. This stimulated the majority of teaching hospitals to open up a number of lying-in beds, and it was not until those beds were opened that any sort of antenatal examination was carried out. Nowadays the district was a thing of the past. The majority of students learned their midwifery in a lying-in hospital, and this was a pity, because some valuable knowledge of the home life of patients was learned in domiciliary midwifery. He hoped it would not be long before all teaching hospitals would have sufficiently large units to enable their students to receive all their obstetric training under the control of the teaching hospital instead of having to go off to another hospital. It was not just training in actual delivery that was important; the training in the antenatal department should by no means be neglected.

In gynaecology the student learned more of value in the out-patient department than in the wards. Here he learned to value the psychological approach. Attendance in the operating theatre should be restricted. From some points of view the operating theatre was important; it afforded the opportunity of careful pelvic examination under anaesthesia, but the watching of long operations should be confined to those who were taking an active part in the particular case. It was also important that such a student should see the same case three or five weeks later in the follow-up department to learn the actual results of operation. When it came to detail in gynaecology, how much intricate knowledge of the pelvis should the student be expected to know? It would be an advantage if he was expected to know more about the physiological aspect of normal functioning. What amount of morbid anatomy was necessary? Was it necessary for him to be asked questions as to all the different types of ovarian tumours? It seemed much more important that the student should recognize if the patient had an ovarian tumour and whether it was innocent or malignant. Any major operative technique was not wanted.

Reduction in Number of Cases

In some discussion following the President's address Dr. J. P. HEDLEY said that the education of the medical student had

recently been considered by the General Medical Council, which was recommending that medicine, surgery, and obstetrics and gynaecology should each have a full six months. It was also proposed that the number of cases a student had to attend should be reduced from 20 to 12, and that two individuals could attend the same case. Dr. MALCOLM DONALDSON said that once it was recognized that a man must have postgraduate training before he took on obstetrics in the new service he could cut down a little of the obstetrics in his undergraduate training and even more of the gynaecology. The latter was best taught in the out-patient department. "On methods of teaching he felt that the value of the film had been neglected. He was a member of a committee which was approaching the University of London on this subject. Much excellent teaching could be given by means of film strips.

Dr. A. J. WRIGLEY said that care must be taken not to put an entirely specialist view before medical students. It was very important to direct the student's attention to the general condition of the pregnant woman, not merely to the manner of presentation and such details. Too often in cases, for example, of ante- or post-partum haemorrhage there was no general assessment of the patient. Very few people had heard of postnatal clinics, which were very useful and in which it was possible to teach a great deal of preventive medicine. At examinations questions were not sufficiently asked about the postnatal condition, and the infant got no attention, the care of infants in many hospitals being handed over to the paediatrician. In gynaecology, more perhaps than in any other branch of medicine, specialization was in less and less demand. The conditions seen in the gynaecological out-patient department were closely linked up with general medicine. In cases of amenorrhoea and the like, as a rule, the general condition was more important than abnormalities of the pelvis. Teaching in gynaecology was best given in the out-patient department. If a student spent too much time in the gynaecological ward he was apt to think of gynaecology as a department of surgery. If a student was going to be three months in his department he would put him for two months with the out-patients and only for one month in the wards.

The Future G.P. and Midwifery

Prof. F. J. BROWNE said that he had long felt that as teachers of undergraduates they were at the mercy of examiners in the final examinations and unable to teach how and what they wanted because their first duty was to try to get the students through the final. The undergraduate should be taught fundamental principles; it was impossible to teach him technical details of the management of cases which the rest of them needed a lifetime to learn. After a student had finished his course in the school there should be an internal university examination dealing with fundamental principles and giving the man his degree, and then during his postgraduate and pre-registration year, when he was serving an internship, he could learn certain technical details in the only way in which they could be learned, namely, by practice. Prof. Browne said that there would never come a time when women would not want to be attended by their own general practitioners in the greatest crisis of their lives, and there would always be men just qualified and going out into practice who, being popular with their women patients, would see them through their confinements. Short of the introduction of an entirely new principle into medicine, these men would attend cases without having any higher qualification. It was essential, therefore, to give a very small amount of training to the undergraduates who might have to take these responsibilities. He was sorry to hear of the reduction from 20 cases to 12. It was important to have both number and variety of cases to give the student the necessary experience. When the student went into practice it was not normal cases he would customarily attend; these would be attended by midwives. He disagreed with the President as regards attendance at operations. It was very useful for the students to see minor operations of the kind which they might have themselves to do in practice. In the operating theatre they had the opportunity of carrying out bimanual examinations under anaesthesia, and they saw the living pathology. He could not agree that the film was valuable in education save in the illustration of a rare condition which would not be seen in six months' clinical work.

Prof. W. C. W. NIXON, speaking with regard to the use of films, took a contrary view to that of his predecessor at University College Hospital. The use of films and of photography in teaching was one respect in which the Americans led. As for social obstetrics, he suggested that students should go to the borough clinics and see pregnancy more "in the round." Mr. ARNOLD WALKER said that there was a large pool of surplus cases in municipal general hospitals which could be used for students. Mr. V. B. GREEN-ARMYtage deplored the tendency in examinations to keep to the book. If they went outside the book the students were at once "stumped" from the point of view of answering questions. One departure which might be made was an interchange of teachers in the various schools. Students got bored with one set of teachers and the same rigmarole.

South African Practice

Prof. JAMES BLACK, who holds the chair of obstetrics and gynaecology in Witwatersrand University, said that his students last year on the average delivered 27 cases, and they saw including normal and abnormal ones. He usually gave them three weeks of practical obstetrics and then, after a six month interval, a further six weeks. He had had the advantage of 17 years in general practice before he took up the speciality and knowing the general practitioner's exigencies, he tried to make the course as practical as possible. Next January a student would come into force in the Union whereby no student would be allowed to practise until he had had a year's internship in hospital, four months of such year to be devoted to obstetrics and gynaecology. He was all in favour of teaching by film. He had been doing this now for six or seven years. He believed too much time was wasted in watching operations while the student should be studying cases he would encounter in general practice.

Dr. G. DICK REID commented on the absence of teaching of normal labour. How were students to be expected to acquire knowledge of normal cases? How many lectures were devoted to the procedures of normal labour? Mr. WILLIAM GILL said that there were men teaching in London who did devote some time in their lectures and demonstrations to teaching the conduct of normal labour, and there were obstetricians who had sat through normal labours. Dr. BEATRICE TURNER said that 12 cases properly attended were far better than 20 in which the student just went in to deliver the head. Lectures, interesting as they might be, should be kept to a minimum before or after the obstetrics course.

A speaker who described himself as the youngest graduate present regretted that he had had no opportunity of following normal deliveries. An "embryo teacher" declared that the reform of the examination system was long overdue. Examination was the "dead hand" against all that the teacher tried to do for his students. The student became more and more technically minded, interested in technical detail, which belonged to postgraduate instruction. Another speaker suggested that more midwifery should be seen at the expense of gynaecology. Attendance at the gynaecological out-patient department should be synchronized with the teaching of midwifery. Thus the period of midwifery could be doubled at the expense of ward gynaecology.

Mr. WYATT, in replying to the discussion, said that in teaching hospitals provision would have to be made for teaching how to deal with cases of abortion.

A clinical meeting of the Medical Society of the L.C.C. was held at Hammersmith Hospital, on Aug. 8, when cases were demonstrated. Prof. Grey Turner introduced a discussion on cases of: A patient thirty-four years after transplantation of ureters for total epispadias with incontinence. Cases seven years and five years after treatment of epithelioma of mouth and C operation for removal of neck glands. Malignant melanoma of eyelid with massive secondary invasion of neck glands; patient free from recurrence six years later. Dr. Scadding discussed a case of sarcoidosis and asthma, urticaria, and transient pulmonary infiltrations: a case for diagnosis. A case of chronic uraemia associated with pregnancy was described by Dr. Hollings and Prof. Keel. Mr. Franklin reviewed the history of a case with carcinoma of the sigmoid colon, pulmonary tuberculosis, and gastric ulcer.

Correspondence

The Plebiscite

SIR,—The profession in this country has now to make the most momentous decision in its history. The point at issue is whether medicine shall remain a free profession or become gradually but inevitably a branch, at one remove, of the Civil Service, whose primary duty will be to the Government which pays and controls it. This question is not directly posed by the present vote but is implicit in it. If it goes in favour of entering the suggested "negotiations" about regulations the implication will be that we are willing to enter the new Service, or, at any rate, are resigned to the prospect. Are we?

Parliament has declined to insert in the Bill several points which we have repeatedly declared to be essential to a good service. I will deal with only one of them because I think it is crucial. The future of the general practitioner would be fixed or ever if we accept that all medical practices shall be the property of the State. It is a sinister sign of the times that in many quarters it is considered to be almost a crime that the individual citizen should possess something he can really call his own. I was brought up to believe that it was a good thing for the individual and for the community that by hard work, enterprise, and thrift a citizen should make good in a career carved out by himself, and that it was something to be proud of if, at the end of his career, he had made something he could call his own and which he could pass on to a successor of his choice. This is, however, repugnant to the people who now think themselves capable of controlling our destinies, and their intention was made quite clear when it was decided that in future there should be no private property in the goodwill of practices, however honestly and laboriously earned. It should be noted that what is proposed for doctors can easily be applied to any man who has built up a business. And what a farce he offers of compensation is! Sixty-six millions of public money is to be given to people who don't need it, because in normal times they could get the price of their goodwill in their own time and without a penny of public assistance. Is it not clear that the intention behind this alleged "generosity" is to acquire complete control of the profession which is as yet "not ripe for it"? Once this is done the "part salary and part capitation" can easily be made into "more salary and less capitation" until the eventual aim (not at all disguised) of the Socialist is attained and the ripening process is complete. I am aware that this prospect has no terrors for some medical men—those who are more Socialist than medical, and those who hanker after "security." Yes, they can have security. A bird in a cage has it, and there will be as little prospect of escape for the one as for the other. There are also the wavering section who plead that it is "inevitable." Nothing is inevitable until it has happened. If Mr. Churchill had been "one of the old inevitables" we should now have been a part of the German Reich.

If one needs further confirmation of this desire for complete control look at what is to happen to the specialists and consultants. The hospitals are to be confiscated, and no specialist or consultant is to have a hospital appointment who is not a member of the Service. And, so that no avenue of escape shall be left, the Minister can take over compulsorily any private hospital or nursing home.

There are many other points in the Bill which show what are the intentions of an arbitrary Minister who has no use for negotiations, but these are comparatively trivial compared with the one I have mentioned. I believe that if the doctors lose the control of the goodwill of their practices they will have surrendered the citadel of our case against the Bill, and their birthright of professional freedom. I hope, therefore, that the answer to the plebiscite will give our leaders the emphatic backing they need if they are to take a strong line. They cannot be expected to do so unless the answer is unmistakable. What would be the consequences if the answer is as I hope it may be? The Minister will be faced with a situation in which he will have a supply of doctors quite inadequate to enable him to fulfil his promise of a first-class medical service everywhere. There will be no "strike." You can only strike against conditions

already accepted. The public will still get the services of their doctors and it will be for the Minister to explain how the bills are to be paid out of the compulsory contributions he has already collected. I am well aware that to take the course I am hoping for means preparing for a stiff fight. Will the profession rise to it? If not, then it will be tacitly confessing that the Service it has told the public was unacceptable to the profession, and had for their patients, must be accepted because the doctors think that a poor Service is good enough for the public—or, at any rate, is not worth fighting about.

I may be told that the history of the fight over National Health Insurance in 1911-12 shows that the profession cannot be relied on to stand to its guns. The circumstances are not at all comparable. Then we had won most of what we fought for but were too stupid to claim a win on points. This time we have won nothing of any consequence. Every alleged "concession" made by the Minister "has strings to it" which can be tightened up in his own good time. I may be told that it is all very well for an old man who has nothing to lose to incite others to undertake a momentous and difficult struggle. It is true that I, personally, have nothing to lose, but the profession I have served all my life has everything at stake—including its soul.—I am, etc.,

London, S.W.7.

ALFRED COX.

SIR,—With regard to the plebiscite about to be taken I can foresee that a good deal of misunderstanding may arise over the interpretation of the answers given. The suggested wording is whether negotiations on regulations under the National Health Service Bill should take place with the Minister of Health. According to the Bournemouth memorandum a vote upon this question will be tantamount to acceptance or rejection by a majority of the profession of the principles and essential structure of the Bill. Surely this is a quite unwarranted interpretation and reads into the question much more than is asked.

Should the majority vote against negotiations it is reasonable to assume that they will refuse to work the present Bill. If the majority are in favour of negotiations, this can only be interpreted to mean that they want to see the final terms and conditions of service before coming to a definite decision. If the Council of the B.M.A. want to know whether the medical profession will accept or reject service under the Bill if enacted in its present form, they must ask this as a direct question either now or at a later date. To interpret the voting on the suggested plebiscite as an answer to the above question can only lead to confusion.—I am, etc.,

London, W.1.

L. G. SCOLLAR.

Fate of Parliamentary Regulations

SIR,—In view of the forthcoming referendum to the profession regarding action to be taken in face of the present position of Mr. Bevan's Bill, I should like to press again my conviction that the only decision which doctors should consider now is whether they, as individuals, will or will not take service when the Act reaches the statute book. My conviction is based upon an analysis, which I submit herewith, of a review of the fate of Regulations (that is "Statutory Rules and Orders") issued by the Ministry of Education since the present Government entered upon its steam-roller course in the House of Commons in October, 1945.

In his masterly exposition of the Bill on the Second Reading (Lords' Hansard, October, 1946) the Lord Chancellor, Lord Jowitt, sought to reassure the medical profession with the statement that while he acknowledged that the Minister is to enforce the provisions of the Bill "by a regulation-making power" the profession was safeguarded by the fact that "Every single one of the regulations which he makes has to come before Parliament, and either must receive affirmative approval, or can be quashed by a resolution of either House." How complete is the scope of this regulation-making power was clearly demonstrated in the White Paper in Section 33. It is there set out: "The Minister is empowered to make regulations governing the qualifications, conditions of service, and remuneration of any, or all classes of hospital staff, as of the staff engaged in any other part of the Health Service." I submit, Sir, that while this practically unrestricted power of making

regulations "governing the qualifications, conditions of service, and remuneration of every person in the Health Service" remains reserved to the Minister, the safeguards of which Lord Jowitt made so much are wholly illusory.

In a Parliamentary answer to me (*Hansard*, Oct. 22, 1946) the House of Commons was informed that since the passage of the Education Act, 1944, the following regulations, circulars, and administrative memoranda have been issued by the Ministry of Education: regulations, 35; circulars, 145; administrative memoranda, 186. I append a record of the ultimate fate of the only regulations under the Education Act, 1944, which have been in fact challenged in debate in the House of Commons since Oct. 18, 1945, up to June 4, 1946: (1) Regulation under Statutory Rule and Order 1945 No. 636—Motion for annulment rejected after debate (Oct. 18, 1945). (2) Regulation under Statutory Rule and Order 1945 No. 709—Motion for annulment withdrawn (Oct. 24, 1945). (3) Regulation under Statutory Rule and Order 1946 No. 352—Motion for annulment rejected. (4) Regulation under Statutory Rule and Order 1946 No. 630—Motion for annulment rejected.

The regulation-making power under Mr. Bevan's Bill is even more universal than in the Education Act. It is to be remembered that Statutory Rules and Orders, unless challenged by one or other of the Houses within a prescribed period, automatically become law.—I am, etc.,

House of Commons.

E. GRAHAM-LITTLE.

Health Service Bill

SIR,—We have already contributed to your columns a letter about the Health Bill (Sept. 21, p. 439) deploring the loss of liberty which we shall all suffer when it becomes effective. Some doctors appear to be unable to recognize the dangers resulting from this loss of liberty, others are apathetic, and some say quite honestly their primary concern is with the regulations, financial and otherwise, by which the Bill will be worked. To the latter we should like to point out that, whereas the Minister will no doubt offer reasonable and attractive terms to medical practitioners to join the new Service, we shall have no guarantee or safeguard that in the future conditions will remain so reasonable and attractive. When we have renounced our freedom and placed ourselves unreservedly in the hands of the Minister, what will prevent him, or his successors in the years to come, from scaling down salaries and pensions on the grounds of national economy? If in the future some of those who are now prepared to join the Service become dissatisfied with the conditions as they may then be, they will have to be very brave to give vent to their dissatisfaction, for under the Bill, if they come into conflict with the Ministry which employs them, they will find that the Minister may be their ultimate accuser, jury, judge, and executioner, and the choice will lie between toeing the line and dismissal and ruin.

The recent dispute between the doctors and the Minister about the N.H.I. capitation fee is an obvious warning to the profession. The Minister refused to apply the recommendations of the Spens Report or to negotiate with the Insurance Acts Committee. His attitude was dictatorial and arbitrary, and it was not until the doctors forced his hand, by showing that the majority were prepared to resign rather than submit to this injustice that he conceded the point. Once the Minister has the profession completely in his power it will not be possible to voice such grievances or obtain redress. We hope that those who think the regulations of the new Service are the subject for consideration (and there are many who seem to think so) have even written letters to the *Journal* roundly declaring as much) will realize before it is too late that it is impossible to buy security at the expense of freedom, even if it were desirable to do so, as some seem to think it is. We do not suggest that the profession should refuse to co-operate in a State Medical Service—the Bill is in many respects excellent—but we do hope that they will be adamant in their refusal to work the scheme until the objectionable and dangerous clauses are removed. It is not our freedom only which is at stake. If we collapse the whole framework of civil liberty, already seriously undermined, will be much further weakened.—We are, etc.,

ZOE HARRIS.
PAUL HARRIS.

Lantern, Somerset.

Errors in Regard to Goitre

SIR,—The original paper (Sept. 28, p. 449) by Drs. L. Keynes, and Piercy, has successfully challenged and stimulated thought. The vast experience upon which the writers for their paper has been mainly gained from a surgical and tends to be fundamental and factual within this application. As a physician with medical leanings, one cannot fail to be impressed by the clinical usefulness of methyl thiouracil in long periods, admitting its limitations and incidence of toxicity. The more recent treatment of thyrotoxicosis with radioiodine by mouth (Chapman and Evans, *J. Amer. med.*, 1946, 131, 86) still further widens the effective field of the drug.

Surgery will, nevertheless, always have a useful and indispensable place in this field. One wonders, however, whether the incidence of carcinoma superimposed on goitre, for which figures in different pathological centres appear to be variable, should be unduly stressed in the absence of indications for surgery. As to the diagnosis of thyrotoxicosis my experience is similar to the much greater one of Robertson, namely, that the basal metabolic rate is of greatest value, and in the absence of an absolute or relatively raised rate thyrotoxicosis should not be diagnosed. For I am impressed by the considerable number of patients who meet with of all ages examination of whom reveals enlarged thyroids of which they have been usually unaware, frequently have anxiety symptoms, but show no real evidence of thyrotoxicosis. Further, such evidence does not develop during years of observation. The frequency of enlarged thyroids and the ineffectiveness of thyroidectomy are well recognized in the condition of "effort syndrome" or D.A.H. (disorder of action of the heart), a recognized neurosis. In view of the emotional factor in the aetiology of thyrotoxicosis and the possible hypothalamic mechanism, it is difficult to see why patients do not go on to thyrotoxicosis. The inherent responsiveness or unresponsiveness of the thyroid gland appears to be a factor. The iodine intake of these sporadic cases appears normal.—I am, etc.,

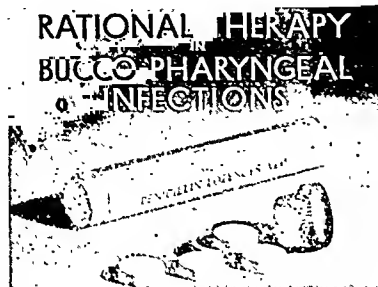
London, W.1.

S. LEONARD SIMPSON

Diagnosis of Intestinal Amoebiasis

SIR,—The letter by Dr. K. R. Hill (Oct. 19, p. 589) on "vocative emetine" in the diagnosis of intestinal amoebiasis cannot be allowed to pass unanswered. The standard works on the subject fail to show any reference to this method of diagnosis, and one can only assume that it is based on a taken analogy with the "provocative" dose of N.A.B. in the serological diagnosis of latent syphilis. However, the problems are obviously wide apart in principle. Whereas the latter involves a complex complement-deviation reaction, the former is no more involved than the action of emetine on the amoeba; and amoebae which are so scanty as to be difficult to demonstrate will surely be made even more scanty if the patient is given emetine. So many inaccurate statements have been made on the subject of diagnosis of this condition that to recall a few elementary points, even at this stage, is almost excusable.

Apart from a suggestive history and clinical findings such as a thickened sigmoid or caecum, the only absolute criterion is the demonstration of the amoeba under the microscope. In the acute or subacute condition, the vegetative amoeba is always found in the faeces or bowel scraping obtained by sigmoidoscopy. In the "quiescent" phase, it is the cyst which is found, but only comparatively rarely, and it is no more a matter of luck whether any one specimen contains cysts than it is that a series of twenty, or thirty stools; but all these may be negative and only a third specimen positive; in fact, where there is one to ten, the production of an artificial diarrhoea by giving the patient salts does not seem to make the problem any easier. In military practice, the patient is put off sick and nothing else to do except provide the laboratory with specimens. In civilian practice this is impossible because no patient will bring thirty consecutive specimens on thirty consecutive days, or stay in hospital for a month merely to establish a diagnosis in a condition which is not giving him much trouble. At this point there are two solutions to the problem, which



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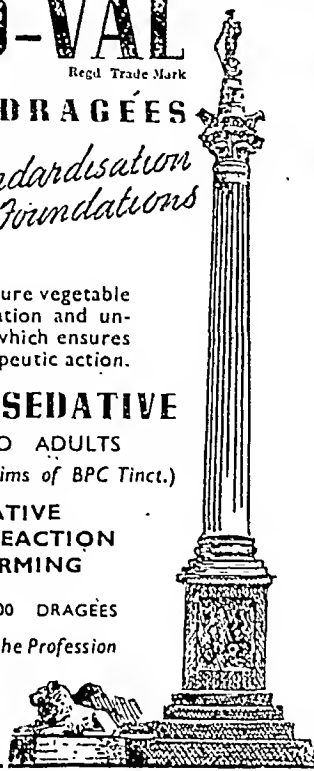


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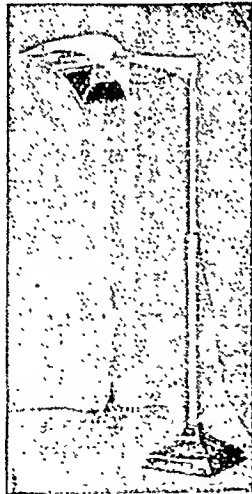
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an academic and practical. The academic solution is very satisfactory. The patient asks, "Have I, or have I not, amoebic dysentery?" and one is bound to answer, "I do not know." The practical solution is to tell the patient to return immediately there is any recurrence of the diarrhoea, and if it is in fact due to amoebic dysentery one will always find the vegetative form of the amoeba. Of course, there are various objections to this procedure, among which is the fact that the patient may in the meantime develop an acute hepatitis, and this in no way affects the general principle. In addition, one may resort to stool culture on special media and, I understand, there is some work being done on a complement-fixation reaction.

Tropical medicine, like all other branches of medicine, consists of a structure of knowledge and experience based on an appreciation of fundamentals, among which is the action of retine on the amoeba of dysentery. That so many misconceptions have arisen is, I feel certain, due to the fact that a large number of doctors during the war, through no fault of their own, have had thrust upon them a subject which they have rarely, if ever, had to consider before.—I am, etc.,

London, W.1.

D. LAWRENCE.

Novel Method of Digital Traction

SIR,—Dr. MacLeod (Oct. 26, p. 614) is incorrect in thinking that nail traction in the treatment of fractured phalanges is novel. While in charge of the fracture department at Guy's Hospital I used this method for many years as the routine treatment for oblique fractures of the phalanges. The method was described and illustrated in an article on "Fractures of the Upper Limb" (*Guy's Hospital Reports*, 1921, 71, 360), and on several other occasions. In most cases I found it possible to perforate the free edge of the nail painlessly and without anaesthesia, and a fine salmon gut suture was my material of choice for traction. The method is one I found of great use, and when established the traction, which in my practice was maintained via a rubber "accumulator," is quite painless.—I am, etc.,

London, W.1.

E. G. SLESINGER.

Classification of Psychological Disorders

SIR,—The conclusions of Dr. Dalton Sands in his most instructive and admirable article on "Electro-convulsion Therapy in a General Hospital" (Aug. 31, p. 289) seem perfectly logical. However, in the cases of "anxiety state" or "anxiety neurosis" to which Dr. Frederick Dillon refers, supposed elements of guilt and tension from aggressive impulses may be quite wrongly interpreted by inexperienced psychiatrists when the anxiety is due to perfectly obvious and innocent reasons which they have not ascertained, the real elements of guilt and aggressive impulses lying completely elsewhere.

Under these circumstances, as Dr. Dillon rightly points out, not only are statistical studies on psychological disorders, in the present state of our knowledge, very apt to be misleading, but they may be wholly erroneous, and will continue to be so unless the whole question is considered *de novo*; and it follows that any knowledge based on such false premises is false knowledge.—I am, etc.,

London, N.W.11.

A. LIONEL ROWSON.

Painful-feet Syndrome

SIR,—I was most interested in Surgeon Commander Page's excellent article on painful feet (Aug. 24, p. 260). On the capitulation of the Dutch East Indies in March, 1942, 3,500 Allied prisoners, mostly British, were interned in a camp at Tandjong Priok, Java. The painful-feet syndrome developed in July, and by October a conservative estimate of the number of cases in the camp would be 1,000. They presented all the signs and symptoms of Commander Page's cases with the exception that gangrene was not found, possibly due to the warm climate.

Certain canteen supplies were allowed into the camp in October, and it was found that a daily ration of 100 g. of boiled kachang idjau (a small type of green pea) had a most beneficial effect on the condition, resulting in complete relief

of symptoms in approximately 80% of the cases within two weeks.

At a later date a liver extract (crude), obtained from Dutch sources outside the camp, was being tried out in the treatment of patients with "blurred vision," many of whom at the same time were suffering from burning feet. It was noticed that while it proved of no apparent value in the former complaint it completely cured or greatly improved the condition of those patients who had painful feet. Following on this discovery 2 ml. of the liver extract, of which available quantities were very limited, were injected intramuscularly at intervals of two to three days in a few very persistent cases of painful feet, and rapid cure resulted.—I am, etc.,

Naini Tal, India.

J. E. O'DONNELL,
Major, I.M.S./I.A.M.C.

Legal and Medical "Insanity"

SIR,—In your correspondence on crime and insanity, Dr. D. Stafford-Clark (Oct. 26, p. 627) very relevantly points out that nebulous speculations on right and wrong are of little practical value, and rightly draws attention to the problem of the psychopath, a problem frequently encountered by military psychiatrists during the war. Some of the difficulties which arise on how best to deal with these medico-legal problems surely arise from the different psychology of psychiatrist and lawyer. The latter often views the problem too logically; to say that if a lunatic kills because he hears the voice of God he is not culpable, as he would be expected to obey His voice, but that he cannot be similarly excused if it is only the voice of Mr. Smith—an argument once put forward—is good logic, but poor psychiatry. For it is the great effect aroused in a paranoid, or the impulsiveness of the schizophrenic, which results in the crime, irrespective of the cognitive side.

I believe I am right in saying that the McNaghten Rules were formulated on the legal tenet that a crime can only be excused if the prisoner's state of mind—like that of an infant—could not form criminal intent. The law ignores the fact that insane impetuous behaviour can occur, although full insight into the quality and illegality of the act is preserved. Therefore, while admitting that irresistible impulse in a sane individual cannot be accepted as a plea while there is no means of proving that it was irresistible, one would think the McNaghten Rules could safely be extended to a third clause, i.e., that if there is gross disease of mind and a consequent inability to control conduct, this would justify a plea of guilty but insane. The matter is largely academic, and if capital punishment goes, this plea will probably never be put forward. If the lawyers are too logical, the same reproach is not always applicable to the psychiatrist. I have heard it urged that the obsessional neurotic is not culpable because the cause of his behaviour is unconscious—a complete irrelevancy, as what matters clearly is not the causation, but proof that control of the impulse is genuinely impossible. Neither do appearances in the witness-box to testify that for years successful forgery was performed in a state of unawareness, or similar sincere but somewhat unlikely hypotheses, help to reassure the legally minded. Yet in the case of the psychopath, as the *Times* states, medical is ahead of legal opinion.

Psychopathy is hard to define, but if we cease to try and find a formula whereby the psychopath can be regarded as not culpable—an impossible and dangerous doctrine—and treat psychopathy as a form of insanity, surely a practical solution lies to hand? A lunatic, like a psychopath, is hard to define, but all we are called upon to do when certifying is to produce evidence of unsound mind, and that the patient in consequence needs "care and treatment for the sake of himself and others." Thereupon he receives an "indeterminate sentence," only as it is to a hospital and not a prison the idea is tolerated. Why cannot the criminal psychopath be dealt with similarly?—i.e., where the court has grounds to regard a prisoner as a true psychopath, let a suitably constituted board certify him as such, and commit him to a form of special institution, with powers to release him if at any time it is felt this can safely be done. As with the insane, borderline cases might not be certified, whereas obvious cases, on whom imprisonment has not the slightest effect, would not be turned loose on society. Nor would a clan of individuals, quite a number of whom are

genuinely desirous of but incapable of inhibiting their impulses, be subject to spells of useless and cruel punishment. For the very same temperamental defects which lead many psychopaths into breaking the law also render them particularly unamenable to ordinary prison discipline. In consequence they are a source of great trouble to the prison staff, and often become severely depressed. It is very much to be hoped that the Prison Reform Bill will make some alternative to ordinary imprisonment where at least the above types of psychopath can be sent.—I am, etc.,

London, W.1.

W. LINDESAY NEUSTATTER.

SIR,—Most psychiatrists will surely agree with the timely observations of Drs. McCluskie and Cuthbert (Oct. 12, pp. 555-6).

(1) It is hardly credible that, in England to-day, the only legally accepted criteria for the diagnosis of mental illness in criminal trials are those formulated over one hundred years ago in the McNaghten rules (1843). It is doubtful whether the latter were even at that time in harmony with contemporary medical opinion; but the tremendous advances made in the twentieth century in psychiatry and in the understanding of criminal psychopathology have been completely ignored by the law. To mention but one gross misconception, the rules assume throughout that an insane person is necessarily "afflicted with insane delusion." To quote the report submitted by the Medico-Psychological Association to the Committee on Insanity and Crime (1924): "Unsoundness of mind is no longer regarded as in essence a disorder of the intellectual or cognitive faculties. The modern view is that it is something much more profoundly related to the whole organism—a morbid change in the emotional and instinctive activities, with or without intellectual derangement. Long before a patient manifests delusions or other signs of obvious insanity he may suffer from purely subjective symptoms, which are now recognized to be no less valid and of no less importance in the clinical picture. . . ." (Cmd. 2005.) The report adds that the McNaghten rules "do not now appear to be considered in Scotland," and quotes in this connexion Lord Dunedin, Lord Justice-General (1907), as follows: "It is quite certain that what may be called the scientific view on insanity has greatly altered in recent years, and Courts of Law, which are bound to follow, so far as they can, the discoveries of science and results of experience, have altered their definitions and rules along with the experts. . . ." It is fortunate indeed that contemporary legislation on the treatment of mental illness or, for example, on matters of public health, is not similarly based on the medical knowledge of over a century ago.

(2) It is time the concept of the "uncontrollable impulse" were given legal recognition, as recommended by the Committee on Insanity and Crime: "It should be recognized that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the prisoner was by mental disease in substance deprived of any power to resist." This conception is by no means a new one: Pinel (1801) referred to *la folie raisonnée*, a mental illness in which reason and intellect were unimpaired; and J. C. Prichard (*A Treatise on Insanity*, London, 1835) introduced the term "moral insanity" as designating "madness consisting in a morbid perversion of the . . . affections . . . moral dispositions and natural impulses without any remarkable disorder or defect in the intellect or knowing and reasoning faculties and particularly without any insane illusion or hallucination." The McNaghten rules have been rightly criticized in that "they . . . responsibility with knowing and reasoning, whereas any sane man with experience of the insane must know of many persons as to whose insanity (and irresponsibility) there can be no possible doubt, who have realized the nature and quality of their act, have known that it was contrary to law, human and divine, and have shown remarkable cleverness in carrying out their object." (M.P.A., *loc. cit.*) In the United States, the "irresistible impulse" test was first introduced in 1884, and to-day it is used in seventeen States.

(3) The importance of ensuring that expert witnesses in such cases shall be suitably qualified psychiatrists cannot be exaggerated. It is true, however, that medical evidence at the present time is seriously distorted in having to fit in with obsolete legal conceptions of insanity. A jury is not competent

to understand the implications of specialized psychiatric evidence, as was abundantly clear when a juror asked who there was "anything in Heath's physical condition . . . would cause present disease of the brain," the assumption being presumably, that in the absence of organic disease there could be no "disease of the mind." There is much to be said in favour of establishing a panel of "medical practitioners, expert knowledge and experience of psychological medicine of recognized standing" whose competence and impartiality could not be questioned, and who would furnish a report to the accused in all appropriate cases to prosecution and defence before the trial (as advocated by B.M.A. and M.P.A.).

It is to be hoped that these matters, as also the question of indeterminate sentence, will receive full and careful consideration during any future discussion on the Criminal Justice Bill, and that this will result in more enlightened legislation similar to the Briggs Law in Massachusetts (1921), and the law on sexual offenders in Illinois (1938) and certain other States of the U.S.A.—I am, etc.,

Chelsea, S.W.3.

R. H. AHRENFELD

SIR,—Your correspondent (Oct. 26, p. 627) in reply to letter (Oct. 12, p. 555) states that the "essence of the pre-legal view is surely that a man is either responsible or irresponsible." No, Sir, not by any means. The essence of the pre-legal view is that in the case of conflicting medical evidence the jury (butchers, bakers, and candlestick makers) are asked to do the certifying—guided unerringly by the McNaghten Rules. Your correspondent also adds that "this has the merit of logic, justice, and simplicity." Simplicity is the word I am etc.,

Westcliff-on-Sea.

JOHN A. MCCLUSKIE

Work of Government Lymph Establishment

SIR,—I read with great interest the article on the work of the Government Lymph Establishment, published in the *British Medical Journal* of Oct. 26. I feel, however, that the Lieut.-Col. W. D. H. Stevenson, who was the Director of Government Lymph Establishment from 1929 until his death last year, would have wished to have added to it his oft-repeated appreciation of his entire staff for their co-operation during the war years, when they increased the output of lymph magnificently.—I am, etc.,

Stanmore, Middlesex.

J. AUDREY M. STEVENSON

Man in Relation to His Environment

SIR,—In the *Journal* of Sept. 28 (p. 471) it is reported that Sir P. Manson-Bahr (at the British-Swiss meeting) remarked "There were also geographical questions to be considered. How was it that heat stroke was much more common in the Liby area than anywhere else—for instance, in western Libya—where the conditions were much the same?" This question was answered by Air-Commodore Morton in his paper "Heat Effects in British Service Personnel in Iraq" (*Trans. roy. Soc. trop. Med. Hyg.*, 1944, 37, 347). Morton took a number of "salted men from the Western Desert for a trip round an Iraq desert just a few hours—allowing them to wear the headgear they had become habituated to in the Western Desert. They collapsed and had to take to "reactionary" forms of protection. The deserts of Mesopotamia are very much hotter than anything in Libya, in spite of the prestige attaching to the latter.

Prof. McCance, at the same meeting, remarked that " . . . the Tropics water was lost so quickly that the stimulus was never quite sufficient to enable the individual to drink himself back to normal. This had not been appreciated by those who had to live and work in the Tropics and handle men there." Prof. McCance's remarks do not apply to all who were responsible for the care of men in the Tropics—there are many enlightened individuals among the medical profession in hot countries. The trouble is that they cannot get their good ideas put into practice by the authorities responsible for policy. Dr. E. A. Carmichael stated: "The process of acclimatization or adjustment required from 4 to 7 days, by which time approximately 80% acclimatization had occurred."

I showed in 1935 (Marsh, F., *Trans. roy. Soc. trop. Med. Hyg.*, 29, 309) that acclimatization takes from 4-7 months for

climate like that of South-west Persia. In spite of differences of opinion it is good to see that the subject of effects of heat is now again a "live" problem and lifted out of the "forgotten" zone, like the army that suffered from both effects of heat and of forgetfulness.—I am, etc.,

Eppings.

FRANK MARSH.

Pyloric Stenosis in a Child

SIR,—The following case of pyloric stenosis in a child after swallowing corrosive poison appeared to be interesting enough to report.

A boy aged 2½ was brought to the Royal Gwent Hospital, Newport, in March with a history of having swallowed some acid which was being used to put in a battery. The child was detained in hospital for three days and was discharged as apparently there were no symptoms. I first saw him four weeks later when he was readmitted to hospital suffering from vomiting and abdominal pain, also loss of weight. X-ray examination showed marked pyloric stenosis with delayed emptying of the stomach—three-quarters of the meal being still retained at the 5-hour examination. There was no other abnormality apparent. At operation the pylorus was seen to be thickened and stenosed, giving the appearance which one usually associates with a chronic ulcer. Posterior gastrojejunostomy was performed. The stoma admitted three fingers. The child was discharged from hospital in three weeks having made an uneventful recovery.

Subsequent x ray shows the gastrojejunostomy to be functioning normally, with nothing passing through the pylorus. The child has regained its lost weight and is eating normally.—I am, etc.,

Newport, Mon.

J. T. RICE EDWARDS.

Parasyphilis

SIR,—I rubbed my eyes to read in your issues of Aug. 31 (p. 311) and Oct. 5 (p. 514) the word "parasyphilis" applied apparently to meningo-vascular syphilis, general paralysis of the insane, and tabes dorsalis. Parasyphilis one believed was an outdated term referring to the above syphilitic conditions used at a time when their true nature was still unproven. This assignation was generally understood to refer to certain diseases of the nervous system, including general paralysis and locomotor ataxia, which were formerly considered to be due indirectly to syphilis but are now known to be directly dependent upon syphilitic lesions in the organs concerned. The parasyphilitic doctrine, in general paralysis at any rate, was abandoned with the discovery of the living spirochaete in the brain tissue of general paralytics by Noguchi and Moore in 1913.¹ One wonders if the fact that general paralysis is the only form of nervous syphilis in which the spirochaete is found in the parenchymatous tissues of the C.N.S. has led to the persistence of the belief that other forms of nervous syphilis are still only indirectly due to syphilitic infection. I would like to hear the views of those who still use what I believed was an entirely outdated term.—I am, etc.,

London, N.6.

W. LEES TEMPLETON.

"Analgesic" or "Anaesthetic"?

SIR,—It seems appropriate at the present time to register a protest against the attempt to substitute the ugly term "analgesic" for "anaesthetic" when speaking of drugs which do not cause loss of consciousness. While it is obvious that a distinction exists, it is only one of degree; the term "analgesic" implies the loss of pain sensation only, and "anaesthetic" the loss of all sensation: surely then "anaesthetic" remains the best word for drugs such as novocain which are capable of abolishing all sensation locally or regionally? It is well known that they abolish taste sensation, and if they do not normally affect sight, hearing, or consciousness, it is only because they do not normally come into contact with the optic and auditory nerves or with the higher centres. The only legitimate criticism that can be levelled at the term is that it does not imply the added abolition of efferent nerve impulses,

which is a characteristic of all "anaesthetic" drugs, most of all of the so-called "analgesics"; and this does not seem to be a justification for the adoption of an even less comprehensive term. In my view the word "analgesia" is justly applicable only, for the want of a better, to intravenous general "analgesia," and, crowning absurdity of all, to the first stage of general "anaesthesia." It is gratifying to note that the writer of your leader (Oct. 12) did not find it necessary to use this jargon.—I am, etc.,

Colchester.

J. N. FELL.

Pronunciation of Medical Words

SIR,—With regard to Dr. Margaret Vivian's inquiry (Oct. 5, p. 516) concerning the pronunciation of E. Bleuler's term "schizophrenia" there appears to be fairly general agreement that "skizo-" is the correct sound (see, for example, Gould's *Medical Dictionary* and Dorland's *American Illustrated Medical Dictionary*). This is also the form given in the *Oxford English Dictionary* for words beginning with "schizo-" (from *σχίζω*, to divide), but there the "i" is stated to be pronounced as in "bind"; this lengthening of the Greek short "i" is seen in "psychiatry" ("paediatrics," however, is usually pronounced *pe-de-at-riks*). Fowler (*A Dictionary of Modern English Usage*) remarks: "The oddities of English treatment of Greek words are well illustrated by *schism* (sī-), *schist* (shī-), and *schizomycete* (skī-), all three being from the same Greek word." No doubt arises about the second part of "schizophrenia," which is derived from *φρέν*, meaning mind here, or diaphragm in other contexts.

A more difficult problem is presented by the much older word "syndrome." While medical dictionaries (e.g., those of Gould and Dorland) favour a silent "e" (cf. aerodrome, hippodrome), more general works (e.g., the *Oxford Dictionary*) require its pronunciation, thus following the Greek *σύνδρομη*, meaning a concurrence. It is interesting to note, however, that occasionally in the seventeenth century the word was written "syndrom" in English.—I am, etc.,

Cork.

R. O'RAHILLY.

SIR,—In the gay letter of Dr. C. E. S. Harris and in your footnote to it baffling problems of pronunciation are raised. The hard or soft C is a perennial headache. The K of the Greeks so often through Latin and the Romance tongues has become the S of many of our words. But not all, is the trouble. "The flicks," perhaps due to the immense American concern with them, are always spoken of as the sinema, but who heard of caput pronounced as saput? Unhappily an intermediate position exists with the cephalic words. Here, I think, the C is always hard, while in America it is usually soft. A living language is bound to change, properly and inevitably. One of the few things I remember of my school days is that an apron etymologically is a napron. But everybody calls an apron an apron. The change is complete.

Webster and Wyld follow the *Shorter Oxford Dictionary* in giving encephalitis a soft C, but it may be that the copying with which we are not unfamiliar in medical textbooks operates here—though who copied from whom I have no idea. I think, as you, Sir, that most medical men here give it a hard C, while in America I think a soft C is the rule. This lack of uniformity can be puzzling, for although it does not matter which is adopted it is a pity that these differences occur. Should we change? Well, unlike most of the rest of the world we persist in keeping to the left of the road, and simple utilitarianism is a poor motive. There are other factors, and I believe we should stick to the hard C as much as possible.—I am, etc.,

London, S.W.1.

E. GALLOP.

The Wellington correspondent of the *Times* reports that New Zealand has signed an agreement on behalf of Western Samoa and the Cook Islands with the Government of Fiji and the Western Pacific High Commission for the inauguration of a joint health service in the Southern Pacific. New Zealand and Fiji have for twenty years shared certain health services, but the new agreement will establish a joint board of administration with an inspector-general, and will provide for central medical and nursing schools and for greater co-operation. Dr. J. C. R. Buchanan, of the Colonial Medical Service, has been appointed the first inspector-general.

¹ *English Dictionary*, p. 1775, Webster.

² *General Paralysis*, 1929, p. 21, Mengher.

³ *Textbook of Practice of Medicine*, p. 1651, Price.

Obituary

SIR LOUIS BARNETT, C.M.G., F.R.C.S.
F.R.A.C.S., Hon.F.A.C.S.

We regret to announce the death at Dunedin of Sir Louis Barnett, emeritus professor of surgery in the University of Otago and a past president of the New Zealand Branch of the British Medical Association. He presided over the Australasian Medical Congress in 1927 and was president of the Royal Australasian College of Surgeons for two years; he was also an honorary Fellow of the American College of Surgeons. His long service in the chair of surgery did much to establish the reputation of the Otago Medical School on the firm foundation on which it now stands.

Louis Edward Barnett, son of Alfred A. Barnett, J.P., was born on March 24, 1865, at Wellington, N.Z. He was educated at the Wellington State School and College and at Otago University, and then came to this country, graduating M.B., C.M. of Edinburgh University in 1888 and taking the F.R.C.S.Eng. in 1890 after a year in London as house-surgeon at the Middlesex Hospital. Returning to New Zealand, he was elected in 1895 to the honorary staff of the Dunedin Hospital, which he served as surgeon for thirty years, and during the same period was lecturer and then professor of surgery in the University of Otago. He was given the title of emeritus professor in 1925. During the war of 1914-18 he served with the N.Z. Expeditionary Force and was appointed consulting surgeon with the rank of lieutenant-colonel. He received the C.M.G. for his war work and was knighted in 1927.

Sir Louis Barnett had joined the B.M.A. in 1889 and came to London to hold office as vice-president of the Section of Surgery at the Centenary Meeting in 1932. He pioneered the foundation of the Dunedin Radium Institute, and in fighting cancer he probably did more than any other New Zealander to awaken public realization of the need for the encouragement of research. It was to this cause that he devoted a large part of his energies after his retirement from active professional work. He was vice-president of the N.Z. Cancer Campaign and chairman of the Hydatid Research Committee in the Dominion. He had also been chairman of the Otago and Southland Division of the British Empire Cancer Campaign.

STUART McDONALD, JUN., M.D., Ph.D.

The sudden and untimely death in Edinburgh of Stuart McDonald, jun., on Oct. 23 is a great loss to Scottish medicine. Scarcely more than a year ago, on returning from war service, he had been inducted into the chair of pathology at the University of St. Andrews and took up the associated post of pathologist to Dundee Royal Infirmary. His gift for teaching, research, and administration was widely recognized.

Stuart McDonald, a son of Emeritus Prof. Stuart McDonald, M.D., who held the chair of pathology in the University of Durham, was born forty years ago. He was educated at Fettes College, Edinburgh, and at Gonville and Caius, Cambridge, where he graduated B.A. in 1926, M.A., M.B., B.Ch. in 1930, and M.D. in 1938. He early showed a leaning towards his father's branch of medical science and became demonstrator of pathology in the University of Durham College of Medicine at Newcastle and assistant pathologist to the Royal Victoria

Infirmary. He was then senior lecturer in pathology in the University of Birmingham, which later gave him the degree of D.Sc. and senior assistant pathologist to the Birmingham General Hospital. He was commissioned as captain, M.C. (T.A.), in May, 1939, and entrusted with the organization of emergency hospital services in a threatened southern area. After service in France he left for the East to take up the post of assistant director of pathology (research) at General Headquarters, India Command, with the temporary rank of lieutenant-col. This work called for unceasing exertion under tropical conditions, which undermined his health.

In March, 1945, it was announced that the Court of the University of St. Andrews had appointed Stuart McDonald to the chair of pathology and the Directors of the Dundee Royal Infirmary to the post of pathologist and clinical pathologist, and soon afterwards he became regional director of the Blood

Transfusion Service for East Scotland. He was a member of the Pathological Society of Great Britain and Ireland and the Medical Society for the Study of Venereal Diseases. His published writings include papers in the *Journal of Pathology and Bacteriology*, in the *Indian Journal of Medical Research*, and in the *British Journal of Venereal Diseases*.

The Principal of the University of St. Andrews, Sir J. Irvine, has paid public tribute to Stuart McDonald's brilliance as a teacher and investigator, whose services to medical education were of the utmost value, and has written of the well given by his colleagues and students at St. Andrews who was recalled to Scotland in 1945. "Stuart McDonald was a man richly endowed with ability, with the constructive imagination which lies at the basis of all scientific work, and with personal charm which endeared him to those who worked with him. The sympathy of all who knew him goes out to his widow and young children and also to his distinguished friends in whose footsteps he followed and to whom he owed so much."

Prof. H. F. Humphreys writes from the Medical School Hospitals Centre, Birmingham:

May I pay a tribute from the many medical officers who served with him in the 1939-45 war to the memory of Stuart McDonald. He was his commanding officer in the 14th General Hospital from early months of 1939, when he helped me to raise it as a Territorial unit, to the autumn of 1943, when his reputation as a pathologist brought about his transfer first to the Central Military Laboratory, Poona, and a year later to G.H.Q. India as Director of Research. It is, however, of his personal qualities that I wish to write rather than of the professional eminence that brought about his selection for the chair of pathology at St. Andrews. He was mess president for more than half his time with the unit, not an easy task for thirty or more medical officers of widely varying personality crowded together in trying conditions of climate and quarters; he discharged it to admiration. His capacity for exact business, his tact, his personal charm and his marked social gifts made him a unit favourite, and did much to provide that happy mess background which adds so much to the efficiency of a hospital. McDonald was a Highlander, with that heightened capacity for exaltations and agonies which distinguish the Highlander from the more prosaic Scot. The former were evident during a memorable 80-mile tramp I took with him in the high Himalayas during the monsoon of 1942, and later were revealed in his sharp antipathy to India and during his last illness. The sympathies of his brother officers go out to his family and to the University of St. Andrews.

ERNEST MALLAM, M.D.

We have to report with regret the death of Dr. Ernest Mallam, who died suddenly at Oxford on Oct. 24 after an illness of six weeks.

The son of Dr. Henry Parr Mallam, a well-known Oxford practitioner, Ernest Mallam was educated at Magdalen College, Oxford, and subsequently at the London Hospital. He took his M.A. in natural science, gaining first-class honours, and his M.B., B.Ch. in 1895, and his M.D. in 1904. At the London Hospital among other posts he held that of a house-physician and returning to Oxford he was appointed house-physician to the Radcliffe Infirmary. His abilities as a physician soon marked their mark and in 1900 he was appointed honorary assistant physician to the Radcliffe Infirmary. He did not have to wait very long for advancement, and in 1904 was elected a physician to the hospital, a position which he held until 1915 when on retirement he was appointed a consulting physician. Always interested in diseases of the skin, he was instrumental in the formation of a department of dermatology of which for many years he was the physician-in-charge. Although a busy and much-sought-after general practitioner he gave up much of his time during the 40 years he was on the staff to the service of the hospital. A man of sound judgment, and one with wide clinical experience, his opinion was highly valued both in general practice and as a consultant; and in committee work, over a long period of years, he played a big and active part in the management and development of the Radcliffe Infirmary. For many years he was secretary of the Honorary Staff Committee, secretary and president of the Oxford Medical Society, a member of the Dermatological Section of the Royal Society of Medicine, and President of the British Association of Dermatologists and Syphilologists. He had also been chairman of the Oxford Division of the British Medical Association and president of the Berks, Bucks, and Oxford Branch.

Ernest Mallam was a good friend to all and a genial host, man who gave his life to the service of his hospital and of its patients, who were in all classes of the community. He belonged to the fast diminishing brigade—the practitioner—men whose wide experience of general practice as brought to the bedside of their hospital patients, and whose work as physicians in a hospital kept them in touch with modern medical thought and practice. In this way they acquired qualities of a high order, and those qualities were possessed by Ernest Mallam to the full. His son, Dr. Patrick Mallam, the third generation which the Mallam family have given to Oxford medicine, is now a physician on the staff of the Radcliffe Infirmary. E. C. B.

Dr. ALEXANDER WYLIE EADIE, who died on Sept. 11 in the Hartley Hospital, Colne, was educated at Glasgow High School and graduated M.B., Ch.B. at Glasgow University in 1907. He held house appointments in Dundee Royal Infirmary, Victoria Infirmary, Glasgow, Monsall Fever Hospital, and Burnley Infirmary. In 1914 he settled in practice in Colne. Eadie soon proved himself a fine type of family doctor. An astute clinician and observer, well versed in modern practice, he rejected with disdain what he considered mere popular fashion. His death, at the age of 61, may be attributed largely to his devotion to his patients, whose confidence he held not only through his professional skill but also through friendly talks on matters relating to education, conduct, and career. As a member of the honorary staff of the Hartley Hospital since its opening in 1924, he contributed in no small degree to its reputation, which extends far beyond the borough boundary. Apart from his practice, and the problems of humanity, his main interests were in architecture, etchings, and antique furniture, on all of which he was an authority. He leaves a widow, three daughters, and a son, Squad-Ldr. J. G. Eadie; their grief at his loss is shared by all with whom he came into contact. A crowded funeral service testified to the great respect in which he was held throughout the district.—F. C. M.

The death, at the age of 55, of Dr. ANDREW ROYSTON ELLIOTT occurred at his home in Tunbridge Wells on Oct. 2. He was educated at Dulwich College, after which he graduated M.B., B.S. (Lond.) from the London Hospital in 1913. Several house appointments there were interrupted by his joining a very early Red Cross contingent sent to Belgium in 1914, during which he was captured and narrowly escaped death as a suspected spy before eventual release and return to England. In 1916 he joined the R.A.M.C. as a temporary officer and served in France and Mesopotamia before demobilization and his taking of the London M.D. in 1920. After six months as R.S.O. at the West London Hospital he joined in partnership in old hospital colleague and friend at Crowborough. He joined the B.M.A. soon after qualification. At Crowborough he remained, a bachelor, in active practice until within a year of his untimely death. Recognition in a widening circle of his sound qualities as a physician led in 1938 to his appointment in that role to the staff of the Kent and Sussex Hospital, Tunbridge Wells. It was entirely characteristic of the man that, having developed over the years an almost abnormal sense of duty, he gave more and more time to his hospital and consulting work, without in the least trying to ease up in his Crowborough practice. That this hastened in some measure his death there can be little doubt. Elliott was in his day a brilliant lawn tennis player and a sound golfer. He could do anything with his hands—surgery, midwifery, carpentry, or brick-laying.—A. E. W.

Dr. SYDNEY ARTHUR OWEN, who died in London on Oct. 14, was essentially a paediatrician, though he was also a general physician and during the late war did valuable administrative work as deputy hospital officer for Sector VII of the Emergency Medical Service. At Trinity College, Cambridge, he won an exhibition and was placed in the first class of Part I of the Natural Sciences Tripos. He went on to University College Hospital, where he won the Atchison scholarship and senior Fellowship medal, graduating M.B., B.Ch. in 1905. He took the M.D. and M.R.C.P. five years later and was elected F.R.C.P. in 1928. Sydney Owen's earliest appointments were those of resident medical officer at U.C.H. and at the East London Hospital for Children, Shadwell, and in middle life he served on the visiting staff of the City of London Hospital for Chest Diseases, Victoria Park. For many years he was physician to the Queen's Hospital for Children at Hackney and physician to the infant welfare department of the City of London Maternity Hospital. He had been consulting paediatrician to the L.C.C. and was in charge of the children's department of the West London Hospital for fifteen years. He was also physician to

the Princess Louise Kensington Hospital for Children from the time of its reconstruction, and consulting paediatrician to the Royal Hospital, Richmond, and the British Hospital for Mothers at Woolwich.

Dr. SIDNEY DEANER, chief tuberculosis officer for Worcestershire and Secretary of the Worcester and Bromsgrove Division of the B.M.A., died on Oct. 15 at the early age of forty-two, leaving a widow and young son. After qualification from St. Mary's Hospital he followed his clinical interest in Ealing, South Wales, Papworth, and Sheffield, and spent most of his too short life assisting the tuberculous in Worcestershire, succeeding to the post of Chief County Tuberculosis Officer in 1939. He was enthusiastic and industrious: the organization of a specialist chest surgery unit at the county sanatorium, his manifold Civil Defence duties, service in the cause of the Midland Tuberculosis Group of the Society of Medical Officers of Health and of the B.M.A., his original description of silicosis in a local industry, and his courageous attempt, while bedridden, to become proficient in the medical vocabulary of the Russian language—may be instanced. His happy relations with that wide circle of doctors, patients, and the general public associated with his work will be long remembered in Worcestershire.

Dr. WILLIAM HENRY PEACOCK, formerly of the West African Medical Service, who had lived recently in Shropshire at Church Stretton, died at the East Suffolk and Ipswich Hospital on Oct. 22. He was born on Feb. 2, 1881, and from Darlington Grammar School went to the University of Durham College of Medicine, Newcastle-upon-Tyne, graduating M.B., B.S. in 1903, and taking the Cambridge D.P.H. with distinction in 1914 and the D.T.M.&H. of the English Conjoint Board in 1922. He had a distinguished student career at Newcastle, winning two scholarships before qualification, and was then for a time casualty officer at the West London Hospital. He joined the West African Medical Staff in Southern Nigeria in 1910, and during the war of 1914–18 held a temporary commission in the R.A.M.C. He saw active service in the Cameroons and with the British Salonika Force, was mentioned twice in dispatches, and received the Order of St. Sava, 5th class. On demobilization in 1919 he was appointed senior sanitary officer for Sierra Leone, and deputy director of the Sanitary Service seven years later. He was transferred to Nigeria in 1930 as deputy director of Health Services and retired in 1935, soon after receiving the C.B.E. Dr. Peacock joined the B.M.A. in 1907 and represented his Division at the Annual Meeting at Edinburgh in 1927.

E. A. U. writes: In your issue of Oct. 12 you published a very full and sympathetic account of the career of Sir WALTER LANGDON-BROWN, and to that I should like to add a note on his great interest in the history of medicine. The obituary notice mentioned the wide range of his studies and his aptness in using the telling phrase. It was inevitable that Langdon-Brown should ultimately give serious attention to historical studies, and the latter part of his career displayed him as a master in what was to him a relatively new field. I know of at least fifteen historical articles written by him during the last seven years. In 1939 he delivered the Thomas Vicary Lecture, choosing as his subject "The Apposable Thumb." In his Inaugural Lecture at Cambridge in 1932 he spoke on "English Medicine and the Cambridge School," and in this he foreshadowed his later interests. During the four years when he occupied the presidential chair of the History of Medicine Section of the Royal Society of Medicine, he gave papers on the history of the Cambridge School which were intended to form a small book on that subject. His final essay on "Clifford Allbutt and the Transition from the Nineteenth Century" had to be postponed because of the surgical operation which marked the commencement of his long illness. It was a great disappointment to him that he was never able to read that paper: it was finally read for him by the present occupant of the Regius Chair of Physics at Cambridge. These papers were published in book form a very short time before his death with the title *Some Chapters in Cambridge Medical History*. This little work is full of ripe wisdom, and it shows on every page the author's knowledge of his subject and his great love for his Alma Mater. Langdon-Brown served as President of the History Section of the Royal Society of Medicine from October, 1939, to October, 1941, and again from October, 1942, to October, 1944. His occupancy of the presidential chair was marked by a quiet dignity, and by the unobtrusive display of a wealth of learning which seemed to embrace all subjects with equal ease. He was a big man, physically and mentally, and those whom he honoured with his friendship were indeed fortunate. One of his favourite quotations was the remark of Dr. Johnson that "Dr. Mead lived more in the sunshine of life than almost any man," and the same phrase might well be applied to Langdon-Brown himself.

Medical Notes in Parliament

HEALTH SERVICE BILL

THIRD READING

The LORD CHANCELLOR in the House of Lords on Oct. 31 moved the Third Reading of the National Health Service Bill. Lord Jowitt said that the Government had not been able to make the amendment which Lord Cecil of Chelwood had asked it to make to deal with deafness. To-day a vast amount of unhappiness was caused by deafness which could at least be alleviated by modern methods. But having used all his ingenuity he could not see how he could put anything in the Bill about it. This matter of the ear was not like the matter of the eye. Ophthalmic opticians could tell what spectacles ought to be used, but if he had anything the matter with his ear he would intensely dislike going to someone who was not a qualified doctor. It was wrong that an intricate mechanism should be at the mercy of people not qualified to deal with it. If ears could not come into the Bill as a supplementary service they could come as part of the general hospital service under Clause 3. If deafness were specified in that clause then Lord Horder would want to put in rheumatism, and Lord Moran tuberculosis, and therefore, after consulting Mr. Bevan, the best he could do was to repeat the definite assurance that a comprehensive service must include provision for deafness. To-day people were concerned to sell for the highest price instruments which had little effect on deafness, and the nation was reluctant to bring other instruments from America and so to use its precious dollars. He gave the House an assurance that he would take up that matter with Sir Stafford Cripps. The Government would do all it could at the earliest time to produce in as large numbers as possible the best scientific instruments and to make them available to the public free of charge.

The Lord Chancellor went on to say that he was grateful to the House for the constructive way in which it had discussed the Bill. By allowing him to meet as far as he could the wishes of the House Mr. Bevan had shown good sense and good judgment. Some of the alterations accepted wrote into the Bill an undertaking which Mr. Bevan had given verbally. An illustration of that was the case of the denominational hospitals. So far as endowments were concerned the Government had hit upon a method which met the general wishes of the House. It did not interfere with the broad general principle that endowments were to be devoted generally to all hospitals, but it did protect specific endowments intended for particular purposes.

It was a good thing that the powers of hospital management committees had been set out as they were in the Bill. The best people need not hesitate to come in for fear they would be ciphers without real work to do. In regard to the discovery of documents in the event of litigation the Government had made plain what it intended. One alteration of real substance had been made. It affected the time between the appointed day and the passing of the Act—which might be as long as eighteen months. The Minister had arranged that after the appointed day endowments given to a particular hospital should not be taken away from it. The House had extended that principle to the time directly after the Bill became an Act of Parliament.

Salaries and Certificates

He thought the Peers were wrong in saying that no part of a doctor's remuneration should be by way of salary. The success of the scheme depended in large measure on getting satisfactory certification. With lax, or still more with dishonest, certification all the schemes were going to break down. He had a profound regard for the medical profession and its standard of honour, but when Minister of National Insurance he had come across cases—not many—where there were two competing doctors, one of whom was strict with his certificates while the other was lax. The people on the panel of the strict doctor were inclined to go to the panel of the lax doctor because they could more easily get certificates. That temptation would have gone if the per capita payment had been abolished and a straight salary substituted, but the change would not have been practical politics. Giving something in the way of salary would have been a very valuable thing.

The other blemish in the Bill as amended was in the special treatment of London. It was a great pity that health services should be split between borough councils and county councils. The amendment carried by Lord Balfour of Burleigh did not seek to transfer all the new powers to the borough council, only the powers they already had with perhaps some slight extension. For the rest the Bill preserved the absolute right of choice of

doctor, and he hoped the public would realize this. If Government were not going to move people about. If nurses had a contract to serve in a particular place they could only be called upon to serve in that place. Under the Bill there would always be a great need for well-disposed persons to help the money and by service, and he hoped that the passage of the Bill would not prevent voluntary service from being forthcoming. He moved the Third Reading.

"Acting in an Honorary Capacity"

Lord LLEWELIN said the amendments put forward by the Opposition in that House were not put forward with a view to ruining the Bill or to making it ineffective. Good improvements had been made in the Bill. The House had made certain that a doctor, whether acting in an honorary capacity or not, who served on the staff of one hospital could get his patient admitted, or might even treat him, in another hospital. That was important, because in a lot of small hospitals there was no resident staff. He hoped the Bill would not result in the closing down of smaller hospitals in country towns which attended to minor ailments not in need of special treatment in larger regional hospitals. He was grateful to the Government for drafting a satisfactory amendment dealing with endowments given for a special purpose. The insertion of the words "control and manage" in regard to hospital management committees seemed to have met the desire of the House that the Committees should be given a better function. He was also satisfied with the words accepted by the Government about the disclosure and production of documents.

He was obliged for the assurance that the doctors would be given adequate time before the appointed day to know what their conditions were and also for the assurance that dentists would be allowed to have their names on two lists. The provision about partnerships was also of use, and the measure had been greatly improved by providing that a doctor who might lose his livelihood through a decision of the Tribunal or of the person appointed by the Minister to hear the appeal should be entitled to be represented by counsel or by a solicitor, to call evidence, and to produce documents. He thanked the Minister for the provision in regard to hospitals connected with some religious denomination. The House had rightly restricted the power of the Minister to alter, of his own volition, the Acts or Regulations under it. He noted that the Lord Chancellor had not described as a blemish on the Bill the amendment which made management committees capable of suing and of being sued. He hoped that amendment would stand part of the Bill.

Proportion between Salary and Capitation Fee

On the question of a salary or capitation fee Lord Llewellyn remarked that the House had never been told what in the normal case was to be the proportion between the two. If it was to be 25% salary in the normal case and 75% capitation there would not be much between the Opposition and the Government. If the Government would state what proportion they had in mind for the normal case that would put a lot of anxieties to rest. The Lord Chancellor had said the capitation fee would mean doctors' perhaps getting more patients because these doctors were lax in the way they gave certificates. In these days the public had to have licences for everything, and a lady could not get a pair of corsets without a certificate from a doctor. In that event there would be a considerable temptation for her to change her doctor to one who would say that the garment was necessary for medical reasons. On the whole, however, the House did not want to take away from doctors the sense of energy and hard work, and part of that depended on their being able to attract patients by giving them good service. He noted that Lord Horder and Lord Moran had supported this amendment, and he remarked that the whole course of the debates on the Bill had shown how the House of Lords could act as a Council of State.

Lord READING remarked that although the specific scheme embodied in the Bill might be the production of the Government, yet the idea of a National Health Service had originated with the Government which embodied members of all parties. He believed that the Government should employ the eighteen months before the scheme came into operation in making plain to the people what the scheme included and did not include. The amount of ignorance prevalent in the country was incredible. Some educated people proclaimed that under the Bill no one would be entitled to go to the doctor of his choice and that with a temperature of 105° a patient would be forced under the Bill to go to a health centre and stand in a queue extending down the road.

L.C.C. and Metropolitan Boroughs

Lord BALFOUR OF BURLEIGH said that if the Minister accepted the amendment passed last week regarding the devolution of

the authority of the L.C.C. to the metropolitan boroughs it could be a tribute to the House. It was of fundamental importance to the people of London, for the local government of London was a thing entirely by itself. The Lord Chancellor dubbed the proposal as "retrograde," but in that he (Lord Alford) disagreed. He wanted the same thing as the Lord Chancellor, that the children should get their treatment in the home centre. If the administration was handed over to the London County Council those intimate services would be administered from County Hall. At present if a mother had complaint to make or desired an opinion or had a suggestion to make she had only to seek out one of the local councillors to go to the town hall and see the medical officer of health. The services were transferred to the County Council the personal touch would be lost.

There was the far bigger question of the maintenance of a two-tier system of local government in London. How could the quality of the borough councils be maintained if the important health service, which attracted so many members, was to be removed? L.C.C. administration was bureaucratic. It was a fact that in one, and perhaps other, L.C.C. hospitals neither a medical superintendent nor the matron could condemn a midwife without reference to County Hall. The indication was clear that the Coalition Government, whatever scheme they might have decided to set up throughout the country, would have left the maternity and child welfare services with the borough councils. No change of circumstances had been introduced to justify the change in plan. It was profoundly to be hoped that the Government would have a good look at the Bill as it now stood.

Lord JESSEL said that the provision about London, which had always had separate treatment, was a very grave new departure, and would greatly discourage candidates, particularly women, for election to the borough councils.

The measure was then read a third time with its amendments and passed, and returned to the House of Commons.

FINAL STAGES

The Lords amendments to the National Health Service Bill came before the House of Commons on Nov. 4.

Mr. KEY, Parliamentary Secretary, Ministry of Health, moved at the House should agree with the Lords amendment designed to secure that endowments to hospitals made before the Act comes into operation should, so far as possible, be devoted to the purpose for which they are intended by the donor and not placed in a common pool.

Mr. J. S. C. REID, speaking for the Opposition, said the amendment provided for the retention of gifts by hospitals subject to rather strict conditions, and it was important that the public should understand how stringent the conditions were. Big donors would be able to see that their money was used for the purpose intended, but small donors would see their money go into the common pool.

Mr. BEVAN, Minister of Health, said it was true that the amendment was intended to exclude from the endowment funds money that would ordinarily be paid for the general administration of the hospital. Unless there were safeguards of this kind ordinary weekly subscriptions could obviously be proscribed by simple form of words into a contribution to the endowment of a hospital, and he would find himself after a few months with an enormous deficit. These safeguards would prevent attempts to enrich the funds of a hospital at the expense of the Exchequer.

The Lords amendment was agreed to, and a similar amendment to cover the case of a war memorial embodied in a local hospital was also accepted.

On Clause 12 (functions of boards and management committees) Mr. KEY moved that the House agree with a Lords amendment that in any proceedings hospital authorities should not be entitled to plead privilege of the Crown regarding discovery of documents, but without prejudice to the right of the Crown to withhold documents whose disclosure would be contrary to the public interest. Mr. REID urged that the House ought to have a specific assurance from the Minister that he would use very sparingly the power to withhold discovery of documents. Mr. BEVAN agreed that this power ought to be used only in very exceptional circumstances.

The amendment was agreed to.

Health Services for London

On Clause 19 (local health authorities) Mr. KEY moved that the House disagree with a Lords amendment which provided that the London County Council should delegate to the Common Council of the City of London and the metropolitan borough councils the arrangements for the care of expectant and nursing mothers and children under five not attending

primary schools, the arrangements for home visiting, home nursing, and domestic help, and the arrangements for vaccination and immunization. He said that in the past there had been lack of real co-ordination in providing these home health services and now responsibility for them was to be concentrated in the county and county borough councils. He agreed that many of the London borough councils had provided good services in the past, but said the proposal that in this matter London should be made an exception to the rest of the country was quite unacceptable to the Government. The set-up envisaged in the amendment would lead to greater possibilities of administrative friction and mean a loss of efficiency. The Bill gave a service of common standard in all areas of London irrespective of their poverty or wealth. Under the amendment, which provided that 50% of the cost was to be borne by the boroughs, really unbearable burdens would be placed on poorer areas and the people there would have to put up with less efficient services. The unification under the Bill did not mean that there could not be real co-operation between the L.C.C. and the borough councils and did not exclude the possibility of the local knowledge of borough councillors being used. Power had been given to the L.C.C. and the borough councils to co-operate in the subcommittees which would be necessary for carrying out the services in the various areas—for representatives of the borough councils to share with the county council in management and control. There was still in existence a provision of the London Government Act, 1939, which enabled the borough councils and L.C.C. to get together and put forward schemes to the Minister relating to services which they wanted to share or to powers which they wished to delegate one from another.

Mr. RICHARD LAW recalled that in 1944 the Metropolitan Boroughs Joint Standing Committee, under the chairmanship of Mr. Key, came to an agreement with the L.C.C. It was clear when the Coalition Government White Paper was published there would have to be some division of responsibility as between the L.C.C. and the metropolitan boroughs, and without any pressure from the then Minister of Health, but with his good will, the two bodies got together and reached agreement. The tenor of that agreement was that maternity and child welfare work should be delegated by the L.C.C. to the borough councils, which was what—generally speaking—was proposed by the amendment. Mr. Key, as chairman of the Metropolitan Boards Standing Joint Committee, used great influence and persuasion in order to bring about a division of powers such as was embodied in the amendment which he was now rejecting. He did not want to go into the reasons for the *volte face*.

Mr. KEY, intervening, asked if it were possible for Mr. LAW to understand that a person could serve a team, even though a second team which he joined had a different attitude from the first. When he spoke as chairman of the Metropolitan Borough Councils Subcommittee he was bound to voice their opinions, irrespective of whether they were his own. That was the essence of democracy.

Mr. LAW said he did not follow Mr. Key's new definition of the team spirit and democracy. Anyone who changed his mind because he changed his job was, in fact, doing a great disservice to democracy. The L.C.C. and the metropolitan boroughs must have agreed that the services which it was proposed in the amendment to delegate were essentially personal services, much better handled by the relatively small metropolitan boroughs than by the L.C.C., which had the care of between 3,000,000 and 4,000,000 of the citizens of London. The services had been discharged very well by the boroughs for many years, and another argument considered must have been that removal of the services from the purview of the metropolitan boroughs would result in very great weakening of local government in London.

Too Many Authorities

Mr. SOMERVILLE HASTINGS said that under the amendment London alone would have four authorities instead of three. He had been a member of the hospital and medical services committee of the L.C.C. for about fifteen years, and he had seen the difficulties that arose where functions were divided between two authorities, as in the case of tuberculosis. There were already quite enough authorities under the Bill without increasing them further. One of the objects of the Bill was to associate the doctors as closely as possible with the preventive services at the health centres. The amendment would separate much more than was necessary the preventive and curative side of the treatment of disease.

Mr. HOWARD said that Mr. Key had not put forward a single argument to show that the individual nursing mother or child would get better service if the amendment was rejected. It was something of a red herring to suggest that because powers

of consultation were contained in the Bill, it was ridiculous to want any powers of delegation.

Mr. GOODRICH said he did not think the fear of non-contact between patients and representatives was justified. He was convinced now, though not formerly, that it would be better for these services to be administered by the L.C.C. Mr. MARLOWE said the Parliamentary Secretary had made out a strong case administratively, but there were other issues. The whole purpose of the Bill was to do good for the individual, and the L.C.C. was too vast for contact to be maintained between the authorities and their patients. Mr. SPARKS said he believed that by centralizing responsibility the standard of these services would be improved. They in Middlesex regretted the loss of half their services, but they were not going to adopt a "dog in the manger" attitude which would prevent other counties getting better standards.

Mr. H. STRAUSS (English Universities) said that from his experience the people living within the area of the London County Council were overwhelmingly in favour of these services remaining under the control of the metropolitan boroughs. The people of London had a more intimate regard for their own town hall than they had for the county hall. From the point of view of efficiency, too, there was no reason to suppose that the L.C.C., which had never exercised these functions before, would exercise them now more effectively than the metropolitan borough councils, with all their experience of these services, had done in the past. Mr. E. FLETCHER said that the L.C.C., of which he was a member, had expressed its views on the issue. Everyone sympathized with the metropolitan boroughs in losing the maternity and child welfare services which they had built up with such success; but not all had reached the same standard of efficiency.

Mr. BEVAN said the agreement between the L.C.C. and the metropolitan boroughs had nothing to do with the issue, because the scheme in the Bill was radically different from the one his predecessor in office had placed before the boroughs. The devisers of the scheme in the amendment, because of the nature of local government in London, found themselves faced with exactly the same anomaly as he was faced with in the whole country. Whenever difficulties arose they arose out of the fact that in selecting a particular category of local authorities one was bound to find anomalies. In considering the question of accessibility members of the Opposition had forgotten the health centre. He believed that local authorities ought to be able to be approached by the citizen, but if a citizen in future was in difficulty about his health he would go to the health centre and not to the town hall.

The motion to disagree with the Lords amendment was carried by 296 votes to 134—Government majority 162.

Payment of Doctors

On Clause 33 (arrangements for general medical services) Mr. BEVAN moved that the House disagree with the Lords amendment which laid it down that the remuneration of doctors providing general medical service should be by the capitation method, save in exceptional cases. There was no such restriction in the National Health Insurance Acts, he said, and he did not want the Government to be placed in a strait waistcoat when fixing doctors' remuneration. It was not desirable that future negotiations with the medical profession about remuneration should start with a statutory inhibition, and that some agreed basis could not be adopted without resorting to fresh legislation. Supporters of the Government had always felt that the young doctor starting in practice should have a certain degree of security, and it was the Government's intention that he should start with a salary. A doctor did not examine his patients better because his heart was gnawed by financial anxiety. A basic salary was justified on that ground alone, but it would also reduce to some extent the competition for patients. Panel lists had not always been built up by methods which commended themselves to the best elements in the profession. The size of the panel list did not always indicate the merits of the doctor; some had better advertising methods than others. A basic element in the remuneration made it easier, also, to award additional pay for special attainments.

Some doctors had expressed the fear that this was the beginning of an attempt to introduce full-time medical service. He could not see into the mind of any future minister or prophesy what might be done by a future Government, but that was not the intention of the present Government. Their intention was that the main source of the doctor's remuneration should be by capitation payments. There was an argument for having a full-time salaried service or for having remuneration wholly on a capitation basis, but none for having a high basic salary and a small capitation payment. It would be difficult to carry out the recommendations of the Spens Report

if the basic element were too high because then the cap rate would have to be lower and the highest remuneration could not be achieved without far longer panel lists than could agree to.

Mr. J. S. C. REID said one of the main objections—some people's view the main objection—to the Bill was a tendency to undermine the independence of the medical profession. If there were any truth in that charge the amendment was a crucial one. At present a doctor depended entirely on winning and keeping the confidence of his patients; he was their servant, and the servant of no one else, and the Government neither harmed nor benefited him in any way. As there was introduced an element of salary there was an inevitable tendency to produce Government control, and arose a divided loyalty on the part of the doctor. The object of the basic salary in the Labour Party's policy was to get control of the individual doctor. The Bill contained a limitation of the proportion of remuneration to be paid, and if the amendment were rejected the Government would have a free hand to make alterations bringing the situation nearer to their official policy. If a doctor received a substantial salary and had only a small number of patients it would be necessary for the Minister to direct a number of unwilling patients to him. At present the great majority of doctors were free and independent, but as soon as they were paid on a salary basis the existing atmosphere of freedom and independence would change fairly rapidly for the worse, and this in turn would result in a serious diminution in the quality of the service which they rendered. It was not in the interests of the doctors, nor was it their wish, that the conditions should change in the way the Government proposed.

Sir H. LUCAS-TOOTH said that if it was agreed that a salary was desirable for doctors the same argument might be accepted for every other profession which served the public. Mr. GAGE said that if there was a salaried service there would be a falling off in public confidence in doctors and in the standard of the profession.

Varying Medical Views

Sir H. MORRIS-JONES said the majority of the medical profession preferred the capitation system. A salaried system would take the glamour out of the profession and replace it with a uniformity in which there was no personal contact between patient and doctor.

Dr. MORGAN said they had been treated to a whole series of jeremiads that if a doctor was paid a salary his services would not be so good because of that fact. He would only refer to the salaried doctors of the Indian Medical Service, the Colonies, medical officers of health, the laboratories—were the bad doctors because they were paid by salary? Mr. MARSHALL said that a salary was an inappropriate basis for the payment of professional men. The Minister was wrong in thinking it was necessary to provide security to attract the right type of young men into the profession. The right type of men were willing to undergo hardship in the early stages of their career to achieve success.

Dr. SEGAL said that many doctors were born into the profession in a state of security and these were those who could not be expected to specialize and obtain the best positions. They were always the best men. The Bill sought to ensure that some of the deserving elements of the community should not be deprived of an opportunity to render their best services in the field of medicine because of lack of security.

Mr. WILLINK said that in this matter the Opposition were so much concerned with the doctors as with the interests of the patient. He was convinced that patients would be less satisfied by a salaried service, and he did not think people would come to their family doctor being a salaried servant. Just at the moment when the general practitioner service was being made available to everyone the Minister was destroying a substantial amount of the relationship between the patient and the family doctor. The only issue was whether the service was to be received from a doctor in a part-salaried position or from one whose income was in relation to the zeal and interest displayed.

The motion to disagree with the Lords amendment was carried by 303 votes to 128—Government majority 175.

The remaining amendments made by the House of Commons were agreed to.

MEDICAL MISCELLANY

Private Practice by Medical Officers of Health

In the House of Lords on Oct. 28 Lord MERTON said how many county districts in England and Wales medical officers of health were still permitted to engage in private practice.

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Penicillin by Inhalation

MOST of the organisms responsible for common infections of the respiratory system, such as pneumococci, streptococci, staphylococci, and D. catarrhalis, are penicillin sensitive.

In acute infections, such as lobar pneumonia, the intra-muscular injection of 15,000 units of penicillin in sterile solution three-hourly day and night for five days has given satisfactory results.

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In more chronic conditions such as bronchiectasis and chronic bronchitis, penicillin by inhalation has proved of definite value.

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MEDICAL DEPARTMENT



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Tested members of the medical profession are invited to write a copy of a Thesis on "THE INJECTION TREATMENT OF FIBROSITIS—with special reference to: Lumbago, Muscular Rheumatism (Acute and Chronic), Muscular Pain (of Traumatic origin)."

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2-oz. and 20-oz. Bottles: 1%, 1% and 2% Solutions.
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Each c.c. of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreinatoxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

ARMACEUTICAL MANUFACTURING CO. LTD.
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Syrup Cocillana Compound

'COSYLAN'

is once more available in its pre-war formula and supplies are adequate. 'Cosylan' is issued in bottles of 4 and 16 fl. ozs.

FORMULA

Each fluid drachm of 'Cosylan' contains:

Tinct. Cocillana	5 mins.
Tinct. Euphorb. Pilulif.	15 mins.
Syrup Wild Lettuce	15 mins.
Fluid Extract of Squill	1 min.
Fluid Extract of Senega	1 min.
Tartarated Antimony	1/184-gr.
Cascarin, Bitterless (P., D. & Co.)	1-gr.
Menthol	1/100-gr.
Ethylmorph. Hydrochlor.	3/32-gr.

The adult dose is half to one teaspoonful, preferably undiluted, to be swallowed slowly three or four times daily.

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Defence and attack against CHILBLAINS

Oral administration of calcium and vitamin D—as 'Ostocalcium'—is commonly used as a defensive measure against chilblains. A chilblain-free winter is quite possible when 'Ostocalcium' Tablets are taken regularly throughout the cold weather. If chilblains develop, however, parenteral therapy is more promptly effective. Injection of Colloidal Calcium with 'Ostelin' (vitamin D) will frequently alleviate the immediate symptoms, and the parenteral attack can be consolidated by giving 'Ostocalcium' by mouth to prevent recurrence.

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AND

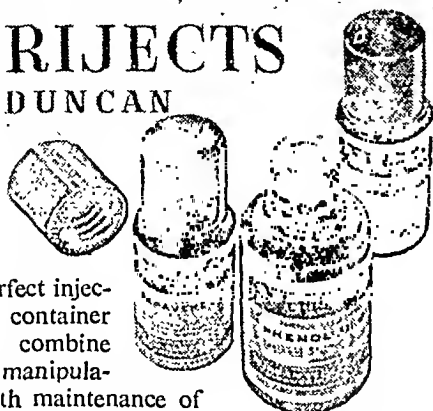
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Careful surgeons minimise the chance of post-operative infection by preparing the previously scrubbed skin with Tincture

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'Merthiolate' BRAND

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In addition to prompt germicidal activity 'Merthiolate' has a sustained effect and is bacteriostatic in high dilution. With its low toxicity and its compatibility with body fluids, 'Merthiolate' fulfils the need for a reliable skin disinfectant.

ELI LILLY AND COMPANY LIMITED
BASINGSTOKE AND LONDON

A treatment of TENO-SYNOVITIS by means of Elastoplast

CASE HISTORY

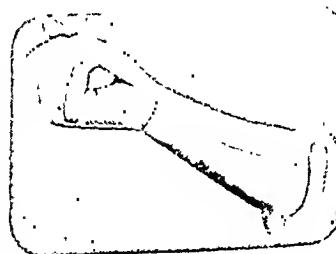
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By the 30th January there were no symptoms.

The patient returned to work after 14 days but the Elastoplast



wrist strapping was retained for a further week.

The details and illustration above are of an actual case T. J. Smith & Nephew, Ltd., manufacturers of Elastoplast, are privileged to publish this instance, typical of many in which their products have been used with success, in the belief that such authentic records will be of general interest.

In Elastoplast elastic adhesive bandages a combination of the particular adhesive spread with the remarkable STRETCH and RESILIENT properties, together provide the correct degree of compression and grip. They mould readily to any part of the body without slipping, rubbing, or constriction.

Elastoplast bandages are available in widths of 2", 2½", 3" and 4" x 5½ yd. long when stretched. Also 2" wide x 1½ yd. (stretched). Elastoplast, Elastocrepe, Iodoine and Gypsol are products of T. J. Smith & Nephew, Ltd., Hull.

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By 270 votes to 157 the House declared its opinion that a Royal Commission should be appointed to inquire into the finance, control, management, and ownership of the Press.

Streptomycin

On Oct. 29 Mr. BEVAN said medical research was being undertaken in the United States of America regarding the use of streptomycin in the treatment of tuberculosis. It would not be justifiable to adopt it for general use in this country till adequate clinical trials had been carried out to test claims made for it. Arrangements to that end were being made.

Mr. BEVAN, on Oct. 31, told Dr. BARNETT STROSS that two small plants were producing streptomycin on a very small scale in this country. None was yet available for clinical trials. Until those trials had been completed it would not be possible to assess the usefulness of the drug.

Tuberculosis Allowances.—On Oct. 24 Mr. WESTWOOD explained that family allowances were taken into account for the purpose of determining tuberculosis allowances because of the principle, accepted in all recent social legislation, that there should be no duplication of benefits payable out of public funds. The future of the Tuberculosis Allowances Scheme in relation to the new social legislation was under review, and the special needs of this class were kept in mind.

Radioactive Isotopes.—Mr. BEVAN, on Oct. 31, said that his attention had been drawn to clinical experimental work in the United States with radioactive substances, such as radioactive phosphorus and iodine in the treatment of inoperable cancerous growths. Experiments were being carried out with the small quantities of these substances available in this country. It was hoped that the quantities would shortly be increased.

Temporary Registrars.—Mr. HASTINGS, on Oct. 31, inquired whether persons who had earned and secured naturalization by service as doctors in the armed Forces during the late war but had not obtained an English medical degree would be permitted to continue in practice in this country after Jan. 1, 1947. Mr. BEVAN assumed that Mr. Hastings had in mind the position which would arise in such cases when the Temporary Medical Register came to an end on Dec. 31, 1947. Mr. Bevan said he was considering this in consultation with the Secretary of State for the Home Department and the Secretary of State for Scotland.

Central Medical War Committee.—Mr. BEVAN, on Oct. 31, told Dr. JEGGER that the duties of the Central Medical War Committee in advising on the selection of individual doctors for the Services were still heavy and it must continue in being for the present.

National Health Service Supplies.—Mr. BEVAN is considering with Mr. WILMOT, Minister of Supply, how the medical supply industries will be able to meet the increased demands when the national health proposals become law. No final arrangements can yet be made.

Universities and Colleges

UNIVERSITY OF LONDON

At a meeting of the Senate on Oct. 24 C. V. Harrison, M.D., was appointed to the University Readership in Morbid Anatomy tenable at the British Postgraduate Medical School, and M. A. Rushton, M.B., L.D.S., was appointed to the University Chair of Dental Medicine tenable at Guy's Hospital Medical School.

UNIVERSITY OF EDINBURGH

At a graduation ceremony held on Oct. 26, the following diplomas were conferred:

DIPLOMA IN PUBLIC HEALTH.—*L. S. Anderson, *H. A. Barker, *A. D. C. S. Cameron, E. Campbell, *K. H. Cheung, *P. S. Clouston, J. R. Gray, *W. W. Hutton, *R. S. Kennedy, *R. I. S. Lewis, D. A. Lowe, *D. I. McCallum, *D. McGowan, Isobel P. MacKenzie, *J. M. Mair, *W. G. Pollard, *K. D. G. Reid, *D. S. F. Robertson, R. Scott, J. E. Simpson, J. Sleight, *B. Snell, *D. Thomson.

DIPLOMA IN MEDICAL RADIOLOGY.—P. Aitken, Margaret D. Cameroo, *N. Saks, *A. C. P. D. Thomson, J. C. Wood.

* In absentia.

CONJOINT BOARD IN SCOTLAND

The following candidates, having passed the final examinations, have been admitted L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.&S.Glas.:

Flora S. Barry, A. Blench, C. K. Brown, P. A. Clarke, E. D. Cloughley, T. Corrie, Hilda M. Davies, H. Fernbach, John Hamilton, Phaik-Lin Lim, P. A. R. Lornie, Anna Majzlis, F. R. Moreland, John McLaughlin, J. A. Pool, E. W. Russell, R. Short, E. Silverstone, H. J. Stott, P. J. Verannes, D. T. Wilson J. Zucker.

The Services

President Truman has conferred the Legion of Merit in degree of officer on Col. F. S. Gillespie, late R.A.M.C., for services as Medical Liaison Officer with U.S. Army.

The President of the U.S.A. has bestowed the Legion of Merit, Degree of Legionnaire, upon Temp. Surg. Lieut.-Cmdr. A. P. Curtin, R.N.V.R., for services to the U.S.A. during the war.

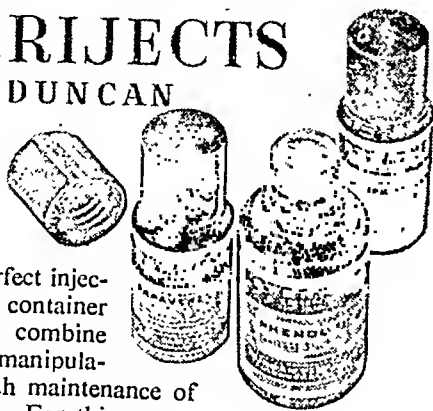
The President of the U.S.A. has conferred the Bronze Star Medal on Wing Cmdr. (Mrs.) Edna V. Butler-Jones, M.R.C.S., in recognition of valuable services rendered in connexion with the war.

Col. A. R. Moodie, T.D., has been appointed Honorary Colonel in the 51st (Highland) Division, R.A.M.C., T.A., in succession to Col. G. W. Miller, D.S.O., T.D., whose tenure of appointment has expired.

Surg. Lieut.-Cmdrs. P. de Bec Turtle and R. R. Prewer, R.N.V.R., have been awarded the R.N.V.R. Officers' Decoration.

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DUNCAN



The perfect injection container must combine ease of manipulation with maintenance of sterility. For this reason alone, hospital clinicians and general practitioners alike have been quick to recognise the advantage of STERIJECTS—Duncan—over ampoules and hypodermic tablets.

STERIJECTS are isotonic and absolutely sterile, and the range includes the more commonly used medicaments in everyday practice.

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MARK

'Merthiolate' BRAND

Sodium Ethyl Mercuri Thiosalicylate

In addition to prompt germicidal activity 'Merthiolate' has a sustained effect and is bacteriostatic in high dilution. 'With its low toxicity and its compatibility with body fluids, 'Merthiolate' fulfils the need for a reliable skin disinfectant.

ELI LILLY AND COMPANY LIMITED
BASINGSTOKE AND LONDON

A treatment of TENO-SYNOVITIS by means of Elastoplast

CASE HISTORY

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By 270 votes to 157 the House declared its opinion that a Royal Commission should be appointed to inquire into the finance, control, management, and ownership of the Press.

Streptomycin

On Oct. 29 Mr. BEVAN said medical research was being undertaken in the United States of America regarding the use of streptomycin in the treatment of tuberculosis. It would not be justifiable to adopt it for general use in this country till adequate clinical trials had been carried out to test claims made for it. Arrangements to that end were being made.

Mr. BEVAN, on Oct. 31, told Dr. BARNETT STROSS that two small plants were producing streptomycin on a very small scale in this country. None was yet available for clinical trials. Until those trials had been completed it would not be possible to assess the usefulness of the drug.

Tuberculosis Allowances.—On Oct. 24 Mr. WESTWOOD explained that family allowances were taken into account for the purpose of determining tuberculosis allowances because of the principle, accepted in all recent social legislation, that there should be no duplication of benefits payable out of public funds. The future of the Tuberculosis Allowances Scheme in relation to the new social legislation was under review, and the special needs of this class were kept in mind.

Radioactive Isotopes.—Mr. BEVAN, on Oct. 31, said that his attention had been drawn to clinical experimental work in the United States with radioactive substances, such as radioactive phosphorus and iodine in the treatment of inoperable cancerous growths. Experiments were being carried out with the small quantities of these substances available in this country. It was hoped that the quantities would shortly be increased.

Temporary Registration.—Mr. HASTINGS, on Oct. 31, inquired whether persons who had earned and secured naturalization by service as doctors in the armed Forces during the late war but had not obtained an English medical degree would be permitted to continue in practice in this country after Jan. 1, 1947. Mr. BEVAN assumed that Mr. Hastings had in mind the position which would arise in such cases when the Temporary Medical Register came to an end on Dec. 31, 1947. Mr. Bevan said he was considering this in consultation with the Secretary of State for the Home Department and the Secretary of State for Scotland.

Central Medical War Committee.—Mr. BEVAN, on Oct. 31, told Dr. JEGG that the duties of the Central Medical War Committee in advising on the selection of individual doctors for the Services were still heavy and it must continue in being for the present.

National Health Service Supplies.—Mr. BEVAN is considering with Mr. WILMOT, Minister of Supply, how the medical supply industries will be able to meet the increased demands when the national health proposals become law. No final arrangements can yet be made.

Universities and Colleges

UNIVERSITY OF LONDON

At a meeting of the Senate on Oct. 24 C. V. Harrison, M.D., was appointed to the University Readership in Morbid Anatomy tenable at the British Postgraduate Medical School, and M. A. Rushton, M.B., L.D.S., was appointed to the University Chair of Dental Medicine tenable at Guy's Hospital Medical School.

UNIVERSITY OF EDINBURGH

At a graduation ceremony held on Oct. 26, the following diplomas were conferred:

DIPLOMA IN PUBLIC HEALTH.—*L. S. Anderson, *H. A. Barker, *A. D. C. S. Cameron, E. Campbell, *K. H. Cheung, *P. S. Clouston, J. R. Gray, *W. W. Hutton, *R. S. Kennedy, *R. I. S. Lewis, D. A. Lowe, *D. I. McCallum, *D. McGowan, Isobel P. MacKenzie, *J. M. Mair, *W. G. Pollard, *K. D. O. Reid, *D. S. F. Robertson, R. Scott, J. E. Simpson, J. Sleight, *B. Snell, *D. Thomson.

DIPLOMA IN MEDICAL RADIOLOGY.—P. Aitken, Margaret D. Cameron, *N. Saks, *A. C. P. D. Thomson, J. C. Wood.

* In absentia.

CONJOINT BOARD IN SCOTLAND

The following candidates, having passed the final examinations, have been admitted L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.&S.Glas.:

Flora S. Barry, A. Blench, C. K. Brown, P. A. Clarke, E. D. Cloughley, T. Corrie, Hilda M. Davies, H. Fernbach, John Hamilton, Phaik-Lin Lim, P. A. R. Lornie, Anna Majlisz, F. R. Moreland, John McLaughlin, J. A. Pool, E. W. Russell, R. Short, E. Silverstone, H. J. Stott, P. J. Verannes, D. T. Wilson, J. Zucker.

The Services

President Truman has conferred the Legion of Merit in degree of officer on Col. F. S. Gillespie, late R.A.M.C., for services as Medical Liaison Officer with U.S. Army.

The President of the U.S.A. has bestowed the Legion of Merit, Degree of Legionnaire, upon Temp. Surg. Lieut.-Cmdr. A. P. Curtin, R.N.V.R., for services to the U.S.A. during the war.

The President of the U.S.A. has conferred the Bronze Star Medal on Wing Cmdr. (Mrs.) Edna V. Butler-Jones, M.R.C.S., in recognition of valuable services rendered in connexion with the war.

Col. A. R. Moodie, T.D., has been appointed Honorary Colonel in the 51st (Highland) Division, R.A.M.C., T.A., in succession to Col. G. W. Miller, D.S.O., T.D., whose tenure of appointment has expired.

Surg. Lieut.-Cmdrs. P. de Bec Turtle and R. R. Prewer, R.N.V.R., have been awarded the R.N.V.R. Officers' Decoration.

No. 42

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Oct. 19.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e), Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	30	2	19	1	3	39	3	22	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	278	23	83	33	8	604	40	161	76	15
Deaths	1	—	3	2	—	7	1	—	—	—
Dysentery	57	2	48	—	1	284	50	87	1	3
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	3	—	—	4	1	1	2	—
Deaths	—	1	—	—	—	3	—	—	—	—
Erysipelas	—	—	56	7	6	—	—	42	12	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	48	—	6	63	1	57	3	16	81	6
Deaths	—	—	—	10	—	—	—	—	11	—
Measles*	2,385	116	200	63	6	441	40	70	92	—
Deaths,	1	—	—	—	—	—	—	1	1	—
Ophthalmia neonatorum	72	4	14	—	—	66	8	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	22	2	1(A)	1(B)	—	7	1	1(B)	—	1(B)
Deaths	—	—	2(B)	—	—	—	—	—	—	—
Pneumonia, influenza ..	407	26	2	1	3	518	32	7	1	2
Deaths (from influenza)† ..	8	2	—	—	—	11	3	1	—	—
Pneumonia, primary ..	—	—	153	14	—	—	—	154	15	—
Deaths	—	20	3	4	—	—	24	4	4	4
Polio-encephalitis, acute ..	1	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute ..	20	1	—	7	3	28	3	6	4	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	1	17	—	—	—	8	11	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡ ..	134	11	7	1	—	159	18	11	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,048	90	218	24	40	1,768	151	375	39	31
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	5	—	1	2	19	5	—	1	8	1
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,375	101	147	24	48	1,087	88	44	44	2
Deaths	11	1	—	—	—	3	—	—	—	—
Deaths (0-1 year) ..	356	49	45	20	12	322	31	52	34	12
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births) ..	4,051	663	542	140	106	4,082	662	535	177	117
Annual death rate (per 1,000 persons living) ..	—	—	11.9	9.0	—	—	—	12.1	11.4	—
Live births	8,660	1,303	1,118	438	223	6,519	827	713	397	225
Annual rate per 1,000 persons living ..	—	—	22.5	28.1	—	—	—	14.3	25.6	—
Stillbirths	295	28	36	—	—	202	26	23	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	31	—	—	—	—	31	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales, and Eire.

EPIDEMIOLOGICAL NOTES

Paratyphoid in Sheffield

In the week ending Oct. 26 there were 71 additional cases of paratyphoid B notified in Sheffield C.B., as against 12 cases in the preceding week. Cases appearing since then and including some adults have brought the number of notifications up to 126 on Nov. 5. The source of the outbreak, which has chiefly affected children under 10, has still not been determined.

Discussion of Table

In *England and Wales* the incidence of scarlet fever declined by 58, while increases were recorded for measles 380, acute pneumonia 56, paratyphoid 16, dysentery 13, and whooping-cough 13.

There was a small general fall in the number of cases of scarlet fever which had been increasing continuously for the past six weeks; the largest decrease was Essex 21. The chief increases in the notifications of measles were Lancashire 212, Yorkshire West Riding 69, Kent 46, and London 44; the largest fall was Devonshire 56. The local trends of whooping-cough fluctuated and the largest variations were rises in Lancashire 50 and Norfolk 25. Of the 22 cases of paratyphoid 15 were notified in Yorkshire West Riding (Sheffield C.B. 12). Returns for diphtheria showed increases in Lancashire 12 and Glamorganshire 12 and a decrease in Warwickshire 10. A fresh outbreak of dysentery was notified in Oxfordshire. Bullington R.D. 13; the only other large total was Lancashire 11.

In *Scotland* the chief features of the returns were rises in the notifications of measles 96 and dysentery 19. The rise in cases of dysentery occurred in the burghs of Glasgow and Airdrie, where 19 and 11 cases, respectively, were notified during the week.

In *Eire* the incidence of measles increased by 17 while decreases were recorded for scarlet fever 15 and whooping-cough 12. The notifications of diarrhoea and enteritis slightly increased to 63, of which 48 were reported in Dublin C.B.

In *Northern Ireland* a further 15 cases of typhoid were reported from Armagh U.D., where last week 25 cases were notified. The notifications of whooping-cough in Belfast C.B. rose from 15 to 48.

Births in the September Quarter

The Registrar-General for England and Wales has announced that 213,135 live births were registered during the third quarter of this year. This is equivalent to a birth rate of 19.7 per 1,000, the highest recorded in any quarter since June, 1923, and is 4.1 and 4.5 above the rates for the third quarters of 1945 and 1938, the last complete pre-war year. The average rate for the September quarters during 1940-4 was 15.4.

Venereal Diseases

The incidence of venereal diseases, which are not notifiable, has in the past been estimated by the number of cases treated at the clinics. In recent years this estimate has been affected by the introduction of sulphonamides. This made it easy to arrange private rather than clinic treatment, especially for cases of gonorrhoea. Now that penicillin is superseding the sulphonamides the number attending clinics is likely to rise again.

The number of cases of early syphilis—infections of less than one year—was first recorded in 1931. From this date until 1939 a continuous fall was observed from 9,104 to 4,926. During the war this trend was reversed and a steady increase took place until 1945, when the cases reached a total of 10,741. The sex ratio also changed considerably. During 1931-9 the number of male cases was two and a half times the number of female cases. In 1945 the females infected slightly outnumbered the males. As a result of this changing distribution male cases of early syphilis in 1945 were 146% of the 1939 figure while the female cases showed an increase of 391%.

The approximate number of new infections with gonorrhoea: both civilian and Service cases, showed a similar trend, rising from 43,400 in 1939 to 58,797 in 1944. The sex incidence of this disease also changed. In 1939 there were 2.7 males to 1 female, whereas in 1944 the ratio had fallen to 1.3.

Vital Statistics in New Zealand

The following summary of vital statistics for the year 1945 shows again how favourably the figures for 1,593,513 Europeans compare with those for 98,007 Maoris. For Europeans

ternal mortality rate including deaths from septic abortion 2.24 per thousand live births, as compared with 2.71 in 14-5. After excluding deaths from septic abortion the rate is 1.95 (2.14 in 1944). Maori figures for maternal mortality : not available.

	European	Maori	Combined
th-rate per 1,000 population ..	23-22	47-38	24-62
th-rate per 1,000 population ..	10-07	16-68	10-46
int mortality rate per 1,000 live	27-99	83-93	34-79
inths			
th-rate, tuberculosis, all forms	3-78	37-02	5-77
er 1,000 population			

Week Ending October 26

The notifications of infectious diseases in England and Wales ring the week included: scarlet fever 1,209, whooping-cough 199, diphtheria 314, measles 2,884, acute pneumonia 436, rebronspinal fever 28, dysentery 59, acute poliomyelitis 31, ratyphoid 89, typhoid 9.

Medical News

The King, on the recommendation of the Secretary of State forotland, has approved the appointment of Dr. Hugh Brechinraigie to be a Medical Commissioner of the General Board ofontrol for Scotland. Dr. Craigie took a major part in developinge psychiatric services in the Middle East, and later became commanding officer of the Military Psychiatric Hospital, Bellsdyke,irlingshire. He is at present deputy superintendent of the Whittingim Mental Hospital, Preston, Lancashire.

A lecture entitled "The Country Doctor" will be delivered byr. William N. Pickles in the Hall of the Royal Faculty ofhysicians and Surgeons (242, St. Vincent Street, Glasgow) onWednesday, Nov. 13, at 4 p.m.

Sir Henaege Ogilvie will deliver the Bradshaw Lecture before theoyal College of Surgeons of England on Thursday, Nov. 14, atp.m. Subject: "Surgical Handicraft." The lecture is open toedical practitioners and advanced students, and tea will be servedom 4.30 p.m.

The Faculty of Radiologists announces that Sir Gordon Gordonaylor will give the Skinner Lecture, on malignant tumours of thesticle, at the Royal College of Surgeons, Lincoln's Inn Fields, onFriday, Nov. 15, at 2.30 p.m. The lecture is open to all members ofe medical profession. Other radiological meetings to be held inondon about that date have been arranged by the British Instituteof Radiology for Nov. 14, at 8 p.m., at 32, Welbeck Street, to discussindustrial skin cancer; and by the Radiological Section of theL.S.M. on Nov. 15, at 8 p.m., at 1, Wimpole Street, to discussray treatment of inflammatory diseases. A joint meeting of allthree radiological societies will take place on Dec. 13 and 14 fordiscussion on carcinoma of the stomach in all its aspects.

The Socialist Medical Association (35, Long Acre, W.C.2) hasarranged a winter programme of six lectures, to be given at 7.30 p.m. at Denison House, 296, Vauxhall Bridge Road, S.W. On Nov. 14Dr. F. R. G. Heaf will speak on social aspects of tuberculosis; onNov. 28 Dr. F. Avery Jones on social aspects of peptic ulcer; onDec. 12 Dr. J. Tyler Fox on social aspects of epilepsy; on Jan. 2Dr. A. T. M. Wilson on social aspects of medical psychology; onJan. 16 Dr. J. N. Morris on social aspects of juvenile rheumatism;and on Jan. 30 Dr. H. Joules on occupational hazards of the healthworker.

The Genetical Society announces a public lecture to be given onFriday, Nov. 22, at 5 p.m., at the London School of Hygiene andTropical Medicine, Keppel Street, W.C., by Prof. Tage Kemp,Director of the University Institute of Human Heredity, Copenhagen.Subject: "Multiple Factors in Morbid Inheritance," accompaniedby a film, "The Fat Dwarf." All interested are invited to attend.

The Food Education Society will hold a meeting in the library ofthe Royal Society of Arts, John Adam Street, Adelphi, W.C., onTuesday, Nov. 12, at 3 p.m., with Lord Horder in the chair, whenSir Jack Drummond, D.Sc., F.R.S., will give his inaugural addressas chairman of the Society.

A sessional meeting of the Royal Sanitary Institute will be heldat Nuneaton Council House on Saturday, Nov. 16, at 10 a.m., whenpapers will be read on "Housing in Relation to Health" and"Environmental Hygiene and Some Problems of the Future."

Wednesday clinical evenings at the Royal Hampshire CountyHospital, Winchester, will be held in the Board Room at 8.30 p.m.on Nov. 20, Dec. 18, Jan. 15, Feb. 19, and March 19.

In connexion with the meeting for inauguration of an Associationof Plastic Surgeons on Nov. 20, it has now been arranged to dineat the Royal College of Surgeons after the meeting. Diners areasked to notify the secretary, Sir Harold Gillies, 149, HarleyStreet, W.1.

The Empire Rheumatism Council has arranged a week-end courseon rheumatic diseases to be held at the Red Cross RheumatismClinic, Peto Place, Marylebone Road, N.W., on Nov. 22, 23, and24. The course is designed for medical students and consists ofthirteen lectures. Programmes may be obtained from the medicalsecretary, Empire Rheumatism Council, Tavistock House (North),Tavistock Square, W.C.1. The closing date for admission to thecourse is Oct. 31.

The Northern Area Surgeons of the St. John Ambulance Brigadewill meet in conference on Sundays, Nov. 10 and 17, at theBonnington Hotel, Southampton Row, W.C., from 2.30 to 6 p.m.

A medical conference will take place in Accra, Gold Coast, fromNov. 12 to 16 between representatives of the Colonial Office andthe French Ministry of France, Overseas. The Portuguese Govern-ment and the Government of Liberia are sending observers. Theconference will include medical experts from four British WestAfrican territories, Nigeria, the Gold Coast, Sierra Leone, and theGambia, from French West Africa, from Equatorial Africa and theFrench Cameroons, from the Belgian Congo, and from PortugueseGuinea and Liberia. The primary object of the conference is toarrive at an agreement regarding the local exchange of informationon medical and health questions of importance throughout WestAfrica and for more effective co-ordination and collaboration oflocal services engaged in the fight against disease.

New methods of attack on gastric cancer will be outlined at aconference to be held on Dec. 5 and 6 at the Billings Hospital,University of Chicago. Arranged by the Gastric Cancer Committeeof the National Advisory Cancer Council, this will be the thirdlarge conference on gastric cancer to be sponsored by the Council.The first one was held in 1940 at the National Cancer Institute ofthe National Institute of Health, which is the research division ofthe U.S. Public Health Service. As a result of these previousconferences, research departments of a number of schools ofmedicine and hospitals have taken a greatly increased interest inthe problem of gastric cancer.

The study of the "science of relationships" is the effort to con-sider the whole man in all his contacts with his environment in itsphysical, mental, and spiritual aspects. To further this study theChurch Missionary Society is calling the third Rural Life Con-ference which will be held at High Leigh, Hoddesdon, Herts, Jan7-10, 1947. It is hoped to assemble doctors, farmers, clergy,teachers, social workers from over-seas and at home to listen toeminent speakers on the problems of rural life and to join in dis-cussing in various commissions subjects related to the addresses.Applications for registration forms should be sent to the actingsecretary, Rural Life Conference, C.M. House, 6, Salisbury SquareE.C.4.

The 38th annual meeting of the Medical Benevolent Society for theEast and North Ridings of the County of York was held at Hullon Sept. 25, with the President, Mr. T. Ritchie Rodger, in the chair.The honorary secretary reported the death of two members, Dr. CHoward Jackman (a member since 1909 and honorary secretary from1933 to 1939) and Dr. George Sandys Belas (a member since 1922and president during 1944-5). Sympathy with the relatives wasexpressed. The honorary treasurer reported the Society as in asound financial state, and the one application for help submittedto the meeting was granted. Three new members were elected; aswere the following officers: President, Mr. T. Ritchie Rodger, Hull;Vice-president, Dr. G. F. Longbottom, Middlesbrough; President-elect, Mr. R. B. Blair, Hull; Hon. Treasurer, Col. N. T. Whitehead,Hull; Hon. Secretary, Dr. W. W. A. Kelly, 92, Micklegate, York.

A new organization to promote the education and rehabilitationof children suffering from cerebral palsy was formed at a meetingin the City Education Offices in Edinburgh on Oct. 31. Theorganization is to be called the Scottish Council for the Care ofSpastic Children, and the first president is to be Sir John Fraser, Bt.,Principal of Edinburgh University. An executive committee hasbeen formed under the chairmanship of the Rev. William Graham,secretary of Inverness-shire Education Committee, and Dr. Alex.Fraser, M.O.H. for Inverness-shire, has been appointed secretary.

Mr. Frederick Newland-Pedley, F.R.C.S., of Lago di Como, Italy,founder of the Dental School of Guy's Hospital, who died on May 4,1944, left £63,416 7s. 5d. After a number of bequests he left the residue of his estate to Guy's Hospital, for prizes and scholarshipsin connexion with the Dental School. Dr. John Price Williams, ofAmbleside, left £5,296 10s. 7d.; Dr. Arthur Walton Peake, ofBristol, £34,826 2s.; Mr. Edward Baines, of Whitby, Yorks.,£29,405 6s. 3d.; and Dr. George Arbour Stephens, of Swansea,£27,116 14s. 11d.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Hyoscine for Seasickness

Q.—Is it safe to give hyoscine as a prophylactic for seasickness in a nursing mother?

A.—Hyoscine is rapidly destroyed in the tissues and only minute traces appear in the milk; thus there should be no danger in prescribing it for a nursing mother. Holling, McArdle, and Trotter (*Lancet*, 1944, 1, 127) investigated the value of drugs in the prevention of seasickness and, of many tested, found hyoscine by far the most effective.

A satisfactory method is to give a tablet containing 1/200 gr. (0.32 mg.) by mouth four hours before sailing, again at the time of sailing, and subsequently four-hourly until four tablets have been taken. On the second and third days 1/200 gr. is taken at 8 a.m., 12 noon, and 4 p.m. More than four tablets in twenty-four hours should never be prescribed. It is seldom necessary to continue after the 8 a.m. tablet on the third day.

Amphetamine for Air Travel

Q.—A patient complains of a severe pain in her temples when travelling by air. It comes on only when descending from a height and remains for some hours after landing. Can you suggest any remedy, and, if she persists in flying, will permanent injury to the ears be likely to result?

A.—This is most unlikely to produce any permanent injury. It is possible that relief may be obtained by the use of an amphetamine inhaler while at high altitude to ease any lack of complete patency of all cavities during descent.

Antrum Infections and Idiopathic Steatorrhoea

Q.—Is it known whether a chronically infected antrum has any effect on adult idiopathic steatorrhoea, and are the risks of operation in such cases greater than in a normal person?

A.—There is no evidence that the presence of a chronically infected antrum has any significant effect upon the course of idiopathic steatorrhoea. Such patients do not appear to be more liable to infection than other members of the community. If a serious degree of anaemia is present the blood should be raised to an adequate level by transfusion. If operation is indicated, on account of the antrum alone, it should be carried out.

M.D.U. Malta

Q.—Can you give any information regarding qualification in medicine in Malta, and/or reciprocity with this country? Can you add any further relevant details, such as schools of medicine, qualifications bestowed, etc., or indicate a source to which I may apply for further particulars?

A.—Reciprocity has existed between this country and Malta since 1901. Any person in possession of the qualification of Doctor of Medicine granted by the Royal University of Malta (M.D.U. Malta), and of the Governor's licence to practise in Malta, is eligible for registration in the Medical Register kept by the General Medical Council, upon complying with the usual requirements of the Council as to evidence of character and on payment of the necessary fee. Further particulars may be obtained from the Dean of the Faculty of Medicine of the University.

Penicillin for Latent Syphilis

Q.—Can penicillin be used to accelerate the cure of latent syphilis contracted four years ago?

A.—Yes. A total dosage of 4,000,000 units is recommended. This may be given by means of intramuscular injections each of 30,000 to 40,000 units three-hourly, or of 300,000 units twice in the twenty-four hours. Arsenic and bismuth should be employed as well immediately after completing the course of penicillin; the amounts will depend on the results of blood tests. In any case, it would be wise to have the cerebrospinal fluid tested without delay, and adjust continuation treatment according to the findings.

Subtrochanteric Osteotomy

Q.—A male aged 70 has advanced osteo-arthritis of the left hip, which is painful and more or less fixed in partial flexion, with marked adduction. Would subtrochanteric osteotomy, if successful mechanically, relieve or remove the pain, which is at present almost constant?

A.—Subtrochanteric osteotomy is of recognized value in osteo-arthritis of the hip for the correction of deformity. It is probable that pain would also be relieved, because of the abnormal posture and the stresses connected therewith are important factors in its production; but it would not be justifiable to give an absolute undertaking that pain would completely disappear, as there may be other influences at work. It would, however, appear that such an operation should be recommended as making life much more comfortable.

Varicose Veins and Menstruation

Q.—A woman of 34, with one child aged 3, complains that since her confinement each period is preceded, and accompanied for the first two days, by severe aching in the left foot and leg. She has a slightly varicose vein, which is tender. Erythematous patches appear on the inner aspect of the foot, where there is a small venous swelling which is also tender to the touch. Can you advise me as to diagnosis and treatment?

A.—The blood supply to the pelvic organs is increased before and during menstruation, and the circulation in the legs is usually affected as well. This latter is not obvious as a rule but tends to show up if the circulation is already impaired. Thus varicose veins are nearly always more distended and painful at this time. All the signs described in this problem could be explained on the basis of a vascular change of this sort. The fact that the symptoms date from pregnancy may be because the varicose veins only developed or became worse during that pregnancy, or the patient may have suffered a deep thrombosis during the puerperium. Treatment in the first place should be directed to the varicose veins, bearing in mind this last possibility.

Risk of Tetanus in Factories

Q.—Is a factory medical officer treating small but contaminated wounds justified in omitting to inject tetanus antitoxin? Does this involve any medico-legal risk?

A.—The injection of tetanus antitoxin in factory workers with minor injuries is not an accepted medical practice, and the medical officer who does not do so would not ordinarily be penalized if cases of tetanus should occur following a minor injury in the workshop. Where the risk is greater, as in a penetrating wound in a worker in an outside yard where contamination with dust or dirt containing the dried excreta of domestic animals is likely, antitoxin might well be given. It seems to be the general experience that tetanus rarely occurs among factory workers suffering minor or even more serious injury.

Pertussis Vaccine

Q.—Is there a phase of increased susceptibility following the injection of pertussis vaccine? Should a smaller initial dose be given in epidemics to those who may be contacts?

A.—It must be pointed out that there is as yet no unanimity about the value of active immunization against pertussis. The whole problem is being studied by the Medical Research Council. There is no evidence to suggest that a child

ceptibility to pertussis will be temporarily increased after action of vaccine. The so-called negative phase is not wadays regarded as having any practical significance apart from the fact that, if the inoculated person has some systemic infection after an injection, for example, of T.A.B. vaccine, he may be temporarily less resistant to infections of any kind. Whether an injection of vaccine in an individual already in the early stages of infection will aggravate the illness, as has been claimed to be the case in typhoid fever ("provocation" theory), is a matter for argument. For pertussis it has been the custom in Denmark to give small doses of vaccine at two-three-day intervals to contact children who may be already in the early stages of infection, with apparently good effect. For young children who are intimately exposed to the risk of infection some arrangement for combined passive-active immunization, as has proved useful in diphtheria, would probably be most effective.

Gold Wishbone Contraceptive Appliance

Q.—A married woman with three children has asked me to help her with a gold wishbone contraceptive appliance. The diminutive Dutch cap and a chemical pessary have proved ineffective in her case. I should like to know: (1) How are these appliances fitted? (2) Are they worn continuously? (3) Are they really 100% safe? (4) Do they cause cervicitis to any significant degree? (5) Are they as dangerous as they are made out to be?

A.—1. The appliance is usually fitted by compressing the arms of the pessary together and slipping a small gelatin cap over the air tips. They can then be pushed through the cervix into the cavity of the uterus. There the gelatin melts and the arms ring apart to grip the uterine walls.

2. It is worn continuously for varying periods, but preferably for not longer than three weeks, after which it is removed, left out for a few days to give the uterus time to recover from any injury, and then reinserted. Although the stem and cap are hollow and allow menstrual blood to escape, the best time to remove it is just before menstruation, reinserting it when the flow has ceased.

3. No. They do not prevent conception but act by inducing early abortion or by preventing implantation of a fertilized ovum. Even so pregnancy is not always interrupted, and has been known to go to term with the "wishbone" still in place.

4. They certainly cause cervicitis to some degree, but what is more important is that they damage the endometrium. This may be followed by infection which is not always confined to the uterus.

5. Yes. The questioner should also note the objections to the "silver" or "Grafenberg" ring, a slightly different contraceptive device, about which the Family Planning Association has recently issued a warning (Oct. 19, p. 599).

INCOME TAX

Miscellaneous Inquiries

M. O. asks for information on a number of points, the nature of which will be seen from the following replies.

* (1) Whether a wife acts as assistant or partner to her husband does not affect the total amount of tax payable, except that in the first year in which she acts as assistant she is liable to tax for that year, but, as the husband is assessed on the basis of the previous year's profits, it does not reduce his liability until the following year.

(2) The fact that "the garage is in a ruinous state" does not affect the Land Tax, and the Rating Authorities are not likely to make any reduction unless it is clearly so damaged as to be practically destroyed.

(3) The cost of repairing those portions of the premises which are used in the practice is allowable—except in so far as it may be claimable as "War Damage."

(4) Broadly, payments for accident and sickness benefit are not allowable for income tax purposes. A reply as to the payments to the pension fund for widows cannot be given without particulars as to the identity of the fund and the precise nature of the contract.

(5) The salary as locum tenens comes within P.A.Y.E., but the local Tax Office may exclude it and bring it into the general receipts if application is made in time.

(6) Necessary travelling expenses between various clinics at which paid professional work is done are allowable.

(7) As regards books, the cost of keeping the private reference books up to date is allowable.

(8) The cost of replacing professional equipment is allowable, but the original cost is in the nature of capital outlay and is not allowable. Instruments are not regarded as plant and machinery and do not carry a claim to depreciation. Such personal instruments as aids to sight or hearing are outside the income tax field altogether.

(9) The cost of repairs to or replacement of a typewriter are allowable.

(10) The income tax consequences of marriage take effect from the date of the marriage whether the spouses then lived together or not.

Cost of Maid

"XYZ" considers that about half the time of the maid is spent on the professional work, but says that if she were not required for that work the cost of the sort of maid that would be kept would be less than half the cost of the present maid.

* The invariable rule adopted is to divide the actual cost according to the ratio of the time spent on the professional side of the maid's work. It is unlikely that the inspector—or if an appeal were made, the Commissioners—would adopt a different basis on the hypothesis suggested.

"Free Board and Lodgings"

"Locum" received a salary and "free board and lodging" while acting as locum tenens. The inspector of taxes regards the value of the free board and lodgings as assessable.

* Benefits provided in kind and not transferable into money are not assessable, and *prima facie* the inspector's action is incorrect. The position would be different if, for instance, "Locum" was primarily liable to a third party for the cost of his board and lodging and his principal paid for him; that would be tantamount to a payment in cash to "Locum."

Car Transactions

R. joined a practice in January, 1946. The accounts of the practice are made up to April 5 each year. He bought a car for £400 in March, 1946, used it for three months, and then sold it for £500. He bought another car in July for £250 and spent £50 on repairing it. It is presumed that the practice is not being treated for income tax purposes as a new one as from the date on which R. joined it.

* The income tax assessments will, of course, be made on the firm and not separately on the individual partners: the question is what will be the effect of these transactions on the firm's assessment. The answer is that they will not affect the assessment for 1946-7, but as regards 1947-8 the first car will give rise to a "balancing charge" of £500-£400=£100, and the second car to an "initial allowance" of 20% of £250=£50 plus a wear-and-tear allowance of 25% of £250=£62 10s., together with the deduction of the £50 spent on repairs. That is on the assumption that the second car remains in use up to April 5, 1947.

J. M. is employed by a County Council. Under the terms of his agreement he must own a car and use it on the Council's work. He used a County Council vehicle until he was able, on August 25, 1946, to buy a car for £575. What allowances is he entitled to for 1946-7 and 1947-8?

* 1946-7.—(a) Initial allowance—20% of £575=£115, and (b) wear-and-tear allowance of 25% of £575 for the period Aug. 25, 1946, to April 5, 1947—say, £88; total £203. 1947-8.—Wear-and-tear allowance—25% of (£575-£203=) £372—i.e., £93. The above must be taken with the following qualifications—(i) J. M. will have to bring into credit the mileage allowance he receives less running costs, insurance and other car expenses; (ii) as the statute authorizes the deduction of such expenses only as are "necessary" in the performance of the duties, some adjustment may be called for if the car is unnecessarily commodious, etc.; and (iii) the expenses incurred and the above allowances will be restricted (if necessary) to allow for any private use of the car.

G. S. has a car which he bought for £200 five years ago but "is now worth £800." He wants to bring it into the practice in order to claim depreciation on it—up till now it has been stored and used occasionally "but not as a practice car." At what value can it be brought in?

* The depreciation allowance is given for a car in use for the purposes of the practice at the end of the year which provides the basis for the assessment. Assuming that the practice accounts are made up as at Dec. 31, and that the car is brought into use before Dec. 31, 1946, the earliest income tax year for which a claim can be made is 1947-8. The allowances are given to meet the amount spent in acquiring the car, and the total allowances cannot exceed the actual cost to the individual claiming the allowance. The maximum value on which the allowances should be based is £200.

LETTERS, NOTES, ETC.

Midwife and Doctor: Conduct of Labour

Dr. A. W. PURDIE (London) writes: The question put to Miss Meave Kenny by the midwives to whom she was lecturing on "The Prevention of Puerperal Sepsis" (Oct. 26, p. 638) is an important one. Obviously these midwives are in the habit of wearing masks while conducting confinements. From time to time I am called, in a consultant capacity, to attend at a confinement which is taking place either in the patient's own home or in a nursing home. From my own observation I know that many doctors and midwives do not wear a mask while conducting a labour. The more senior may not yet have begun to use masks. The younger and more junior, who have been taught their use, can easily slip into bad habits. Are there not potent remedies nowadays against puerperal infection if it should occur? Why then trouble to wear a mask? All would probably agree, if challenged, that prevention is better than cure. But everyone who teaches medical students or student-nurses knows how important is constant and untiring repetition in driving home essential facts. And even then how easily these are forgotten! The well-informed criticism of Miss Kenny's audience should be encouraged. It is a tribute both to the keenness of its members and to the early teaching which they received. I must confess to some surprise, however, on reading what Miss Kenny suggested the midwife should do when a doctor, whom she had called in, did not wear a mask. A man may be led but he will not be driven. I should have answered: "If I were a midwife I should carry a spare mask in my bag. If the doctor whom I called in did not wear a mask I should say casually to him, 'I see you have forgotten to bring a mask, Dr. X. I have a spare one with me. Perhaps you would care to use it.'"

Dr. W. ARNOTT (Totland Bay) writes: Dr. Meave Kenny (Oct. 26, p. 638) makes the amazing suggestion that it is the duty of a midwife to walk out of a confinement ease and report to the M.O.H. if a doctor with whom she is attending declines to wear a mask at her request. I would submit an emphatic negative to this and maintain that no action on her part is called for. The doctor's responsibility is towards his patient, and his action will be ruled by his conscience, judgment, and experience. I have been sorry to see signs of distress of mind of late in midwives on this score: it is so unnecessary. In forty years of midwifery and over 1,000 cases I have not seen a case of puerperal fever attributable to respiratory infection. The few I have had, countable on the fingers of one hand, other than a few calls on midwives' orders to pyrexia cases, have arisen from accidental and extraneous causes such as the occurrence of scarlet fever in the house. I have not worn a mask except on odd occasions when suffering from a catarrhal cold. I am willing to submit my record to Dr. Kenny or to the Central Midwives Board, and my conscience is clear. The profession should stand firm against any muzzling order such as Dr. Kenny proposes.

Dr. W. EDWARDS (Ashstead) writes: Dr. Meave Kenny (Oct. 26, p. 638) draws a pathetic picture of 120 distressed midwives appealing for her advice. What are they to do if they call in a doctor to a difficult confinement and the doctor won't wear a mask? Not for Dr. Kenny the obvious retort that they should mind their own business, realize that the responsibility rests now with the doctor, and just try to be helpful. Dr. Kenny took a grim view. She advised these worthy women to draw the doctor's attention to his fall from grace. If he should then be obdurate, they should inform him that the consequences were on his own head, and withdraw from the case. At which the County Medical Officer of Health, doubtless an experienced obstetrician, could searce forbear to cheer. This, presumably, is the sort of gestapo spirit we shall have to endure in the State medical service. Those dressed in brief authority over us will not be satisfied in telling midwives to strike if the rules are not obeyed. Theatre sisters will walk out if surgeons wear the wrong-sized gloves. Chemists will shut their shops if prescriptions are undated. Physiotherapists will throw in the talcum if asked to use infra-red when the rules say ultra-violet. What a lovely spirit of co-operation we are going to have!

Recurrent Bee Stings

Dr. MARGARET D. WRIGHT (London, W.) writes: The paragraph on recurrent bee stings (Sept. 28, p. 479) prompts me to record my experiences. Having been subject to more than one alarming anaphylactic attack, the most serious of which entailed a week in bed, I gave up bee-keeping myself. More than 20 years later I acquired more stocks and after a number of minor stings had another severe anaphylactic attack which was treated with adrenaline. The treatment suggested using ephedrine hydrochloride prophylactically at least half an hour before opening any hive. I have used this steadily over the last three summers, and, although on some occasions I have been badly stung, yet the pre-

monitory symptoms of an anaphylactic attack have never been more pronounced than the tingling felt throughout the palms of the hands and the soles of the feet, together with slight swelling of the lips. No major discomfort has been experienced and the swelling has subsided in a day or two. Swelling does tend to be severe, however, from any occasional sting. It is hard for a bee-keeper to give up his hobby and I myself have no hesitation in carrying on with this protection.

Sex Determination

Dr. F. T. B. LQVEGROVE (Wongan Hills, W. Australia) writes: In the *Journal* (Aug. 10, p. 216) I notice mention of Dawson's theory that one ovary makes male-producing eggs and the other female. If your expert's statement that there is no scientific basis for the theory merely means that it remains to be proved or disproved (despite the unassailable theory quoted in the preceding paragraph) the following case may be of interest to him. In June, 1938, I performed a laparotomy on a woman in whom I found an abdomen full of blood. The right ovary was split almost in half, presumably due to a ruptured Graafian follicle. The most satisfactory way to control the bleeding was to remove the ovary, and I did so. This woman has since had three children—two boys and one girl.

Doctor's "Lines" for Glucose, etc.

Mr. ROBERT S. WHITELAW, M.P.S., writes: A doctor's "line" on account of its "time honoured" illegibility has been the subject of many a good-humoured story both inside and out of the profession. My immediate appeal to doctors does not concern their handwriting (though that is still the cause for frequent profanity) so much as the simple "line" given for commodities in short supply. I am sure I am voicing the opinion of most pharmacists when I say that shortages would not be so acute if doctors generally gave more time to considering necessity before granting a prescription for glucose, olive oil, malted milk, etc. I have had one "signed order" which, if fulfilled, would practically exhaust my entire quota of glucose. This is of course exceptional, but it serves as an illustration of the fact that better supplies would be available for genuine requirements' if "lines" were only given when medically required.

Cables from Canada

The following cable has been sent to the British Medical Association by Dr. George Ramsay, President of the College of Physicians and Surgeons of Ontario: "Canadian medical profession regret misunderstanding of references concerning British nurses made by Hamilton Bailey at London, Ontario, meeting. His reference was small part of broad discussion of national shortages and particularly stressed nurses' weariness following extended war effort. We did not regard it in any way as reflection on professional efficiency and loyalty."

Mrs. Hamilton Bailey has also received a cable from Mr. C. M. Carruthers, F.R.C.S., in the course of which he said: "Mr. Bailey at no time during his lecture or otherwise made a statement derogatory to the nursing profession in Great Britain or any other country."

Apparatus for Trichlorethylene In Midwifery

Dr. JOHN W. SCHOLEY writes from Sleaford, Lincs: As I have so far been quite unable to obtain a Clover's inhaler for use with trichlorethylene in midwifery I would welcome any readers' views on the use of an Oxford vaporizer in the same capacity using trichlorethylene as the anaesthetic.

Digital Traction

Mr. H. P. MALCOLM, M.Ch. (Belfast), writes: Dr. K. M. MacLeod (Oct. 26, p. 614) will find traction from the nails described in *The Thomas Splint and its Modifications in the Treatment of Fractures*, by Meurice Sinclair, C.M.G., published in 1927 by the Oxford Press.

"In My Fashion"

Mr. P. A. MORAN (Oxford University) writes: The reviewer of my father's book *In My Fashion* did not read the book very carefully. My father did not serve with the Italian army in Abyssinia. He went there with a party of American and foreign journalists.

Varicose Ulcers and Penicillin

Dr. P. L. RENOUF (Hayle) writes: Referring to Dr. W. T. E. Blackmore's letter (Sept. 28, p. 480), I am not convinced that cleansing a varicose ulcer thoroughly with warm saline, and applying a dressing of penicillin cream once weekly, adds any beneficial effect to the overlying tight supporting bandage from foot to knee described by Dr. Blackmore. Nor can I see from my own experience, in the majority of cases, that anything but delay is caused by withholding surgery and injection until the ulcer is healed by less effective methods.

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CRIMINAL JUSTICE BILL

RECOMMENDATIONS BY THE B.M.A.

the document printed below containing observations on, and recommendations for amendment of, certain clauses in the Criminal Justice Bill, has been drawn up by the British Medical Association and sent to the Home Office by the Magistrates Association.

General.—Throughout the Bill the substitution of the words "agree to mental treatment" for "required to submit to mental treatment" is recommended.

Clause 5 (5) (c).—"the expression 'local authority' means the local authority liable in accordance with the provisions of this Act to defray the expenses of the probation committee, or, where two or more local authorities are so liable, such one of those authorities as may by agreement between them be appointed to act, either generally or in a particular case, for the purpose of this section." After the initial use of the words "local authority" the word "authority" might well be substituted for "local authority" in the definition since the subsequent use of the term "local authority" appears to be redundant and likely to lead to difficulty.

Clause 10 (1).—"The Secretary of State may provide places to be called 'remand centres,' in which persons of not less than fourteen nor under twenty-three years of age, who have been remanded or committed for trial or sentence and are not released on bail, may be detained." (a) This provision, which covers the dangerous gap after 17 years of age, is welcomed. (b) In view of the wide range of ages covered, provision should be made for the grading and grouping of the persons concerned.

Clause 10 (2).—"The Secretary of State shall provide in remand centres facilities for the observation of any person detained therein whose case a report may be desirable for the assistance of the court in determining the most suitable method of dealing with his case." It is important that where a report is required to assess the mental condition of an offender in a remand centre, it should be made by a psychiatrist with adequate knowledge of mental deficiency and child psychiatry.

Clause 11 (1).—"The Secretary of State may provide, in addition to the remand homes provided by the councils of counties and county boroughs, one or more remand homes, to be called State remand homes. . . ." Provision for two types of remand homes is unnecessary and all remand homes should be provided and maintained by the State.

Clause 11 (2).—"The Secretary of State shall provide in State remand homes, and the councils of counties and county boroughs may provide in remand homes provided for their areas, facilities for the observation of any person under seventeen years of age on whose mental condition a medical report may be desirable for the assistance of the court in determining the most suitable method of dealing with his case, and any such council may, if facilities for observation are available at any other institution or place, arrange for the use of those facilities for the observation of any such person as aforesaid who is detained in a remand home provided for the area of that council." (a) The provision should be made obligatory, not permissive. (b) The facilities should be available for persons up to 23 years of age.

Clause 19 (1).—"Where a court is of opinion that it is expedient to make a probation order and is satisfied on the evidence of a duly qualified medical practitioner that the mental condition of the offender is such as requires and as may be susceptible to treatment but is not such as to justify his being certified as a person of unsound mind under the Lunacy and Mental Treatment Acts, 1890 or 1930, or as a mental defective under the Mental Deficiency Acts, 1913 to 1938, the court shall have power to include in the probation order a provision requiring the probationer to submit, for such period not extending beyond twelve months from the date of the order as may be specified therein, to treatment by or under the direction of a duly qualified medical practitioner with a view to the improvement of the probationer's mental condition." (a) The provision should apply to supervision as well as probation orders. (b) The

period should not be limited to 12 months. The order should be reviewed after 12 months, and if considered desirable extended for a further period or varied to suit the circumstances.

Clause 19 (5) (b).—"while the probationer is under treatment as a voluntary patient or as a resident patient, the probation officer responsible for his supervision shall only carry out the supervision to such extent as may be necessary in connexion with the variation or cancellation of the said provision." It is undesirable that the probation officer's responsibility should be so limited, as she may often be able to play a useful part in the restoration of the patient. It is suggested that the Bill should indicate that the probation officer should be encouraged to befriend the patient while under treatment.

Clause 26 (1).—"If within three months of the making of a probation order an application is made to the supervising court by the probation officer responsible for the supervision of the probationer and the court is satisfied on the evidence of a duly qualified medical practitioner that the probationer is a person in whose case a provision could, if the probation order were then being made, be included therein under section nineteen of this Act, the court may, with the consent of the probationer, insert in the probation order a provision requiring the probationer to submit, for such period not extending beyond twelve months from the date of the amending order as may be specified therein, to any such treatment as is mentioned in the said section nineteen." It is suggested that the opening words should read: "If at any time during the year . . ."

Clause 26 (3).—"Where the probation officer responsible for the supervision of a probationer receives a report made under the last foregoing subsection, or is of opinion that the probationer cannot for any reason continue to receive treatment for his mental condition by or under the direction of the person, or at the place, specified in the probation order, or in charge of the person so specified, the probation officer shall make application to the supervising court and that court may, with the consent of the probationer, make such amendment of the order as appears to the court to be proper, or may by order cancel the provision requiring the probationer to submit to such treatment as aforesaid." The period should not be limited to 12 months. The order should be reviewed after 12 months, and if considered desirable extended for a further period or varied to suit the circumstances.

Clause 26 (4).—"An order under this section cancelling a provision may be made without summoning the probationer." The probationer should nevertheless be notified of the cancellation.

Clause 42 (1).—"Where a person is charged before a court of summary jurisdiction with an offence for which the court has power to pass a sentence of imprisonment, and the court is satisfied that the offence has been committed but is of opinion that an inquiry ought to be made into the mental condition of the offender before the method of dealing with him is determined, the court shall remand him in custody or on bail (with or without sureties) for such period or periods, not exceeding three weeks in the case of any single period, as the court thinks necessary to enable a medical examination and report to be made." (a) The group of persons for which the provision is made is not comprehensive enough. It should include separation and maintenance cases, young persons beyond control, and persons requiring care or protection. (b) Provision should be made for the payment of a fee for the medical examination and report. Funds should be made available for the purpose. (c) It is suggested that the words "by a duly qualified medical practitioner" be added to the end of the Clause.

Clause 43 (1).—"Where a person is charged before a court of summary jurisdiction with an offence for which that court has power to pass a sentence of imprisonment, and the court is satisfied that the offence has been committed and is satisfied on the evidence of at least two duly qualified medical practitioners that the offender is of unsound mind and is also satisfied that he is a proper person to be detained, the court may, in lieu of dealing with him in any other manner, exercise the powers conferred by this section." The clause should be extended to cover mental defectives who cannot be treated under the Mental Treatment Act.

Clauses 43 (3) and 43 (5) (b).—"If no such arrangements as aforesaid have been made, the court may order him to be taken to and received in a hospital or part of a hospital approved for the purposes

of section nineteen of the Mental Treatment Act, 1930, by the council of the county or county borough comprising the petty sessional division for which the court acts, or in a workhouse belonging to the said council, or may, if it is satisfied that proper care will be taken of the offender in the meantime, adjourn the case with a view to enabling such arrangements as aforesaid to be made; and where the court adjourns the case in accordance with this subsection and it is notified, before the expiration of the period of the adjournment, that a reception order has been made in relation to the offender, it may discharge him without requiring his further appearance." "The provisions of the Lunacy and Mental Treatment Acts, 1890 to 1930, shall have effect as if—(b) any order made under subsection (3) of this section for the reception of an offender in a hospital or part of a hospital or workhouse were an order made under subsection (1) of section twenty-one of the said Act." The words "suitable institution" should be substituted for "workhouse."

PROTECTION OF PANEL PRACTICES IN LONDON

At the last meeting of the London Protection of Practices Committee the following report of the administrative officer of the London Insurance Bureau (the bureau which operates the panel side of the Protection of Practices Scheme in London) was submitted, and the committee felt that it was of such general interest that other areas would like to see it.

On Dec. 31, 1943, the number of insured persons on the lists of absentee practitioners who were credited to acting practitioners was 111,071. At that time the number of absentees was 380. After that date the numbers declined quarter by quarter as practitioners returned to their respective practices, and by March 31, 1946, the number of insured persons had been reduced to 31,538 and the number of absentee practitioners to 126.

The capitation fee per annum paid in respect of the insured persons on the lists of acting practitioners was as follows:

Year	Rate per Unit
1939 (September to December—4 months only)	8s. 1-376d.
1940	11s. 9-253d.
1941	11s. 8-367d.
1942	9s. 11-404d.
1943	8s. 5-447d.
1944	8s. 4d.
1945	8s. 3-815d.
1946 (January to March—3 months only)	4s. 8-8d.

An examination of the lists of 94 of the practitioners who have returned has been made. It discloses a total National Health Insurance credit at the date of return of 70,454, and of that number 47,688 persons, or 67% of the lists of the absentees, had been accepted by acting practitioners. The figure affords an interesting index as to the number of insured persons on the list of an insurance practitioner who required treatment assuming, of course, that only those persons in need of treatment were accepted. I am inclined to doubt the strict accuracy of this assumption.

Further analysis of the number of 47,688 persons shows a very wide distribution among acting practitioners. At the beginning it was thought that the patients of an absentee practitioner would distribute themselves among, say, four or six neighbouring practitioners, whereas, taking all cases into consideration, it has been ascertained that to provide treatment for over 100 insured persons on the lists of absentees the services of six acting practitioners were enlisted. Owing to the proximity to the surgery of an absentee practitioner or for some other special reason, acting practitioners in some cases accepted responsibility for more than 100 of the insured persons of a neighbouring absentee. If these cases, which represent nearly one-half of those under notice, are excluded, the remainder shows an even wider distribution—viz., twelve acting practitioners to every 100 provisional patients.

The practice of an insurance practitioner in London ordinarily extends two miles from his surgery (North, South, East, and West) with the exception that the River Thames forms a natural line of demarcation. This gives a "practice area" of twelve and a half square miles. Patients on the boundary of a "practice area" were free to select an acting practitioner two miles from such boundary, and the area within which some patients of an absentee practitioner might conveniently find an acting practitioner was thus increased from twelve and a half square miles to fifty square miles. This may partially account for the very wide distribution of patients. I may say that every effort was made to afford protection in a very strict sense to the practice of an absentee practitioner, and in a few cases in which doubt might have arisen as to the validity of a removal transfer the benefit of that doubt was given to the practitioner who was absent.

I append details of a few cases which are typical, showing the distribution of an absentee practitioner's patients. These relate only, of course, to the practices of practitioners who have resumed

practice, but there is no reason to think that the details are unrepresentative of the lists of all practitioners. Attention is also drawn to the number of acting practitioners who accepted the insured persons of particular absentees. These varied considerably.

Practitioner No.	Figure of Credit on Date of Return	No. of Insured Persons who Secured Acceptance by Acting Practitioners	No. of Acting Practitioners	Further Details
(a) 3,535	1,873	1,322	79	Two practitioners accepted 675 persons
(b) 3,749	1,578	1,083	74	Four practitioners accepted 653 persons; the remainder (430) went to 73 practitioners
(c) 2,706	3,165	2,275	54	2,036 persons of this practice went to one practitioner; the remainder (239) were accepted by 53 practitioners
(d) 4,909	715	520	54	Two practitioners accepted 335 persons; the remainder (185) were accepted by 52 practitioners
(e) 6,992	929	396	53	One practitioner accepted 129 persons; the remainder (267) were distributed among 52 practitioners
(f) 5,259	372	259	50	Only a small practice but 50 practitioners were involved
(g) 5,414	1,750	1,385	36	One practitioner accepted 1,312 persons; the remainder (73) distributed themselves among 35 practitioners
(h) 6,428	636	385	31	One practitioner accepted 332 persons; the remainder (53) were distributed among 30 practitioners
(i) 2,616	373	164	25	128 persons were accepted by one practitioner and 24 practitioners were involved in the remainder (36)
(j) 6,021	493	225	22	One practitioner accepted 199 persons; the remainder (26) were distributed among 21 practitioners
(k) 6,282	31	21	13	Only a very small practice but 13 practitioners were involved
(l) 7,718	26	9	6	Only 9 persons were concerned but these were accepted by 6 practitioners
(m) 6,429	8	5	4	Four practitioners accepted 5 persons between them.

A detailed analysis has been made of 94 cases, and the result shows that over 60 practitioners were involved in 5 cases, between 50 and 60 practitioners in 12 cases, between 41 and 50 practitioners in 16 cases, and between 31 and 40 practitioners in 18 cases.

It need hardly be mentioned that the work of notifying practitioners of the return of absentees was largely increased owing to the manner in which insured persons distributed themselves among acting practitioners, and in my opinion the very wide distribution of patients which occurred was a complete revelation.

J. C. GILBERT,
Administrative Officer.

MEDICAL SERVICES IN CEYLON

B.M.A. Branch Plan for Reconstruction

The Ceylon Branch of the British Medical Association has worked out a scheme for the reconstruction of the medical services of the island. The aims of the scheme are (1) to provide for an efficient system of medical education and services directed towards the attainment of health, prevention of disease, and relief of sickness, (2) to make available to every person all necessary medical services, and (3) to bring into existence a comprehensive medical service to effect these objects, with the necessary safeguards for the prospects and interests of the profession.

Shortage of Personnel

The scheme, which was agreed to unanimously at a meeting of the Branch early in the year, addresses itself first to the most urgent problem, that of the shortage of doctors. In Ceylon there is one doctor to nearly 9,000 people. Excluding 85 medical officers of health, there are about 700 doctors for a population of more than six millions; 400 of these doctors are in the Government service and 300 in private practice. Three thousand

is needed if the British minimum of one doctor to 2,000 people is to be attained. The output from Ceylon Medical College is some 28 doctors a year. Measures are suggested for increasing the teaching accommodation at the General Hospital, Colombo, which at present has not room for more than 100 students working at the same time. Recommendations are also made for postgraduate courses, and for a diploma in tropical medicine and public health, with a department at the University.

The shortage of nurses is also a dire problem. They number only 550, and if the minimum British standard of one nurse to 100 hospital beds were adopted, 4,000 nurses would be needed for the present accommodation in Ceylon hospitals, not to speak of the large increase in that accommodation which is likely to be necessary. Recommendations are made for recruitment, including the creation of a service of male nurses and of assistant nurses. Midwives, too, are scarce, and proposals are made for an increase to 300 in the number of pupils at the De Silva Maternity Hospital, where about 9,000 deliveries take place every year, and for the establishment of three other small training hospitals.

Hospital Needs

The report goes on to assess the hospital needs of Colombo, the capital, and the nine Provinces, based on density of population and mortality. It is urged that at the General Hospital, Colombo, there should be set up an advisory board, composed of Government officials and representatives of the industrial and business community, also a specially constituted board of management, with official and unofficial members, and a medical staff committee. Each of the Provinces should have one central general hospital staffed on the same lines as the metropolitan, with an advisory board, special departments, and so on; every district hospital with 50 beds should have at least one medical officer, and cottage and rural hospitals should be distributed throughout the island on a definite plan based on accessibility and density of population. Proposals are made for a maternity and child welfare service, including an increase in the very small number of obstetric specialists at present available, the appointment of two qualified paediatricians, and the setting up of neonatal clinics in every maternity unit.

Planning of Health Services

For the general planning of the services under a Ministry of Health two chief officers are proposed, one to have supervision of the preventive and the other of the curative side. The reason for not combining the two services is the fear that the organization would become preponderantly curative or preventive according to the bent of a single director. District councils of health are proposed, representing localities, and on these the medical practitioners and district health officers would serve. These district bodies would submit their plans to the Ministry, which would co-ordinate them in its general plan for the whole country.

Each group of schools with 6,000 or so pupils should have a medical officer attached to it, so that children could be examined on admission and annually and necessary prophylactic treatment be given. A forward movement is called for to combat tuberculosis, this to include the mass radiography of factory and office employees, investigation of contact infection in homes, special care of pregnant women with tuberculosis, improvement of the economic conditions of tuberculous patients, and adequate provision of beds. Another proposal is for the co-ordination of the present measures for dealing with malaria problems under the control of a central officer with institute and laboratory personnel. The creation of a department of industrial medicine is suggested because of the number of industries in the island which involve health hazards. For dealing with mental diseases a psychiatric clinic near the General Hospital, Colombo, is recommended, also a child guidance centre, a psychopathic hospital and observation home, and an asylum for the criminal insane. A dental service of a very thorough character is also outlined.

Doctors' Salaries

The present scale of pay of medical officers is compared with that of officers in corresponding Government services, and it is shown that after ten years of employment a higher salary

is paid in the police or the irrigation department than is attainable in twenty or more years in the medical department. After thirty years in the medical department the salary of an officer rises only to Rs. 9,000 (about £670). It is felt that there is no reason why the salaries of medical officers should be lower than those of the legal officers of the Crown, whose training is not so prolonged and is certainly not more exacting than that of medical officers. Therefore the new scale of salaries proposed for medical officers is the same as that for Crown Counsel, namely, Rs. 6,540 rising to Rs. 12,000 (£490 to £900), and for the highest posts among medical officers the same salary should be paid as for the legal officers of the Crown, namely £2,400 per annum.

The report is fortified at many points by references to the position in Great Britain, and it is evident that in working out the scheme the Ceylon Branch has studied very carefully the achievements and tendencies in the Western world.

PANEL CONFERENCE DINNER

At the close of the Panel Conference the representatives assembled at dinner at the Connaught Rooms, the members of the Insurance Acts Committee being the guests. Dr. J. A. Brown was in the chair, and among those present was Sir Hugh Lett, the President of the Association. Just upon 200 sat down at the tables, and the occasion was marked by great cheerfulness, to which the Scottish contingent contributed in a very large degree.

Dr. D. F. HUTCHINSON proposed the health of the Insurance Acts Committee and spoke of the outstanding leadership which insurance practitioners had enjoyed. Dr. E. A. GREGG, in responding, claimed for his committee that it was the best in the Association. The knowledge and aptitude of its members, he said, put their chairman in constant peril. He stressed again the necessity for the maintenance of unity in the profession.

The Dain Testimonial Fund

Dr. Gregg then formally presented to Dr. Guy Dain the Dain Testimonial Fund—a belated presentation, for the Fund had been in existence for some time and had already done good if modest service for the assistance of sons and daughters of medical practitioners in need of financial help for educational purposes. At the same time he handed to Dr. Dain, in token form, a tangible gift in the shape of three pieces of furniture of his choice—a corner cabinet, a table, and a desk. Dr. Gregg recalled Dr. Dain's outstanding services in the I.A.C. long before he reached the chair. It was due to his insistence that in 1923 the offer of the then Minister of a capitation fee of 8s. for five years or 8s. 6d. for three years was rejected, and an independent inquiry insisted upon, as a result of which an award of 9s. was made. There was another court of inquiry in 1937, when Dr. Dain, then chairman of the committee, presented the case with great efficiency and clarity, and countered with the skill of an advocate certain very questionable evidence presented on the other side. The Dain Testimonial Fund was completed in 1939 and would have been presented to him at the Panel Conference of that year but for the outbreak of war. At the moment it stood at rather less than £5,000. He formally handed it over to him with the great appreciation of all insurance practitioners for his exceptional services.

Dr. DAIN said that when the testimonial was organized he had felt, having received the Gold Medal of the Association as well, that his work for his profession might be considered to be completed, but events had turned out otherwise. He had done no more for the profession than many others, but the limelight had happened to fall on him and not on them. That being so, he felt when the testimonial fund was mooted that he should not accept the money for himself, but for some purpose of good in the profession, and the assistance of the children of doctors who had fallen upon misfortune suggested itself. The income from the Fund at present was small, but some deserving cases had been helped, and others had been referred to sources where help could be obtained. Many Panel Committees, for example, had funds which might be used for the educational assistance of doctors in their areas. He heartily

thanked all those concerned for the kindness shown to him. He had never understood those who said, when asked to do something for their profession or for some public cause, that they would probably never be thanked for it. One did not do this kind of thing for thanks, but for enjoyment and for the opportunities of fellowship and friendship which such service opened out. But in his own case the thanks had been forthcoming too, and he was grateful.

Dr. R. W. COCKSHUTT, in a witty speech, proposed the health of the Chairman, and Dr. BROWN replied with an amusing appreciation of his four colleagues—Drs. Dain, Wand, Gregg, and Hill—who had accompanied him to the Ministry when the invitation to reopen discussions on the capitation fee was received. Dr. CHARLES HILL, responding to the toast of "The silent service"—the secretaries and staff of the B.M.A.—concluded with a tribute to the excellent clerical staff of the Association, especially the clerk of their own Committee, Mr. Scrivener. Dr. L. S. POTTER, Secretary of the Committee, also made a brief acknowledgment, and the proceedings concluded with a vote of thanks to the Dinner Committee, proposed by Dr. J. A. IRELAND.

As a result of an appeal made from the top table a sum of £99 7s. was contributed to the Dain Testimonial Fund from the assembled hosts and guests.

HEARD AT HEADQUARTERS

The Plebiscite

The National Health Service Bill will presumably receive Royal Assent before this issue of the *Journal* reaches its readers. Immediately after the passing of the Act the form for the plebiscite will be sent out from headquarters to every member of the profession. Only one question is asked on the form and it admits of no answer save "Yes" or "No." The question is: "Do you desire the Negotiating Committee to enter into discussions with the Minister on the regulations authorized by the National Health Service Act?" The only other entries to be made on the paper are a statement as to the number of years the voter has been qualified and an indication in the appropriate space of the kind of professional work in which he is wholly or predominantly engaged. The voting papers sent to members in Scotland and Northern Ireland will bear a distinctive mark in order that they may be separately classified. With the form there goes out a report of the Negotiating Committee and a covering letter embodying the decisions and voting of the Representative Body on the important issues, an appeal to all practitioners to vote whatever their views, and a reminder that the profession is free to enter or not to enter the Service.

Reformed Procedure of the G.M.C.

The B.M.A. Council was faced with a heavy agenda at its meeting this week. The number of reports of committees to be considered was 23, and there was much other business. All this related to the ordinary work of the Association, not touching, except incidentally, on the question of the National Health Service. One report which came up for consideration was from the committee which has been considering the reform of the disciplinary procedure of the General Medical Council. All the bodies concerned with this subject seem to be agreed on the setting up of a disciplinary tribunal much smaller than the Council itself. The draft medical bill of the G.M.C. proposes a tribunal of 19. The defence societies suggest one of 7, possibly having in mind the new jury figure. The special committee of the B.M.A. makes no recommendation on this point, but seems to favour some figure between these two. In any event it will be a drastic change from the procedure which has obtained for nearly ninety years whereby the whole Council of 40 or more has listened to these cases. One consequence of any altered disciplinary procedure of this kind will be an increase in the number of direct representatives so as to ensure that enough members of particular knowledge of general prac-

tice problems will be available both for the disciplinary tribunal and for the penal cases committee which will undertake the earlier sifting of complaints.

A Day with the Students

The annual meeting of the British Medical Students' Association, apart altogether from the irruption of Mr. Bevan into their midst, was a very prolonged affair. The students, having already devoted part of Friday and part of Saturday to their business, sat through the whole of Sunday, from 10 in the morning until 6 at night, and only the determination of the president, Mr. D. R. Cook of Newcastle, prevented them from rounding the clock. The talk ranged over such subjects as increased tuition fees and students' expenses (here one was glad to hear some expressions of sympathy for parents), the de-reservation of medical students (it was stated that in one school students who failed once in one part of the first examination are forthwith de-reserved), the supply of bodies for dissection, international relations, liaison with other student group proposals for a medical postal library, and for obtaining periodical medical literature at a reduced rate. Some of the students wanted to go outside their own field and help the nurses to organize a students' association, but as the B.M.S.A. is only five years old it was felt that at present it had better keep behind its own plough. The students who gathered at the conference from most of the schools of Great Britain were a very able and wideawake lot of young people, who knew their own mind and were not afraid to speak it.

Reminders of Two Great Men

Headquarters has just received posthumous reminders of two men, contemporaries, each of whom in high office did great work for the Association, and whose names will live in its history. One such reminder was a cheque for £1,000 bequeathed free of all duty from the estate of the late Mr. Bishop Harman to be devoted to the increase of the clinical prize which the late Treasurer of the Association initiated just before the war. The other was a small portrait of the late Sir Kaye Le Fleming which he had desired the Association should have, together with his silver presentation porringer, the latter given in the hope that perhaps it might start a collection of plate for the B.M.A.

Industrial Health Research and the T.U.C.

Dr. H. B. Morgan, M.P., had a tilt at Mr. Herbert Morrison at the T.U.C. at Brighton over the question of industrial health research. The T.U.C. had passed on to the Lord President of the Council a resolution that the powers and funds of the Industrial Health Research Council should be increased to enable it to carry out widely extended research and for the establishment of an institute for the purpose. Mr. Morrison had replied that the lack of suitable men rather than the lack of money was the main obstacle to expansion. Dr. Morgan said that this reply was so unsatisfactory as to be ludicrous. Of course there was a lack of suitable men to do industrial research according to the methods of the present "clique" running it, but there were in the country medical men of progressive mind who were available. These men would not be chosen because they did not fit into a particular groove. The problem of the relationship between occupation and disease, said Dr. Morgan, had been grossly neglected. Mr. Morrison had said that the work of industrial health research would be actively pursued. Dr. Morgan wanted to know where. The London Hospital was doing excellent work but in the other teaching schools, except Birmingham, practically no research was done. Under the pressure of its programme the T.U.C. took no further action.

RETURN TO PRACTICE

The Central Medical War Committee announces that the following has resumed civilian practice: Dr. H. Everley Jones, O.B.E., 11, Park Road West, Wolverhampton.

Correspondence

Bureaucratic Control

SIR,—The letter from the Minister of Health to Mr. Eardley Holland published in the *Journal* of Oct. 12 (p. 550) illustrates something of what we may expect in a Government Service th laymen ignorantly legislating for us. The Minister proposes to have an "obstetrician," presumably a M.R.C.O.G., in charge of each antenatal clinic run by local authorities. This assumes first a fantastic surplus of obstetric specialists, and then a gross underpayment not commensurate with their skill else a gross waste of the people's money if they are paid equally. The routine work of antenatal clinics at present is very competently done by G.P.s and local government M.O.s of similar professional status, who have had special experience of the work. The percentage of cases requiring the opinion of a consultant is very small indeed, and perfectly well dealt with by referring them to a central clinic. I speak after some experience as M.O. to an antenatal clinic. This talk of obstetric specialists to every clinic is pure propaganda to the lay public, who do not understand and are only the poor mugs who have foot the bill. Mr. Holland wisely made no comment, but his letter reached the press, where it was meant to go. On the same principle of using a steam-hammer to crack a nut, I expect that the Minister will be appointing full-time experienced paediatricians to run the child welfare clinics to bring their powerful intellects to bear on the problem of little illie's spots and the important issue of whether "baby ought to be cutting her teeth now because the book says so and I don't see any sign of them, doctor"—problems very important to the mother anxious to do her best for her child, but quite within the abilities of any average practitioner to deal with. With a paediatrician in the central clinic for real problems. While on the subject of propaganda, I wonder if Lord Jowitt so simple-minded as really to believe, as he stated in the Lords on Oct. 8, that the National Health Service involved no bureaucratic control and would not involve a single additional civil servant? He also stated that no doctor was to be compelled by direct or indirect pressure to join, and he was to be in no way interfered with. As the alternative to joining is, as a noble lord well knows, either starvation or emigration. I wonder what he does mean by "indirect pressure"? Churchill was all too right when he envisaged the slave State wards which we are steadily being impelled by the men who are supposed to be the servants of the people, but who see themselves and act as the masters. Thinking men are reluctantly forced to see the analogy to the commencement of the Nazi regime, and it may not be long till no editor will dare to publish a letter like this lest he find himself in the concentration camp. This is the logical progress of the present régime, and if this letter, or the length of which I must apologize, brings but one more man into the fold of the resistance movement a useful purpose will have been served.—I am, etc.,

Pogtrefact.

J. S. LAURIE.

Receipt against Dictatorship

SIR,—The medical profession has by a united front won a great victory. Mr. Bevan has found that he cannot impose his will on a free people and has been forced to climb down and agree to implement the Spens Report. Let us make no mistake, this is only the first round, and the fight for justice and professional freedom is not yet won. My conviction has always been that, in the face of a united front, the dictatorial methods of Mr. Bevan will always fail. The Minister of Health refused to negotiate with the medical profession prior to introducing his Health Service Bill into Parliament and refused to incorporate the basic principles of the B.M.A. into the same. The fact that the Bill, as it now stands, will probably become law makes no difference to our stand for freedom. New laws can be easily introduced to give effect to our demands for incorporation of our principles.

I am confident that if the medical profession once again stands firm and refuses to co-operate until we are assured our right to practise as free men, we will again triumph. It is a basic principle of our democracy that a man shall have the

right to work where and when he pleases. Heartened by our recent victory and assured of the rights of our cause, I appeal to the profession to once again "stand firm" and present a united front to Mr. Bevan. It may mean a temporary hardship for some, but in the end it will benefit all—not only doctors, but patients also. In the face of a united profession Mr. Bevan will be again forced to climb down, and the fight for professional freedom will be triumphant.—I am, etc.,

Birmingham.

MARK J. BRADLAW.

Mutual Confidence

SIR,—For successful elaboration of the National Health Service Bill the good will of the profession will be essential. This implies mutual confidence. After our recent experience a vote would produce a 99% result of "No confidence" in the present Minister of Health. Bullying and bad faith will wreck any hope of a sound start. The Prime Minister will be wise to appoint a man we can trust and talk to and work with. This is not politics, it is just plain horse sense, for at the best the bulk of the profession views much of this Bill with distrust and misgiving. To us it is not an agreed measure.—I am, etc.,

Newton Ferrers.

W. F. BENSTED-SMITH.

A Tactical Withdrawal

SIR,—Let us note the wise move of the Minister to give way on panel capitation rate before the obvious danger of defeat. Let us beware that we are not caught on the rebound in the bigger matter to come. Some men may almost feel under a compulsion, as the panel cheque enlarges, but let not money blind us now or hereafter. I have no doubt that, financially, the Act may work out all right, but let us have no delusions about our freedom if we accept. The Act must be amended.—I am, etc.,

Newquay.

J. P. O'SHEA.

Trade Union for Doctors?

SIR,—On the question of the Health Service Bill I consider that action on this matter resolves itself into one of two alternatives: (1) sitting back and hoping for the best from the Government; (2) forming a trade union, which will be in a position to insist on negotiations with the Government and failing a satisfactory settlement will be in a position to organize opposition to the Health Bill. I can see no other practical means by which the medical profession can protect either the public or itself, or prevent the Government riding rough-shod over it both now or at a future date.

Finally, may I point out that as under the Health Bill we shall lose our independence and become State employees it becomes logical for us to arm ourselves with the only weapon with which the employee has been able to keep in check the employer, namely, the trade union.—I am, etc.,

Swansea

L. A. SYLVESTER

H.M. Forces Appointments

ROYAL NAVY

Surg. Cmdrs. G. G. Newman and J. J. Keevil, D.S.O., have been placed on the retired list.

ROYAL NAVAL VOLUNTEER RESERVE

Prob. Temp. Surg. Lieuts. H. J. P. Davies and G. E. Mavor to be Temp. Surg. Lieuts.

ARMY

Col. H. C. D. Rankin, C.I.E., O.B.E., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Major-Gen.

Cols. R. K. Mallam, O.B.E., and A. A. M. Davies, late R.A.M.C., retired, have retired on retired pay and have been granted the honorary rank of Brig.

Col. F. S. Gillespie, late R.A.M.C., having attained the age for retirement, has been retained on the Active List supernumerary.

Cols. F. G. Flood, O.B.E., M.C., and R. H. Alexander, M.C., late R.A.M.C., having completed four years in the rank, are retained on the Active List supernumerary.

Col. J. B. Fotheringham, late R.A.M.C., has retired on retired pay on account of disability.

Lieut.-Cols. W. W. S. Sharpe, R. S. Dickie, and A. R. Oram, O.B.E., M.C., from R.A.M.C., to be Cols.

Majors G. B. F. Churchill and A. E. B. Jones, retired pay, R.A.M.C., have been restored to the rank of Lieut.-Col., on ceasing to be employed.

Capt. J. D. Paterson, half pay list, late R.A.M.C., has retired on retired pay on account of disability, and has been granted the honorary rank of Major.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) M. M. Shepherd has relinquished her commission and has been granted the honorary rank of major. (Substituted for the notification in a *Supplement* to the *London Gazette* dated June 11.)

Association Notices

Sir Charles Hastings Clinical Prize

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition. The following are the regulations governing the award:

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money award of the value of fifty guineas.

2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made. It is to be noted that candidates in their entries should confine their attention to their own observations in practice rather than to comments on previously published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, their interpretations, and their conclusions.

4. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, not later than Dec. 31, 1946. The prize will be awarded at the Annual General Meeting of the Association to be held in 1947.

5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work. A prizewinner in any year is not eligible for a second award of the prize.

6. If any question arises in reference to the eligibility of the candidate or the admissibility of his or her essay the decision of the Council on any such point shall be final.

7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8. The writer of the essay to whom the prize is awarded may, on the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal*, or for presentation to the appropriate Section of the Annual Meeting of the Association.

9. Inquiries relative to the prize should be addressed to the Secretary.

Diary of Central Meetings

NOVEMBER

19. Tues. Undergraduate Subcommittee: (Film Committee), 2 p.m.

Branch and Division Meetings to be Held

AYRSHIRE DIVISION.—At Ayrshire Central Hospital (Infectious Diseases Section), Irvine, Sunday, Nov. 17, 7 p.m. Clinical Meeting.

KINGSTON-ON-THAMES DIVISION.—At Kingston County Hospital, Kingston-on-Thames, Tuesday, Nov. 12, 7.45 p.m. Clinical Evening. Cases will be demonstrated by the hospital staff.

WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION.—At Clayton Hospital, Wakefield, Thursday, Nov. 14, 8.15 p.m. Mr. A. J. C. Latchmore: The Acute Abdomen.

Meetings of Branches and Divisions

SUNDERLAND DIVISION

A very well-attended meeting in the scientific programme of the Sunderland Division was held on Oct. 13 at the Royal Infirmary, Sunderland.

A film, demonstrating pentothal anaesthesia and showing very fully how to deal with anaesthetic emergencies, was introduced by Dr. F. YOUNG, after a brief history of anaesthetics during the last 100 years. Dr. H. J. BELL showed an infant suffering from congenital syphilis which had been under treatment for 7 weeks and which showed

remarkable response to treatment by penicillin by mouth. The cases of failure of the circulation of the lower limbs were shown Dr. D. R. CRAMB. The address by Prof. R. V. BRADLAW, Newcastle, on "Oral Pathology of Interest to General Practitioners" was beautifully illustrated by remarkably clear, coloured slides, showed how extremely important was the proper study and scrutiny of lesions of the mouth.

POSTGRADUATE NEWS

The Fellowship of Medicine announces a week's course in obstetrics and gynaecology, for general practitioners, to be held at Qu Charlotte's Maternity Hospital and Chelsea Hospital for Women daily from Nov. 25 to 30.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Thurs., 5 p.m. Bradshaw Lecture by Sir Heneage Ogilvy Surgical Handicraft.

ROYAL SOCIETY OF MEDICINE

Section of *Psychiatry*.—Tues., 5.30 p.m. Paper by Dr. H. Eysenck: The measurement of personality.

Section of *Physical Medicine*.—Wed., 4.30 p.m. Paper by Sir A. Page: The uses of physiotherapy in an accident service.

Section of *Ophthalmology*.—Thurs., 5 p.m. (Cases at 4.30 p.m.) Discussion: Eye signs in malignant nasopharyngeal tumour. Openers: Dr. Godtfredsen (Denmark) and Mr. E. D. D. Day. Short paper by Mr. Frank W. Law: Ring scotoma after retrobulbar neuritis.

Section of *Obstetrics and Gynaecology*.—Fri., 8 p.m. Discussion: Stress incontinence in micturition. Openers: Messrs. Ever Williams and Terence Millin.

Section of *Radiology*.—Fri., 8 p.m. Discussion: The x-ray treatment of inflammatory diseases. Openers: Miss M. S. Cripps, M. Baker, Dr. Freund, and Dr. N. S. Finzi.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—Tues., 5 p.m. Dr. H. Corsi: Diseases of the Nails. Thurs., 5 p.m. Dr. Sydney Thomson: Animal Diseases Communicable to Man.

FACULTY OF RADIOLOGISTS.—At Royal College of Surgeons, Lincoln's Inn Fields, W.C.—Fri., 2.30 p.m. The Skinner Lecture by Gordon Gordon-Taylor: On Malignant Tumours of the Testicle.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Mr. Thurs: Experiences in War Surgery as applied to Civilian Practice.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, Tues., 5 p.m. Mr. Angus Sinclair: The Interdependence of Biology and Other Branches of the Higher Learning.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS, 58, Queen Anne's Street, W.—Fri., 5 p.m. Dr. J. M. H. Campbell: The Role in Pregnancy.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Mon., 8.30 p.m. Discussion: The Field of Research in Industrial Health. To be introduced by Dr. E. R. A. Merewell.

APPOINTMENTS

BOWYER, H. W., M.D., Honorary Assistant Physician to Out-patients Bolton Royal Infirmary.

CHELSEA HOSPITAL FOR WOMEN.—Surgeon to Out-patients, A. B. Evi. F.R.C.S. Anaesthetists, H. Woodfield-Davies, L.M.S.S.A., G. C. St. M.R.C.S., L.R.C.P. Chief Assistants, T. Jackson, F.R.C.S., T. L. T. St. F.R.C.S., R. B. K. Rickford, M.D., F.R.C.S., G. W. Williams, F.R.C.S.

EMPIRE RHEUMATISM COUNCIL.—Registrars to the Council: D. P. Nichols M.B., M.R.C.P. (at West London Hospital); Duncan Shiers, M.B., B.S. (at Royal Mineral Water Hospital, Bath).

ROYAL LIVERPOOL UNITED HOSPITAL.—At David Lewis Northern Hospital Branch: Honorary Assistant Surgeon, W. M. Beattie, M.Chir., F.R.C.S.

SWANN, W. G., M.D., D.P.H., Deputy Medical Superintendent Officer Health and Deputy Port Medical Officer, County Borough of Belfast.

SWANSEA GENERAL AND EYE HOSPITAL.—Radiologist, K. Mendl, M.D., M.R.R.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or 12 Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

FERNANDEZ.—On Oct. 29, 1946, at The Willows, Bramley, Yorks, to Dr. and Mrs. Alexander Fernandez, a son.

MILNER.—On Oct. 26, 1946, to Dorothy (née Galloway), wife of John F. M. Milner, M.D., 452, Heysham Road, Heysham, a son.

PARKINSON.—On Oct. 29, 1946, at Lorna Lodge, Manchester, to Margaret, wife of Dr. John S. Parkinson, a son.

STUART-HARRIS.—On Nov. 2, 1946, at Sheffield, to Marjorie, wife of Prof. C. H. Stuart-Harris, a sister for Graham.

DEATHS

ELLIOTT.—On Oct. 2, 1946, at 3, Clarendon Gardens, Tunbridge Wells, Andrew Royston Elliott, M.D., of Crowborough, aged 55 years.

VAKIL.—On Oct. 23, 1946, at 71, Compayne Gardens, N.W.6 (formerly of 18, Coram Street, W.C.1), Chuni Lal B. Vakil, M.R.C.S., L.R.C.P., aged 63

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PURE PENICILLIN IN OPHTHALMOLOGY

BY

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Until recent months supplies of penicillin in current use contained some 80 to 90% of impurities. In contrast most of the samples now generally obtainable contain a concentration of penicillin of up to 80%, and limited quantities of pure penicillin are becoming available.

Pure penicillin in calcium or sodium salt is a white crystalline substance devoid of any yellowish tinge. It is freely soluble and is more stable than commercial (impure) penicillin. In the dry form pure penicillin remains stable when kept at room temperature over a period of many months. Aqueous solutions remain active for fourteen days when kept at room temperature under sterile conditions, and retain full potency for up to four weeks when kept on ice. One milligramme of pure penicillin corresponds to 1,660 Oxford units.

The use of penicillin in ophthalmology, and particularly in intraocular infections, is still limited by considerable difficulties. In the first place, penicillin administered systemically in the usual clinical doses does not penetrate into the interior of the eye. Secondly, commercial penicillin instilled locally into the conjunctival sac in high concentrations is not well tolerated. There are discomfort, conjunctival hyperaemia, and, in extreme cases, damage to the corneal epithelium; moreover, with tolerated concentrations there is no penetration through the cornea into the interior of the eye. To overcome the obstacles to the passage of the drug into the interior of the eye, penicillin has been employed as subconjunctival and intravitreal injections, and iontophoresis of solution instilled into the conjunctival sac has been practised, but only with indifferent results. The limit of tolerance to subconjunctival injections, though varying with different samples of commercial penicillin, is about 600 to 2,000 units in 0.5 ml. of water. With such doses the intraocular concentrations of penicillin are again low (only a trace in the aqueous, according to Struble and Bellows (1944), who employed 2,500 units in the dog; though, in man, Rycroft (1945) obtained higher values by the use of 4,000 units subconjunctivally—0 to 3 units per ml. in five instances, and 10, 15, and 20 units in three more). Intravitreal injection of commercial penicillin is badly borne by the experimental animal (v. Sallmann, Meyer, and Di Grandi, 1944; Sorsby, 1945; Mann, 1946), and this procedure has distinct clinical disadvantages. Iontophoresis as advocated by v. Sallmann and Meyer (1944) also presents clinical difficulties, and is only doubtfully valid on theoretical grounds (Hamilton-Paterson, 1946). Since the value of penicillin as a local therapeutic agent is limited by the inability of the eye to support large doses of the commercial product, and since intolerance varies directly with the amount of impurity present, a study of tolerance of the eye to pure penicillin was undertaken, followed by preliminary investigations of the levels of concentration that can be reached intraocularly and of the effect of local medication on experimental intraocular infections. These results have been assessed against those obtained both experi-

mentally by the systemic administration of massive doses of commercial penicillin and clinically by the use of pure penicillin locally.

Experimental Studies on Pure Penicillin

Rabbits were used throughout. Guinea-pigs were also used at first, but proved unsatisfactory, particularly when intraocular fluids had to be collected, and were therefore discarded. The rabbits were of a mixed breed and generally six months old, with an average weight of 1,500 g. The concentration of penicillin in the eye fluids, blood, and tissue extracts was estimated by the standard capillary tube method, as described by Fleming. Where ointment was introduced into the conjunctival sac, 0.1 ml. (=0.1 g.) was delivered into the lower fornix from a syringe with a wide-bore needle, and spread evenly over the globe through the closed lids; before aqueous was withdrawn for assessing the concentration of penicillin the conjunctival sac was thoroughly irrigated. Where penicillin was injected into the vitreous, the needle was entered at the equator of the proptosed eye and the drug injected centrally; a similar technique was used for introducing infection into the vitreous. Subconjunctival injections were made by the usual clinical method, and fluid from the aqueous was collected by limbal puncture (subconjunctivally), also in the proptosed eye. In assessing the concentration of penicillin in solid tissues, the parts were minced with scissors on a watch-glass, placed in 1 ml. of saline (2 ml. in the case of the sclerotic), and allowed to stand overnight in a refrigerator; the supernatant fluid was then tested.

Tolerance

Pure penicillin in aqueous solution in concentrations of 10,000, 25,000, 50,000, and 100,000 units/ml. was well tolerated when two or three drops were instilled into the conjunctival sac at ten intervals of three minutes. There was no obvious irritability, nor any flushing of the eye. Likewise pure penicillin in ointment form was well borne in concentrations of 500, 1,000, 2,000, 4,000, 8,000, 25,000, 50,000, and 100,000 units per gramme. The ointment was made up in two different bases, one being "eucerin" L.M. base, and the other a specially prepared mixture of petroleum jelly and liquid paraffin (90 and 10 parts of each respectively). Some ointment still remained in the conjunctival sac after half an hour. Subconjunctival injections of 0.5 ml. of water containing 25,000 and 50,000 units of pure penicillin were also well tolerated. There was no reaction around the bleb produced by the injection, and the bleb had mostly disappeared within three to four hours. The vitreous too tolerated direct injection of pure penicillin: 0.1 ml. of saline containing 5,000 units (50,000 units/ml.) and 0.2 ml. containing 10,000 units produced a visible "globule" in the vitreous, with but little reaction around it and no ophthalmoscopically visible changes. Apart

from some scattering of the globule after six months (the total period of observation) there was practically no reaction of the vitreous or the globe as a whole.

These observations suggested that, in contrast to commercial penicillin, the pure product is remarkably well tolerated by the eye, so that ocular intolerance is not a factor of any significance in limiting its use. It should, however, be borne in mind that concentrated solutions of pure penicillin should be made up in water rather than saline; watery solutions containing 20,000 to 50,000 units of pure penicillin per ml. are isotonic with 0.9% sodium chloride, while saline solutions of such concentration are distinctly hypertonic (Ungar and Denston, 1946).

Concentration in Interior of Eye

In the Primary Aqueous (Chart 1).—The level of penicillin in the aqueous obtained at different time intervals (a) after a single instillation of penicillin ointment in the conjunctival sac, and (b) after subconjunctival injection, was determined.

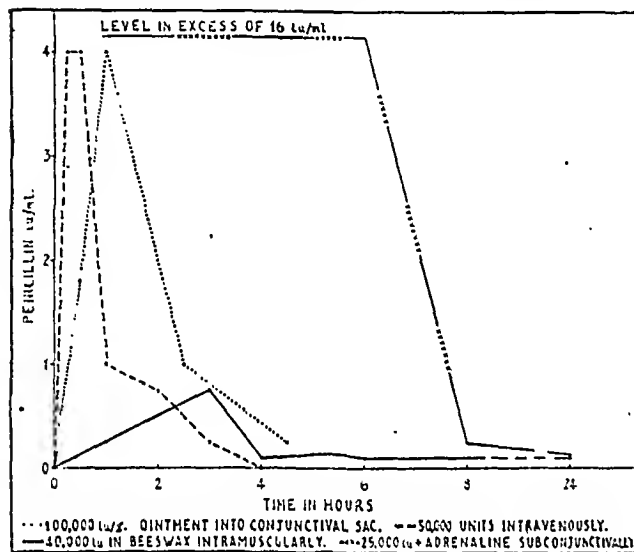


CHART 1.—Penicillin levels in the primary aqueous of the rabbit after administrations by different routes.

(a) For instillation of pure penicillin ointment the base used was a mixture of petroleum jelly and liquid paraffin, as already indicated. Table 1 shows that penicillin penetrates in therapeutic levels through the cornea when ointments of high concentrations are used. Each reading in the table represents

TABLE 1.—Level of Penicillin (Units/ml.) in Primary Aqueous on Instillation of 0.1 g. of Concentrated Ointments of Pure Penicillin into Conjunctival Sac

Concentration (units/g.)	At 1/2 hr.	At 1 hr.	At 2 hrs.	At 2 1/2 hrs.	At 3 hrs.	At 4 hrs.	At 4 1/2 hrs.	At 5 hrs.
25,000	0.4	1.5, 3	0.125, 0.25, 0.25	0	0, 0	0, 0	0, 0	0
50,000	0.4	1.5, 2, 2	0.125, 0.125	0	0, 0	0, 0	0, 0	0
100,000	0.4	4, 4, 8	1.1	0	0, 0	0, 0	0, 0	0

a single estimate, and the 44 readings recorded all refer to primary aqueous. These findings suggest that the more concentrated the ointment the higher is the concentration of penicillin in the aqueous and that a therapeutic level is sustained for 2 1/2 hours and possibly longer.

(b) The level of penicillin in the primary aqueous was also determined at different time intervals after the injection subconjunctivally of 25,000 units of pure penicillin in 0.5 ml. of water. As can be seen from the first column in Table II, adequate levels are quickly reached in the aqueous and maintained for at least 6 hours, and possibly longer. That the levels of penicillin reached and maintained by this procedure are the result of the quantity injected and not conditioned by the purity of the agent is shown by the findings recorded in

the second column of the table, where it is seen that the distinctly irritating commercial penicillin gives concentrations somewhat similar to those of pure penicillin. The results in the last column suggest that when adrenaline is added to pure penicillin considerably higher levels are reached in the aqueous. (The penicillin was dissolved in 0.25 ml. of water to which 0.25 ml. of adrenaline 1:1,000 was added.)

That at least some of the penicillin in the aqueous reaches it through the blood stream rather than directly by penetrating

TABLE II.—Levels in Primary Aqueous of Anterior Chamber after Subconjunctival Injection of 25,000 Units of Penicillin

	Pure Penicillin	Commercial Penicillin (654-1,425 u/ml.)	Pure Penicillin with Adrenaline
	Units/ml.	Units/ml.	Units/ml.
At 15 minutes	2	16	
" 30 "	16	16	
" 1 hour "			>16, 16
" 1 1/2 hour "	10, 16	1, 4	
" 2 "	4, 32	4, 4	>16, 12
" 2 1/2 "	2, 4	1, 8	
" 3 "	0.5, 2	2	
" 4 "	4	0.25	6
" 5 "	1, 1	1	>16, 0
" 6 "	0.5		0.25
" 8 "			0
" 15 "			0.125
" 22 "			
" 24 "	0.5		
	(0, 0, 0.12, 0.06*)		

* Secondary aqueous.

the corneo-scleral angle is suggested by the findings recorded in Table III. When only one eye received a subconjunctival

TABLE III.—Level of Penicillin in Primary Aqueous of Anterior Chamber after Subconjunctival Injection of 25,000 Units in Opposite Eye

	Units/ml.
At 2 hours	4*
" 3 "	0.25
" 5 "	0.125

* The injected eye showed the value of 32 units at 2 hours

injection of 25,000 units of penicillin a not insignificant concentration was obtained in the aqueous of the opposite eye at 2, 3, and 5 hours. That most of the penicillin injected subconjunctivally is indeed absorbed into the blood stream is shown by the findings in Table IV, which also suggest that absorp-

TABLE IV.—Level of Penicillin in Arterial Blood after Subconjunctival Injection

	A	B	C
	Units/ml.	Units/ml.	Units/ml.
At 1 hour	2, 2, 2		
" 2 1/2 hours "	0.25		
" 3 1/2 "	0.125 (1*)	2	
" 4 "	0.06	0	
" 4 1/2 "	Trace, 1		
" 5 "	0, 0.25	0	
" 6 "		0, 0	0, 0.5
" 24 "	0	0	0

A.—In rabbits receiving 25,000 units pure penicillin subconjunctivally in one eye and 25,000 units commercial penicillin in the other. B.—In rabbits after 25,000 units pure penicillin subconjunctivally in one eye only. C.—In rabbits after 25,000 units pure penicillin subconjunctivally in one eye only.

* 25,000 units pure penicillin subconjunctivally in each eye with adrenaline.

tion into the blood stream is rapid and that excretion is, too. Aqueous levels seem to be maintained longer than blood levels. The rapid absorption into the blood stream may explain why unmedicated subconjunctival injections of penicillin are less effective than injections with adrenaline; presumably the adrenaline subconjunctivally impedes absorption into the blood stream.

Concentration in Other Ocular Tissues on Application of Ointment and on Subconjunctival Injection.—No systematic study was undertaken, but the results shown in Table V indicate that adequate therapeutic levels are present in the cornea, sclera, and vitreous as late as 5 hours after a subconjunctival injection, and suggest that equally satisfactory results can be achieved by the application of ointments

TABLE V.—Levels of Penicillin reached in Ocular Tissues on Application of Ointment and on Subconjunctival Injection of Pure Penicillin

Tissue†	Ointment, 50,000 Units g.: 0.1 g. instilled				Subconjunctival Injection of 25,000 Units
	At 1 hr.	At 2 hrs.	At 3 hrs.*	At 4 hrs.	At 5 hrs.
	Units/ml.	Units/ml.	Units/ml.	Units/ml.	Units/ml.
cornea ..	2	0.75	0	0.25	0.25, 0.25
iris ..	0	0.1	0	0	0, 0
lens ..	2	0.1	0.25	0.25	4, 2
aqueous ..	1	4	0.2	0.2	0.15
vitreous ..	4	0.3	0	0	Not determined

* Arterial blood at 3 hours showed no penicillin.

† An experimental error of 0.1 unit/ml. was shown by the presence of that amount of penicillin in washings from the eye after washing with 6 ml. saline hours following application of ointment. (Before this estimate was earned at the eye had been washed in two changes of saline.)

Chart II). A copious flow of tears noted in one rabbit 4 hours after instilling ointment, 100,000 units per gramme, revealed a concentration of penicillin of more than 16 units per ml. of tears.

Concentration in Aqueous and Vitreous in Infected Eyes after subconjunctival Injection.—In the course of therapeutic experiments, recorded below, the level of the aqueous and vitreous in infected and treated eyes was determined at 5 hours and 4 hours after subconjunctival injection of 20,000 units with adrenaline. As can be seen from the second column of Table XIV, the aqueous at both 5 and 24 hours contained more than 2 units of penicillin, while the vitreous contained 1 and 0.25 unit respectively. Column 1 of the same table suggests that without adrenaline the values are not dissimilar.

Local Therapy with Pure Penicillin in Intraocular Infections

Two types of experimental infection and two modes of treatment—(a) subconjunctival injections and (b) the application of ointment—were studied. The anterior chamber was infected in 4 eyes and the vitreous in 16. In no case were both the anterior chamber and the vitreous infected. Treatment was begun within two hours after infection.

Anterior Chamber Infection.—(a) Three eyes were infected with suspensions of *Str. haemolyticus* and one with *Staph. aureus*, the suspensions containing 25,000,000 organisms per ml.; 0.1 ml. was injected into the anterior chamber by subconjunctival puncture at the limbus. Treatment consisted of subconjunctival injection of 25,000 units of pure penicillin twice daily for two days. As can be seen from Table VI, the process was controlled, but not completely; in two eyes there was still slight exudate along the pupillary margin on the fifth day, while one eye showed a more severe reaction,

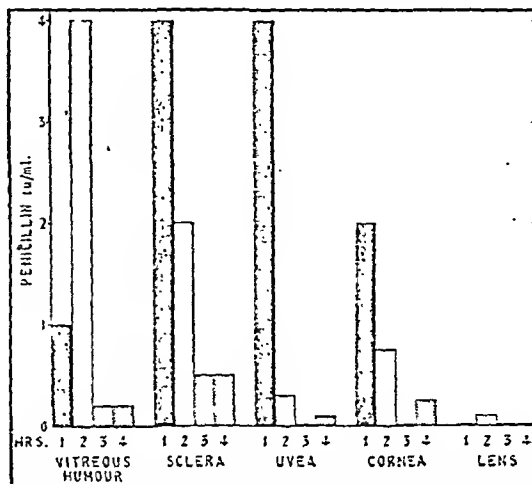


CHART II.—Penicillin levels in ocular tissues of rabbits after local application of ointment (50,000 units/g.).

and the fourth one a still heavier disturbance. These results were, however, better than the state of two untreated eyes, which were largely disorganized. Four further eyes infected less heavily with staphylococcus (1,000,000 organisms per ml.) and treated for a day longer did distinctly better. Only one eye showed exudate along the pupillary margin on the fifth day, while the remaining three were normal. Two untreated control eyes were disorganized by this time.

TABLE VI.—Infections of Anterior Chamber: Treatment by Subconjunctival Injections and by Ointment

No.	Organism	Concentration of Infecting Fluid (Dose: 0.1 ml.)	Treatment	End-result (on 5th Day)	Remarks
1	<i>Staph. aureus</i> 663 ..	25,000,000/ml.	Subconjunctival Injection		
2	<i>Str. haemolyt.</i> 618 ..	"	25,000 units twice daily for 2 days	Slight exudate in anterior chamber	
3	" ..	"	"	Exudate in anterior chamber	
4	" ..	"	"	Slight exudate in anterior chamber	
5	<i>Staph. aureus</i> 663 ..	1,000,000/ml.	20,000 units with adrenaline twice daily for 3 days	Considerable exudate in anterior chamber	
6	" ..	"	"	Eye normal	
7	" ..	"	20,000 units twice daily for 3 days	Slight exudate in anterior chamber	
8	" ..	"	"	Eye normal	
9	" ..	"	Ointment—0.1 g. three times a day for 3 days:	"	
10	" ..	"	25,000 units/g.	"	
11	" ..	"	50,000 units/g.	"	
12	" ..	"	100,000 units/g.	Slight exudate in anterior chamber	
13	" ..	"	"	"	
14	" ..	"	"	"	

TABLE VII.—Infections of the Vitreous: Treatment by Subconjunctival Injections and by Ointment

No.	Organism	Concentration of Infecting Fluid (Dose: 0.1 ml.)	Treatment	End-result (on 5th Day)	Remarks
1	<i>Staph. aureus</i> 663 ..	1,000,000/ml.	Subconjunctival Injection		
2	" ..	"	20,000 units twice daily for 3 days	Eye normal	
3	" ..	"	"	"	
4	" ..	"	20,000 units with adrenaline twice daily for 3 days	"	
5	" ..	10,000,000/ml.	20,000 units twice daily for 3 days	"	
6	" ..	"	"	"	
7	" ..	"	"	"	
8	" ..	"	"	"	
9	" ..	"	"	"	
10	" ..	"	"	"	
11	" ..	"	Ointment—0.1 g. three times a day for 3 days:		
12	" ..	"	25,000 units/g.	Eye quiet but extensive vitreous organization	
13	" ..	"	"	"	
14	" ..	"	50,000 units/g.	"	
15	" ..	"	100,000 units/g.	"	
16	" ..	"	"	"	

(b) Ointment (petroleum jelly and liquid paraffin base) was delivered into the conjunctival sac by a syringe three times daily for three days; the concentration of the ointment was 25,000 units/g. in two eyes, 50,000 in two more, and 100,000 in yet another two. The type and degree of infection were the same as with the second series treated with subconjunctival injection (0.1 ml. of a suspension containing 1,000,000 *Staph. aureus* per ml.), and the results were substantially the same. Five of the six eyes were normal on the fifth day, and one showed a slight exudate at the pupil margin. An untreated control eye was lost.

Vitreous Infection.—(a) Ten eyes were infected with *Staph. aureus* injected centrally into the vitreous by direct puncture at the equator: 0.1 ml. was injected in all cases, the concentration of the infecting fluid being 1,000,000 organisms per ml. in four eyes and 10,000,000 per ml. in the remaining six. Treatment was given twice daily for three days, and, as can be seen from Table VII, the results were remarkably good. Residual vitreous opacities were observed ophthalmoscopically in five of the ten eyes. The four control eyes were all lost.

(b) Six eyes were infected as for subconjunctival therapy, the concentration of the infecting fluid being 1,000,000 *Staph. aureus* per ml. Two eyes were treated with ointment 25,000 units/g. three times daily for three days, two with 50,000 units/g., and two more with 100,000 units. There was no evidence of active inflammation on the fifth day, but the vitreous was largely an organized grey mass. An untreated control eye was lost.

Comparative Experimental Studies on Massive Systemic Administration of Commercial Penicillin

Struble and Bellows (1944) have indicated that a concentration of 1 unit of penicillin per ml. of aqueous can be obtained if 12,800 units per kilo body weight are injected intravenously in the dog—a dose of the order of about 40 times that of the usual clinical dose in man. Town and Hunt (1946) and Town, Frisbe, and Wisda (1946) have extended these observations, and have shown that anterior-chamber infection in the rabbit can be controlled by injections of 5,000 units per kilo body weight intramuscularly at 3-hourly intervals. In confirming and extending these findings an attempt was made to assess the relative value of systemic and subconjunctival administration of penicillin. Commercial penicillin was used for systemic injections.

Concentration in Interior of Eye

In the Primary Aqueous (Chart I).—The level of penicillin in the primary aqueous was determined at different time intervals from 1/4 to 6 hours on intramuscular and intravenous injection of 25,000 and 50,000 units into rabbits. As can be seen from Table VIII an adequate therapeutic level can be

TABLE VIII.—Aqueous Levels on Massive Systemic Administration of Penicillin

	Intramuscular Injection		Intravenous Injection	
	25,000 Units	50,000 Units	25,000 Units	50,000 Units
At 15 minutes	Units/ml. 8	Units/ml. 4	Units/ml. 8	Units/ml. 4
" 30 "	1	4	8	4
" 1 hour "	0.5	2	1	1
" 2 hours "	0.125	1	0.25, 0.5	1, 4
" 3 "	0	0.125	0.125	1
" 4 "	0	0.1	0.1	0
" 6 "	0	0	0	0

TABLE IX.—Aqueous Levels on Modified Forms of Intramuscular Injections of Penicillin (40,000 Units)

	Penicillin with Adrenaline	Penicillin with Hexamine	Penicillin in Beeswax	Penicillin Intramuscularly with Adrenaline Subconjunctivally
At 1 hour	Units/ml. 0.2	Units/ml.	Units/ml. 0, 0.25, 0.25, 0.25	Units/ml.
" 1 1/2 hours "	0.125			1
" 2 hours "	1	0.125, 0.25	0, 0.25	0.5
" 3 hours "	1		0.25, 0.5, 0.75	
" 4 hours "	0.15		0.1, 0.3	
" 5 hours "	0.125		0.125	
" 6 hours "	0	0, 0	0.1, 0.125	0, 0
" 8 hours "	0		0, 0	
" 22 hours "	0		(?) 0.1	

reached in the aqueous by systemic injections of both 50,000 and 25,000 units, but it does not persist for longer than 3 hours. This is a shorter period than that obtained by subconjunctival injection—and incidentally at a lower level, too. In attempts to raise the aqueous level and to increase its duration several modifications of intramuscular injection were tried. The detailed results are given in Table IX.

When an equal quantity of adrenaline 1:1,000 was added to the solution of penicillin (of which 40,000 units were injected) no marked increase in level or persistence was obtained; nor were better results achieved with penicillin to which had been added hexamine (7%) in the hope that this might cause a more ready passage of penicillin into the aqueous. The results were likewise negative when adrenaline (0.5 ml. of 1:1,000) was injected subconjunctivally at the time the intramuscular injection was given. Better results were recorded when penicillin was given intramuscularly in beeswax. The eighteen readings obtained with this mode of administration suggest that low aqueous levels are reached and maintained for at least 6 hours. None the less it is clear from a comparison of Table II with Tables VIII and IX that when approximately equal quantities are injected the subconjunctival route gives higher and more sustained aqueous levels of penicillin. That aqueous levels reached by the injection of penicillin intramuscularly and intravenously are unlikely to be maintained after 3 hours or so is indicated by the level reached in the arterial blood by these methods of administration, and by all the modifications indicated except that in which beeswax was employed (Tables X and XI). With penicillin intramuscularly or intravenously

TABLE X.—Levels of Penicillin in Arterial Blood on Massive Systemic Administration

	Intramuscular Injection		Intravenous Injection	
	25,000 Units	50,000 Units	25,000 Units	50,000 Units
At 15 minutes	Units/ml. >8	Units/ml. >8	Units/ml. >8	Units/ml. >8
" 30 "	1	2	1	0.25
" 1 hour "	Trace	0.6	0.25	0.125, 0.25
" 2 hours "		0	0	0
" 3 hours "		0, 0.125		
" 6 hours "				

TABLE XI.—Levels of Penicillin in Arterial Blood on Modified Forms of Intramuscular Injection (40,000 Units)

	Penicillin with Adrenaline	Penicillin with Hexamine	Penicillin in Beeswax	Penicillin Intramuscularly with Adrenaline Subconjunctivally
At 1 hour	Units/ml.	Units/ml.	Units/ml.	Units/ml.
" 1 1/2 hours "			4	
" 2 hours "	2	0.25	2	
" 3 hours "	2	0.5	1.5, 2, >16	
" 4 hours "			3	
" 5 hours "			2	
" 6 hours "	0.5	0, 0	>16	0
" 8 hours "	0.25		2, >16	0
" 22 hours "	0		0.5	0
			0, 1, 4	

the blood level is low within 2 hours, and this was substantially uninfluenced by all modifications except beeswax. With penicillin in beeswax injected intramuscularly a high arterial level was still present at 6 hours, and at 22 hours the two of the three readings obtained were still significantly high.

Concentration in Other Ocular Tissues (Chart III).—The level of penicillin in various ocular tissues was determined in one case 30 minutes after the intravenous injection of 50,000 units, and in a second case 2 1/2 hours after an intravenous injection of 25,000 units (Table XII). These determinations indicate that penicillin administered in massive doses reaches in therapeutic levels all the tissues of the globe, the lens excepted.

Concentration in the Vitreous after Modified Intramuscular Injections.—As with the aqueous and arterial blood levels, there is nothing in the few findings available to suggest that any modification substantially affects the level of concentration in

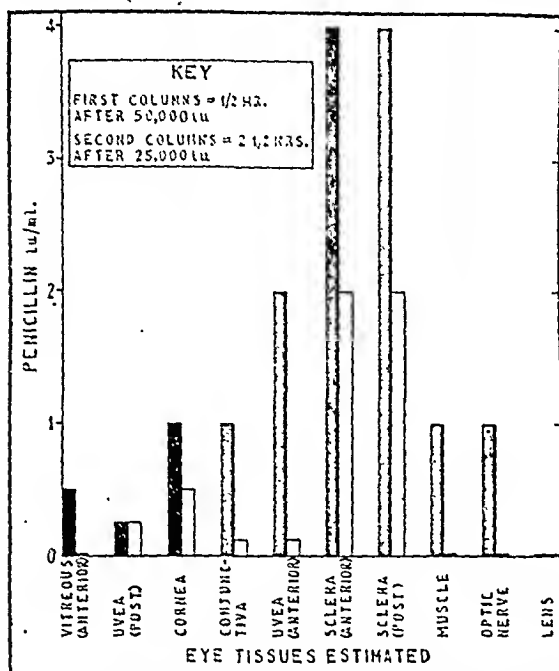


CHART III.—Showing distribution of penicillin in the tissues of the eyes of rabbits after intravenous injections of 50,000 and 25,000 units respectively.

TABLE XII.—Levels of Penicillin reached in Ocular Tissues on Systemic Administration

Tissue	30 minutes after 50,000 Units Intravenously	2 1/2 hours after 25,000 Units Intravenously
Cornea	1	0.5
Lens	0	0
Anterior sclera	0	0
Posterior	0	0
Anterior vitreous	0.125	0.125
Posterior	0.125	0.125
Anterior uvea	0.25	0.25
Posterior	0.25	0.25
Conjunctiva	0.25	0.125
Muscle	0	0
Optic nerve	0	0

the vitreous (Table XIII). Judging by the two readings recorded this would apply to beeswax-penicillin, too. (The one method that gave a high and sustained vitreous level was the injection of beeswax-penicillin subconjunctivally—a procedure that is

clinically inapplicable, as it produces a severe reaction with gross corneal damage.)

Levels in the Aqueous and Vitreous of Infected Eyes.—As with subconjunctival penicillin, the level of the aqueous and vitreous of infected and treated eyes was determined at 5 hours and at 24 hours after intramuscular administration of 40,000 units in beeswax (Table XIV). The aqueous levels were low and the vitreous levels rather higher.

TABLE XIII.—Levels of Penicillin reached in Vitreous on Systemic and Subconjunctival Administration

Mode of Administration	At 1 hr.	At 2 hrs.	At 4 hrs.	At 22 hrs.	At 24 hrs.
40,000 units penicillin in beeswax intramuscularly	Units/ml. 0.5			Units/ml. 0	
40,000 units penicillin with adrenaline intramuscularly		0.25			
40,000 units penicillin intramuscularly with adrenaline subconjunctivally				0	
40,000 units penicillin in beeswax subconjunctivally in each eye		>2	1		0.25, 1

TABLE XIV.—Random Estimates of Level of Penicillin in Aqueous, Vitreous, and Blood during Course of Treatment of Infected Animals

Method of Treatment	Aqueous		Vitreous		Blood
	At 5 hrs.	At 24 hrs.	At 5 hrs.	At 24 hrs.	
Pure penicillin subconjunctivally (20,000 units)	Units/ml. 1	Units/ml. 0.5	Units/ml. 0.15	Units/ml. 0.5	Units/ml.
Pure penicillin with adrenaline subconjunctivally (20,000 units)	>2	>2	0.1	0.25	0
Penicillin in beeswax intramuscularly (40,000 units)	0.03	0.25	0.25	0.5	0.06, 1.125
Penicillin in beeswax (20,000 units subconjunctivally, with 40,000 units intramuscularly subsequently)		0.2		1.0	0.03

Treatment of Intraocular Infection by Intramuscular Injections of Massive Doses

Anterior Chamber Infection.—Two eyes were infected with *Str. haemolyticus* and two with *Staph. aureus*, 0.1 ml. of suspensions containing 25,000,000 organisms per ml. being injected into the anterior chamber, as in the experiments with subconjunctival penicillin therapy. Treatment consisted of intramuscular injection of 50,000 units of commercial penicillin twice daily for two days. As can be seen from Table XV, only one of these eyes became

TABLE XV.—Infections of Anterior Chamber: Treatment by Intramuscular Injection

Rabbit No.	Organism	Concentration of Infecting Fluid	Treatment	End-result (on 5th Day)	Remarks
1	<i>Str. haemolyt.</i> 618	25,000,000/ml.	50,000 units in water twice daily for 2 days	Much exudate in anterior chamber	4 control eyes ended in a destructive inflammatory reaction
2	<i>Staph. aureus</i> 663	"	"	Panophthalmitis	
3	"	"	"	Slight exudate in anterior chamber	
4	"	"	"	Eye normal	
5	"	1,000,000/ml.	40,000 units in beeswax twice daily for 3 days	"	
6	"	"	"	"	
7	"	"	20,000 units in beeswax subconjunctivally twice on 1st day, and 40,000 units intramuscularly for 2 further days	Infection controlled but much irritability of eye	
8	"	"	"	"	

TABLE XVI.—Infections of Vitreous: Treatment by Intramuscular Injections

Rabbit No.	Organism	Concentration of Infecting Fluid	Treatment	End-result (on 5th Day)	Remarks
1	<i>Staph. aureus</i> 663	1,000,000/ml.	Penicillin in beeswax 40,000 units twice daily for 3 days	Eye quiet, but vitreous is largely an organized grey mass	4 control eyes all ended in a destructive inflammatory reaction None of the 10 eyes treated could be regarded as having good function, though the inflammatory process was largely controlled
2	"	"	"	"	
3	"	"	"	"	
4	"	"	"	"	
5	"	10,000,000/ml.	"	Eye inflamed but vitreous organized	
6	"	"	"	As 5, but more marked	
7	"	"	"	As 5	
8	"	"	"	Eye quiet, but extensive vitreous organization	
9	"	"	"	"	
10	"	"	"	"	

completely normal by the fifth day; in one eye there was minimal reaction, as shown by exudate along the free margin of the iris, while in another there was considerably more exudate. One eye showed the classical picture of panophthalmitis. The two untreated control eyes ended in a destructive suppurative reaction. Four further eyes infected less heavily with *Staph. aureus* (1,000,000 organisms per ml.) were treated in a modified manner, two being given 40,000 units in beeswax twice daily for three days, and two receiving 20,000 units in beeswax subconjunctivally twice on the first day, and 40,000 units in beeswax intramuscularly for two more days. These did distinctly better. The infection in the anterior chamber was completely controlled, but in the two eyes that received beeswax subconjunctivally there was much reaction from the beeswax. Two untreated control eyes were completely lost.

Vitreous Infection.—Ten eyes were infected with *Staph. aureus* by the same technique as used in the therapeutic experiments with penicillin subconjunctivally. Four eyes received 0.1 ml. of suspension containing 1,000,000 organisms per ml., while six eyes had a concentration of 10,000,000 organisms per ml. Treatment consisted of penicillin in beeswax 40,000 units twice daily for three days, and, as can be seen from Table XVI, the infection was controlled in seven of the ten eyes, but in all the eyes there was considerable disorganization of the vitreous. Though the infection could be regarded as largely controlled, these eyes could not be considered as giving a clinically satisfactory result.

Discussion on Experimental Results

The comparative aqueous levels reached by the use of pure penicillin in the form of ointments or of subconjunctival injections, and by commercial penicillin in massive systemic administration, suggest that the best results are likely to be obtained by subconjunctival injection—a conclusion that stands in spite of individual variations in the experimental animal. Moreover, high aqueous levels persist longer with subconjunctival injections than with the other two methods. The advantages of subconjunctival injection are borne out by the experimental results with infections of the anterior chamber and vitreous. Such infections respond well to subconjunctival therapy in doses of 25,000 units/ml. administered twice daily for three days. In contrast, vitreous infections, though controlled, hardly give clinically satisfactory results when treated either by ointment in the conjunctival sac or by massive systemic injections—at any rate in the dosage employed so far. It would appear that the two factors that put both local application of ointment and systemic administration at a disadvantage are lower initial penicillin levels intraocularly and the evanescent character of these levels. On the evidence available the addition of adrenaline to the subconjunctival penicillin injection would seem to be an advantage, but this requires clarification. For the moment it would seem that while pure penicillin applied locally, either as an ointment or as a subconjunctival injection, is a highly efficacious agent, and systemic administration in massive doses a most useful procedure, the balance of advantages in severe intraocular infections rests with subconjunctival injection with adrenaline and massive systemic administration.

Of these two procedures subconjunctival injection, though it has clinical disadvantages, would seem to be preferable. Apart from the fact that the experimental results indicate that in vitreous infections subconjunctival injection is the only promising procedure, it must be borne in mind that the animal results cannot be applied mechanically to man. In experiments on rabbits, largely identical doses were used either as subconjunctival injections or intramuscularly. Translated into terms of its application to man an intramuscular dose will have to be many times that of the subconjunctival dose. Clinically the question is, not whether a given dose should be injected subconjunctivally or intramuscularly, but whether a dose of 25,000 units of pure penicillin be given subconjunctivally or about fifteen times that amount intramuscularly. Even so it must be emphasized that the advantage, as judged by aqueous level and effect on experimental infections, lies with the smaller dose injected subconjunctivally. It is, however, possible that ultimately the frequent application of concentrated ointments may prove an adequate procedure.

The aqueous level in man after massive subconjunctival injection of pure penicillin has not yet been determined. There is therefore no evidence that the pharmacological and therapeutic experiments recorded here for the rabbit apply to man; but there is some indirect indication that essentially this

is the case. In four patients who received 50,000 units of pure penicillin subconjunctivally the blood level was determined at hourly intervals between the first and tenth hours. Two patients had adrenaline together with the penicillin. As can be seen from Table XVII, the blood levels were not dissimilar from those obtained in the rabbit (see Table IV). Moreover, the patients receiving adrenaline showed a more consistent blood level, indicating that the penicillin was being absorbed only slowly into the blood stream. Presumably there was also slow absorption into the aqueous, allowing such level as may be reached in the aqueous to be more persistent. The similarity in this respect makes one hopeful that the pharmacological and therapeutic results seen in the rabbit apply to man.

TABLE XVII.—*Subconjunctival Injection of Pure Penicillin in Man: Blood Levels (Units/ml.) reached after 50,000 Units Injected Subconjunctivally*

	Penicillin Only		Penicillin with Adrenaline	
	First Patient	Second Patient	First Patient	Second Patient
At 1 hour ..	1	0.5	1	2
" 2 hours ..	0.125	0.125	1	0.25
" 3 " ..	Not tested	0	1	0.125
" 4 " ..	0.03	0.125	1	Not tested
" 5 " ..	0.1	0.125	1	0.25
" 6 " ..	0.25	0	1	0.125
" 7 " ..	0.03	0	0.25	0
" 8 " ..	0.06	0	0.125	0
" 9 " ..	0.06	0	0.5	0
" 10 " ..	0	0	0.5	0
" 23 " ..	0	0	0	0

In the light of the experimental results it was felt that clinical trials with ointment of pure penicillin in high concentration and with subconjunctival injections both with and without adrenaline, were justifiable, as was the use of commercial penicillin in massive doses in watery solution, or preferably in beeswax, injected intramuscularly.

Clinical Experiences

Pure Penicillin in External Infections

Adequate control of external infections of the eye by tolerated concentrations of commercial penicillin is readily obtained. The use of pure penicillin might conceivably give better results and avoid the occasional occurrence of irritation. These are possibilities that have not been explored to any extent, and the results so far obtained can be summarized briefly and are essentially observations on tolerance.

Ointments.—In five patients with acute conjunctivitis and in six children with blepharitis ointments containing up to 8,000 units of pure penicillin per gramme were well tolerated and effective. When instilled into the conjunctival sac some ointment could still be seen after an hour. There was no tangible difference whether "eucerin" L.M. base or petroleum jelly and liquid paraffin (90 and 10 parts of each respectively) was used. In subsequent trials only the latter base was used.

The tolerance of the eye to ointments containing 25,000, 50,000, and 100,000 units/g. was established by the successful use of such ointments in three cases of hypopyon ulcer, the ointment being instilled at hourly intervals during the first day and at two-hourly intervals subsequently. Tolerance to ointment containing 100,000 units/g. was also noted in infants with ophthalmia neonatorum (but an adequate clinical result could not be obtained, as the treatment of ophthalmia neonatorum by ointments is unsatisfactory, the ointment being difficult to apply when the lids are swollen, and it is, moreover, squeezed out of the conjunctival sac by the spasmodic contraction of the infant's lids).

Solutions and Suspensions.—Watery solutions of pure penicillin 10,000 units/ml. were used satisfactorily in the form of drops in three cases of acute conjunctivitis. Two drops instilled six times at five-minute intervals and subsequently six times at half-hourly intervals were well borne. In six cases of ophthalmia neonatorum concentrations of 10,000 and 12,000 units in methyl cellulose solution (2%, in a buffered aqueous medium) used in the same manner were likewise well tolerated, as was the use in four further cases of a suspension of pure penicillin in oil (castor oil or liquid paraffin) in a concentration of 10,000

units/ml. A suspension of pure penicillin in castor oil (10,000 units/ml.) instilled at hourly intervals for five days proved efficacious in a case of hypopyon ulcer.

Pure Penicillin In Intraocular Infections

The opportunity of studying the value of pure penicillin in eight cases of post-operative infection presented itself by the kind co-operation of colleagues, and the following remarks are based on their reports.

1. In a case of infection after cataract extraction in a diabetic patient one subconjunctival injection of 25,000 units was given on the seventh day after the infection had become established. There was no tangible improvement on the following day, and the eye was excised.

2. In another case of infection after cataract extraction subconjunctival injections of 50,000 units of pure penicillin were given on the sixth and seventh days after the onset of infection, combined with five doses of 100,000 units of commercial penicillin intramuscularly at 12-hourly intervals. There was considerable improvement, but some relapse on the ninth day, when the course was repeated. The infection was clinically controlled, but the eye now shows evidence of early shrinking. A course of sulphamezathine was given without result between the third and sixth days (before penicillin treatment).

3. In this case infection was noted at the first dressing 24 hours after a cataract extraction, and consisted of a localized exudate in the anterior chamber at the temporal side of the corneal incision. Powder of commercial penicillin (about 30,000 units) was sprinkled on the wound, and the procedure was repeated later in the day and again on the following morning, a total of 100,000 units being used. There was a distinct improvement, but the infection still persisted. Sixty hours after the operation a subconjunctival injection of 50,000 units of pure penicillin was given, and the following morning (72 hours after operation) the infection appeared under control, so that further treatment was suspended. Forty-eight hours later there was a relapse; two subconjunctival injections were given, with definite improvement by the following day, when two further injections were made, and one more the day after. Recovery since has been steady and uninterrupted.

4. In a further case of infection after cataract extraction treatment was begun after five days, and consisted in opening the anterior chamber and irrigating with 10 ml. solution of pure penicillin containing a total of 100,000 units. This was repeated on four subsequent days. The infection was checked, and though the eye is likely to be retained it is unlikely to have any useful vision. An organized mass of exudate is still present in the anterior chamber after 14 days. (A subsequent report suggests that after capsulectomy useful vision is likely to be present.)

5. A fully developed panophthalmitis was observed in a patient three years after a trephine operation for a glaucoma. Treatment consisted of drops of commercial penicillin 2,000 units/ml. at half-hourly intervals, with considerable improvement after 24 hours, when the cornea was clearer and a purulent infiltration of the vitreous could be seen. Treatment was continued for two more days without much result. Intramuscular injection of 100,000 units of commercial penicillin was then instituted at 3-hourly intervals for 72 hours, resulting in further control of the infection in the anterior chamber but not of that in the vitreous. Daily injection of 50,000 units of pure penicillin subconjunctivally was begun 14 days after the patient first came under observation, and continued for 4 days. This led to the vitreous becoming less dense, and its reflex, as seen by oblique illumination, less yellow and more greyish; but the eye must be regarded as functionally lost.

6. In a further case of post-operative infection a simple extraction of a hypermature cataract had been performed with loss of fluid vitreous at the operation. The patient was a diabetic. At the first dressing, 24 hours later, slight mucoid discharge was seen, and penicillin drops 2,500 units/ml. were instilled. Twenty-four hours later a severe infection was fully established: the lids were red and oedematous, chemosis was marked, and there was total hypopyon. A course of sulphamezathine was instituted, penicillin drops 2,500 units/ml. were instilled 2-hourly, and injections of penicillin intramuscularly were begun—two of 50,000 units at intervals of 6 hours and subsequently 25,000 units 3-hourly. During the 3 days this treatment was continued the condition steadily deteriorated, and pus began to exude from the corneal section. Subconjunctival injections of 50,000 units of pure penicillin in 0.5 ml. of 2% "novocain" were then given at 8-hourly intervals, with ointment 100,000 units/g. instilled into the conjunctival sac 2-hourly. After 6 days of this treatment the condition had improved to the extent that the patient was now able to open his eyes, and the infection had become localized to the upper segment of the anterior chamber. The injections were now causing pain, and these as well as the ointment were discontinued, atropine drops and fomentations only being used. Further improvement continued for 12 days, when there was a sudden

worsening. The eye became intensely red and engorged and pus in the vitreous could be seen through the pupil. There was no perception of light. A complete hypopyon rapidly formed and the eye was eviscerated. The vitreous was found to be full of pus.

7. In a case of intracapsular extraction complicated by prolapse of vitreous the iris was muddy at the first dressing three days later. Twenty-four hours later a small hypopyon was present. A course of sulphamerazine was instituted and ointment of pure penicillin 50,000 units/g. instilled into the conjunctival sac 2-hourly. In spite of treatment continued for 3 days the hypopyon increased, and the patient showed intolerance to the sulphonamide. Treatment, apart from atropine drops, was changed to subconjunctival injections of 50,000 units of pure penicillin in 0.5 ml. of 2% novocain at 6-hourly intervals. After eight injections the hypopyon had disappeared; the eye was almost white but showed post-operative iridic adhesions. Though the eye was saved, the ultimate outcome as regards vision is still uncertain.

8. A man aged 58 had undergone a second operation for retinal detachment by surface coagulation and three micropunctures. Ophthalmic catgut was used for re-attaching the external rectus severed during the operation, and an intraglottal injection of 50,000 units penicillin in oil was given prophylactically. At the first dressing 48 hours later there was much chemosis, the anterior chamber was deep, and the iris yellowish green. Two further intraglottal injections of 150,000 units of penicillin in oil were given the same day, and full doses of sulphamerazine instituted and continued for 7 days. On the following day the condition was worse, the cornea now being cloudy, and hypopyon was present. Further deterioration occurred during the next 24 hours; the vitreous seen through the remaining area of clear cornea was cloudy. Subconjunctival injections of 50,000 units pure penicillin in 0.5 ml. of 2% novocain with adrenaline were given at 6-hourly intervals, a total of 20 injections being used. Improvement was noted after the sixth injection, and at the end of the course of injections there was no hypopyon, the cornea was clear, and the iris less yellow; the anterior chamber was still deep. General administration of 150,000 units of penicillin in oil was continued daily for 3 days, when all treatment was suspended. On the following day the eye was quiet, the cornea clear, the iris normal in colour, and the anterior chamber almost normal in depth. Eight days later the patient was discharged. The eye is still somewhat red, there was a small hyphaemia, and there appears to be a haemorrhage in the vitreous.

Apart from these eight cases of post-operative infection three cases of infection of the vitreous associated with intraocular foreign body were treated.

1. A man aged 27 sustained a perforating injury of his left eye while using a hammer and chisel. The lens was semi-opaque, the pupil irregular, and there was no red reflex. A foreign body was extracted by the magnet from the vitreous on the same day, and a scleral suture inserted. Convalescence was uneventful for the 5 succeeding days, when suddenly much congestion and chemosis set in. Ointment of pure penicillin 100,000 units/g. was then instilled at 2-hourly intervals for 24 hours, and 50,000 units of pure penicillin in 0.5 ml. of water was injected subconjunctivally and repeated on eight further occasions at 12-hourly intervals. The injections proved painful. After the first two, which did not seem to influence the infection, the wound was explored and the scleral sutures removed, though they did not appear to be infected. In spite of continued treatment the infection progressed, and on the tenth day the eye was eviscerated. The vitreous was found to be a purulent mass. Two hours before evisceration 50,000 units of pure penicillin were injected subconjunctivally, and at evisceration the aqueous and some vitreous were collected for penicillin assay and culture. The penicillin content was found to be 32 units in the aqueous and 0.5 unit in the vitreous. A penicillin-sensitive *Staph. aureus* was present in the vitreous, but there were no organisms in the aqueous.

2. In a man of 21, whose right eye was hit by a small ball-bearing 48 hours previously, hypopyon filling a third of the anterior chamber, and grey opacities in a hazy vitreous, were present when he was first seen. Because of the established infection no immediate attempt at removing the intraocular foreign body was made. Ointment of pure penicillin 100,000 units/g. was instilled at 2-hourly intervals for 3 days, with but little effect. After 14 subconjunctival injections of 50,000 units of penicillin at 6-hourly intervals the infection seemed sufficiently controlled to warrant an attempt at magnet-extraction of the foreign body. There was, however, no response to the magnet. Two days later the infection flared up, and was not controlled by eight subconjunctival injections of 50,000 units. The eye had to be eviscerated, and the vitreous was found to be a purulent mass.

3. While hammering a boiler, three days before admission, a man aged 38 sustained a perforating injury to his right eye. On admission the vitreous was grey and a hypopyon occupying one-third of the anterior chamber was present. X-ray examination showed a foreign body located just outside the globe. A course of sulphamezathine was given unsuccessfully for 3 days, and then suspended for penicillin

therapy. This consisted in the instillation of ointment (100,000 units/g.) 2-hourly by day and 4-hourly at night, and of 20 subconjunctival injections of 50,000 units in 0.5 ml. of 2% novocain solution given at 6-hourly intervals. As a re-location put the foreign body as just inside the globe an attempt at magnet-extraction was made. This, however, proved unsuccessful. The hypopyon disappeared after 3 days' treatment with penicillin, and an organized opacity in the upper part of the vitreous could be seen. This mass has not been influenced by penicillin therapy, and though the treatment seems to have checked the development of panophthalmitis the eye is now shrinking and must be regarded as functionally lost.

Subconjunctival Penicillin In Interstitial Keratitis

Four patients were treated. A girl aged 19 years received twelve subconjunctival injections of 25,000 units in one eye, generally at daily intervals, together with a systemic course of 200,000 units daily for seven days. The injections were well tolerated, though some conjunctival adhesions seemed to form towards the end of the course. The other three patients were soldiers with interstitial keratitis developing apparently as a result of acquired syphilis. In the case of the girl there was rapid and progressive whitening of the eye. Three months later she still had a central corneal haze reducing vision to 6/18; this, however, practically disappeared during the subsequent two months, when vision rose to 6/9. Two of the men responded well to four and six subconjunctival injections of 25,000 units, vision rapidly becoming normal, though they had shown no response to classical local and antisyphilitic treatment. In the third man the response was poor.

Subconjunctival Penicillin In Hypopyon Keratitis

In addition to the three cases of hypopyon ulcer treated successfully with ointments of pure penicillin and one by penicillin in oily suspension there were five others treated by subconjunctival injection.

The first case was that of a man aged 68, who initially responded to pure penicillin ointment (100,000 units/g.) applied hourly for 12 hours. Three days later there was a sudden and severe relapse, the anterior chamber showing a total hypopyon within 24 hours. At this stage two subconjunctival injections of 25,000 units at intervals of 24 hours failed to influence the condition, the eye showing evidence of panophthalmitis. On admission the conjunctival swab had shown *Staph. aureus* microscopically, and culture revealed *Ps. pyocyanea* (? a contaminant). Unfortunately no swab was taken of the contents of the anterior chamber when the eye was ultimately eviscerated.

In a second patient, a lady aged 83, initially more severely affected than the man with a hypopyon of five days' standing, the outcome was more favourable. Hourly instillation of pure penicillin in a suspension of castor oil (10,000 units/ml.) led to rapid improvement within 15 hours. As the cornea was still hazy, some hypopyon still present, and the general condition poor (the patient had a large carbuncle on the nose), two subconjunctival injections of 50,000 units with adrenaline were given at 12-hourly intervals. The eye was now normal in appearance, and penicillin in oil (10,000 units/ml.) was continued for a further 48 hours.

In a third patient, with hypopyon filling half the anterior chamber, pure penicillin in ointment form (25,000 units/g.) was applied at 2-hourly intervals for 48 hours with no marked improvement. One injection of 50,000 units with adrenaline was then given subconjunctivally, and the hypopyon diminished considerably. A second subconjunctival injection was given after 48 hours. Three days later the anterior chamber was clear. Application of ointment at 2-hourly intervals was continued throughout.

In a further case of hypopyon complicating an old-established iridocyclitis with secondary cataract and a tension of +3, treatment with atropine and penicillin drops 500 units/ml. at 3-hourly intervals for 5 days broke down some iris adhesions but did not affect the hypopyon or tension. Subconjunctival injections of 50,000 units of pure penicillin were now given on three occasions on alternate days, while ointment of pure penicillin 100,000 units/g. was instilled 3-hourly during the first 4 days. On the sixth day the hypopyon had become barely visible as a mere crescent. Further treatment by short-wave therapy brought the tension down to normal.

In a case of recurrent hypopyon iritis associated with rheumatoid arthritis, treatment for 12 days with ointment of commercial penicillin 800 units/g. gave no response. There was some improvement after subconjunctival injection of 50,000 units of pure penicillin daily for 3 days, and resolution after 14 days' treatment with penicillin ointment 100,000 units/g. instilled 2-hourly. The end-result was excellent, but it is doubtful whether penicillin treatment contributed to it.

Discussion

The studies recorded here indicate that pure penicillin is remarkably well tolerated by the eye, and that dosage need no longer be limited by the intolerance of the eye to the impure supplies available till recently. There seems to be no upper limit of concentration of drops and ointments of penicillin that can be instilled into the conjunctival sac, while massive amounts can be given subconjunctivally. It is also clear that ointments in high concentration instilled into the conjunctival sac allow adequate penetration into the anterior chamber of the eye. This applies still more to subconjunctival injections, so that the current teaching that adequate therapeutic levels cannot be obtained in the interior of the eye is no longer valid. It is also established that adequate levels of penicillin can be obtained by massive systemic administration. The results of biological assay are confirmed by the experiments in infection of the interior of the eye, for infections of the anterior chamber respond to instillation of concentrated ointments, to systemic administration of massive doses, and to subconjunctival injections. Infections of the vitreous are, however, only partially controlled by systemic administration and by the application of ointments, and subconjunctival injections appear to be the only satisfactory method of treating vitreous infections.

The clinical use of penicillin in intraocular infections still requires clarification. The range of efficacy of ointments for intraocular infections has still to be established, as has the frequency of application. Experimental findings suggest that adrenaline should be used together with pure penicillin for subconjunctival injections, but it remains for clinical trial to establish whether this is necessary or desirable, as also whether 2% novocain solution should replace water as a solvent for the penicillin in such patients who do not tolerate injections of 50,000 units subconjunctivally. Likewise clinical trial will have to establish the best way of giving massive doses of penicillin systemically—whether in aqueous solution or in oily suspension in beeswax. In intraocular infections involvement of the vitreous is always a grave complication. The experimental results recorded here indicate that even a low-grade infection has serious implications, possibly because of the disorganization of the vitreous consequent on physical alterations of its colloidal state. Only the most effective measures against bacterial action are therefore likely to be clinically efficient.

The limited clinical data recorded here bring out forcibly three essential points in penicillin treatment of intraocular infections. In the first place, early treatment is essential; little is to be expected once there is extensive disorganization of the eye from the suppurative reaction. Secondly, it is important to continue treatment for at least 24 hours, and possibly as long as 72 hours, after the eye is apparently normal, as otherwise residual infection may readily flare up—a point that is well appreciated in the treatment of ophthalmia neonatorum. Thirdly, in infection of the anterior chamber evacuation and irrigation at an early stage, supplementary to subconjunctival injections, may prove advisable, but it is clear that little can be expected from irrigation by itself, with its momentary antibacterial effect. The considerable amount of work that has been done on sustaining adequate levels of concentration of penicillin is in itself a strong indication against irrigation as a sole method of treatment.

The adequate use of pure penicillin for intraocular infections promises control of a hitherto uncontrollable condition, but the optimum modes of use have still to be established. At the moment the most promising approach would seem to lie with subconjunctival injections of 50,000 units of pure penicillin at intervals of 6 hours. In the case of vitreous infections it may prove necessary to combine subconjunctival with massive systemic injections, and possibly even direct intravitreal injection of pure penicillin.

Summary

Pure penicillin is well tolerated by the eye when applied locally in ointments containing up to 100,000 units per gramme or in watery solutions. Intravitreal injection of pure penicillin, though not free from secondary effects, is also well tolerated. Repeated subconjunctival injections of 50,000 units in 0.5 ml. of water are well tolerated.

Adequate therapeutic levels of penicillin can be obtained in the aqueous by the installation of concentrated ointments into the conjunctival sac. Higher and more persistent levels are secured by subconjunctival injections. Adequate though rather more evanescent levels are obtained by the systemic administration of penicillin in massive doses. When subconjunctival injections are used the addition of adrenaline increases persistence; intramuscular injection of penicillin in beeswax also gives more sustained levels.

Experimental infections of the anterior chamber are readily controlled by the use of concentrated ointments, subconjunctival injections, and systemic administration of penicillin. In vitreous infections subconjunctival injection is the only procedure that was found satisfactory; no more than partial control is obtained by other methods.

Preliminary clinical trials indicate that the experimental results are largely applicable to man.

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PENICILLIN IN TREATMENT OF ACUTE PUERPERAL MASTITIS

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Since penicillin is now universally available, and especially as it has come to our notice that some clinicians are dissatisfied with its effect in acute puerperal mastitis, a short communication on our own somewhat limited experience would seem appropriate, and might serve as an encouragement for a further trial of our suggested technique. Theoretically, since the predominant causal organism in infection of the breast is *Staphylococcus aureus*, penicillin should prove effective. It appears to us that the unsatisfactory results of which we have heard have been due to (a) the use of local therapy only, or (b) underdosage. Vaughan Hudson (1944) found that local penicillin alone was not successful in acute soft-tissue infections unless they were entirely confined to the surface, and this is not the case by the time a diagnosis of acute puerperal mastitis is made. More recently Hodgkinson and Nelson (1945) have reported from the United States on 24 cases of acute puerperal mastitis successfully treated with large doses of penicillin administered systemically.

The principles underlying the treatment of this disease are, first, emptying of the breast, and, secondly, adequate control of the infection. The first principle may be attained by suppressing lactation by means of oestrogens, or by regular emptying with a breast pump, or by allowing the infant to suckle. We prefer to keep the breast empty by permitting the child to feed, but if the discomfort caused to the patient is very great then we temporarily discontinue suckling and give a small dose of stilboestrol (usually not more than 1 mg. in 24 hours). Adequate control of the infection can, in our opinion, be attained only by the systemic administration of

large doses of penicillin. We administer it by 3-hourly intramuscular injections of 12,000 to 20,000 Oxford units.

Our criteria for starting treatment are pyrexia, associated with flushing, and hardening of the breast; but from some of our cases it appears that pyrexia with pain in the breast, even though there are no other changes, should be considered an indication for treatment.

Results

Case 1.—Primipara, aged 23. 6/11/45: Manual rotation and forceps delivery on account of persistent occipito-posterior presentation. Breast-feeding started. 14/11/45: Severe pain in the left breast on suckling. 15/11/45: T. 102° F. (38.9° C.); P. 100. Hard inflamed area in outer and upper quadrant of the left breast. Suckling very painful. Breast rested for 12 hours and emptied with pump. Penicillin started. Stilboestrol 0.5 mg. 16/11/45: T. 100° F. (37.8° C.). 17/11/45: T. 99.6° F. (37.55° C.). Breast fluctuating. 18/11/45: T. 99.4° F. (37.4° C.). Abscess aspirated and 25 ml. of pus obtained. 19/11/45: T. 98.4° F. (36.9° C.); P. 90. Aspiration again produced pus. No pain. Flush gone. 20/11/45: T. 98.2° F. (36.8° C.); P. 82. No pain. No pus obtained. Slight thickening at site of abscess. 21/11/45: T. 98.2° F. (36.8° C.); P. 72. Breast appears normal. Lactating well. 22/11/45: Penicillin discontinued. Total dosage, 1,050,000 Oxford units.

Case 2.—Primipara, aged 33. 3/11/45: Normal delivery. Breast-feeding begun. 14/11/45: Flushed left breast. T. 99° F. (37.2° C.); P. 100. 15/11/45: T. 102° F. (38.9° C.); P. 116. Suckling stopped for 12 hours. Stilboestrol 0.5 mg. Penicillin started. 16/11/45: T. 100° F. (37.8° C.); P. 116. Flush diminished. Less pain. Baby suckling. 17/11/45: T. 98° F. (36.7° C.); P. 96. 18/11/45: T. 98° F. (36.7° C.); P. 90. Breast normal. 20/11/45: T. 98° F. (36.7° C.); P. 80. Penicillin discontinued. Total dosage, 525,000 Oxford units.

Case 3.—Primipara, aged 21. 6/4/46: Normal delivery. Breast-feeding started. 16/4/46: Baby developed a septic finger, which was treated with penicillin. Breast-feeding continued. 20/4/46: Baby recovered. Mother's temperature, 101° F. (38.3° C.); P. 100. Flushed left breast. Penicillin begun. Breast-feeding continued. 21/4/46: T. 103.8° F. (39.9° C.); P. 126. 23/4/46: T. 98° F. (36.7° C.); P. 80. Little pain, definite thickening and hardness inner and lower quadrant of left breast. 24/4/46: T. 98° F. (36.7° C.); P. 82. No flush. Thickening resolving. 25/4/46: T. 98° F. (36.7° C.); P. 82. Thickening almost completely resolved. 26/4/46: Breast normal. Penicillin discontinued. Total dosage, 600,000 Oxford units.

Case 4.—Para-2, aged 20. 8/4/46: Normal delivery. Breast-feeding started. 17/4/46: T. 101.2° F. (38.4° C.); P. 100. Flushing and thickening of the left breast. Penicillin begun. 18/4/46: T. 98.6° F. (37° C.); P. 104. 19/4/46: T. 100.8° F. (38.2° C.); P. 104. 20/4/46: T. 98° F. (36.7° C.); P. 90. Breast normal. 22/4/46: T. 98° F. (36.7° C.); P. 90. Penicillin discontinued. Total dosage, 600,000 Oxford units.

Case 5.—Primipara, aged 21. 20/4/46: Normal delivery. Breast-feeding started. 26/4/46: Cracked nipples. Breast rested for 12 hours. 27/4/46: T. 102° F. (38.9° C.); P. 130. No abnormality found on examining breasts. 28/4/46: T. 103° F. (39.4° C.); P. 130. Definite thickening and tenderness outer and upper quadrant of left breast. Penicillin begun. 29/4/46: T. 99.4° F. (37.4° C.); P. 96. Breast flushed and thickened. 30/4/46: T. 98° F. (36.7° C.); P. 98. Flush less. Thickened area considerably smaller. 1/5/46: T. 98° F. (36.7° C.); P. 90. No flush. 2/5/46: T. 98° F. (36.7° C.); P. 90. Breast normal. 4/5/46: T. 98° F. (36.7° C.); P. 80. Penicillin discontinued. Total dosage, 700,000 Oxford units.

Case 6.—Para-2, aged 26. 28/4/46: Normal delivery. Breast-feeding begun. Owing to shortage of beds this patient was transferred to the district on the third day of the puerperium. She herself attempted to discontinue breast-feeding on the tenth day and developed acute puerperal mastitis. 12/5/46: Readmitted to hospital. T. 100° F. (37.8° C.); P. 106. Tender flushed left breast. Thickened area 2 in. (5 cm.) in diameter in upper and outer quadrant. Penicillin started. Baby put back on breast and all artificial feeding stopped. 13/5/46: T. 100° F. (37.8° C.); P. 104. Breast flush limited to upper and outer quadrant. Tenderness also limited to this area. 14/5/46: T. 100° F. (37.8° C.); P. 83. Thickening now 1 in. (2.5 cm.) in diameter. Slight flush. Slight tenderness. 15/5/46: T. 97.8° F. (36.55° C.); P. 64. No flush. Slight thickening. 16/5/46: T. 98° F. (36.7° C.); P. 80. No thickening, flush, or tenderness. Penicillin discontinued. Total dosage, 500,000 Oxford units. Two weeks later this patient returned to the clinic. She was still lactating freely, but the baby was again being artificially fed. She was instructed to re-establish breast-feeding, but has since refused to return to clinic.

Case 7.—Para-3, aged 30. 29/4/46: Normal delivery. 5/5/46: Cracked nipples. Breast rested for 12 hours. 7/5/46: T. 101.8° F. (38.8° C.); P. 100. Right breast very flushed and tender. Penicillin started. 8/5/46: T. 98.4° F. (36.9° C.); P. 88. 9/5/46:

T. 98° F. (36.7° C.); P. 82. 10/5/46: T. 97° F. (36.1° C.); P. 80. Breasts normal. Penicillin discontinued. Total dosage, 300,000 Oxford units.

Case 8.—Primipara, aged 25. Delivered at another hospital and admitted 9/5/46 on account of an infected perineal laceration, for which she was being treated with sulphamezathine. The baby was not admitted. 10/5/46: T. 100° F. (37.8° C.); P. 100. Tender flushed left breast. Lactation suppressed with stilboestrol. Penicillin begun and sulphamezathine discontinued. 11/5/46: T. 100° F. (37.8° C.); P. 104. Slight flush and tenderness over an area the size of a penny. 12/5/46: T. 99.6° F. (37.55° C.); P. 86. Breasts normal. 15/5/46: T. 98° F. (36.7° C.); P. 80. Penicillin discontinued. Total dosage, 500,000 Oxford units.

Case 9.—Para-3, aged 32. 5/6/46: Normal delivery. Breast-feeding begun. 12/6/46: T. 99.6° F. (37.55° C.); P. 90. Outer and lower quadrant of left breast flushed and tender. Penicillin started. 13/6/46: T. 97.6° F. (36.4° C.); P. 88. Flush almost gone. Slight tenderness. 14/6/46: T. 97.3° F. (36.55° C.); P. 86. Breast normal. 18/6/46: T. 97° F. (36.1° C.); P. 80. Penicillin discontinued. Total dosage, 500,000 Oxford units.

Case 10.—Para-2, aged 26. 9/6/46: Normal delivery. Breast-feeding begun. 17/6/46: T. 100° F. (37.8° C.); P. 120. Flush, tenderness, and induration in inner and lower quadrant of right breast. Penicillin started. 18/6/46: T. 98° F. (36.7° C.); P. 110. Severe pain in breast. Stilboestrol 3 mg. As breast-feeding did not increase the pain it was continued. 19/6/46: T. 97° F. (36.1° C.); P. 84. Flush decreased. Localized hardening the size of a walnut. 20/6/46: T. 97.6° F. (36.4° C.); P. 84. Breast normal. 22/6/46: T. 97.6° F. (36.4° C.); P. 72. Penicillin discontinued. Total dosage, 500,000 Oxford units.

Comment

The above constitute the total number of cases of acute puerperal mastitis seen in the Princess Mary Maternity Hospital between November, 1945, and July, 1946, during which time 1,537 deliveries took place. In these cases there was quick resolution, with no prolonged disorganization of the breast; in only one instance did suppuration occur, and this was treated by closed aspiration. Lactation was not interfered with, and breast-feeding was maintained except in Case 8, where the baby was not admitted to hospital. The total period of disability was not longer than 7 days, and discomfort was never present for more than three days. The following table shows the length of time taken to achieve a cure as judged by the disappearance of all signs.

2 cases were cured in 2 days			
4	"	"	3
1	case was	"	4
1	"	"	5
1	"	"	6
1	"	"	7

No baby became infected as a result of the continued suckling. There were no recurrences after the cessation of treatment.

These results are in such great contrast to those of the usual methods that the treatment seems worthy of an extended trial, for it appears that, provided early treatment is instituted, penicillin can abolish the morbidity of this painful and crippling puerperal complication. Our results are in agreement with those of Hodgkinson and Nelson, who suggest that, owing to the ineffectiveness of sulphonamide therapy in this disease, it should be entirely replaced by penicillin.

We wish to thank Dr. Jean Grant and Dr. G. I. Isaacs for their assistance in treating these cases.

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Two motion pictures on tuberculosis case-finding with miniature film mass radiography of the chest have just been completed for the U.S. Public Health Service, under the supervision of the Tuberculosis Control Division. The films demonstrate the techniques, the staff, procedures, and equipment required for: (1) routine admission miniature film chest x-ray examination of all patients and personnel entering general hospitals; (2) miniature film mass radiography in community tuberculosis case-finding programmes. These are teaching and orientation films for an audience of professional, technical, or administrative personnel, or trainees, in the fields of medicine, public health, and hospital care. The film prints are 16 mm. size, black and white, with sound. They may be purchased from Castle Films, Inc., 30, Rockefeller Plaza, New York 20, N. Y.: routine admission chest x-ray in general hospitals, \$23.00 per print; techniques of group chest x-ray services, \$21.00 per print.

USE OF "BENADRYL" FOR PENICILLIN URTICARIA

PRELIMINARY REPORT

BY

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"Benadryl" (β -dimethylaminoethyl benzhydryl ether hydrochloride) is a synthesized chemical compound said to possess both anti-allergic properties and antispasmodic activity capable of relieving spasms of smooth muscle. This antihistamine agent is administered orally in the form of capsules, the dose for an average adult being one capsule (50 mg.) three or four times daily. Its toxic-effects are said to be minimal but include a sensation of drowsiness and nausea. In consequence the simultaneous administration of barbiturates or opium derivatives should be conducted with caution. During the past year this drug has been undergoing extensive trials in the United States of America, and has shown encouraging results as a palliative for urticaria, angioneurotic oedema, serum sickness, and erythema multiforme; while hay-fever and vasomotor rhinitis have also been treated.

One of its uses in the U.S.A., and doubtless soon on this side of the Atlantic too, is the symptomatic treatment of urticaria occurring in patients undergoing penicillin therapy. This condition, which may arise at any time during treatment, often becomes apparent at the end of a 7- or 12-day course in the treatment of syphilis. Generalized urticaria may be associated with oedema of the eyelids, swellings of the ankles or wrists, and effusions into joints, and, when treated symptomatically by means of adrenaline and ephedrine, usually takes 3 to 5 days to subside completely. The frequency of this complication depends to some extent on the particular batch of penicillin used or on the medium in which it is prepared. In America the early penicillin in oil-beeswax mixtures were said to be more liable to cause urticaria than penicillin in aqueous solution. It is therefore likely that this drug will be widely used in this connexion and the preliminary reports from America are most encouraging.

The following describes the action of "benadryl" on six cases of urticaria, five of which were considered to be due to intramuscular penicillin therapy. The penicillin used throughout was manufactured on Feb. 6, 1946, by the Distillers Company, Ltd.; the batch number was 0025.

Case I

A young man of 24, suffering from congenital syphilis with interstitial keratitis. The blood Wassermann was strongly positive and the quantitative Kahn 10 units. The cerebrospinal fluid had a protein value of 80 mg. per 100 ml. and contained a slight excess of globulin, but was otherwise normal. There was no history of previous allergy. In April, 1946, he received 720,000 units of penicillin in 36 three-hourly injections for a septic throat following dental extraction.

Present Attack.—Between Aug. 3 and 3 a.m. on Aug. 16, 1946, he was given a total of 4,600,000 units of penicillin (40,000 units every three hours). Some complaints were made of local pain after these injections. At 10 a.m. on the 17th there was slight urticaria, with a small lesion below the left eye and a larger one on the left flank. When seen again at noon, four more lesions had appeared on the extensor surface of the right forearm. One capsule (50 mg.) of "benadryl" was given i.d. for one day, and by the following morning the urticaria had entirely subsided and there was no recurrence. No untoward reactions were noted. The maximum temperature recorded during the attack was 99° F. (37.2° C.), and a blood count on Aug. 19 showed: W.B.C., 8,500 per c.mm. (polymorphs, 48.5%; lymphocytes, 44%; mononuclears, 4%; eosinophils, 3.5%).

Case II

Male aged 38, with a diagnosis of latent syphilis. This was discovered in August, 1945, when the cerebrospinal fluid was normal but the blood Wassermann was strongly positive and the quantitative Kahn 20 units. Since then, though antisyphilitic treatment had been continuous, at the time of admission the Wassermann was still strongly positive and the quantitative Kahn 2 units. There had been a previous attack of urticaria following an injection of antitetanic serum while in India in 1935. In September, 1945, he received

00,000 units of penicillin over 7½ days without ill effect. This was consolidated with two full courses of neosarsphenamine and muth, which were completed in July, 1946.

Present Attack.—Penicillin therapy was begun on July 26, 1946, in injections of 40,000 units were made every three hours. On July 6, when 3,120,000 units had been administered, generalized urticaria developed involving the back, thighs, wrists, and knees. There was no pyrexia, and a blood count on this day showed the W.B.C. to number 8,800 per c.mm. (polymorphs, 52%; lymphocytes, 45%; mononuclears, 4.5%; eosinophils, 2%; basophils, 0.5%). One capsule (50 mg.) of "benadryl" was then administered orally. By the following day there was some improvement, and the dose was increased to one capsule t.i.d. By the 8th further improvement was evident, there remaining only a few scattered erythematous patches. Three more capsules were given, making a total dosage of 350 mg. over 2½ days, and by the next day the skin was quite clear. While the result was not dramatic, the improvement was steady and maintained. The usual duration of such a severe reaction before improvement is manifest is, in my experience, about 4 days.

Case III

Man aged 29, with a diagnosis of sero-positive primary syphilis. There was no history of allergy or of previous penicillin treatment.

Present Attack.—Between July 17 and 24, 1946, a total of 2,400,000 units of penicillin were administered in conjunction with 10 daily intravenous injections of 0.06 g. of mapharside. The arsenic injections were completed on the 28th, at which time a white cell count showed W.B.C., 8,000 per c.mm. (polymorphs, 61%; lymphocytes, 35%; mononuclears, 4.5%; basophils, 1%). On this day he developed severe generalized urticaria of left thigh, buttocks, and both legs. He was given two doses of adrenaline 10 min. (0.6 ml.) and 1b. ephedrine 1/2 gr. (32 mg.) t.i.d. On the 29th the urticaria was unchanged in severity, and one capsule of "benadryl" (50 mg.) was prescribed t.i.d. By the following morning four capsules (200 mg.) had been taken, but the urticaria was worse, and it was decided to give a further 10 minims of adrenaline in addition. This time the administration had rather alarming results. The patient at once became pallid, developed a rapid thready pulse, and collapsed. As he recovered, his temperature rose within an hour to 101° F. (38.3° C.). A blood count gave the following results: R.B.C., 3,030,000; Hb, 99%; W.B.C., 13,300 (polymorphs, 83.5%; lymphocytes, 13.5%; mononuclears, 2%; basophils, 1%). At this time it was thought that the severe reaction to the adrenaline might in some way be aggravated by the concurrent administration of "benadryl." Both drugs were therefore discontinued.

On the 31st the general condition was much improved, though intense pallor persisted. The urticarial lesions were still pronounced in the thighs and chest, and the temperature was 99° F. (37.2° C.). Ephedrine 1/2 gr. (32 mg.) t.i.d. was then renewed, and by the following day the lesions were subsiding, though the temperature remained at the same level. The patient continued with the ephedrine and by the 8th the skin was normal, but the temperature was still 99° F. He was discharged to duty on Aug. 14.

Case IV

A youth of 18½ with recurrent impetigo; the lesions were on the face and behind the ears. There was no history of previous allergy. In June, 1946, he had been admitted to hospital with impetigo of the face, and was treated with penicillin cream for two weeks. Two weeks after discharge the condition relapsed, and he was readmitted and treated with penicillin cream for a further week. After another week at his unit, a second relapse occurred, and he was admitted to hospital again on Aug. 3.

Present Attack.—He was treated locally for 4 days with penicillin cream, after which time intramuscular injections of penicillin were given. When he had received 8 three-hourly injections to a total of 320,000 units he developed a generalized urticaria and had a temperature of 101° F. (38.3° C.). Three capsules of "benadryl" (150 mg.) were given over 24 hours with entirely satisfactory results, the urticaria disappearing.

Case V

A 19-year-old youth, with impetigo (beard area), giving a history of penicillin sensitivity. He was admitted to hospital on July 22, 1946, having been treated elsewhere with penicillin cream for impetigo of the face. He thought this had made the condition worse. He was then treated with intramuscular penicillin for 26 three-hourly injections of 40,000 units up to a total dose of 1,040,000 units, and at the same time a gentian-violet lotion was applied to the face. The local condition showed considerable improvement, but on July 30 penicillin cream was again applied and the skin relapsed.

Present Attack.—On Aug. 11 it was decided to give him a further course of penicillin, but by the next day he had severe generalized urticaria with oedema of the eyelids, swelling of both wrists, and an effusion in both knee-joints. Three capsules of

"benadryl" (150 mg.) were given on that day, and on the 13th the urticaria had gone, though the oedema around the eyes and wrists persisted. This too had subsided by the next day, and the "benadryl" was continued until a total dose of 450 mg. had been given over 3 days with entirely satisfactory results. On the following day, however, there was a relapse, both of the oedema around the eyes and wrists and also of the urticaria. This time it was treated by ephedrine, and the condition subsided gradually over 5 days. The temperature was normal throughout.

Case VI

A youth aged 18. The diagnosis in this case was giant urticaria and drug sensitivity. There was no history of previous allergy or sulphonamide administration. The patient was a seborrhoeic subject and had some lesions of seborrhoeic dermatitis on the chest of some two months' duration.

He was admitted on July 19, 1946, with an acute oedema of his penis giving it a corkscrew appearance. He had always had phimosis. There was no evidence of suppurative or urethral discharge, and his Wassermann and Kahn reactions later proved negative. He was given two divided doses of adrenaline *q.viii* (0.5 ml.) and ephedrine gr. 1/2 (32 mg.) t.i.d., and a course of sulphathiazole, 1 g. 4-hourly, was begun. Next day, there being little change, the treatment was repeated. By the 22nd, however, after receiving 15 g. of sulphathiazole, there appeared a generalized toxic erythema and the scrotum also became oedematous. This was ascribed to the sulphonamide, and the drug was discontinued. A blood count showed: W.B.C., 17,500 (polymorphs, 72%; lymphocytes, 25%; mononuclears, 2.5%; eosinophils, 0.5%). On the 23rd the skin in both groins was weeping. He was treated with calamine lotion and luminal gr. 1/2 thrice daily, and showed steady improvement, as the generalized erythema faded and the weeping areas dried and became inactive.

Present Attack.—On July 27, after receiving a total of 6 gr. (0.4 g.) of luminal, there was slight swelling of the dorsum of the left hand. On the 28th the dorsa of both hands had swelled and two bullae had appeared in the third and fourth finger clefts on the right side, and both thighs, moreover, showed large erythematous and urticarial patches. Treatment was started with "benadryl," a capsule (50 mg.) t.i.d., with very satisfactory results in so far as the urticaria and the oedema subsided within 24 hours. The bullae, however, noticeably increased in size, and four developed on the dorsum of the right hand and one at a similar site on the left. It was then decided to aspirate these as they interfered with flexion of the fingers; some 5 ml. of clear fluid was withdrawn from each. By the 30th no more urticaria had appeared, and the "benadryl" was discontinued after 450 mg. had been given; though the bullae had to be aspirated again on this date.

Improvement was then rapid, and, apart from peeling of some skin that had been affected by the bullae, by Aug. 2 there was no lesion requiring treatment. On the 5th another attack of swelling of the penis and an exacerbation of the seborrhoeic lesions in the groin occurred. As with the previous attacks there was no elevation of temperature, and a blood count showed the W.B.C. to number 10,500 (polymorphs, 63%; lymphocytes, 32%; mononuclears, 3.5%; eosinophils, 1%; basophils, 0.5%). This relapse was treated with "benadryl," one capsule (50 mg.) three times a day. There was great improvement within 24 hours, and by 48 hours the oedema had completely subsided. A total dose of 450 mg. was given for the relapse.

Summary

An account is given of 6 cases of urticaria treated with "benadryl," of which 5 were associated with intramuscular penicillin therapy.

The doses ranged from 150 to 450 mg. in each case.

A reaction was noted in one patient who received concurrent adrenaline.

The results obtained showed success in five cases and failure in one (Case III). Two of the successes relapsed (Cases V and VI), one of which was again treated with the drug with a satisfactory result.

I am grateful to Major B. Schwartz, R.A.M.C., and Major L. Sefton, R.A.M.C., for their help, and to Messrs. Parke, Davis and Co. for kindly supplying me with the "benadryl."

In a White Paper entitled *Organization of the Colonial Service*, recently issued by the Colonial Office, the need for large reinforcements is stressed. Government policy aims at progressive self-government by the peoples in the Colonies, and it is from them that many of the recruits must be drawn. The potentialities and abilities of these peoples have been neglected in the past; they lack the opportunities for education available to candidates in the United Kingdom and Dominions; so the creation of educational facilities will be immediately undertaken by the Government, and the sum of £1,000,000 has already been allocated over the next ten years to enable selected Colonial candidates to receive higher education.

CONGENITAL PATENCY OF THE FORAMEN OVALE CORDIS, WITH SUDDEN DEATH DURING EXERCISE TOLERANCE TEST

BY

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The following case of congenitally patent foramen ovale of the heart in an adult is reported, as it presents a most unusual clinical termination: sudden death from acute cardiac failure.

Clinical Features

The patient, an able-bodied Indian seaman aged 25, with six years' service, was at the time in question serving aboard a light destroyer of the Royal Indian Navy. He was of good-class Muslim family from the Upper Punjab. There was no past history of illness or disability. He had passed his several medical examinations before and after his enrolment in the R.I.N., and his medical records were clear. He had been a notably enthusiastic recruit, with a good record of service, free of any default.

Towards the end of November, 1942, his ship had had a sharp engagement at sea against superior enemy surface forces, and after a running battle of several days, from which H.M.I. ship emerged victorious, it returned, crippled, to port for refitting. The patient reported sick on the day after the arrival in port, being unable to attend the victory parade given in honour of the ship's gallant action. He stated that since the recent naval action, about five days before, he had felt "peculiar," and that if, during the course of his duties, he ran, he felt dizzy, became out of breath, and could feel his heart beating in a peculiar way. These symptoms alarmed him because he had never noticed them before.

On examination by the medical specialist he appeared of good physique and in good health, and had no dyspnoea at rest. His pulse was regular at 68 per minute. He did not exhibit appreciable cyanosis on examination; there was no oedema of the ankles. On auscultation of the heart no murmurs were detected. The patient, a cheery and co-operative lad, then said he "could best demonstrate his complaint after a run" (medical specialist's report), an exercise tolerance test to which his examiner saw no objection. Accordingly the patient was instructed to run to the end of a corridor, a distance of some 20 yards (18 m.). At the end of the corridor, just as he turned to run back, he fell in a faint, from which he did not recover, despite the medical attention at hand. He died in three to four minutes.

Findings at Necropsy

A post-mortem examination was made two hours after death; it was primarily required for purposes of a medico-legal report.

External Examination.—The body was well nourished, of average stature, and of normal skeletal development. There was no clubbing of the fingers or toes, no oedema of the ankles or of subcutaneous tissues anywhere, no cutaneous haemorrhages or other congestive features of the head or neck, and no jaundice.

General Internal Examination.—The muscles and tissues of the body generally were well coloured, there being no evidence of any anaemia. There was no excess of free fluid, nor were there any abnormal contents in any of the body cavities. The organs, apart from the heart and aorta (q.v.), were healthy and did not show any evidence of chronic venous congestion. The blood was still fluid in the heart and vessels, and there was no cardiac, pulmonary, or cerebral embolism.

Cardiovascular System.—The pericardial sac contained only some 3 to 4 ml. of clear straw-coloured fluid. There was no pericarditis. On inspection and palpation the heart was distinctly enlarged, mainly due to a relatively enormous distension of the right atrium, which contained some 9 to 10 oz. (250 to 280 ml.) of dark fluid blood. The great afferent veins, superior and inferior, were unduly swollen with blood. The left side of the heart was not appreciably enlarged, but the left ventricular wall felt unduly hard and thick. The ascending aorta was prominent, and its wall was palpably thickened and rigid. On dissection of the heart the abnormal findings were: (1) a patent foramen ovale between the atria, fairly high up; (2) an advanced and confluent atheroma of the wall of the ascending aorta, with a diminishing degree of atheroma in the descending aorta, thoracic and abdominal; and (3) a distinct myo-hypertrophy of the wall of the left ventricle. The margins of the "foramen" ovale were unduly separated, and the superior curtain of the endocardial reflexion formed a large semilunar flap, manifestly capable of occluding the opening when the atria were not abnormally distended—that is to say, in the collapsed state of the heart after

draining most of the blood from it—but when the atria were distended with fluid, or on stretching the septum widely with the fingers, a semicircular fenestra or opening some 8 to 10 mm. in diameter was exposed, permitting of ready communication between the atria. The atheroma of the aorta started beyond the aortic valve and surrounded the orifices of both coronary arteries, so that the inlets to each of these appeared distinctly narrowed though readily distensible. The atheromatous plaques as far as the arch were confluent, so that the whole aortic wall to the level of the arch was thickened, hard, inelastic, and appreciably, though not grossly, dilated. The change appeared to be strictly intimal, resembling the ordinary atheroma commonly seen in much older subjects. There was no medial change, and the appearances were not at all suggestive of syphilis. There was no sign of any coarctation of the aorta. Both coronary arteries were exposed carefully throughout, but these were innocent of any atheromatous change. The myocardium was of good colour and showed no evidence of ischaemic pathology. The pulmonary valve was not at all stenosed, and the wall of the pulmonary artery was healthy throughout. There was no patency or persistence of the ductus arteriosus. There was no perforation in the interventricular septum. All the heart valves were normally constructed and were devoid of any apparent pathological change. The valve curtains of the mitral valve exhibited no thickening or any undue rigidity; the chordae tendineae and papillary muscles revealed no malformation. The valve just admitted three fingers, and no more; we find at necropsy that many apparently "normal" hearts do. Only the wall of the left ventricle showed any degree of hypertrophy, and this was of moderate degree. The whole heart, emptied of blood, weighed 310 g. Blood collected from the heart, post mortem, gave a negative Kahn test result.

Respiratory System.—The lungs were comparatively dry and were air-filled throughout. There was no consolidation or oedema. The upper air-passages were clean, dry, and healthy looking.

Liver and Spleen.—These organs were not enlarged and showed no visible evidence of any chronic venous congestion. A frozen section of the liver revealed no fatty change.

Urinary System.—The kidneys were of average size. The parenchyma showed no appreciable pathological changes. The urinary bladder was healthy and contained a few ounces of clear straw-coloured urine.

Nothing abnormal was found in the examination of the brain. The pituitary, thyroid, and parathyroid glands, the adrenal bodies, prostate, and testes exhibited no pathological features. There was no enlargement of any of the regional lymphatic nodes. The osseous and muscular systems showed no obvious morbid change.

Histological Examinations.—These were restricted to the wall of the aorta, the liver, and one kidney. The aorta showed only intimal change, and there was no perivascular infiltration of the vasa vasorum such as to suggest any syphilitic aetiology. There was no microscopical evidence of chronic venous congestion of the liver. The renal parenchyma showed no degenerative changes, and there was no interstitial cellular infiltration.

Commentary

Clinically, the cause of death was manifestly syncopal, and at necropsy this appeared to be referable to the acute dilatation and engorgement of the right atrium. This atrial distension was strikingly greater than anything I have seen in cases of fatal syncope from other causes—in fact, in any other necropsy. It was considered highly probable that the distension was directly due in some way to the congenital persistence and patency (the latter, terminally) of the foramen ovale. The appearance of the specimen at necropsy suggested that physiological occlusion had been possible. There had been no prolonged decompensation or significant leakage through the defect, since there was no evidence of congestive sequelae of any chronic nature in the tissues or organs of the body generally.

The emphatic assurance given by the patient that his symptoms had developed suddenly, coupled with his demeanour, which was one of surprise and pique that such an absurd misfortune should have befallen him in the hour of his triumph, forced me to the conclusion that there was an immediate cause-and-effect relationship between the recent strain on the heart and its sudden failure. It may be that during the prolonged nervous excitement and physical activity of the naval action (at one phase the men had been at action stations continuously for sixty hours) there had been dilatation of the atrial defect and an unaccustomed or excessive leakage through that defect from left to right. In this case the atheromatous condition of the aorta may have contributed by increasing the load on the heart; possibly a terminal acute incompetence of the mitral valve may be the missing link in the chain of events. In this

spect the definite absence of any appreciable degree of limonary oedema is recalled.

Alternatively, it may be argued that the acute cardiac failure as due to coronary ischaemia, purely and simply. Certainly here was aortic atheroma here, and this involved the wall in the immediate vicinity of the orifices of the coronary artery. Similar cases of sudden death among soldiers in training during the recent war were usually ascribed to coronary chaemia. If the present case was due to that cause then the extreme dilatation of the right atrium requires explanation. It is certainly an interesting and apparently insoluble pathological problem.

THE COUGH SYRUP

BY

ELDON M. BOYD, M.D.

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While syrups are commonly used as correctives for the disagreeable taste of medicines, there is probably no one group of drugs so consistently prescribed and dispensed in a syrupy vehicle as are expectorants and antitussives. Many drugs in this category could be prescribed as tablets, pills, capsules, etc., and any undesirable taste thus effectively dealt with; but they continue, for the most part, to be given in the form of a syrup. A good proportion of the syrups listed in the British and United States *Pharmacopoeias* contain drugs commonly held to be expectorant, while the number of non-official and patent cough syrups is legion. These considerations lead to the question of what, if any, are the pharmacological and therapeutic effects of syrups *per se* in the treatment of cough, and whether there is any justification for their continued use in cough medicines.

Historical

Why and when cough syrups were first used is a moot question in the investigation of which many interesting facts may be brought to light. Sugar, the basis of syrups, was first manufactured from the sugar-cane in Bengal, where it was called *sharkarā*, an old Sanskrit word which meant a substance made up of small grains (Flückiger and Hanbury, 1879). Etymologically the word *sharkarā* or *śarkarā* is the root of many modern words, such as sugar, sucrose, saccharin, syrup, sherbet, etc. From the Sanskrit the Persians changed the word to *shakar* and the Arabians to *sukkar*; in early Latin it became *saccharum*, and by mediaeval times had altered to *succarum*: from these words there was a gradual transition to the early French word *sukere*, then *sucre*, to the early English *sugre*, then *suger*, and finally to *sugar*. About the 8th century the cultivation and manufacture of sugar spread eastward from India to China, the Malay and the Pacific Islands, and westward through Persia to the Arabian Empire. Arabian physicians, especially Rhazes and Avicenna, are usually credited with introducing syrups into the therapeutic armamentarium. The word "syrup" is generally said to originate from an Arabic word, *sharab*, which meant a drink, but it is obvious that this Arabic word was derived from the more ancient Sanskrit source. It is interesting to note also that our word "candy" may be traced back to the Arabic word *kandān*, which meant a lump of sugar.

No evidence has been found that any one physician was responsible for the introduction of the cough syrup, and it seems most likely that the common people found, by trial and error, that sugar or syrups or candy held in the mouth would relieve a cough. In recent years Gordonoff (1935) has shown, using modern techniques, that the sucking of candy has a pharmacological effect upon the respiratory tract, which he interpreted as meaning an increased output of bronchial or respiratory-tract fluid: In a later extensive review of the physiology and pharmacology of expectorants Gordonoff (1938) has made the statement, without references, that sugars were ancient folk-remedies for colds. Should this be true—and it would appear to be correct from what evidence is available, or rather lack of evidence to the contrary—it is readily apparent how cough syrups were introduced into medical practice, because

the early pharmacopoeias were, to a large extent, compilations of folk-remedies of earlier days. The retention of the cough syrup in subsequent editions of the pharmacopoeias and in the practice of medicine is readily understood when one looks over the list of drugs of disagreeable taste described in textbooks of materia medica and therapeutics of the last 200 years and even to-day—e.g., Beckman (1945).

Gordonoff (1935, 1938) claims to have proved that syrups do act as expectorants by augmenting the output of bronchial or respiratory-tract fluid. He noted that the duration of action is short, and hence advised giving syrups at intervals of about two hours. He also reported that maltose and sucrose, but not lactose, had expectorant properties.

Antitussive Action of Syrup in Man

Syrupus, B.P., was given in doses of two teaspoonfuls t.i.d. or q.i.d. to 28 patients complaining of cough due, for the most part, to an attack of the common cold. I interviewed these people at short intervals, and recorded the results of "therapy" as effective or ineffective in relieving the cough. Where there was any doubt as to the syrup's having had an antitussive action the case was listed as ineffective. It should be mentioned that the patients did not know what medicine they were getting. Those who obtained relief from cough with syrup reported, on the average, that the antitussive effect lasted about two hours. In this small series of cases 68% got complete relief from cough, and in the remaining 32% there was little or no antitussive effect. Allowing for the subjective factor, which could not be controlled because a true control group was not possible, it seems reasonable to conclude that syrup alone actually did have some antitussive properties. In view of the fact, as will be described below, that syrup given by stomach tube to animals did not augment the output of respiratory-tract fluid, and in view of the short antitussive action of the syrup in man, it seems most reasonable to conclude that syrup taken by mouth exerted a linctus-like action by soothing the irritated pharynx and upper respiratory tract—irritation which presumably was responsible for cough in approximately two-thirds of the patients studied. The evidence from these experiments would favour the retention of syrup as a vehicle for expectorant and antitussive medicines. The results suggest that when an expectorant mixture is given in a syrupy vehicle the syrup exerts an immediate direct demulcent action, while in an hour or two the effective expectorant drugs in the mixture take over the same function but in a different way—namely, by augmenting the output of respiratory-tract fluid.

Syrups and the Output of Respiratory-tract Fluid

It was next investigated whether syrups alone have a true expectorant action, as claimed by Gordonoff. There is no unanimous agreement on the definition of an expectorant. Faced with this problem, when research on expectorants was begun a number of years ago in this department of the university, the decision was made to leave in abeyance the question of a definition and to investigate those pharmacological and therapeutic properties of reputed expectorants which might offer an explanation of their mode of action. Older methods for studying the nature of expectorant action were tried and discarded for one reason or another. The first new method used was to measure the water content of the tracheal, bronchial, and alveolar portions of the respiratory tract before, and at intervals after, administration of an expectorant drug. The technique was applied to a study of the creosotes and guaiacols (Boyd and Johnston, 1940; Connell, Johnston, and Boyd, 1940) and, while reasonably satisfactory, the procedure was cumbersome, time-consuming, and, more seriously, it did not provide the information most desired, so that it too was abandoned.

Gunn (1927) has stated: "If it were as easy to determine the quantity of bronchial secretions as it is to measure the amount of urine, there would be by this time no such vagueness in regard to the effect of expectorants as still exists." The problem, therefore, was to find a satisfactory method for quantitatively measuring the output of bronchial secretion or, as is used in this laboratory, respiratory-tract fluid (R.T.F.)—a term which does not designate the site of origin, at present imperfectly understood, of this fluid in the respiratory tract. Perry and Boyd (1941) eventually worked out a technique for determining the exact output of this fluid and of providing a means whereby

it could be collected and analysed. This method, with subsequent modifications, improvements, and variations (Boyd, Jackson, and Ronan, 1943; Boyd and Ronan, 1942; Boyd and MacLachlan, 1944; Boyd, Perry, and Stevens, 1944), consists essentially in collecting R.T.F. through a T-cannula ligated into the trachea of lightly anaesthetized or decerebrate animals, with the inhaled air warmed to body temperature and saturated with water vapour. By means of this technique it has to date been possible to measure the effect upon the output and composition of R.T.F. of the following drugs: ammonium chloride, ammonium carbonate, and thymol (Perry and Boyd, 1941); various guaiacols and creosotes (Stevens, Ronan, Sourkes, and Boyd, 1943); sympathicomimetic amines (Boyd, Jackson, and Ronan, 1943); ether (Boyd and Munro, 1943); inhalation of ammonia (Boyd, MacLachlan, and Perry, 1944) and steam (Boyd, Perry, and Stevens, 1944); paregoric, camphor, benzoic acid, and alcohol (Boyd and MacLachlan, 1944); theophylline ethylenediamine, potassium citrate, and chloroform (Boyd, Palmer, and Pearson, 1946); ipecacuanha (Perry and Boyd, 1941; Boyd, Palmer, and Pearson, 1946); organic and inorganic iodides (Boyd, Blanchaer, *et al.*, 1945), volatile oils, balsams, terpene hydrate, and terebene (Boyd and Pearson, 1946); parasympathicomimetic drugs and atropine sulphate (Boyd and Lapp, 1946; Lapp and Boyd, 1946; Boyd and Munro, 1943); sulphonamides (Boyd and Dorrance, 1946) and expectorant saponins and related drugs (Boyd and Palmer, 1946). Further studies are in progress.

In the investigation described here, the same technique was applied to a study of the effect of several pharmacopoeial syrups on the rate of output of R.T.F. in approximately 200 animals, including guinea-pigs, rabbits, and cats. The general procedure was to arrange the animals for collection of R.T.F., and at the end of three hours, when the rate of output had been at a plateau level for two hours, administer the respective syrup by stomach tube. The dosage ranged from 0.1 to 10 ml. per kilogramme body weight, and when the volume was below 10 ml. per kg. it was made up to that volume with water. In previous studies from this laboratory it has been repeatedly shown that water given by stomach tube in doses up to 10 ml. per kg. body weight has no effect upon the output of R.T.F. On the average, somewhat over twenty animals were used for each syrup given to each species. To standardize the presentation of results the mean output of R.T.F. per kg. body weight per hour was first determined for the two control hours immediately preceding the administration of the syrups. The mean output each hour afterwards was then found, and any increase in the rate of excretion expressed as a percentage of the initial control two-hour output. In calculating these means all values from all doses of syrups were included, since no syrup, with the possible exception of syrup of tolu, had any significant effect on the output of R.T.F. in any of the doses studied. The results thus determined are presented in the accompanying Table.

Table Showing Effect of Several Pharmacopoeial Syrups on Rate of Output of Respiratory-tract Fluid in Animals

Syrup	Species	Change in Output of R.T.F.*			
		1st Hour	2nd Hour	3rd Hour	4th Hour
Simple syrup	Rabbit	% +6	% 0	% -10	% -15
	Cat	-13	-11	-16	+7
Wild cherry	Rabbit	-22	+16	+8	-22
	Guinea-pig	-24	-26	-20	-21
Squill	Cat	-18	-16	-14	-9
Liquorice	Rabbit	-2	+21	+18	+8
	Cat	+32	+33	+47	+37
Tolu	Rabbit	+93	+43	+28	+4
	..	+10	+6	+28	+21

Syrupus, B.P., syrupus pruni serotinae, B.P., syrupus scillae, B.P., syrupus zingiberis, B.P., and syrupus glycyrrhizae, U.S.P., had no significant effect on the rate of output of R.T.F., even in doses which would correspond to a pint (568 ml.) or quart (1.14 l.) taken by mouth by an average man, on a body-weight basis. Syrupus toluanus, B.P., slightly augmented the output of R.T.F. in cats and rabbits. From the results with this group of syrups it is apparent that the syrup in a cough syrup has little or no effect on the rate of output of R.T.F. when it is given by stomach tube.

Conclusions

From the results of these experiments on animals and man the following conclusions are indicated. First, the syrupy vehicle of a-cough syrup exerts a short demulcent effect on the mucosa of the pharynx and upper respiratory tract, and if cough is due to irritation of this mucosa the syrup has an antitussive effect *per se*. Secondly, when the bulk of the volume of syrup enters the stomach it has little or no expectorant property in itself, in the sense that it does not increase the rate of output of soothing respiratory-tract fluid. Thirdly, effective expectorant drugs added to the syrup begin to exert an antitussive action, again in the sense that they increase the output of respiratory-tract fluid, at about the time that the local antitussive action of the syrup alone has begun to wear off. These experiments offer a logical explanation of the time-honoured use of expectorants in a vehicle of syrup, producing a cough syrup, and at the same time justify the continued use of this form of prescribing and medication.

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Medical Memoranda

An Accessory Liver in an African

While accessory spleens are commonly found at necropsy both in Europeans and in Africans, accessory livers are extremely rare. Rolleston and McNeen (1929) were able to record only a very few cases, and in the literature available to me since their publication I have not been able to find reports of other cases. Thus this record of the occurrence of an accessory liver in an African may be of interest.

In the body of an adult male African of unknown tribe, dying of bronchopneumonia, a dark tumour, shaped like a fat cigar, about 3.5 by 1 cm. in its greatest dimensions, was found adherent to and partly embedded in the anterior surface of the pancreas at about the junction of the head and body, the longest axis being transverse. It was attached by a delicate pedicle which disappeared into the substance of the pancreas and, under the circumstances of the necropsy, was not traced further. The tumour was not attached to the liver. It was of darker colour than the true liver, which had no anatomical abnormalities.

Microscopically it proved to be hepatic tissue showing the normal liver architecture, enclosed in a delicate fibrous-tissue capsule with arteries, veins, and bile ducts running beneath the capsule, and these left the accessory liver at a small hilum and ran into the pancreas. Both the true liver and the accessory liver showed pathological changes, but these were much more pronounced in the accessory organ. They consisted of collections of fibroblasts and chronic inflammatory cells in the portal areas, with an increased amount of fibrous tissue surrounding and partially delimiting the periphery of some of the lobules. The rather dilated central veins were surrounded by liver cells containing considerable amounts of fat in large and small droplets, but the peripheral cells were free of fat. Considerably increased amounts of pigment were present—as granules in the Kupffer cells, in the sinusoids near the periphery as amorphous masses, and in the portal cell collections. All these changes were much more noticeable in the accessory liver.

DISCUSSION

Most of the accessory livers recorded by Rolleston and McNee (1929) were attached to, or in close proximity to, the liver; mostly in the hepatic ligaments or directly attached to the liver or gall-bladder. One case is recorded by them of hepatic tissue in the omentum and scattered over the peritoneum; and one with a nodule of liver tissue in a suprarenal gland. None had such an attachment to the pancreas as was found in this case. They do, however, record the occurrence, reported by Mohamet, of an accessory liver attached to the tip of the gall-bladder in a case of cirrhosis; the accessory liver was also cirrhotic.

Permission to publish has been granted by the D.M.S., Uganda.

Mulago Hospital, Kampala. J. N. P. DAVIES, M.B., Ch.B.

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Persistent Vomiting in Infants treated by Continuous Nasal Drip-feeds

The difficulty of getting an infant suffering from severe and persistent vomiting to take enough food by ordinary means is well known. With a view to overcoming this difficulty I have in many cases during the past three years adopted the method of drip-feeding described below.

TECHNIQUE

A small soft rubber catheter (size 4-6, according to the size of the infant) is lubricated and passed through one of the nostrils into the stomach. This is easily accomplished, with little discomfort to the infant. The free end of the catheter is attached to an ordinary blood transfusion set, the bottle of which contains the prescribed feed. The amount of milk mixture required by the infant is calculated for 24 hours, and this is run into the stomach by means of a slow drip. A rate of eight drops a minute will deliver 20 fl. oz. (568 ml.) in 24 hours. If a larger feed is required, the rate can be increased accordingly. The method is simple and can be easily mastered by trained nurses.

Before starting this regime of feeding the stomach is washed out and sufficient glucose saline (5%), or Hartmann's solution, is given by this method to combat dehydration. The actual feeding mixture will depend, naturally, on the requirements of the case concerned, and may consist of a milk mixture or a pure protein preparation, such as casein hydrolysate. Feeding in this way can be continued over a period of days until improvement occurs, when it is discontinued and normal feeding resumed.

DISCUSSION

During the last three years I have used the above method of feeding for infants suffering from incessant intractable vomiting, for which no organic cause can be found, and for very weak wasted babies. In the first type of case the vomiting seemed to occur as a sequela to an attack of gastro-enteritis which had subsided, and may possibly have been due to a form of habit vomiting (Holt and MacIntosh, 1940). In weak malnourished infants the strain of having to be fed with small feeds at frequent intervals is exhausting, and it was regarded as far less tiring for the infant if it could be fed in a way unlikely to cause any such exhaustion. With this in mind the continuous-drip method was adopted. I have also used this method in other selected cases; notably, in infants suffering from rumination and in young children suffering from cyclical vomiting, during severe attacks. The chief advantage of this method is that the food requirement of the infant is maintained over a long period, without at any time overloading the stomach and so producing a recurrence of vomiting; and the patient is assured of adequate rest by not having to be disturbed at frequent intervals, as would occur if feeding by normal means were carried out. Where sedation by means of drugs is an essential part of the treatment, as in cases of rumination and habit vomiting, this is a very important consideration. I prefer this method to the usual form of oesophageal feeding of weak marasmic infants because it obviates the passing of a tube into the oesophagus several times a day.

I am very grateful to Dr. K. H. Tallerman, consulting paediatrician to the Essex County Council, for his help and encouragement in preparing this note, and to Dr. E. Miles, medical superintendent, for permission to publish it.

Oldchurch County Hospital, Romford. T. N. NAUTH-MISIR, M.B.

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Reviews

THE DOCTOR-PATIENT RELATIONSHIP

The Human Approach. A Book for Medical Students. By Henry Yellowlees, M.D., F.R.F.P.S., F.R.C.P., D.P.M. (Pp. 189. 10s. 6d.) London: J. and A. Churchill. 1946.

This is a book for which we have long been waiting. It may be described as a textbook of the doctor-patient relationship. Primarily intended for medical students, it would be read with great profit by all qualified doctors and not least by hospital physicians and surgeons and even psychiatrists themselves. It is possible that this volume will not help the student much in passing his examinations, but if he will learn, mark, and inwardly digest all the admirable common sense and enlightened appreciation of the other fellow's point of view which it contains, he will certainly be a much better doctor. He can do this not only with profit but with enjoyment too, for the style is delightfully humorous and the homely examples can be appreciated by those who are in no way versed in academic psychiatry. The book does not deal either with elementary psychology or psychiatry, but gives some simple explanations of psychopathology, a pathology from which none of us can escape since no one can be perfectly adjusted to life and everyone uses various devices to get round these maladjustments. It is with these devices that most of the book is concerned, but there are excellent chapters on the much discussed problem of rehabilitation, which must after all be primarily psychological, on the doctor's relation with the legal profession and his behaviour in court, on medical etiquette and ethics, and on the medical curriculum. A book to be thoroughly recommended.

MANAGEMENT OF VENEREAL DISEASES

Aids to the Diagnosis and Treatment of Venereal Diseases. By T. E. Osmond, M.B., M.R.C.S. (5s.) London: Baillière, Tindall and Cox. 1946.

Students and general practitioners and perhaps many specialists will welcome this work as giving in a very handy form (138 octavo pages) an account of the management of venereal diseases and of some others commonly dealt with by specialists in this branch of medicine. The author has had many years' experience in venereal diseases on both their clinical and laboratory sides, and during the late war was adviser on them to the Army.

Approximately 44 pages are devoted to gonorrhoea and 52 to syphilis, the remainder of the book containing accounts of soft chancre, granuloma venereum, lymphogranuloma inguinale, trichomonas infestation, non-specific urethritis, balanitis, and condylomata acuminata; serum tests; technical methods such as irrigation, staining by Gram's method, dark-ground microscopy, collection of specimens, and injections; prophylaxis; and the social aspects of venereal disease. The size of the work does not permit of an elaborate account of any of the above subjects, but sufficient has been given in most of those commonly met to enable the reader to deal with them. Indeed, the author is to be congratulated on having packed into such a small space and in such readable language so much useful information.

It is pleasant to find in this work so little that seems to call for criticism, but one of the few points which might be revised concerns the arrangement of some of the sections. One would think that diagnosis should follow symptoms; here it often precedes the latter. On page 58 the gonococcal fixation test is sandwiched between an account of the Kahn test and interpretation of the Kahn and Wassermann tests, and this is followed by a schematic presentation of these tests, the principles of which were described before the paragraph on the gonococcal test. On page 100 there is a little on serum diagnosis of congenital syphilis, yet on pages 101 and 102, under the principal heading of "Late Congenital Syphilis," subhead "Central Nervous System," there is more on serum diagnosis in the early weeks of life. Again, the treatment of congenital syphilis, into which the general treatment of syphilis is interpolated, would be more conveniently described in a single section.

THE INTIMATE STUDY OF BACTERIA

The Bacterial Cell in its Relation to Problems of Virulence, Immunity and Chemotherapy. By René J. Dubos. With an addendum by C. F. Robinow. Harvard University Monograph in Medicine and Public Health, No. 6. (Pp. 460; illustrated. \$5.00 or 28s. 0d.) Massachusetts: Harvard University Press; London: Oxford University Press. 1945.

It has long been a reproach to the science of bacteriology that its study has been pursued only with limited ends in view—usually restricted to the apparent needs of one of its several branches. A more fundamental comprehension of bacterial behaviour, which in the end would serve the science in all its forms, has been neglected. But in recent years the depths reached even by *ad hoc* inquiry have vastly increased: progress in the study of immunity and chemotherapy have in particular demanded that we should know far more about the structure, chemical constitution, and metabolic behaviour of bacteria. It is mainly with these matters that Dr. René J. Dubos deals in *The Bacterial Cell*, a Harvard University monograph of the proportions of a full-sized book, and having a bibliography occupying 70 pages. Its main subjects are the structure of bacteria as revealed by direct observation, their physico-chemical properties, and in particular the mechanism of their staining, the analysis of their structure by means of enzymes and antigen-antibody reactions, variation, the nature of virulence, methods of immunization, and the mechanism of bacteriostatic and bactericidal action. These subjects are deeply involved in every advance for years past in the study of bacteria generally, and particularly in the therapy of microbic infections. The therapeutic success of the sulphonamides, and later of gramicidin and penicillin, has been largely responsible for the immense effort now directed at unravelling the secrets of bacterial metabolism, and now we have a fair understanding of how most antibacterial agents work, penicillin being the notable exception. An addendum to the text is a description by C. F. Robinow of the nuclear apparatus of rod-shaped bacteria as revealed by Feulgen staining; this is profusely illustrated, as indeed are other parts of the book which deal with morphology.

As a source of well-edited information on vital subjects, many aspects of which are not by any means generally familiar, and as a stimulus to thought and inquiry, this book will be valued by all progressive bacteriologists. The quotations which head each chapter are a delightful and sometimes humorous feature; their sources include not only the works of Pasteur and Ehrlich but the Bible and *Alice in Wonderland*.

AMPUTATION PROSTHESES

Amputation Prosthesis. Anatomic and Physiologic Considerations, with Principles of Alignment and Fitting Designed for the Surgeon and Limb Manufacturer. By Atha Thomas, M.D., F.A.C.S., and Chester C. Haddan. (Pp. 305; 207 illustrations. 50s.) Philadelphia and London: J. B. Lippincott Company.

A basic knowledge of the surgery of amputations, the specification and supply of suitable prostheses, the tuition of the disabled after limb-fitting, and complete rehabilitation of the patient are more necessary to-day than ever before. This applies not only to the surgeon deciding upon the exact operative procedure but to all who have any responsibility whatever, both for the supply and maintenance of the prostheses and the well-being of the patient. The preface of the book attempts to make this manifest. Many well-known books in various countries are mentioned as worthy of reference, among them being Muirhead Little's book written nearly twenty-five years ago. This is still a standard reference book and even now gives excellent guidance in surgery and the fitting of artificial limbs.

Mention is made of a tendency throughout history to exaggerate the values of prostheses, more especially artificial arms and hands. The success of any artificial limb, after it is correctly fitted, depends mainly upon the patient and the tuition given. The authors suggest that a limb-maker might be consulted before an amputation site is decided upon. This is surely a surgeon's sphere of work and it would be more satisfactory for the surgeon to have a knowledge of the types of limbs available or to consult another surgeon with this knowledge. Skin traction is treated at some length, especially in connexion with the guillotine operation. Surgeons in the British Army preferred to make flaps loosely sutured in the first place to allow for drainage. Only a very short summary is given

of the important treatment of the stump by bandaging, and it is doubtful if it can be clearly understood. The illustrations show a thigh stump being bandaged by the patient standing erect; it is not possible for the patient to secure firm pressure in this way. The below-knee stump is shown being bandaged by another person; the patient can and should do this himself. Pylons are stated to cause "faulty habits of walking which may be difficult to overcome," but provided the patient has not used the pylon too long he can be taught to walk satisfactorily on an articulated limb and avoid the long use of crutches, which may induce "faulty habits."

The survey of the materials used in making prostheses is not sufficient to appeal to a limb-fitter, nor is it of great value to surgeons. The limbs illustrated are not typical of those used in this country. Better information would be obtained from a catalogue, such as those published by limb-making firms. One cannot agree that the mechanism of walking "is a perpetual falling and self recovery" as illustrated. The text and diagrams in this section need very cautious study. Many of the statements dealing with arm amputations and prostheses are debatable. A particular type of mechanical hand, copiously illustrated, shows tools held in the hand. It has been found here that better control of a tool or implement is obtained by the use of an appliance fitted to the artificial arm and interchangeable with the artificial hand. The tool is used for heavy work, and the hand for light work or cosmetic purposes. The cineplastic operation, with the special prosthesis, was tried on many patients some years ago in this country, and results were not satisfactory. It is pleasing to note the recommendation that children should be fitted in early childhood, as is the practice here. There is a good section on rehabilitation, though it is only a summary.

The book is very well produced, fully illustrated, and easy to read. One could not recommend it as a standard reference book for surgeons or advanced students in this country. The design of limbs varies so much in each country that a very comprehensive book would be required to cover the methods used in all countries.

Notes on Books

On Feb. 28 of this year Prof. J. Z. YOUNG, F.R.S., gave his inaugural lecture after appointment to the chair of anatomy at University College, London. The title of this thought-provoking address was *Patterns of Substance and Activity in the Nervous System*, and those who heard it as well as those not fortunate enough to be present will be glad to know that well-printed copies are now obtainable in pamphlet form from H. K. Lewis and Co., 136, Gower Street, W.C., price 1s. 6d. net. Prof. Young holds that for the progress of teaching and research in medicine what is needed is not a mere collaboration of anatomists and physiologists but to a considerable extent a fusion of the two. "To be able to understand and control living material, and in particular our own, we must regard it in various ways. We shall not make useful studies of the structure of the substance unless we bear in mind that it is continually changing, taking part in activities. Nor conversely can we profitably study the activities unless we remember that they are directed towards the conservation of the pattern. . . . This is tantamount to saying that anatomy and physiology cannot exist as separate sciences, and this indeed is my belief. Further, since each particular manifestation of organization has developed and in the end returns to the dust, all biology must also be historical and include the study of embryology and evolution. There is a real danger that if each of these sciences remains separate no one will be left to study the processes of conservation of the organism."

Experiments on the Presence of Carcinogenic Substances in Human Surroundings, by THEODORE VAN SCHELVEN (Amsterdam: Kosmos Publishing Company, Keizersgracht 133: \$1.00), records an experiment in which benzene extracts of black crusts from bread and roast meat were painted on the skin of mice and induced a few tumours. The author suggests that carcinogenic hydrocarbons are produced at temperatures which cause blackening during roasting, baking or frying of food and that these substances may constitute an indispensable link in the chain of causal factors leading to "spontaneous" cancer in man. The alleged low incidence of cancer in certain populations (Eskimos and the Nubian Hadendowa) which lack fuel and therefore eat their food raw or lightly cooked is quoted in support of the hypothesis, and investigation of the tumour incidence in other populations with similar habits is urged. The argument is interesting but no more convincing than numerous other attempts to blame cancer on the habits of civilized man; ordinary civilized cookery should not produce charred food. The substance of the pamphlet is suitable for compression into an article for a medical journal but does not merit separate publication.

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YES OR NO?

The National Health Service Bill received the Royal Assent last week and is therefore now on the Statute Book as an Act. The appointed day for the Act is April 1, 1948. Between now and that date the medical profession will have to make up its mind collectively whether or not it is to take service under the Act, whatever may be the free decision of the individual doctor. If an effective majority of practising medical men in this country, after full consideration of what the Act means for both the public and the medical profession—for both individual patient and individual doctor—decide that the Act in operation will be in the best interests of neither, then the Minister of Health will fail to secure that co-operation of the medical profession which he has acknowledged to be essential if his measure is to be successfully carried through. This week every medical man and woman on the *Register* will receive from the British Medical Association three documents. The first is the plebiscite form on which each doctor is being asked to give the answer "Yes" or "No" to the following question: "Do you desire the Negotiating Committee to enter into discussions with the Minister on the Regulations authorized by the National Health Service Act?" The second is a report on the Act by the Negotiating Committee which summarizes the contents of the Act and examines them in relation to the principles laid down by the Negotiating Committee and endorsed by the medical profession as a whole. The third document is a brief letter from the Secretary of the B.M.A. which includes the decisions of the Representative Body on some of the more important issues in the Bill—as it was when these decisions were made. The latter two documents are printed in this week's *Supplement*. Elsewhere in the *Journal* we publish an abridged version of the White Paper on the Scottish Bill and an address on the Act given at Exeter last week by Dr. H. Guy Dain, Chairman of Council of the B.M.A.

It is well to state once more that the Negotiating Committee is made up of representatives of the B.M.A., the three Royal Colleges of England, the Royal Scottish Medical Corporations, the Society of Medical Officers of Health, and the Medical Women's Federation. It is, therefore, a committee wholly representative of the medical profession. The decision whether this Committee is to enter into discussions with the Minister of Health on the Regulations of the Act lies with the individual medical man and woman. Whatever answer may be given, the Negotiating Committee will plainly be in a weak position unless a large majority fill in the Plebiscite form and return it promptly to B.M.A. House. Surely at a time like this no medical man will shirk the responsibility of coming to his own decision on a matter which will not only affect him personally but which will have an equally profound effect upon the future of

medicine. No man can afford to leave the decision in the hands of others. If everyone sends in his "Yes" or "No," then whatever the majority decision may be the Negotiating Committee will know that it can act in the full confidence that it has the solid backing of the profession in whatever course it has to pursue.

The answer "Yes" will empower the Negotiating Committee to discuss with the Minister the Regulations and Orders which will fill out what is to all intents and purposes an Enabling Act—Regulations dealing with such matters as the mode and amount of professional remuneration, terms and conditions of service, and the composition of Regional Hospital Boards. If, despite the divergences between the principles of the profession and the provisions of the Act, the profession chooses this course, then at the end of the discussions it will be able to have another look at the Act and to see how it will shape the doctor's daily work and conditions of living after April, 1948. In full possession of all the many and important details of the Regulations, and being able to assess their impact upon the status of the medical profession and upon the kind of service to be offered to the future patient, the doctors of this country will have to take the final decision whether or not to go into the Service prepared with a clear conscience to make it work. If discussions on Regulations are so unsatisfactory as to make the completed picture of the new National Health Service Act repellent to the medical mind, then the medical profession will be able to give a final "No" to the Minister of Health completely satisfied that it had withheld its answer until the intentions of the Minister were fully revealed.

This is one of the two alternatives with which the profession is now faced. What will be the position if the Negotiating Committee is instructed not to enter into discussions with the Minister on the Regulations and Orders of the National Health Service Act? The Minister, it is true, could proceed to make these Regulations and Orders with, presumably, the advice and assistance of the minority in favour of discussions. There can be no doubt, for example, that in this he would have the support of the Socialist Medical Association. He would, however, not have the indispensable support of the constituent bodies of the Negotiating Committee. The answer "No," backed by a substantial majority, would make the Act inoperable, and further legislation would be necessary to secure those principles the medical profession considers to be fundamental to its professional existence. But for the Negotiating Committee to be strongly armed in any conflict that might arise as a result of a negative answer the majority would have to be substantial and firm in its purpose. It is, of course, obvious that if the medical profession was so set against the Act that it felt unable to work under it such a decision would in no sense be illegal or in the nature of a strike. Doctors do not strike. They will always continue to serve the sick public. An Act is not necessary to make them do this. It would simply mean that they would not serve the sick public within the framework desired by the Government of this country. The Minister fully recognizes the right of the individual medical man not to enter the Service, so a decision not to enter into it would be strictly legal and honourable.

What factors are there in the present situation which might lead medical men to refuse to discuss with the Minister of Health the Regulations under the National Health Service Act? It has been said that economic factors will weigh heavily with medical men in the decision they arrive at. It is obvious that economic considerations must count with any man who has to earn his own living. We doubt, however, whether doctors generally would be misled by any favourable economic terms the Minister might propose as an inducement to enter the Service, for the simple reason that, as insurance practitioners know well, a Minister who can offer favourable terms in one year may in another year do the opposite. Nor do we think that medical men will sacrifice what they hold to be important principles for the sake of an immediate return in payment. These principles are set forth in the statement by the Negotiating Committee published in this week's *Supplement*, as well as an analysis of the divergence between the principles and the provisions of the Act. The essence of these principles is contained in the first: "The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full-time salaried servants of the State or local authorities."

In his speech at Exeter Dr. Dain stated his belief that the Act is part of the nationalization programme which is being steadily pursued by the Government. "What the Minister appears to have done," he observed, "is to have taken the Bill which we had partly fashioned and to have inserted into it the Socialist principles of State ownership of hospitals, direction of doctors, basic salary for doctors, and abolition of buying and selling of practices." Again he said: "We have attributed the importance of our professional position to the freedom we have to be employed by the patient and, in private practice, paid by him, or in insurance practice paid for him, but whether paid by or for the patient we have what is called free choice." Dr. Dain observed that neither the voluntary nor the municipal hospitals had put forward any definite or very strong opposition to the Bill, but it seemed to him that one of the earliest effects of the Act would be that the greater proportion of the consultants and specialists would become to all intents and purposes State servants. "We want," he concluded, "to put into the Act the right of every doctor to come in, and the right of appeal to the courts from the Minister's decision to take us out of the Service; we want removed from the Act the State ownership of hospitals, the embargo on the buying and selling of practices, all direction of general practitioners, and the salary element in general practitioners' remuneration; we want altered the procedure of election on to the councils and committees so that we may nominate our own representatives instead of the Minister choosing them all, and in that way we may curb dictatorship in the Service."

Dr. Dain stressed that "everybody should answer according to his views and his conscience the question framed in the plebiscite." He had been asked why the Association did not give a lead, and said that it was for the Council and for him to give the profession an understanding of the position and for the individual doctor to take the responsibility of decision. For that understanding we would urge

everyone to read his speech, the summary of the National Health Service Act, the criticisms formulated by the Negotiating Committee under the heading of the "Profession and the Act," and the letter from the Secretary of the Association. What the profession instructs the Negotiating Committee to do will be faithfully carried out. The onus for determining what is to be done rests on each man and woman now practising medicine in this country.

PENICILLIN IN INTRAOCULAR INFECTIONS

The application of penicillin to external infections of the eye presented relatively simple problems, which have now been largely solved. The two time-honoured methods of treating the outer eye by drops and ointments are both used. Watery solutions have proved satisfactory, and of the various ointment bases the oculentum base of the *British Pharmacopoeia* (yellow soft paraffin 9 parts, wool fat 1 part) has proved better than many of the newer bases. The cold creams have been disappointing, because they are rapidly dissolved and because some of them tend to be irritating. Now that the imperative need for a buffered ointment base is recognized penicillin ointments have been widely adopted. The concentration of penicillin is a matter of importance, and in the more severe infections the maximum concentration that can be tolerated is generally employed: 2,500 units per ml. for drops and 800 to 1,000 units per g. for ointments. The frequency of application is also important. For example, in ophthalmia neonatorum the best results are obtained by prescribing drops at intervals of one minute for the first half-hour, every five minutes for another half-hour, and subsequently at longer intervals.¹ As for its range of efficacy in the external infections, penicillin is invaluable in purulent and muco-purulent conjunctivitis, in sepsis of the lids, styes, infected corneal ulcers, and to a lesser extent in blepharitis. The immediate results in blepharitis are generally good, but relapses are common, probably because sepsis is only one aspect of this condition. Promising preliminary results have also been obtained in the treatment of trachoma.

The use of penicillin in the intraocular infections presents many complexities. In the usual concentrations for drops and ointments penicillin does not penetrate into the interior of the eye. Intramuscular injection has also proved disappointing, as the drug does not reach the eye in a therapeutic concentration. Ionization presents clinical difficulties which have yet to be overcome, and subconjunctival injection is limited by the irritating effect on the eye of any large quantity of penicillin. In tolerated concentrations the amount reaching the interior of the eye seems to be low and therapeutically ineffective. Moreover subconjunctival injection cannot be repeated as frequently as the rapid excretion from the eye requires. A partial solution of these difficulties, particularly in the case of hypopyon ulcer, has been suggested by Juler,² who applies solid penicillin to the infected cornea. Many observers have advocated the introduction of penicillin directly into the anterior chamber and into the vitreous, but Von Sallmann, Meyer,

¹ *British Medical Journal*, 1945, 1, 903.

² *Brit. J. Ophthalmol.*, 1946, 30, 204.

³ *Arch. Ophthalmol.*, Chicago, 1944, 32, 179.

⁴ *Brit. J. Ophthalmol.*, 1945, 29, 511.

⁵ *Ibid.*, 1946, 30, 134.

and Di Grandi,³ Sorsby,⁴ and Mann⁵ have all found that the eye, and especially the vitreous, does not tolerate such injections.

For these reasons the place of penicillin in the treatment of intraocular infections remained ill-defined until the recent advent of pure penicillin and the application of massive doses of penicillin systemically. In 1944 Struble and Bellows⁶ indicated that a concentration of 1 unit of penicillin per ml. of aqueous could be obtained in the dog by the injection of 12,800 units per kilogramme bodyweight. Town and Hunt⁷ have recently confirmed the possibility of obtaining adequate therapeutic concentrations by massive injections of penicillin, and Town, Frisbe, and Wisda⁸ have shown that experimental infections of the anterior chamber of the rabbit can be controlled by intraocular injections at 3-hourly intervals of 5,000 units of penicillin per kilogramme bodyweight. Further confirmation of the feasibility of controlling infections of the anterior chamber by the systemic administration of penicillin is recorded at page 723 of the current issue of the *Journal* by Sorsby and Ungar, who also obtained partial control of vitreous infections by this procedure. The data they give on the concentration reached in the aqueous of the rabbit after the injection of 25,000 units and of 50,000 units systemically indicate that though an adequate therapeutic level can be reached it is evanescent, persisting for not longer than three hours. When penicillin is given intramuscularly in beeswax there is longer maintenance of the concentration in the aqueous but at a lower level. It is possible that the administration of even more massive doses of penicillin intramuscularly may yield a higher concentration, but the work of Town and Hunt⁷ suggests that this is unlikely. None the less the significant fact is that suitable therapeutic levels can be reached in the aqueous by systemic administration, and it remains only to establish optimum doses and adequate methods of giving the drug. As for the vitreous, Leopold⁹ could not obtain any therapeutic concentration of penicillin by intramuscular and intravenous injections of massive doses of penicillin, nor could he control experimental infections of the vitreous by such treatment. Leopold, however, used only 4,000 units per kilogramme bodyweight, and the higher doses may explain the better results obtained by Sorsby and Ungar. That the control of vitreous infections is not satisfactory is perhaps only to be expected in view of the low vitreous concentrations that even the massive doses employed by Sorsby and Ungar produce. A further increase in dosage may perhaps overcome this limitation, but the outlook is not too promising.

The high degree of tolerance of the eye to pure penicillin makes it possible to inject subconjunctivally at frequent intervals quantities massive enough to reach concentrations in the aqueous which are many times higher than the necessary therapeutic level. These high levels are, moreover, maintained for longer than the lower levels following massive systemic administration. The experimental and clinical results recorded by Sorsby and Ungar show the efficacy of this procedure. Even in desperate cases subconjunctival penicillin was not unsatisfactory; in these circum-

stances a clinically satisfactory result in three out of eight post-operative infections is more significant than the two total losses. Their results in vitreous infections were less satisfactory. A total loss of two eyes was to some extent balanced by a partial control in a third eye, and rather more than a partial control in a fourth eye. It is possible, of course, that the trauma of an intraocular foreign body contributed to the total loss of two out of three eyes with such an injury, but these clinical results and the experimental findings emphasize the gravity of a vitreous infection. Experimentally subconjunctival injections gave adequate control, while other methods were not so satisfactory. In man, however, subconjunctival injections may not be quite adequate, and the possibilities of pure penicillin injected into the vitreous require further exploration. Like other workers, Roenne¹⁰ found that only the direct introduction of penicillin into the vitreous would control an experimental infection. The disadvantage of this procedure is the intolerance of the vitreous to such intervention. Von Sallmann and his associates³ advocated a dosage not exceeding 100 units; Leopold,⁹ on the other hand, found 1,000 units necessary for adequate control. Roenne believes that an injection into the vitreous of up to 500 units is harmless. These observers all used penicillin containing unknown amounts of impurities. That the impurities are responsible for the intolerance of the eye to injections has been suggested by Mann⁵ and seems to be proved by Sorsby and Ungar's finding that the rabbit's eye will tolerate 5,000 units of pure penicillin injected into the vitreous. The control of intraocular infection, and particularly of infections of the vitreous, would seem to lie, therefore, in a judicious blend of massive systemic therapy, with pure penicillin subconjunctivally, and perhaps also direct injection into the vitreous.

WARTIME MENTAL HEALTH

The annual report of the Board of Control for 1945 is the first to be published since the outbreak of war and is largely occupied with a retrospect of the war years.¹¹ It is also the first to be issued under the chairmanship of Mr. Percy Barter, a former secretary of the Board, and it contains a tribute to the work of Sir Laurence Brock, who was its chairman for seventeen years.

In the autumn of 1939 some 25,000 beds were placed at the disposal of the Services and the E.M.S. Four mental hospitals and two colonies for mental defectives were completely evacuated within twenty-four hours, and in twenty other institutions space was released by the transfer of patients. Air raids caused damage and disorganization to over a hundred institutions, and altogether 252 members of the medical staff left for war service. All these disturbances had very little effect upon the death rate in mental hospitals, which was much below that obtaining during the previous world war, though conditions then were not so abnormal. In 1941 the death rate was 33% higher than the pre-war level, but it fell again slowly, until in 1945 the rate was slightly below that for the last pre-war five-year

⁶ *J. Amer. med. Ass.*, 1944, 125, 685.

⁷ *Amer. J. Ophthalm.*, 1946, 29, 171.

⁸ *Ibid.*, 1946, 29, 341.

⁹ *Arch. Ophthalm.*, Chicago, 1945, 33, 211.

¹⁰ *Brit. J. Ophthalm.*, 1946, 30, 408.

¹¹ *The Thirty-second Annual Report of the Board of Control for the Year 1945. Part I.* London: H.M. Stationery Office. 1s. net.

average. In 1938 the proportion of deaths to the average number of patients resident in mental hospitals was 66.7 per 1,000, but in 1945 it was only 68.4 per 1,000 notwithstanding the difficulties of the war years. During 1918 the corresponding figure was 203 per 1,000. Details of the 1945 deaths could not be included in the report, but in 1944 the principal causes of death in mental hospitals were diseases of the myocardium, pneumonia, senility, and pulmonary tuberculosis, in that order. Of 8,774 deaths, 113 were due to violence, including suicide, and 363 to general paralysis of the insane. The death rate from tuberculosis was somewhat above the pre-war level.

Admissions to public mental hospitals are governed to some extent by the accommodation available, the facilities provided at different hospitals, and the extent to which out-patient work is developed. They are also influenced by quite external factors, and although it is true that during the war the general community was subjected to abnormal strains which might have predisposed to mental disorder, on the other hand there was full employment and a relatively high standard of living. Admissions in the earlier war years were lower than the average for the pre-war quinquennium. They rose above this average in 1943 and continued to rise for the next two years. The total number of persons under care during 1945 under the Lunacy and Mental Treatment Acts was 146,027 (62,512 males and 83,515 females). There were 33,961 direct admissions, just over half of which were voluntary, and the discharges were equal to 71.7% of the direct admissions. They included 11,271 discharged "recovered" and 10,128 "relieved," as well as 2,801 "not improved." Of those remaining, 130,047 were certified, 15,565 voluntary, and 415 temporary patients.

The number of mental defectives reported to local authorities during the years immediately before the war showed a continuous increase. Between 1930 and 1940 the total reported rose from below 2.0 to over 3.0 per 1,000 population, and those ascertained as "subject to be dealt with" from 1.17 to 2.39. The rise was checked on the outbreak of war but was eventually resumed. The transient fall was due to shortage of staff, transport difficulties, evacuation, lack of beds in certain institutions, and a labour market which enabled defectives who had never before earned their living to become self-supporting. There were 51,768 defectives under statutory care in 1945 and 23,862 under voluntary supervision. The variation in the number of mental defectives reported in different areas is probably not so much a guide to the local incidence of mental deficiency as a pointer to the alertness of the authorities. For example, in one county borough 8.48 per 1,000 of the population were reported, and in another only 1.37. In one Yorkshire county borough the figure was 4.73 and in another only 1.71. There are great differences also between the numbers reported and the numbers ascertained as "subject to be dealt with." In some areas all those reported were apparently "ascertained": in others only half or less than half.

In dealing with reconstruction the report emphasizes the need for substantial reinforcement of the medical personnel of the mental health services. The war has naturally focused attention on the psychiatric needs of Service men and women, and this in turn has quickened appreciation of the needs of the civilian community. Since the passing

of the Mental Treatment Act in 1930 the number of out-patient clinics has increased greatly, but it is apparent that many more are required, and that mental health work is hindered by lack of staff and of proper accommodation.

"With the recognition of the potential importance of these clinics to the mental health of the community and to the efficiency and well-being of the individual the time seems ripe for their rapid expansion so that they can be organized to carry out the wide range of work now regarded as their function. . . Briefly, the functions of an out-patient clinic are to accept for consideration persons referred for psychiatric help, to diagnose the psychiatric disorder, to arrange proper in-patient or out-patient treatment, and to interpret the disorder to persons or agencies who must co-operate in treatment. To achieve this there will be required an adequate staff of psychiatrists, psychologists, social workers, and clerical assistants. If the clinic is to be an all-purpose one there will need to be specialization within it to deal efficiently with the various aspects of the work such as child psychiatry, court work, industrial problems, vocational guidance, teaching and propaganda, and research."

The most important aspect of reconstruction in the mental health service and one with which the Board of Control is now preoccupied is its organization as an integral part of the National Health Service. The Board is considering the rewriting of the Lunacy Code, the recasting and simplification of which is urgently necessary in view of the many and far-reaching modifications which the new health legislation effects in the Lunacy and Mental Treatment Acts and in the Mental Deficiency Acts.

THE MINISTER OF MILK

The Minister of Food recently issued a statement to the medical press on priority milk for invalids.¹ He stated that during the war the amount so allocated remained about 900,000 gallons weekly. By December, 1945, it had risen to 1,200,000 gallons, and since then to 1,300,000 gallons weekly. The Minister concluded that as there was evidence for a 44% increase in invalidism the rise in consumption of "priority milk" must be because of "less strict" medical certification. The Minister then consulted the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council on how to effect economies in the consumption of milk. The M.R.C. Committee appears to have accepted the Minister's view that the increased consumption of "priority milk" is the result of "less strict" certification, because it has advised him that "when the medical profession had been informed of the present situation of the country's milk supplies they would endeavour to effect the necessary economies." The M.R.C. Committee is composed of men able to assess facts in a scientific manner. It is therefore surprising that they should appear to have accepted the Minister's assumption without sifting the evidence. Not one of the members of the M.R.C. Committee is in general practice and therefore without direct experience of the matter they were called upon to judge. The Minister plainly felt in need of scientific backing for what he must have known was a thoroughly unscientific approach. He can have no more grounds for believing that there has not been a 44% increase in invalidism than for concluding that medical certification for milk has become less strict. There are many other factors to be considered, not least among them being the demobilization of 4,000,000 persons from the Forces. The incidence of gastro-intestinal disturbances

¹ *British Medical Journal*, 1946, 2, 661.

he Forces has been a subject for continued comment since 1939. It is clear, in fact, that the Minister of Food finds the medical profession a convenient scapegoat, and it is significant that, knowing the weakness of his case, he made no attempt to consult the B.M.A., the one body which would have been in a position to put him in possession of the facts. At its meeting last week the Council of the B.M.A. took the strongest exception to the Minister's methods and hasty and ill-judged conclusions.

SILICOSIS AND METALLIFEROUS MINING IN ENGLAND

The decennial supplement of the Registrar General reveals that the occupation with the highest standardized mortality ratio (registered deaths expressed as a percentage of the calculated or expected number of deaths in any particular occupation) among males aged 20-65 is "tin and copper mining below ground," with a ratio of 342; the third highest is "other metalliferous mining below ground," 133; and the fifth is slate mining and quarrying, with 168. An account of tin-mining practice in relation to silicosis by Hale¹ which appears in the June number of *Thorax* is herefore of great importance and interest. He explains how the metalliferous lodes in Cornwall are related to the siltas (slate) and to the granite, how the shaft is sunk, and how the ore is removed. In the period 1932 to 1944 one hundred and thirty men were certified as suffering from silicosis, and received compensation. This silicosis conforms more to the classical type than that occurring in South Wales. The miners are exposed to pure quartz, as opposed to a mixture of quartz, mica, clay, coal, and other substances. The lungs present a generalized fibrosis with niliary collagenous fibrous nodulation, and later considerable emphysema with pleural adhesions develops. The skiagraphic appearance is that of reticulation, often starting in the second interspace and going on to nodulation; massive shadows are not as common as in the South Wales coal miners, and appear to be related to reticulation rather than to nodulation. The development of the disease is insidious, but the onset of symptoms is often abrupt, disabling dyspnoea arising in a period of weeks. There may be no evidence of a superadded infection, though its eventual occurrence is the rule; it is sometimes tuberculous and sometimes non-tuberculous. The immediate cause of death is often congestive heart failure or bronchopneumonia.

In all industrial disease the most important thing is prevention; in this case that means the suppression of dust; and great advances have been made by engineers in the invention of drills towards the achievement of this end. Cornwall has made a great contribution, and Cornish tin mining, besides producing valuable raw material, has inspired the Camborne School of Mines to become one of the most famous schools of mining engineers in the world, and Camborne itself to become the centre of the world's rock-drill industry. Treve Holman² has written a historical review of the methods of extracting rock and their relation to silicosis, and he has pointed out that the invention by Leyner in 1902 of the hollow drill, through which a current of water passed, is one of the most valuable aids to preventive and industrial medicine of our time. The latest inventions, which include the tungsten-carbide cutting tip and the apparatus which prevents the drill working without the water's being turned on, may prove to be so effective that silicosis will no longer occur in British mines.

Since it takes an average of ten years for silicosis to develop, at least that time must elapse for us to know for

certain the success that has been achieved by this excellent work; and medical supervision is required during that period for assessment of the results. During the past fifteen years medical supervision under the direction of Craw³ has been carried out in the haematite miners in Cumberland with very great success; in fact, he claims that no miner who has entered the mines in that period has developed any signs of dust disease of the lungs. This has been achieved by careful selection of the men allowed to enter the mines and their repeated examination and routine chest skiagraphy, which among other things ensures that early cases of tuberculosis are identified and removed. The presence of the tuberculous in metalliferous mines has certainly in the past been a very serious matter. Tuberculosis, inextricably bound up with silicosis and often the cause of the abrupt onset of symptoms, is undoubtedly one of the factors predisposing to the development of that disease, which itself favours the development of tuberculosis.

PNEUMONECTOMY IN BABY OF THREE WEEKS

Pneumonectomy has now become a standard operation in thoracic surgery, but the occasions when it is needed in very young children are few, and in infants it is an unusually rare procedure. For this reason the recent report by Gross⁴ of a case of successful pneumonectomy in an infant aged 3 weeks and weighing only 6 lb. 4 oz. (2.8 kg.) is of great interest. It would appear to be the youngest case of pneumonectomy on record.

The baby's breathing was noticed to be abnormal and laboured on the fourth day of life, and during the following days the symptoms gradually increased in severity until dyspnoea became pronounced and cyanosis appeared. The child was admitted to hospital, and skiagraphy revealed a large air-containing tension cyst in the substance of the left lung causing gross mediastinal displacement and compression of the left lung. Operation was decided upon, as it was considered that needling to relieve tension would be of only temporary benefit and might lead to further complications. Pneumonectomy was performed easily by dissection of the individual vessels and the bronchus; in addition to the large cyst several smaller cysts were present. The child made a rapid recovery, and at the age of 6 months weighed 15 lb. (6.75 kg.) and seemed perfectly healthy and normally developed.

A large congenital cyst in the lung at this age is usually fatal, and most cases have been recorded post mortem. Gross is therefore to be congratulated both on his courage in attempting such a formidable operation at this tender age and on the excellent result obtained. It is especially interesting to know that the operation was so well tolerated.

The case is also of interest as an example of true congenital cystic disease of the lung. A histological description is given. Gross quite correctly points out that in many cases, and especially in older patients, it is often difficult or impossible to know whether one is dealing with a true congenital cyst which has become infected or with a condition of bullous cystic disease following upon an infective process in the lung with scarring. Many, however, would not agree with him in his statement that a lining membrane composed of bronchial epithelium, the individual cells of which are ciliated, columnar, and mucus-secreting, positively identifies a cyst as being congenital in origin. True columnar ciliated epithelium of bronchial type can undoubtedly grow into and form a lining of a chronic lung abscess, thus closely mimicking a congenital cyst. In many such cases differentiation from congenital cystic disease is certain on the clinical features and on serial skiagraphy.

¹ *Thorax*, 1946, 1, 71.

² *Brit. J. Industr. Med.*, 1947, 4, 1 (in the press).

³ *Ibid.*, 1947, 4 (in the press).

⁴ *Ann. Surg.*, 1946, 123, 229.

NATIONAL HEALTH BILL FOR SCOTLAND

THE PROPOSED NEW SERVICE

The National Health Service (Scotland) Bill was published on Nov. 6 together with a White Paper¹ outlining the proposed new service. The notes that follow are abstracted from the White Paper. It reveals some differences between the Scottish Bill and the English Act, which received the Royal Assent last week.

The Bill provides for the establishment of a comprehensive health service in Scotland. It does not deal in detail with everything involved in the service. It deals with the main structure. Within that structure, further provision will be made by statutory regulations—on lines which the Bill lays down and subject always to the control of Parliament. All the service, or any part of it, is to be available to everyone in Scotland. The Bill imposes no limitations on availability—e.g., limitations based on financial means, age, sex, employment or vocation, area of residence, or insurance qualification.

The service is to be available from a date to be declared by Order in Council under the Bill, probably early in 1948, as for the corresponding service in England and Wales.

The health service is to be financed partly from the exchequer, partly from local rates, partly from the help which part of the National Insurance contributions will give. There are to be no fees or charges to the patient, with the following exceptions: (i) some charges for the renewal or repair of spectacles, dentures, and other appliances, where this is made necessary through negligence; (ii) charges for the provision of domestic help under the Bill and for certain goods or articles in connexion with maternity and child welfare or the special care or after-care of the sick; (iii) payment for additional amenities within the service—e.g., charges for private rooms in hospitals.

General Organization

The Bill places a general duty upon the Secretary of State to promote a comprehensive health service. To bring physical and mental health closer together in a single service, it places the administration of the mental health services under the Secretary of State in the same way as the physical health services, while leaving undisturbed the functions of the General Board of Control for Scotland in regard to the liberty of the subject and the interests of the individual.

For parts of the service organized on a new national or regional basis—i.e., hospital and specialist services, ambulance services, blood transfusion, and bacteriological laboratories for the control of epidemics—the Secretary of State is to assume direct responsibility; but he is to entrust the actual administration of the hospital and allied services to new regional and local bodies established under the Bill. These bodies are to act on his behalf in suitable areas, and they are to include people of practical experience and local knowledge and some with professional qualifications. Special provision is made for the medical and dental teaching which is carried on in connexion with those services. The Secretary of State is also to undertake the provision of the new health centres; but he is empowered to delegate this function to the major local authorities.

For parts of the service organized as a function of local government—i.e., a variety of local domiciliary and clinic services—direct responsibility is put upon the major local authorities, the county councils and town councils of large burghs. They will stand in their ordinary constitutional relationship with the central Department, but their general arrangements for these local services are made subject to the Secretary of State's approval.

For the personal practitioner services both in the health centres and outside—i.e., the family doctor and dentist and the pharmacist—new local executive machinery is created in the form of local executive councils. One half of the members of each of these councils will consist of people nominated by the major local authorities and by the Secretary of State, and

the other half of people nominated by the local professional practitioners concerned. There will normally be an executive council for each of the counties and of the four largest cities; and they will work within national regulations made by the Secretary of State.

To provide professional and technical guidance, there is to be set up a Scottish Health Services Council. This will include people chosen from all the main fields of experience within the service—with various standing committees of experts on particular subjects, medical, dental, nursing, and others.

Hospital Administration and Endowments

The existing premises and equipment of voluntary and public hospitals are transferred to the Secretary of State under the Bill, and he is empowered also to acquire by purchase—where necessary—other hospitals and their equipment which may be required for the purposes of the new service. If in any particular case he is satisfied that the transfer of a hospital is not in fact necessary for the new service he can—with the institution's concurrence—except it from transfer. The general transfer of hospitals includes the present mental hospitals and mental deficiency institutions.

The Bill requires the Secretary of State to entrust the administration of the hospital and specialist services to a specially created regional and local organization. Regional hospital boards are to be set up to act as agents of the Secretary of State for the general administration of hospital and specialist services in their areas. Five such boards are envisaged in Scotland. In turn, to act as agents of the regional hospital boards for the control and management of particular hospitals, boards of management are to be set up, one for each large hospital or for each group of hospitals forming a convenient unit.

The area of each regional board is to be fixed by the Secretary of State in an order subject to Parliamentary review. So far as practicable each area is to be such that the provision of hospital and specialist services in the area can conveniently be associated with a university medical school. Each regional board will be composed of people chosen by the Secretary of State for their individual suitability for the task, but before making the appointments the Secretary of State is to consult any university with which the hospital services in the area are associated, bodies representative of the medical profession, local health authorities of the area, and others concerned including initially those with experience of the voluntary hospital system. The boards are to include some members with experience of the mental health services.

Boards of management are to be appointed by the regional hospital board, in accordance with a scheme drawn up by the regional board in consultation with the university, and approved by the Secretary of State. The scheme will specify the hospitals which are to provide facilities for medical teaching and also the hospitals which are to be grouped for appointment of a board of management. Each board of management is to include members appointed after consultation with the local health authorities of its area, with executive councils for general practitioner services in its area, with the senior medical and dental staff of the hospitals concerned, and with the governing bodies of any voluntary hospitals that are to come under the board. Where a hospital provides medical teaching facilities, the board of management is to include university and teaching staff nominees.

Subject to general regulations and any particular directions the Secretary of State may give, the regional organization of the service will be undertaken by the regional board itself. Within that framework each board of management will be as free as possible in the actual running of their hospital. For example, although all persons employed at the hospitals will be technically employees of the regional boards, boards of management will in fact choose, appoint, and dismiss all staff except certain senior officers; subject to bulk supply arrangements in appropriate cases they will have discretion in the purchase of equipment and supplies; and they will be responsible for maintenance work or improvements at hospitals, short of major extensions or works involving change of the hospitals' functions in the regional service. They will be able to set up committees for particular purposes.

¹ Cmd. 6946. H.M. Stationery Office, Edinburgh. Price 4d.

including house committees for individual hospitals where a group is within their care.

It is intended that the regional boards and the boards of management shall enjoy a high degree of independence and autonomy within their own fields. For the general financing of their hospital services they will look to the exchequer, and they will be given as much financial freedom—by a system of block annual budgets or otherwise—for local initiative and variety of enterprise as general principles of exchequer responsibility make possible. They will also have independent control of the endowment funds entrusted to them. The endowments of each voluntary hospital transferred to the Secretary of State—defined in the Bill to mean, broadly, all its property other than buildings and their contents—will pass, in the first place, to the board of management responsible for the hospital or group of hospitals in which it is included, and the board will hold them in trust exactly as they were held before. The Secretary of State, however, may make regulations providing for some of the property comprised in endowments to be used to discharge liabilities transferred to him from the voluntary hospitals.

The Secretary of State is then required to set up a Hospital Endowments Commission, to operate initially for a period of five years. Its powers may be continued for further periods, and when they finally lapse the Secretary of State may thereafter exercise like powers himself. The Commission is given the duty of reviewing all endowments and making schemes for their future management and application, including in appropriate cases the transfer of endowments from the board of management which received them in the first place to another board of management or a regional board. Schemes may specify a particular purpose for which endowments are to be used, or may enable the board to which they are given to use them for any purpose relating to hospital or specialist services or to research that the board chooses. In making the schemes the Commission is to take into account the spirit of the intention of the founder of the endowment, the extent to which its original purpose is now otherwise fulfilled, and the interests of the hospital service generally.

In addition, regional hospital boards and boards of management are also enabled, under the Bill, to receive gifts or legacies and to hold any property on trust for any purpose relating to hospital or specialist services or research. Such acquisitions are not subject to review by the Commission.

Hospital Staffs

Specialists taking part in the service, whole-time or part-time, will be attached to the staff of hospitals. Part-time participation in the service will not debar the specialists from also continuing any private practice outside the service which individual patients may wish them to undertake. Special provision is to be made by regulations affecting the appointment of senior medical and dental staff employed on the staff of hospitals. In these cases the vacancy is to be advertised, and an advisory appointments committee is to be set up for each occasion. This committee will consist of nominees of the regional board and boards of management concerned; in the case of a specialist appointment, specialists nominated from a national Scottish panel maintained for this purpose; and, in the case of an appointment where the holder is also to have teaching duties, nominees of any university concerned. The committee will select suitable applicants and the appointment will be made from this selection.

The regional boards, or in appropriate cases the boards of management as their agents, will determine the terms of engagement of any staff employed in the hospital service. The Secretary of State, however, is empowered to make regulations governing the qualifications, conditions of service, and remuneration of any or all classes of hospital staff—as of the staff engaged in any other part of the health service. Before making regulations he will consult any appropriate organizations representing the staffs concerned, and it is his intention—wherever appropriate—to use existing, or set up new, negotiating machinery to facilitate those consultations. Existing hospital officers employed on a paid whole-time basis are to be protected, either by being transferred to the new bodies or by compensation if they are not transferred or are re-employed on less favourable terms than before.

The promotion of research, the provision of ambulances, of a blood transfusion service, and of a laboratory service are functions which will for the most part be devolved upon regional hospital boards and boards of management. It is intended to make the fullest use of the motor ambulance service recently set up by the St. Andrew's Ambulance Association and the Scottish Branch of the British Red Cross Society, and also of air ambulance services. The transfusion service in Scotland is at present run by the Scottish National Blood Transfusion Association, and it is intended that this arrangement should continue. The Secretary of State is expressly empowered to provide a bacteriological service, including the provision of laboratories, for the control of infectious disease. This service will be at the disposal of the local health authorities in the discharge of their epidemiological functions.

Medical Education

The Bill leaves untouched existing responsibilities for medical education. But a vital part of medical education is carried out in hospitals, and the Bill therefore places a specific duty on the Secretary of State to make available for this purpose such facilities as he considers necessary to meet all reasonable requirements. Access to facilities for the conduct of research is also essential for the work of a medical school, and a similar duty to provide research facilities is placed upon the Secretary of State. These duties will devolve upon regional boards and boards of management. Every board of management administering a hospital used for medical teaching will include members nominated by the university concerned and by the teaching staff at the hospital; in the case of an important teaching hospital each of these groups may form one-fifth of the total membership. Every regional hospital board will also include members appointed after consultation with the university or universities concerned.

In addition there is to be a Medical Education Committee in each region, to advise the regional board on the administration of hospital and specialist services in the area so far as the provision of facilities for medical education or for research is concerned. This Committee will consist of members appointed by the universities concerned, with an equal number appointed by the regional board; and representatives of other bodies such as the Royal Medical Corporations will also be included where appropriate. Where an officer appointed by the hospital organization for hospital work is also to hold a teaching appointment from the university, the Bill provides that the advisory appointments committee set up in connexion with the hospital appointment is to include a representative of the university.

General Practitioner Services

To arrange these personal health services locally new bodies—to be called executive councils—are to be established. There will be separate councils for the four largest cities and for most of the counties, but some of the counties with smaller populations may be combined for this purpose. Each council is to be so composed that one half of its members are professional—appointed by the local doctors, dentists and pharmacists through their own representative committees in the area—while the other half of the members are to be appointed partly by the local authorities in the area (one third of the executive council) and partly by the Secretary of State (one sixth). The chairman will be appointed by the Secretary of State.

A feature of the personal practitioner services is to be the development of health centres. The health centre system, based on premises technically equipped and staffed at public cost, should afford facilities both for the general medical and dental services and also for many of the special clinic services of the local health authorities, and sometimes also for out-post clinics of the hospital and specialist services. Besides forming a base for these services—e.g., providing doctors on suitable terms with equipped and staffed consulting-rooms in which to see their patients—the centres will also be able to serve as bases for various activities in health education. The Bill makes it the duty of the Secretary of State to provide, equip, staff and maintain the new health centres. He is empowered to delegate this function wholly or partly to local health authorities, but it is not intended to exercise this power widely in the early years of the new service.

Doctors and dentists, who use the new centres while participating in the general personal practitioner service will be in contract only with the new executive councils, and those councils in turn will arrange with the Secretary of State for the use of the centres' facilities by those doctors and dentists. In the case, for instance, of doctors in the general practitioner service the centres will in effect stand in place of the doctors' own surgeries; and the doctors' responsibilities to their patients on their personal lists—e.g., in visiting their patients' homes and in general responsibility for their patients at all times—will be the same whether a doctor practises from a health centre or not.

All doctors are to be entitled to take part in the new arrangements in the areas where they are already practising when the scheme begins. Taking part will not debar them from also continuing to make private arrangements for treating such people as still wish to be treated outside the service instead of taking advantage of the new arrangements, provided that such persons are not on their lists as public patients or on the lists of their partners in a health centre. People will be free to choose their own doctor (including their present doctor if he takes part in the service) subject to the doctor's consenting and being in a position to undertake their care.

All doctors taking part in this part of the new service will be in contract with the executive council for the area in which they practise. The executive council will be required to draw up and publish lists of all general practitioners who are participating. People will then choose their doctor and each doctor will have his own list of the people whom he has agreed to attend. There will be machinery for allocating among the doctors concerned such people as wish to take advantage of the service but have not chosen a doctor for themselves or have been refused by the doctor chosen by them. The relationship of the doctor with any person on his list—i.e., his functions under this part of the service—will then be similar to the ordinary relationship of doctor to patient as it is now known, except that the doctor's remuneration will come from public funds and not directly from the patient.

The Bill itself does not determine the detailed terms and conditions for doctors joining in the service or the doctors' remuneration. These are left to be settled by regulations, and the necessary regulations will be made in consultation with the doctors' professional representatives. It is, however, the intention that remuneration should take the form of a combination of fixed part-salary and of capitation fees. Variations of the fixed part-salary will be possible so as to take account of different circumstances and experience and the differing conditions of practice in particular areas. Supervision allowances can be provided for practices where assistants are employed. It is intended also to institute, under powers contained in the Bill, a contributory superannuation scheme for doctors taking part in the new arrangements.

Actual rates of remuneration for doctors will be determined, in consultation with the profession, in the light of the report received from the Spens Committee. The substance of the Committee's majority recommendations has been accepted by the Government.

Distribution and Sale of Medical Practices

To help in dealing with the needs of under-doctored areas it is intended to adjust the scales of remuneration of doctors so as to provide additional inducement to practise in less attractive areas. In addition, a new body to be called the Scottish Medical Practices Committee, mainly professional in composition, is to be appointed under the Bill to regulate in future the succession to old, or the opening of new, practices within the service. To begin with, an appointed day will be fixed and all doctors then in practice will have the right to have their names included in the lists drawn up by the executive councils for the areas in which their existing practices are. After the appointed day any doctor who wishes either to join the public service for the first time or, if he is already in it, to go and practise in a new area will need to obtain the consent of the Medical Practices Committee. He will normally ask to have his name included in the list of the executive council for the area of his choice and that council will inform the Committee. The Committee may give consent either unconditionally or subject to a

condition as to the part of an executive council's area in which he may practise. They will not be able to withhold consent on any ground except that there are already enough doctors practising in the public service in the area in question. If, when a practice becomes vacant in a particular area, there is more than one applicant for taking it over, the Committee will decide to which doctor the necessary consent is to be given. Before reaching their decision the Committee is required to consult the executive council, which in turn is to consult the doctors' own local representative committee. A doctor whose application to practise in a particular area is refused, or granted only subject to conditions, is given the right to appeal to the Secretary of State.

The above control of succession to, or opening of, practices will apply to all practices which are wholly or partly within the service. It will, therefore, make the sale of the goodwill of such practices inappropriate, and the Bill provides for the prohibition of the sale of such practices in future and for compensation to existing practitioners in respect of the consequent loss of selling values. Regulations will govern the detailed method of apportioning the global sum among the doctors entitled to compensation and the manner and times at which it is to be paid. It is intended that the settling of the apportionment of compensation among the individual doctors shall be left in the main to the profession itself and the Secretary of State will accept any reasonable proposals within the sum available for Scotland. Normally compensation is to be payable on the retirement or death of a doctor, though payment at an earlier date will be arranged where hardship (e.g., through outstanding debts) would otherwise arise. In the meantime interest on the compensation due is to be paid each year to the doctor at the rate of 2½% per annum.

Tribunal for Disqualification

A special Tribunal is to be set up to investigate cases where it is claimed—either by the executive councils or otherwise—that the continued inclusion of any doctor, chemist, dentist, or optician in the lists drawn up by the executive councils would be prejudicial to the efficiency of the service. The Tribunal will have a legal chairman, and will in each case include a member of the same profession as the person whose case is being investigated and one other. Where the Tribunal is satisfied that the representations are justified, the executive council will be directed to remove from the list the name of the doctor, dentist, chemist, or optician, who is given the right to appeal to the Secretary of State. Where the Tribunal so decides a similar direction can be applied to all lists in all areas, with the same right of appeal.

Where the Secretary of State is satisfied, after inquiry, that the services provided by doctors, dentists, or pharmacists in any particular area are not adequate he is empowered to take such steps as he considers necessary to secure an adequate service.

The Secretary of State is empowered to arrange with universities and other appropriate institutions for the provision of "refresher" courses for doctors, dentists, pharmacists, and opticians in the service, to contribute towards the cost of these courses, and to pay expenses of persons attending them.

Local Government Services

The "local health authorities" will be the councils of counties and of large burghs, with provision for combination wherever, exceptionally, this may be found desirable. Co-operation between the local health authority and the education authority providing the school health service, where these authorities are different, i.e., in large burghs, is already secured by section 14(5) of the Local Government (Scotland) Act, 1929, as rewritten by the Education (Scotland) Act, 1945. For most of these services the Bill requires the local health authorities to indicate to the Secretary of State the way in which they intend to carry out their responsibilities, which requires the Secretary of State's approval. Their proposals, so indicated, are to be made known also to the regional boards for the hospital service, to the executive councils for the general practitioner services, and to any voluntary organization which to the local authority's knowledge is working in the same field in their area.

Maternity and child welfare and domiciliary midwifery.—The Bill makes it the duty of every local health authority to make arrangements for the care of expectant and nursing mothers and of children under five years of age who are not attending school and who are therefore not covered by the school health service. The local health authorities are also to be the supervising authorities for the purposes of the Midwives (Scotland) Acts, and are to be responsible as under the Maternity Services (Scotland) Act, 1937, for providing a complete midwifery service for mothers who are confined at home. The midwives are to be employed either by the local health authority itself or by voluntary organizations with whom the authority comes to an appropriate arrangement. In addition to the clinic facilities, medical supervision before, during, and after the confinement will be available through the general practitioner service, but where advantage is not taken of this the midwife will have the usual right—and duty—to call in a suitably qualified doctor in case of need.

Health visiting and home nursing.—It is made the duty of the local health authority to provide for a full health visitor service for all in their area who are sick, or expectant mothers, or those with the care of young children. This widens the present conception of health visiting (as concerned with mothers and children) into a more general service of advice to households where there is sickness or where help of a preventive character may be needed.

Local mental health services.—Local health authorities are to be given responsibility for the ordinary local community care in the mental health service—that is to say, the ascertainment of mental defectives (so far as this is not the function of the education authority) and their supervision when they are living in the community. This part of the service covers also the initial proceedings for placing under care those who require treatment under the Lunacy Acts.

Vaccination and immunization.—Compulsory vaccination is abolished by the Bill, but the date for this change will be fixed later by Order in Council. In future it is to be the duty of the local health authority to provide free vaccination and diphtheria immunization for anyone who desires them. The authority will give doctors who are taking part in the general practitioner service the opportunity of undertaking this work. The vaccines, sera, or other preparations required may be supplied without charge by the Secretary of State to local health authorities and doctors, and the service may, if circumstances demand, be extended to cover vaccination and immunization against other diseases besides smallpox and diphtheria.

Care and after-care of the sick.—Local health authorities are given a new power, and duty where the Secretary of State so requires, to make approved arrangements for the purpose of the prevention of illness and the care and after-care of the sick. This can include such things as the provision of special foods, blankets, extra comforts, etc.

Domestic help.—Under the existing law local authorities are empowered to provide home helps as part of their maternity and child welfare functions and, during the war, this power has been extended by temporary enactments to enable them to provide domestic help in a wider range of circumstances. The Bill makes this power permanent and extends it to cover the provision of domestic help, subject to the approval of the Secretary of State, to any household in which it is needed on grounds of ill-health, maternity, age, or the welfare of children. The local health authority will be allowed to make appropriate charges for this service.

Health committees.—Local health authorities will in future be required to appoint statutory health committees and to refer to them all matters relating to the discharge of their functions as health authorities. The health committees may be authorized to exercise functions on behalf of their parent authorities and there is the usual discretion to appoint by co-option expert members who are not members of the authority itself.

Scottish Health Services Council

To advise him generally on the administration of the health service the Secretary of State is to have beside him a Scottish Health Services Council. The members are to be doctors, dentists, nurses, and other professional people concerned with the different parts of the service, together with people having experience of hospital management, of local government and of mental health services—all of them appointed by the Secretary of State in their individual capacities, but after consultation with the appropriate representative organizations. The new Scottish Council will be free to advise the Secretary of State of its own initiative on any expert aspect of the services, as well as on matters expressly referred to it by him. It will report annually to the Secretary of State, who will lay the report before Parliament—with his own comments, if he wishes

—unless he is satisfied that it would be contrary to the public interest to publish the report or any part of it.

The Secretary of State is empowered also to constitute various Standing Advisory Committees on different technical aspects of the new service. These Committees are not specified in the Bill. They will in fact deal with medical aspects of the service, mental health, dentistry, nursing, pharmacy, and any other matters justifying special advisory machinery. They will deal with questions referred to them either by the Secretary of State or by the Scottish Council and will have direct access to the Secretary of State as well as to the Council.

THE NEW ACT

DR. DAIN'S SPEECH AT EXETER

The Plebiscite: Practitioners' Responsibility

On the day after the Royal Assent was given to the National Health Service Bill Dr. H. GUY DAIN, Chairman of Council, addressed a large meeting of the Exeter Division. Between 150 and 200 were present. Dr. J. D. R. MURRAY, chairman of the Division, presided.

Dr. DAIN, who was received with enthusiasm, spoke as follows: The National Health Service Bill yesterday received the Royal Assent and became an Act and is now the law of the land. We members of the profession are in a position of great responsibility—all of us. On our actions now will depend the form of medical practice in this country for perhaps a long time to come. Under this Act it is proposed to give to every citizen free medical attention in his own home or wherever it may be required, including hospital service, the whole to be provided by the State partly out of taxes and partly out of insurance premiums.

As a medical service its first and most important group of officers must be its doctors, and we who may become its doctors are in a peculiar position. The Government which has produced this Act has refused to talk to us about it. Nothing more stupid can be imagined than to set up a scheme without consulting the people who are to carry it out. It is true that before this Government came in we had prolonged discussions with Mr. Willink, Minister of Health in the Coalition Government, on the form that a national medical service should take, and we got a long way towards agreement with him. Indeed, if the General Election had taken place a few months later we might already have had an agreed Bill in the House of Commons. At the election a Government was returned whose policy was the establishment of a whole-time salaried medical service for the entire community. The new Minister of Health, contrary to Labour Party policy, was charged with housing as well as health, and after taking office he refused to say anything about the medical service problem until he had dealt with housing. We were shut out of conversations with him until the end of last year, when we heard that a Bill was in preparation; then we put pressure on him to see us, and we had two or three conversations, in which he told us that the Bill would be his own production and that he was not prepared to consult with the medical profession as to its form or principles.

Nationalization of Medical Practice

We are now faced with an Act containing certain items of policy of which we have definitely disapproved. The Act is part of the nationalization programme which is being steadily pursued by the Government. What the Minister appears to have done is to have taken the Bill which we had partly fashioned and to have inserted into it the Socialist principles of State ownership of hospitals, direction of doctors, basic salary for doctors, and abolition of buying and selling of practices. None of these additions is likely to be of any value for the public: they will not help to produce a better service in any way; but, of course, they do affect us very materially. From being a profession of independent practitioners we are faced with a scheme which will almost immediately turn us into whole-time or part-time salaried servants of the State.

The Minister has said he is not prepared to give way on any of the things we stand for, and it is for us to look carefully at the Act and at our own agreed principles, and to say whether

we should go forward and discuss with the Minister the details of administration.

What are the effects on the practice of medicine of some of the proposals of the Bill? We have not regarded the ownership of hospitals as being so much our problem as that of the hospitals themselves, and as neither the voluntary nor the local authority hospitals have put forward any very definite or strong opposition to the Bill it has been rather overlooked that from the medical point of view this may be one of the most important factors. When the Minister owns all the hospitals he will not only administer them through a regional body but he will have power to say what are the terms and conditions of service and what must be the nature of the qualifications of the people who work in them. He has power under the Act—and he has said that he will insist upon it—to ensure that no doctor shall work in the hospitals unless he is a member of the service.

Consultants and specialists can hardly practise without hospital beds, and, as I see it, the Act is the end of independent private consulting practice, unless the consultants and their friends are prepared to set up nursing homes all over the country. A modification was made by the House of Lords to the effect that those entitled to treat private patients in private wards must be "either honorary or paid members of the staff." In a State service in which everybody is paid I cannot imagine what meaning is to be attached to the word "honorary," and I think the Minister, perhaps with some amusement, allowed the phrase to remain because it pleased the Lords and meant nothing. It looks to me as if one of the earliest effects of the Act will be that the greater proportion of consultants and specialists will become, to all intents and purposes, State servants.

If this is not Control, what is?

On the general practitioner side there are three special points to be borne in mind. As a first step towards making practitioners Civil Servants they are no longer to be allowed to buy or sell practices. The Minister has made a great deal of this buying and selling as an immoral act, describing it as the transfer of large blocks of patients, which is a complete travesty of the position whereby goodwill only is transferred. And although it is "immoral" for a general practitioner to buy and sell his practice it is not "immoral" for the consultant or for the dentist similarly to buy and sell. The general practitioner has looked to the capital value of his goodwill to provide him with an income on retirement, and, recognizing this, the Minister has said that compensation shall be paid; and 66 millions is set aside as the appropriate amount. It is not expected that more than five millions of this will be required during the first few years, for the capital will only be drawn by the practitioner on his retirement or by his executors at his death. Some provision will probably be made to assist doctors who are experiencing hardship through having borrowed money to buy their practices, but there is no guarantee that every doctor who is in debt will be able to draw the capital value of his practice straight away. There is only a vague statement that the problem will be dealt with.

Interest at 2½% annually is to be paid on the capital value. We tried to impress on the Minister early in the year that it would be a businesslike proposition to pay out the 66 millions straight away, because the Government could borrow money at a cheaper rate than 2½%, but we could not move the Minister. We have to bear in mind in considering this matter that a capital value which was assessed at 66 millions last year may be vastly different in twenty years' time, in view of the downward course of money values.

The Minister has said that it was necessary for the buying and selling of practices to be abolished in order to obtain a better distribution of doctors all over the country, the assumption being that there is an improper distribution to-day. That is not true. Doctors, on the whole, are not badly distributed. The Central Medical War Committee register has shown that in the areas where there appears to be an undue number a liberal discount has to be made for retired doctors and doctors who are themselves invalid and less active. The distribution of active doctors cannot be learned by taking the total number of doctors in a locality and dividing it into the population. It would be perfectly easy for us through our own organization to distribute the doctors quite fairly about the country without the Minister having the power to direct them.

The Act says that every doctor in practice on the appointed day—presumably April 1, 1948—can stay where he is, but that anyone coming into practice after that date will have to obtain the requisite permissions before he is allowed to settle in any area. Even though doctors in established practice are not liable to be moved, yet if they wish, for domestic, economic, or other reasons, to change their areas after the appointed day, they will have to obtain the permission of the executive councils in the area which they propose to leave and the area in which they propose to settle. If that is not putting us under control or direction I do not know what is.

Dictatorship

Next, the method of payment. We have attributed the importance of our professional position to the freedom we have to be employed by the patient and, in private practice paid by him, or in insurance practice paid for him; but whether paid by or for the patient, we have what is called free choice. So long as we are paid in proportion to the people we serve we retain that freedom. Those of us who have been in national health insurance practice have been quite unconscious of any restriction on our freedom. We declare that in a service for the whole community that same position should be maintained. Directly we begin to be paid even a basic salary we recede from that position, because, instead of our whole interest lying with the patient, a second interest is introduced in the form of the body which employs us or pays us a salary. An amendment passed by the House of Lords that general practitioners should be paid only by capitation fee was rejected by the House of Commons and has been taken out of the Act, the Minister insisting that it is of first importance to him that doctors should be paid, at any rate partly, by salary. You will be aware of the terrible penalties which have been inserted in the Act to ensure that goodwill is not sold twice over—to the State and to somebody else afterwards—and of the difficult position which the abolition of buying and selling of practices will create. It means that all partnerships which depend upon shared receipts and all assistants' agreements will be at an end. It will be necessary for the retiring practitioner to be extraordinarily careful in selling his house, which, though it may have been built or adapted as a doctor's house, must not command on that account any excess value which goes into the practitioner's pocket.

The Act, of course, in parts is good. It does contain one of the things for which we have asked for a long time—a proper organization of hospitals, whereby they do not act as individual units but are to be brought together in regions, based if possible on university centres, so that a more even standard of service is obtainable in remote hospitals. We have obtained representation on all the various committees which control the medical services. We argued with Mr. Willink on that point, and largely the new Act does not interfere with that, except that in every committee or council the Minister has complete control, with power to appoint its members and alter its constitution. The utmost concession we obtained is that the Minister would consult with us before making the appointments. He is not compelled to accept our advice. We had hoped that the Minister would appoint on our nomination, a method of setting up committees which has been accepted under many other Acts of Parliament, but here the Minister takes complete power.

By these powers he becomes the complete medical service dictator. He may use his powers beneficially, but we have seen a number of Ministers of Health during the last twenty years and we know that the wisdom or beneficence of one Minister is not necessarily inherited by his successor. During the passage of the Bill through the House of Commons he opposed every attempt to limit his powers of appointment by saying that it was essential for the flexibility of the service that he should be able to make modifications where he thought necessary in the composition of these bodies without having to go back to Parliament. That was an excuse but no sound reason for departing from the position that we should have the right to nominate for the Minister to make his appointment.

A Vital Decision

What is now our position? A Special Representative Meeting early this year declared by 214 votes to 2 against control over doctors concerning choice of area of practice, by

10 to 29 against State ownership of hospitals, by 229 to 131 in favour of retaining the right to buy and sell practices, and by 209 to 8 in favour of the capitation fee method of payment. That is the policy which through your representatives you have laid down and which your Council is endeavouring to carry out. From to-day we are faced no longer by a Bill which may be altered but by an Act of Parliament. The Representative Body decided that as soon as the Bill became an Act a plebiscite should be taken of the whole profession to find out their opinion on the importance of the principles. If we think that the Act is so dangerous that we had better not proceed to discuss regulations, that the principles set out in the Act do not conform to our ideas of what is necessary to the freedom of medicine in the future, we shall indicate it in the plebiscite. On the other hand, if we think that the risks I have set out are exaggerated, that the Act will really make very little difference to us, and that the non-acceptance of our principles is not fundamental, then we shall tell our representatives to go and talk with the Minister on the details. Even supposing you answer "Yes" in the plebiscite you will be given a further opportunity of saying whether or not you wish to enter the service.

At the moment the Council is bound by the decisions of the Representative Meeting. What we are anxious now to secure is an answer in the plebiscite from every member of the profession. No greater calamity could happen to the negotiators than to find that only half the profession had taken the trouble to answer the question:

Do you desire the Negotiating Committee to enter into discussions with the Minister on the Regulations authorized by the National Health Service Act? Please answer YES or NO.

Excursion into Economics

Before saying anything more about the plebiscite I have a few words to say on the economic aspects. What are the prospects? The Spens Committee has reported that in 1938 doctors' incomes were on the whole too small and that they should have been increased by a certain amount. Starting from the lower incomes up to £1,200 a year net, the increase should have been roughly £200 a year. The capitation fee for insured persons paid at that time was 9s., and it was shown by doctors' returns that all other patients put together—private patients, club patients, etc.—were paying their doctors at the rate of 14s. a year; and, of course, we all know that the private patient was not requiring anything like the same amount of services as the insured patient. We asked accordingly that the insurance capitation fee should be adjusted in accordance with the Spens Committee findings, but the Minister was not prepared to discuss the capitation fee unless it was linked with the terms in the new service, though we impressed upon him that we represented insurance practitioners only and had no authority to deal with the new service at all. Later we were told that we had perhaps got a wrong impression of what the Minister meant, and were invited again to go to the Ministry: but in further conversations it seemed impossible to get the Ministry to dissociate the two things. The Minister announced that the capitation fee would be 12s. 6d. as from January 1, 1946. You know what has taken place since then, and what followed when the Minister learned that well over 90% of insurance practitioners were likely to put in their resignations. We are going to talk over these matters next week at the Ministry's invitation, and we shall get down to discovering what the Spens Report means in terms of capitation fee for national health insurance practice alone.

But these proceedings are very sinister. If at a time when we are only half-embroiled with the Minister and only half the population are at stake we have to resort to what may be called brute force in order to make the slightest impression on the Minister and his department, what hope is there when all are in it? The action of the department has been most illuminating—and most depressing.

Altogether it seems to me quite unlikely that, however we are paid in the new service, we shall obtain as much as from our present practices, which are partly insurance and partly private, and I see no reason why we should go into a service and be less well paid for it than we are to-day, when our services are sought by people as private individuals.

We have to take the 9s. pre-war capitation fee, plus 6d. added on the introduction of persons with incomes up to £420 a year, and to this we have to add, in the first place, the amount by which, according to the Spens Committee, doctors' incomes were inadequate in 1938. We claim that the inadequacy must be ascribed to the insurance side of the practice, because here a fixed fee operated which could not be adjusted according to economic circumstances. The average of this addition over the whole range of incomes is equivalent to £170 per 1,000 insured persons, or about 3s. 4d. per insured person, bringing the capitation fee to 12s. 10d. To this has to be added a betterment figure for altered values since 1938. When we talked with the Government over the compensation proposals—I agree now that it was a mistake to have talked at all—a figure of 22% was agreed to as reasonable, but I have had placed in my hands this week a report by an economic expert—the first in the country, for we always employ the best experts we can, believing in expert advice ourselves—and he says that the betterment figures now on 1938 values should be 45%. It is obvious that if that percentage had been taken when assessing compensation values 66 millions would not have been nearly sufficient. Therefore to the figure of between 12s. 6d. and 13s. we have to add 45% for betterment, showing that the 15s. of which so much has been made in the press has no relevance. My point in entering into all this is only to show the risks we run if we go into a service in which we are paid by salary and are in the hands of the State so completely.

The Plebiscite

I come now to the plebiscite. All members of the profession will shortly receive, together with a summary of the Act and a statement of conflict between the conditions laid down in the Act and our own principles, a form requesting an answer "Yes" or "No" to the question whether it is desired that the Negotiating Committee should enter into discussions on the regulations.

(Dr. Dain read here the statement "To every member of the profession" which appears on the form.)

The last sentence in that statement reads as follows: "Implicit in such a negative vote by general practitioners and the staffs of voluntary hospitals is an undertaking, if so advised by the Association, not to enter the new service." This has been framed having in mind medical officers of health who are already employed in a local authority service. We want to make it clear that the medical officer of health who is opposed to this new service because it contravenes the principles which the profession has laid down may properly vote "No" without being expected to resign his office, a thing which it would not be feasible or proper for us to ask him to do.

The difficulties with which some practitioners may be faced are fully realized, and action is being taken by the Association to deal with them. At the meeting of the Council yesterday we appointed a committee to consider the use to be made of the money at our disposal to meet cases of hardship. We are well aware of the difficulties of men in their forties with children to educate, and the handicap which it might be to some of them if all contract work were stopped consequent upon the resistance of the profession to the new scheme. We have very substantial sums in hand. If we wanted to do so we could to-morrow morning spend up to a million pounds, and there need be no doubt whatever that if the need becomes obvious it will be met. We are ready for action, and we put it to the members of the profession to-day that they need not be embarrassed in their decision at this critical moment because of financial considerations. We recognize, of course, that if it came to a fight we must all suffer some loss, but as it is true that, for the country as a whole, two-thirds of our incomes comes from private practice and other sources, and only one-third from National Health Insurance, it is not a question of the whole of the income of any person stopping suddenly. It was the view of a number of members at the Council yesterday that whatever happens will have to happen fairly quickly, and it is not reasonable to suppose that we shall have to prepare for a long and exhausting struggle. The Minister is under an obligation to maintain a service to the insured community, and if he is unable to put something in its place because of our opposition to the new service it is almost certain that the insurance medical service must continue.

We are anxious that everybody should answer according to his views and his conscience the question framed in the plebiscite. I am asked why the Association does not give a lead, why I myself as Chairman of Council do not give a lead. It is for the Council and for me when I get an opportunity to give you an understanding of the position so that you may take the responsibility of decision. It is your responsibility, and what the profession says will go. We want a reply to the question uninfluenced by any such consideration as to whether you may be left in the lurch or whether if you stand out your neighbours may take your place. You need not be afraid of being left in a small minority. There are no spare doctors; there are not enough to go round even in a small town.

I am asked what is my own view. The situation is entirely in our own hands. We have just learned that a strong and concerted action will force the Minister to do something which he was entirely unwilling to do. The threat—it was no more than the whisper of a threat—that insurance practitioners would resign if he would not agree to implement the Spens Report brought him to heel at once. Here we have an opportunity of saying that we will not take any part in a service that does not concede our principles. Why should we not get our principles accepted as well as the conditions of service? The conditions will have to be argued afterwards anyhow. Why not insist on our principles being established, by an amending Act or whatever it may be, before we agree for a moment to talk on terms and conditions? We should be no worse off; indeed we should be infinitely stronger in talking about terms and conditions if we had first by our own efforts secured the acceptance of our principles.

Dr. Dain's address was frequently applauded, and there was prolonged acclamation at the close.

Various Questions

Asked whether it was expected that retired practitioners should answer the plebiscite, Dr. Dain said that he certainly expected them to do so. The answers would be analysed in age groups. If a retired practitioner had not the same interest in events, he had the knowledge of his profession and of the validity of the principles they sought to establish.

Another practitioner was anxious that nothing should be done which might be construed as against the law. Dr. Dain replied that the profession was perfectly free to decide not to enter the service. They would be doing nothing against the law in deciding not to take part in it. They had the right to stay out, though they had not yet succeeded in obtaining the right to come in.

A reference was made to the reported satisfaction of consultants with the Act. Dr. Dain said that consultants must surely regard it as unsatisfactory to have no beds under their control which were not State-owned beds. To another question he replied that the Act laid down that the Minister might determine the qualifications of the people working in the service. Though it was not specified that this applied to doctors specially any more than to nurses or hospital porters the fact remained that the Minister had power to decide a qualification which was different from that set up by the General Medical Council. In one instance it was stated specifically that a general practitioner must not do midwifery unless his qualification was approved by the Minister. "We want that out, of course, among other things, but that is the dangerous position that he by this Act has the power to decide what shall be the qualifications for different jobs."

At the request of Dr. Roper, Dr. Dain gave a brief account of the position of State medical services in the Dominions, and referred especially to the satisfactory position in South Africa, where the South African Medical Association set up a committee to advise the Government, and the Government had appointed the chairman of that committee to be chairman of the Government committee to carry out the service.

Dr. G. Lowe, in proposing a vote of thanks to Dr. Dain, said that he, like others, had made criticisms of B.M.A. leaders, but he unhesitatingly withdrew them. In his addresses, in various parts of the country and to the Representative Body and in his work on the Council and elsewhere Dr. Dain had proved a splendid leader. In a quiet and unassuming way he had marshalled the facts, of which he had a complete mastery. The

way in which he and other B.M.A. leaders had acted during this long period of controversy excited his boundless admiration. They had always been careful to consider the wide interests of the public. Bureaucratic control was no more in the interests of the patient than in those of the doctor. The profession had been forced into this fight against its will. I leaders had been brushed aside as stupid children. They had not been allowed to co-operate in the building up of a service about which they ought to know something, at least as much as an erstwhile miner, a trade union leader, and a member of the present Cabinet. He called for 100% backing of the B.M.A. in this vital struggle.

Dr. DAIN, in reply, repeated the things they really wanted.

"We want to put into the Act the right of every doctor to come in, and the right of appeal to the courts from the Minister's decision to take us out of the service; we want removed from the Act the State ownership of hospitals, the embargo on the buying and selling of practices, all direction of general practitioners, and the salary element in general practitioners' remuneration; we want altered the procedure of election on to the councils and committees so that we may nominate our own representatives instead of the Minister choosing them all, and in that way we may curb dictatorship in the service."

These points again were heartily cheered, and the meeting ended.

Correspondence

The Plebiscite

SIR,—Permit me to express my profound admiration at agreement with the fine, robust letter from Dr. Alfred Co (Nov. 9, p. 707). One can only hope and, I might well add, pray that his stirring and powerful appeal will secure the unanimous support of the profession which he has so splendidly served all his life.—I am, etc.,

London, W.8.

FREDERICK MENZIES.

National Health Service

SIR,—I have followed the correspondence on the proposed National Health Service appearing in your columns and would like to submit the following observations. The Bill, soon to become law, contains many provisions that are good; and the scheme no doubt appeals in various ways to some individual members of the many sections of our profession. Thus the young doctor will welcome the prospect of not having to buy a practice; others will look with favour upon a certain security of tenure, while the young man anxious to specialize will see in it a chance to acquire and practise a specialty without enduring years of penury. But surely these considerations are really beside the point. The kernel of the matter, as far as the profession is concerned, is centred in this business of control. Initially, the conditions of service may appear rosy, but we will make these conditions or alter them as time goes on. If we find regulations concerning salaries or hours of work not to our liking to whom shall we appeal for redress? To government and control of hospitals and of the doctors will be in the hands of the nominees of the Minister.

Let each one in our profession, specialist or general practitioner, examine individually this aspect of the Bill as far as he himself is concerned. Recent European history has shown that the Führer, once elected, quickly entrenched himself behind his Gauleiters and Gestapo. As this matter of control over shadows the other provisions of the Bill, I consider that it is on this issue that the B.M.A. should mainly base its propaganda so that no doctor could afterwards say that he was left in ignorance by our Association.

As I have said, the Bill has many good points, but, unlike some of your recent correspondents, I am only as enthusiastic as one free from any illusions can reasonably be expected to be.—I am, etc.,

Consett, Co. Durham.

K. M. MACDONALD.

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Milk Priorities

SIR,—The Milk Rationing Scheme is too valuable to be allowed to break down for administrative reasons. If general practitioners had been consulted earlier, the present position need never have arisen. The problem is not one for scientific experts, but for practitioners. In my view, the causes of "lax certification" are the extreme vagueness of some of the categories for priority; the absence of other categories; the recognized abuse of the "children's milk" in a substantial number of cases; and the fact that there is no effectual equality in the basic ration as between some groups of consumers and others. It is a fact that some of the "children's milk" is either being given away or else being sold at a profit. It is a fact that in larger families (above four persons) and in hotels, etc., the ration is adequate for the simplest needs, but it is hopelessly inadequate in families of one or two. Since these facts are generally known, it is almost universally felt that the present scheme is "unfair." So long as the arrangements are felt to be unfair, means will be found to evade them.

In my opinion, the following changes should be made: category 2c should be abolished (dyspepsia); "colitis" should be replaced by "ulcerative colitis"; "gastric, etc., ulcer" should receive a priority for six weeks only (but see below). A ten days' priority (after the first three days of illness) should be given to industrial workers who are ill in bed. It should not be given to the "injured or to short-period surgical cases." In all cases in which the doctor in charge thinks that effectual treatment requires a supply of priority-milk, an independent supporting certificate (e.g., from the M.O.H. or his deputy; from hospital consultants or [as has been suggested] from specially appointed practitioners) should be required. I regard it as essential that a category should be added so that the aged can receive more milk than they do at present. Every aged person suffers from "dyspepsia." This point might be met by increasing the basic allowance for small families of one or two persons.

Steps should be taken to "take the profit" out of the illicit sale of the children's milk. It seems to me that the cost of the milk used in a family of children should be made a direct charge upon the "family allowance." This could be done by making a charge for the second half-pint of the "subsidized milk allowed to children." Lastly, all milk given to children at school should either be drunk in the presence of a responsible person, or else collected (sterilized, if necessary, by re-canning) and either sent to an institution or returned to the supplier next morning.—I am, etc.,

Worcester.

HOWARD E. COLLIER.

SIR,—In the announcement issued by the Ministry of Food on Oct. 29, quoted in the *Journal* of Nov. 2 (p. 661), the Minister omits one of the main causes for the increased demand for milk in the United Kingdom. It is that from Aug. 6 milk in publicly provided schools and in private schools has become free to the tune of one-third of a pint per scholar daily. In certain special schools the amount permitted free is two-thirds of a pint. Whereas the consumption of milk in schools varied considerably from place to place before this arrangement was made, I think it will now be found that the consumption approaches nearly 100% of the school population. This free milk is in addition to the extra milk obtainable on the juvenile ration cards. Thus, children may obtain substantial supplies of extra milk from two sources while many elderly and frail people have to be content with milkless days. No one grudges children as much milk as they like provided there is enough milk to go round. It is however arguable, with due respect to the Government experts, that most boys and girls under the age of eighteen can and do eat and digest any ordinary food, whereas the elderly, the frail, and the invalid cannot. Before the Minister blames the medical profession for lax certification, he should put his house in order by reviewing drastically the whole system of milk distribution in this country.—I am, etc.,

Exeter.

G. B. PAGE.

SIR,—For some time I have been of the opinion that a considerable economy in our very restricted milk supply could be effected by reducing the quantity of milk allowed in the Category 2c to half a pint daily. Many cases of mild dyspepsia

cannot possibly manage on two pints of milk weekly, but could make a fairly comfortable diet on three and a half pints weekly. This would save three and a half pints weekly, as these cases now must have seven pints or be refused priority. Doctors, also, should be permitted to state the time for which all priorities are needed. One month is much too short for cases of thyrotoxicosis, nephritis, etc., and monthly repetition of these certificates wastes time. While on the subject of certification I should like to know whether some means of reducing this intolerable burden cannot be devised.—I am, etc.,

St. Leonards.

ANNE BEATTIE.

SIR,—The public scandal of milk "priorities," now a subject of contemptuous comment in the lay press, will continue until something is done to stem the spate of medical certificates. Abolition of the ridiculous categories of "dyspepsia" and "colitis" might help. A woman to whom I refused a certificate which she demanded merely on the grounds that she "hadn't enough milk for the cat" informed me, subsequently, that she was able to obtain milk from a neighbour whose "doctor is not so strict and gives her milk certificates for anything." This is not, I have very good reason to believe, a unique case.—I am, etc.,

Hove.

SIDNEY B. DEPREE.

SIR,—The Minister of Food has announced that medical certificates for priority milk supply to invalids will be disregarded if dated before Nov. 3. He excuses this dictatorial step by saying that medical practitioners have been granting more of these priority certificates in the recent past than they did during the earlier phases of the rationing scheme. It should be pointed out that doctors can only issue such certificates on a prescribed form, and only when they can certify that a patient is suffering from a definite condition on the schedule of diseases drawn up by the Ministry of Food. The obvious inference is that the Minister of Food does not accept the honesty of the doctors who have to issue these certificates. He has virtually stated that he does not put any value on certificates issued up to Nov. 3. What he should realize is that it is not the standard of medical honesty and integrity that has deteriorated during the war years but the standard of the nation's health. We doctors have stood about enough from him and his kind, and it is about time that we rejected this new idea of his with all its nasty implications. I can say clearly and fairly myself that every patient of mine at present receiving extra milk will continue to do so. I shall reserve the right to judge whether people are ill enough to require extra milk or not, and will certainly not be coerced into any attempt to deny them what is a necessity of life in their case merely to satisfy the whim of a nebulous Food Official. "one dressed in brief authority."—I am, etc.,

Torbart, Argyll.

A. KENNETH YOUNG.

Priority Certificates for Rationed Foods

SIR,—For years past the profession has acted as agents for the Ministry of Food in certifying on form R.G.50 any disease for which a patient could obtain priority rations. This has entailed much labour—unpaid to the extent that, though in theory one might make a charge, in practice I have never heard of anyone doing so. The work is unpleasant in that refusal of a certificate resulted in a disgruntled patient and often a subsequent loss to the practice. It should be noted that any resentment felt is directed against the *doctor*—not the Ministry, who have thus succeeded in shelving the unpopularity rightly belonging to it on to the profession. With the issue of the Ministry's instructions that all cases are to be reviewed an enormous amount of extra work will fall on doctors, with a still larger amount of unpopularity. We cannot refuse to do the work, as to do so would harm such patients as are rightly entitled to priority; but what we can do, and what I urge should be the routine procedure, is to give certificates *not* on form R.G.50, and *not* in the Minister's code, but giving details of the illness from which the patient suffers. This he can take to the Food Office, where the priority form will be issued or refused, so saving the doctor the explanations and arguments for which he has little time and less taste, and the unpopularity for which he is in no way to blame.

One further point: I note that the Ministry state that there is no evidence of increased illness to account for a 44% increase

in priorities. Might one ask where the Ministry get their figures of illness? It seems to me that the returns of deaths, infectious disease, and claims for N.H.I. benefit to which the Ministry have access bear little relation to the volume of actual work done by doctors or the amount of minor ill-health present in the community.—I am, etc.,

London, S.W.1.

ARNOLD HARBOUR.

Work of Government Lymph Establishment

SIR,—My attention has been drawn to the article appearing in the Oct. 26 number of the *Journal* by Dr. H. S. Fremlin in which he describes the work of the Government Lymph Establishment from July, 1898 to June, 1946. It was with considerable surprise that I was unable to find anywhere mentioned the name of Lieut.-Col. W. D. H. Stevenson, C.I.E., M.D., D.P.H., I.M.S. (ret'd.), who was Director of the Establishment from 1930 to 1945 and was thus in charge throughout the strenuous times of the last war regarding which Dr. Fremlin says: "In addition we supplied 750,000 doses to Scotland during the 1942 outbreak of smallpox there, as well as dealing with minor outbreaks in England. Altogether from September, 1939, to May, 1945, over 15,000,000 doses were issued. At one time during the war our reserve stood at over 5,000,000 doses." (The italics are mine.) I know that Col. Stevenson when Director was not only responsible for the supply of lymph but for many years until his death in 1945 carried out many arduous researches for the Government on bacteriological and other issues in connexion with modern developments of vaccine lymph manufacture. It seems scarcely credible that no mention should be made of his name in what purports to be a review of the work of the Establishment up to last year.—I am, etc.,

Cambridge.

S. R. CHRISTOPHERS.

SIR,—In reading the article by Dr. H. S. Fremlin (Oct. 26, p. 613) I was surprised to see that no mention whatsoever was made of the great work done either by the late Lieut.-Col. W. D. H. Stevenson, who was the Director of the Government Lymph Establishment from 1930 till his death in 1945, or by his colleague and second-in-command, Dr. G. G. Butler. On those two more than anyone else fell the great burden of meeting the tremendous demands for lymph from 1939 onwards, which Dr. Fremlin has described; and yet Dr. Fremlin writes "we supplied," etc., and "our reserve," etc., which, to those who do not know the facts, would suggest that he with his colleagues—unmentioned except for Mr. Sutton—had been responsible for this work. Honour to whom honour is due, and since, as I understand, his own good work ended in 1930, Dr. Fremlin would probably like to make the situation more clear than he has done in the latter part of his article, which presumably was intended only to stress the value of refrigeration in storing lymph during the war.—I am, etc.,

Leitchworth.

H. H. KING.

The *Xenopus* Test for Pregnancy

SIR,—Prof. Hogben's letter on the *Xenopus* pregnancy test (Oct. 12, p. 554) calls for a reply not only because it contains several gross misrepresentations of the true facts but also because many of the claims made in support of his contention are irrelevant. He writes: "Zwarenstein and Shapiro enjoyed the hospitality of my laboratory during their visit to London in 1933. We then demonstrated to them both the results of our pregnancy tests. . . ." In actual fact, Shapiro visited London for the first time in 1936 and Zwarenstein can state unequivocally and with certainty that neither Hogben nor Bellerby nor any other member of Hogben's department gave him any information whatsoever either verbally or by demonstration about pregnancy tests on *Xenopus laevis* during the time he was enjoying the hospitality of Hogben's laboratory in London in 1932-3. It is quite clear that Hogben's recollection of events does not correspond with the facts. In any case, if Hogben had communicated any such information about the test due and adequate acknowledgment of any private communication would, as a matter of course, have been made in our preliminary announcement of the test in October, 1933. The unquestioned priority for our description of the test is established by our communication to the Royal Society of South Africa on Oct. 18, 1933, when we stated the number of tests we had performed. This communication was actually

abstracted in *Nature* on March 3, 1934, p. 339, and therefore appeared in England before Bellerby's letter to *Nature* on March 31, 1934. English readers were, therefore, in a position to have read our account before Bellerby published his own letter to *Nature*, in which he did not state the number of tests he had made.

Hogben's assertion is further controverted by the fact that the procedure of performing the test as described by Shapiro and Zwarenstein (1933) differs in all major respects from that described by Bellerby (1934). Shapiro and Zwarenstein employed the alcohol method and Bellerby, in his subsequent communication, described an acetone method for the preparation of urine extracts. According to Bellerby, actual extrusion of ova must occur in at least five of ten test animals before a positive diagnosis is made. Shapiro and Zwarenstein, on the other hand, regarded ovulation in *any one* of several test animals as a positive reaction. All subsequent work, by investigators all over the world, amply confirmed the accuracy of the standard laid down by Shapiro and Zwarenstein. Acceptance of Bellerby's criterion for a positive reaction would have led to many and serious errors in diagnosis and would have made the test valueless as a test for pregnancy. It is significant that no one subsequently adopted Bellerby's standards for a positive reaction.

It is interesting, at this stage, to recall the reasons which led Prof. Crew to suggest the association of Hogben's name with the *Xenopus* pregnancy test. They have nothing in common with those attributed to Crew by Hogben. Crew wrote (*B.M.J.*, April 15, 1939, p. 767): "I owe much to the willingly given help of Professor Hogben, now of Aberdeen, in whose laboratory in Capetown it was first shown that this anuran might with advantage be used for this particular purpose. I accordingly propose to refer to the biological test for pregnancy in which *Xenopus laevis* is used as the Hogben test." The statement that *Xenopus* was first used for pregnancy diagnosis in Hogben's laboratory in Capetown is incorrect, even according to Hogben's own account of the history of the test, and since this major assumption is incorrect a sense of gratitude would appear to be an inadequate reason for Crew's proposal.

The lengthy discussion about a captivity effect in Hogben's letter does not affect the point at issue, which is whether or not pregnancy urine can produce ovulation in *Xenopus*. No claim to the authorship of this test can be sustained unless the authors have been the first to describe such a reaction, and Hogben in his letter concedes our priority. We disapprove of an eponymous nomenclature for tests of this kind and have always regarded our own contribution as an obvious application based on the fundamental discovery of Aschheim and Zondek. Consequently, from the outset, we have preferred to call the test the *Xenopus* or frog test.—We are, etc.,

H. A. SHAPIRO.

H. ZWARENSTEIN.

University of Capetown, South Africa.

Nomenclature of the Rh Blood Types

SIR,—In a recent article published in this *Journal* (June 29, p. 982) I described my latest improved nomenclature for the Rh-Hr blood types. The nomenclature proposed was devised in order to emphasize the analogies to the scheme of the four Landsteiner blood groups, so that the eight Rh types were designated as rh, Rh', Rh'', Rh'Rh'', rh₀, Rh₁, Rh₂, and Rh₃, respectively. This has caused some confusion to clinicians, who sometimes mistake the designation rh₀ for rh. For this reason, and because Rh₀ is the most important antigen clinically, so that for practical purposes when testing patients' bloods of types Rh', Rh'', and Rh'Rh'' should all be considered Rh-negative, it is proposed to make a slight but important change in the designations which may help to clarify the subject further for the uninitiated. Under this slightly changed nomenclature the three Rh blood factors are now designated as Rh₀, rh', and rh'', respectively, the capital letter being reserved exclusively for the factor Rh₀ in order to emphasize its special position and clinical importance. The eight Rh blood types now become: rh, rh', rh'', rh'rh'', Rh₀, Rh₁, Rh₂, and Rh₃, respectively. The new designations also have the advantage that they remove the danger of confusing the prime sign and the figure "one" in the superscripts, because the use of capitals and small letters removes any danger of ambiguity.

With respect to the reactions of the three types of Rh antibodies, it is now easy to remember that standard anti-Rh, or anti-Rh₀, reacts with Rh₀, Rh₁, Rh₂, and Rh/Rh₂, but not with rh, rh', rh'', or rh'rh''. On the other hand, anti-Rh' reacts with all bloods containing factors Rh₁ and/or rh'—that is, types rh', rh'rh'', Rh₁, and Rh/Rh₁, respectively—while anti-Rh'' reacts with bloods containing factors Rh₂ and rh''. For clinical purposes, patients of types rh, rh', rh'', and rh'rh'' are classed as Rh-negative, but for use as donors only individuals of type rh should be selected.—I am, etc.,

ALEXANDER S. WIENER, M.D.

Serological Laboratory, Office of the
Chief Medical Examiner of New York City.

SIR,—To one who has been obliged to acquire his knowledge of the blood group Rh from published papers, Prof. D. F. Cappell's clear exposition (Oct. 26 and Nov. 2) is most helpful. Nevertheless I raise my hand in almost a last salute to the members of the Ayrshire Division of the B.M.A. if the paper was read to them as published. It would seem wise to support fully the use of the letters CDE. Fisher's terminology for the elementary antigens is neat and informative. But I beg that these sufficiently complicated factors should be capable of being as clearly and easily indicated in speech as in writing. Fisher suggests that the antisera should be denoted by Greek letters. Would it not be wiser to use Greek characters for cde? Would this really be too "troublesome for many workers"?

In accordance with Prof. Cappell's suggestion the 'antisera should be indicated in the simplest way by the use of "anti" before the English or Greek letters denoting the antigens with which they react. This should also be the invariable custom in describing the antisera of the ABO and MN groups. Further, it would seem advisable to indicate the alleles, whose discovery at the CDE loci is confirmed, by means of numerals instead of letters—e.g., C₂ instead of C_w.—I am, etc.,

G. E. W. WOLSTENHOLME,
Lieut.-Col., R.A.M.C.

London.

SIR,—Prof. D. F. Cappell's excellent articles (Oct. 26 and Nov. 2) on this subject prompt me to raise a point about pronunciation. I have heard many otherwise estimable medical men talking about the "Ar-aitch" factor. Now the "rhesus" factor is presumably derived etymologically from the Greek word *ῥῆσος*, and the initial letter is *ῥ* (rho) with the "or" "spiritus asper." If one must contract the word "rhesus" I suggest it is easier to say "rho" than to say "Ar-aitch," and considerably more reasonable.—I am, etc.,

Shipley.

H. S. RUSSELL.

Recent Advances in Anaesthesia

SIR,—Mr. J. Johnston Abraham complains that in my recent article "no reference whatever is made to intravenous anaesthesia." If he would be kind enough to read through my poor effort, he will find a paragraph on this very subject in which the following occurs: "There is no doubt that the introduction of the rapidly acting barbiturates constituted a major advance in anaesthesia between the wars." I would be the first to admit that the subject of intravenous anaesthesia was not dealt with adequately, but to cover the whole of "Recent Advances" in 3,000 words was a task far beyond my powers.—I am, etc.,

St. Albans, Herts.

C. LANGTON HEWER.

Discovery of Chloroform as an Anaesthetic

SIR,—As a small addition to Dr. J. Y. Simpson's account of the "Discovery of a New Anaesthetic Agent More Efficient than Sulphuric Aether" quoted in the *Journal* of Oct. 12 (p. 541), Dr. Matthews Duncan told me, when I was clerking for him at St. Bartholomew's Hospital in 1886, that the chloroform used was found by him in the chemical laboratory of Prof. Gregory in Edinburgh and that he took it to the meeting on the celebrated occasion when the discovery of chloroform as an anaesthetic was made. He stated that he and several of the dressers in the clinic had made themselves quite ill by inhaling various volatile drugs, but that as he was the person who took the chloroform to the meeting he was entitled to some of the credit of the discovery.—I am, etc.,

Faversham.

PRIDEAUX G. SELBY.

The "Silver Ring"

SIR,—There is a suggestion of panic implied in the communication of the honorary secretary of the Family Planning Association (Oct. 19, p. 599), criticizing the "sudden revival" of the "silver" or "Grafenberg" ring as a means of contraception. Less bias and closer scientific scrutiny is advised before wholesale condemnation of the method can be justified.

The question of the choice of a contraceptive method should be decided on: (a) the personalities involved, (b) their previous experience, if any, of contraceptive measures, (c) the degree of security desired, and (d) the indications for or against any particular method of contraception. Only a very small proportion of the population seek contraceptive advice and it can therefore be accepted that the majority of married couples are content to carry out their own ideas on the subject. When men or women seek scientific information, however, they should be advised on the foregoing basis.

It is clear that in the case of erotic, unstable, and unintelligent types any method necessitating preparation of one kind or another would not be without danger. It might also be bad advice to suggest the use of an occlusive cap to an aesthetic individual who may find the manipulation "more trouble than its worth." Some women are so constructed that a cap is not well retained. Others find a sheath irritating, locally and psychologically, and numerous men report interference with pleasure and/or potency with the rubber condom.

The "safe period" and "withdrawal" methods are used by many couples who for financial reasons or inability to find suitable accommodation are temporarily reluctant to start a family but who, nevertheless, are glad enough to welcome the baby in the event of an "accident." It is a very different story when the wife has advanced cardiac or renal insufficiency, pulmonary tuberculosis, gross neurosis, or incipient psychosis. It is then necessary to recommend a more certain contraceptive method rather than expect such patients to submit to therapeutic abortion.

Failure with an occlusive cap would naturally tend to bring that particular method into disrepute as would discomfort and discharge in the case of the "Grafenberg" ring. It is obvious that a foreign body in the uterus would be contraindicated in a case of gonococcal cervicitis or other infection. No hard-and-fast rules can be laid down except that contraceptive advice should only be given by those who have practical experience of the various methods and technique and who, in addition, have some knowledge of sexual psychology.

It is quite inaccurate to suggest that no progress has recently been made in contraceptive technique. Experience with the "Grafenberg" ring has proved it a most satisfactory method of contraception provided that it is properly applied with all necessary safeguards in suitable patients. I have found less than 5% in something approaching a thousand cases exhibit a mild menorrhagia. I have not encountered any cases of failure or infection which could be attributed to the ring per se. Further, pathological examinations in several hundred diagnostic curettages, which I have had carried out as a routine in all cases when the ring is changed after twelve months, have failed to indicate any gross uterine changes. I propose publishing these results at a later date. I, myself, always regard the insertion of a Grafenberg ring as something in the nature of a minor operation, which should only be performed in a nursing home and under an anaesthetic.

I entirely agree that a simpler and more generally applicable method of contraception is desirable and that further research in this direction should be stimulated, especially as the most consistent factor in precipitating neurosis in women over 35 years of age is fear of pregnancy. I cannot help but feel that the criticism which has been directed against the "Grafenberg" ring has been determined by a survey of cases in which the technique of insertion was faulty or, alternatively, in which a "Grafenberg" ring would appear to have been contraindicated.—I am, etc.,

London, W.I.

EUSTACE CHESSEY.

Treatment of Ingrowing Toe-nail

SIR,—I am very glad to see from Dr. J. C. Leedham-Green's letter (Oct. 19, p. 589) that he has found my method of treating ingrowing toe-nail so successful. There is, however, one point which he has not mentioned which I think is perhaps the most important of all and that is the treatment of the spur on the nail which is found on the affected side. This is so obviously the cause of the irritation and pain that the temptation is always to remove it. If this is done recurrence is almost certain. The correct procedure is to lift that edge of the nail with the spur upwards and over the surrounding tissue, packing

underneath, thus preserving the full width of the nail, and every day to raise it a little more. If this is done and the nail subsequently cut square across there will be no recurrence. The spur is undoubtedly caused by cutting the nail in a rounded fashion and leaving a small portion at the end.—I am, etc.,

Taynult, Argyll.

P. F. CHAPMAN.

Novel Method of Digital Traction

SIR,—Our attention has been drawn to Dr. Kenneth MacLeod's recent description of a novel method of digital traction by means of a thread passed through a hole in the nail and attached to a "banjo" splint (Oct. 26, p. 614). We have used this method at Rinkwood Hospital, Worcester, for more than two years, and have incorporated additional refinements such as the use of elastic in the extension and the fitting of a second "banjo" loop at right angles to the first to give support by means of little rubber slings under the proximal inter-phalangeal joints for those cases in which this is desirable. The appliance has proved most useful for minor fractures, peripheral nerve injuries, etc. We are sorry to disappoint Dr. MacLeod, but his "new" method is an old-established practice at our hospital.—We arc, etc.,

Worcester.

E. W. BINTCLIFFE.
HIREN DE.

SIR,—This method can hardly be called novel. On page 317 of Trueta's *War Surgery*, published in 1943, a better procedure is illustrated, thanks to the simple device of threading the end of the nail and the retention of all the finger joints in flexion rather than in extension, the latter being the undesirable position maintained by the "banjo" splint shown in the photograph accompanying Dr. MacLeod's memorandum.—I am, etc.,

Swindon.

F. LOUIS.

Obituary

SIR EDWARD THORNTON, K.B.E., M.R.C.S.

We regret to learn that Sir Edward Thornton, formerly Secretary for Public Health and Chief Health Officer for the Union of South Africa and D.G.M.S. of the Union Defence Forces with the rank of brigadier, died on Oct. 26 at Pretoria. He had been chairman of the Pretoria Division of the B.M.A. and president of the Northern Transvaal Branch, and presided over the South African Medical Congress in 1934.

Edward Newbury Thornton, sixth son of Thomas Thornton, of Sporre, Swaffham, Norfolk, was born on June 10, 1878, and from Cheltenham College came to study medicine at the London Hospital, qualifying M.R.C.S., L.R.C.P. in 1902 and later taking the Cambridge D.P.H. After service in the South African war and on plague duty in India he entered the Public Health Department of Cape Colony as additional medical officer in 1903, and in 1910-14 was medical adviser to the Cape Province Administration and chief local government inspector of the Province. At the outbreak of the 1914-18 war he joined the South African Expeditionary Force and in 1915-20 commanded the large South African Military Hospital at Richmond Park, Surrey, where he inaugurated the scheme for the vocational training of disabled soldiers during their stay in hospital, and was chairman of the executive committee on vocational training in military hospitals in the London District. He was created K.B.E. (Military Division) in 1919. On returning to South Africa he was appointed D.M.S. of the Union Defence Forces and assistant health officer to the Union, and chairman of the Housing Board. His early work as a plague officer in the Punjab at the beginning of the century led the Government of Nigeria in 1926 and the Administration of the Uganda Protectorate in 1930 to seek his advice on the control of that disease.

Sir Edward Thornton was a versatile man of great energy. He published many reports and scientific articles, and at one time held the chair of public health in the Witwatersrand University; he had a seat for a long period on the South African Medical Council and was an authority on the organization of State-aided hospitals and charitable institutions.

C. E. K. HERAPATH, M.C., M.D.

We regret to announce that Dr. Charles Edward Kynaston Herapath, a former chairman of the Bristol Division of the B.M.A., died on Nov. 4 aged 64. His father was the late C. K. C. Herapath, and he studied at the Bristol Medical School, taking the English Conjoint qualifications in 1907, the M.B., B.S. Lond. degrees in 1908, and the M.D. two years later. His earliest appointments were those of house-physician and house-surgeon at the Bristol Royal Infirmary, and he was for some years physician to the Bristol Dispensary. During the war of 1914-18 he held a temporary commission as major in the R.A.M.C. and won the Military Cross; four years after his return to civilian life he was awarded the Colston research fellowship.

For many years Dr. Herapath was honorary physician and Dean of Faculty at the Bristol Royal Hospital, clinical lecturer in medicine in the University of Bristol, and cardiac specialist to the Somerset County Council; he was also honorary physician to the Winford Orthopaedic and Heart Hospital, and consultant to the Clevedon Cottage Hospital, the Northwood Mental Hospital, and Southmead Hospital. He was a member of the Association of Physicians of Great Britain and Ireland and of the Cardiac Society, and published a number of papers on diseases of the heart, which appeared in these columns and in the *Lancet*. He joined the British Medical Association in 1909, was joint honorary secretary of the Bath and Bristol Branch for ten years, and chairman of the Bristol Division in 1936. At headquarters he served for four years on the Medical Students and Newly Qualified Practitioners Subcommittee.

We regret to announce the death of Prof. MARCEL BRULÉ of Paris. In later life a well-known physician, he was formerly Chef de Laboratoire of the Faculté de Médecine of Paris, where his work on liver diseases and especially on jaundice made his name familiar far beyond the borders of France. He was an old friend of Sir Humphry Rolleston and of many other physicians in Britain and America.

Grief came to the medical profession of Cheltenham and to his numerous patients when Dr. BASIL TAYLOR died on Oct. 24 at the age of 62 after three weeks' illness. A son of the late Rev. George Taylor, rector of Great Witcombe, he studied at Durham University and graduated M.B., B.S. in 1908. He then entered the Royal Navy, from which he retired in 1919 with the rank of surg. lieutenant-commander. He saw service in the original *Dreadnought* and with Evans of the *Broke*. J. R. C. writes: Basil Taylor came to practice in Cheltenham 24 years ago and was appointed on the medical staff of Cheltenham College and also to the Cheltenham Hospital for Sick Children. Endowed with an extraordinary charm of personality, a lasting boyish temperament, always courteous, always cheerful, he made one think that he brought with him from his life in the Navy some of the freshness and vigour of the sea. I think that it was his work at Cheltenham College that was nearest his heart, and his temperament made him a welcome and successful doctor with that observant and critical patient the public school boy. He won their confidence, and they knew that no matter how hard-worked he might be they came first. The funeral service was held at the College chapel and was attended by the Headmaster, the staff of the College, many of the medical profession, and a large congregation of his patients and friends. Devoted to his patients, loyal to his colleagues, happy in his home, it may be said that he was fortunate in his life and also fortunate in his death that he should be mourned by so many. He had been a member of the B.M.A. for 34 years. He is survived by his widow and two sons, both majors in the Royal Artillery. A third son, also a major in the R.A., died this year.

Dr. C. B. VAKIL, who died on Oct. 23, was an Indian who spent his professional life in England after qualifying M.R.C.S., L.R.C.P. in 1913 from St. Bartholomew's Hospital. He was born at the end of 1882 and began his medical studies in Bombay. He practised in various parts of London and joined the B.M.A. in 1930. A colleague writes: Dr. Vakil was a man of quiet manner with a deep passion for his ideals—the welfare of his fellow men, the freedom of his country, and the well-being of his patients. These qualities endeared him to all kinds of people; his passing was mourned by a large gathering, including lawyers, doctors, students, business men, journalists, and labourers. He leaves a widow but no children.

The Services

The *London Gazette* has announced the award of the George Cross to Lieut.-Cmdr. PATRICK ALBERT O'LEARY, D.S.O., R.N., a Belgian doctor known to his countrymen as Dr. Albert Edward-Marie Guérissse, who became a British naval officer. The citation reads as follows:

Lieut.-Cmdr. O'Leary was captured by the French police during operations off the south coast of France in April, 1941. He escaped while en route to a French prison, and thereupon set up an organization to help the escape of Allied prisoners of war and evaders. Through his skill and his sustained personal bravery, the organization succeeded, between April and August, 1941, in getting away some 150 officers and men, many belonging to the Royal Air Force. At increased risk to himself, Lieut.-Cmdr. O'Leary was soon forced to expand his organization, to help an ever-increasing number of evaders. To keep the members working at full pressure, and to inspire their confidence, he travelled frequently between the Dutch border and the south of France through numerous German controls, himself escorting numbers of escapees. If any question arose of hazard greater than usual, Lieut.-Cmdr. O'Leary carried out the work himself. In March, 1943, he was betrayed to the Gestapo by a member of his group. Arrested, he was put to many forms of torture in an attempt to make him reveal the names, whereabouts and duties of the other members. He was put in a refrigerator for four hours, he was beaten continually, but never did he disclose information which could be of profit to the enemy. After more ferocious experiments the Germans gave him up as hopeless, and sent him to a concentration camp where he was once again the victim of torture. He was a prisoner in Mauthausen, Natzweiler, Neubremm and finally Dachau. He nearly lost his life in the Neubremm quarries, where he was beaten senseless. Throughout his time in prison, Lieut.-Cmdr. O'Leary's courage never faltered. Numbers of prisoners have given evidence that his moral and physical influence and support saved their lives. On his liberation from Dachau, Lieut.-Cmdr. O'Leary refused to leave the camp, where he had been made "President" of all the prisoners (including some thousands of Russians), until he had ensured that all possible steps had been taken to ease the lot of his fellows. He was then given the opportunity to return to his family, but he insisted on proceeding to France, to trace the surviving members of his organization, and to help them in any way he could. From the time of inception until the end of the war, Lieut.-Cmdr. O'Leary's group was responsible for the rescue and successful return of over 600 British and American officers and men. It is now known that over 250 owe their safety directly to Lieut.-Cmdr. O'Leary, whose fortitude and determination matched every task and risk.

Fl.-Lieut. A. N. H. Peach, R.A.F.V.R., has been mentioned in dispatches in recognition of gallant and distinguished services in Malaya, Hong Kong, and the Netherlands East Indies during the operations against the Japanese ending in March, 1942.

The following appointments and mention in dispatches have been announced in recognition of gallant and distinguished services while engaged in special operations in South East Asia:

M.B.E. (Military Division).—Majors (Temp.) J. G. Dumoulin and A. Rapoport, and Capt. E. J. Harrison. R.A.M.C.

Mentioned in Dispatches.—Major (Temp.) C. E. Aston, R.A.M.C.

CASUALTIES IN THE SERVICES

Fl.-Lieut. RAYMOND GEORGE BLACKLEDGE, previously reported as missing, has now been presumed to have died about Jan. 20, 1945, while a prisoner of war in Japanese hands. He was born in August, 1912, studied medicine at Oxford University and St. Thomas's Hospital and qualified B.M., B.Ch., and M.R.C.S., L.R.C.P., in 1937. After holding house appointments at St. Thomas's, the Radcliffe Infirmary, Oxford, and the Miller General Hospital he was commissioned in the Medical Branch R.A.F.V.R. on Sept. 10, 1940.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a reception at the College on Oct. 30, to celebrate the centenary of the first administration of ether in this country, the Princess Royal, Hon.F.R.C.S., unveiled a memorial tablet marking the centenary and honouring the four British pioneers, Henry Hill Hickman, James Young Simpson, John Snow, and Joseph Thomas Clover. Dr. A. D. Marston, president of the Association of Anaesthetists of Great Britain and Ireland, in his address pointed out that of the three English pioneers one was a Fellow and the other two were Members of the Royal College of Surgeons of England, and said that no more suitable place for the keeping of their memory could be thought of than within the precincts of the ancient and famous College which was their alma mater. Dr. Marston gave a brief account of the life and work of each of the pioneers and of their contribution to anaesthesia. Hickman's life was short (1800-30). He lived before the actual introduction of anaesthesia, but made experiments on animals and reported them to the Medical Society of London, and was convinced that means would be found to relieve human suffering. Sir James Young Simpson, the celebrated Scottish physician, had attained the age of 35 years and considerable academic distinction at the time of the

first administration of ether in this country. As professor of medicine at Edinburgh University and a leading exponent of obstetric practice Simpson had constantly sought means of alleviating the pangs of childbirth. John Snow, a Yorkshireman, was practising medicine in London when he read in the *Lancet* Bigelow's account of the Massachusetts demonstration, and he began to study the possibilities of anaesthesia at the age of 33. Clover, a native of Norfolk, became F.R.C.S. at the age of 28, and decided to devote his life to the study and practice of anaesthesia. He did much valuable work in restoring ether to its place as the principal routine anaesthetic agent, and spent years in perfecting his famous inhaler.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the annual meeting of the Royal Faculty of Physicians and Surgeons of Glasgow the following officers were elected for the ensuing year: *President*, Dr. Geoffrey B. Fleming; *Visitor*, Mr. J. Scouler Buchanan; *Honorary Treasurer*, Mr. Walter W. Galbraith; *Honorary Librarian*, Dr. Archibald L. Goodall; *Representative on General Medical Council*, Mr. Andrew Allison.

VICTOR HORSLEY MEMORIAL LECTURE

The Victor Horsley Memorial Fund, which was raised in 1920 to commemorate the services of Sir Victor Horsley to Science and the Empire, is devoted to the giving of a lecture triennially in London entitled the "Victor Horsley Memorial Lecture." By invitation of the Trustees (the Presidents for the time being of the Royal Society, the Royal College of Surgeons of England and the British Medical Association, the senior physician of the National Hospital for the Paralysed and Epileptic, Queen Square, the senior surgeon of University College Hospital, and Mr. Stanley G. Robinson, son-in-law of Sir Victor Horsley) the seventh lecture will be delivered by Dr. F. M. R. Walshe, F.R.C.P., F.R.S., physician to the National Hospital, and physician-in-charge, Neurological Department, University College Hospital, in the Lecture Theatre, National Hospital, Queen Square, W.C., on Wednesday, Nov. 27, at 5 p.m. The title of the lecture is "The Contribution of Clinical Study to the Physiology of the Cerebral Motor Cortex," and the chair will be taken by Sir Alfred Webb-Johnson, Bt., P.R.C.S. Admission to the lecture is free on presentation of visiting card.

Medical Notes in Parliament

HEALTH SERVICE BILL

Royal Assent

Final discussions on the National Health Service Bill arose in the House of Lords on Nov. 6 on a Government motion that the House should consider the reasons advanced by the House of Commons for disagreeing to certain amendments previously made by the House of Lords.

A Lords amendment transferred to the Metropolitan boroughs and the City of London some of the health services which the Bill, as introduced, concentrated under the London County Council. In rejecting this the House of Commons formally expressed the opinion that it was expedient for all services to be provided under Part III of the Bill in any area to be the responsibility of a single authority and that in the County of London, as in other counties, the appropriate authority was the county council.

In defending the decision of the House of Commons the LORD CHANCELLOR said that to be effective the supervision of expectant mothers, and also prenatal and postnatal care, must be co-ordinated with the domiciliary midwives service through one authority responsible for all related facilities. Before the war 25% of the births in London were attended by these L.C.C. services and that figure had substantially increased.

LORD BALFOUR OF BURLEIGH said midwifery was transferred from the borough councils to the London County Council only a few years ago. Integration had remained complete and mothers were unaware that the midwife was the servant of the L.C.C. while the health visitors were servants of the borough councils.

On the motion of the Lord Chancellor the House agreed not to insist on its amendment.

The Major Method of Remuneration

To the amendment made by the House of Lords respecting the remuneration of general practitioners undertaking to provide general medical services under the Act the Commons had disagreed on the ground that it was inexpedient that the method of remunerating the doctors providing these services should be laid down in the Statute.

The LORD CHANCELLOR submitted that the peers' amendment was too restrictive. He said it would be ridiculous if an Act of Parliament were necessary to vary the method of remuneration agreed to by the profession. He moved that the House should not insist on the amendment. He could not say what the proportion of salary should be in the normal case. "That must depend on the consultation which we shall enter into with the profession itself, but the Government's intention, subject to what the profession may say, is clear. It has been said several times. It is that a salary should be an element only, a minor matter, and that the major method of remuneration should be by way of capitation fees. That has been stated by the Minister several times, and was restated when the Commons considered this matter again."

LORD LLEWELLIN, who had originally moved this amendment, rose to say he accepted the Lord Chancellor's motion.

LORD HORDER said the principle which underlay the amendment had not been modified by the Minister, but the position had, to some extent, been clarified. Mr. Bevan's assurance that the main part of the remuneration would be by capitation would, however, not bind future Ministers. If the regulations on this and other matters were to come up for discussion before they were put into operation, then medical men would feel more satisfied. He understood that by regulation it was still possible to change the percentages of the two forms of remuneration, or even to do away with one or other of those forms. If the capitation method of payment were done away with at some future time the fear that the Bill was the thin end of the wedge in respect of a national service would be intensified in the minds of doctors. Colleagues in general practice were left cold by Mr. Bevan's assurance that it was not the intention of the Government to make the present proposal the beginning of establishing a full-time salaried service. If the Minister wished to have the profession with him, as he had said, he could have gone further. It was still doubtful whether the doctors were going to come in willingly and enthusiastically to work the scheme. Lord Horder hoped they would. The pose of the Government of doing certain things for the sake of the doctors so that they could do their work without financial anxiety and could be freed from competition was odd when no clamour in respect of those matters had been heard from the rank and file of the profession. Doctors were not dissatisfied with a certain amount of insecurity when they started nor with a healthy spirit of competition as they went along.

LORD MORAN thanked the Lord Chancellor for his reasonableness during the discussions on the Bill. The Lord Chancellor had not argued that the basic salary was a measure of security for the young practitioner beginning practice. He had not suggested a basic salary to prevent early casualties in the legal profession where these were much heavier. Barristers did not want a basic salary. Neither did the doctors. Lord Moran said he had been dean of a medical school for twenty-five years where each year 60 or 70 men qualified and went into practice. He had never heard security discussed. There was a fundamental belief throughout the profession that there was something profoundly wrong with a man if he could not make a livelihood in medicine. This question of a basic salary was a figment of the political imagination, a debating point and no more. A second argument had been that payment by capitation fee led to abuses and undesirable practices. In the House of Commons the Minister had said that did not apply to more than a very small proportion of doctors. So, said Lord Moran, because there were a few black sheep, the whole remuneration of the rest of the medical profession was to be altered in a way which the profession almost unanimously felt might result in a deterioration of medical practice. When the Bill became law the vast majority of the profession would work under it. It was of enormous importance that they should have confidence in the Ministry of Health. That confidence would not be created if there were impugning by the political world of the honesty of the great body of the profession. Debates on this particular amendment had seemed unreal to the profession because, generally speaking, doctors did not believe that the reasons given for introducing a basic salary were the real ones. They thought it was an instalment, to be increased from time to time, towards a condition of affairs which would ultimately result in the basic salary becoming a whole-time salary. Ministers of Health came and went, but this principle remained a basic faith in the Party which had so often expressed it. If the basic salary ever became a whole-time salary, Parliament would embark on a condition of affairs whose effect on the proficiency of the profession could not be calculated.

The House then agreed with the Lord Chancellor's motion not to insist on its amendment.

Later in the same day a Royal Commission signified the Royal Assent to the National Health Service Bill.

Release of Medical Officers

On Nov. 6 Sir ERNEST GRAHAM-LITTLE asked whether Mr. Bellenger knew that doctors in the Forces over-seas suffered from uncertainty with regard to their release, their anxiety being occasioned by the issue at the end of 1945 of a Government statement reducing the ratio of doctors to two per thousand; which was contradicted by a later Army circular fixing the ratio at 2.75 per thousand. He asked the Minister to inform the officers concerned of the actual position.

Mr. BELLENGER replied that the ratio of two doctors per thousand troops was agreed under the conditions existing at the end of 1945 to enable the maximum number of doctors to be returned to civilian practice for the winter months. By that measure the Army alone was able to release 5,600 doctors by the end of February. Present estimates, based on an over-all cover of 2.75 doctors per thousand British troops, provided also for medical commitments other than those that could be considered a purely military responsibility and for military families overseas. The release programme for medical officers must depend upon the strengths and deployment of the Forces generally. Dates for release of the various age-and-service groups were announced as soon as possible. The release of doctors was thus inevitably linked with the release programme for the Army as a whole. Whatever the percentage of doctors per thousand, there must necessarily be some uncertainty for individuals until a definite programme had been announced. There was no more cause for uncertainty in the minds of doctors than in the minds of any other members of the Forces.

West African Medical Services

Mr. A. CREECH JONES told Mr. SORENSEN on Nov. 6 that the expansions of the medical services in the West African colonies envisaged for the next ten years were considerable. Nigeria was devoting nearly £9,000,000 under its £55,000,000 development plan to these services and by 1956 would have more than doubled its present annual expenditure of nearly £1,000,000. The number of hospital beds would be multiplied two and a half times and the medical staff trebled. In addition, over £8,000,000 was to be spent on improved water supplies, which should have a marked effect on the health of the people. In proportion to its resources, Sierra Leone proposed expenditure of a similar order. Although the plans for the Gold Coast and Gambia were not yet final, they provided for substantial expansion. Mr. Creech Jones added that having regard to the limitation of the available resources and the need of other equally essential services, it would not be wise to contemplate further expansions unless the future revenues of the territories concerned turned out to exceed expectations.

Medical News

Five candidates were nominated at Edinburgh University on Nov. 6 for the Scottish Universities Parliamentary by-election to fill the seat in the House of Commons relinquished by Sir John Boyd Orr. Two are medical men: the Right Hon. Walter Elliot (Conservative), and Mr. R. Scott Stevenson, F.R.C.S.Ed. (Liberal National). Polling at each university will take place between Nov. 22 and 27 on days appointed by the several Vice-Chancellors. The result will be declared on Nov. 29 in Edinburgh.

The London Medical Exhibition will be resumed, after a wartime break, at the New Hall, Royal Horticultural Society, Westminster, London, S.W.1, from 11 a.m. to 6.30 p.m., daily from Nov. 18 to Nov. 22 inclusive. Doctors who wish to attend, and have not been sent an admission card, can obtain one, free of charge, from the Secretary, London Medical Exhibition, 194-200, Bishopsgate, London, E.C.2. Tel. Bis. 2148.

A meeting of the Hunterian Society will be held at Apothecaries' Hall, Blackfriars Lane, Queen Victoria Street, E.C., on Monday, Nov. 18, at 8.30 p.m., when the motion "That the Advertisement of Proprietary Medicines is a Menace to the Public" will be discussed. For the motion: Mr. Hugh N. Linstead, M.P., Dr. G. H. Day; against the motion: Mr. Arthur Mortimer, Mr. J. S. Walmsley. The meeting is open to medical and non-medical guests and the Council hopes that Fellows will avail themselves of the opportunity to invite guests who are interested in the subject.

A lecture on "New Factors concerned in the Coagulation of Blood" will be given at University College Hospital Medical School (Lecture Theatre No. 1) by Dr. P. A. Owren (Akers Hospital, Oslo, Norway), on Friday, Nov. 22, at 4.30 p.m., when the chair will be taken by Prof. C. Rimington. Students and others interested in the subject are invited.

A meeting of the Middlesex County Medical Society will be held at Chase Farm Hospital, Enfield, on Thursday, Nov. 28, at 3 p.m., when clinical cases will be shown and a paper read by Mr. J. A. Dunlop on "Pre-vesicular Prostatectomy: Experiences with 25 cases."

The Albert Medal of the Royal Society of Arts, awarded jointly this year to Sir Alexander Fleming and Sir Howard Florey for their services in the discovery and development of penicillin, was handed to them privately on Nov. 4 by Viscount Bennett, president of the Society. Lord Moran, P.R.C.P., and Sir Alfred Webb-Johnson, P.R.C.S., were present.

Mr. Horace H. Rew, Secretary to the Examining Board in England, will retire on Nov. 30 and will be succeeded by Mr. F. M. Stent, the present assistant secretary.

Two American visitors of interest to the medical world who have recently been in England are Dr. Kendall Emerson, managing director, and Mr. F. D. Hopkins, executive secretary, of the National Tuberculosis Association of the U.S.A. The Duchess of Portland and the Council of the National Association for the Prevention of Tuberculosis entertained Dr. Emerson and Mr. Hopkins to luncheon on Nov. 1, when the keynote of the speeches was the importance of the closest co-operation between Great Britain and the United States in the fight against tuberculosis. At a Council meeting afterwards, attended by Dr. Emerson and Mr. Hopkins, various matters of interest to the two associations were discussed, including the situation which will confront voluntary bodies when the World Health Organization comes into being.

Two distinguished Brazilian medical men are now in this country as the guests of the British Council. Dr. Reynaldo Neves de Figueiredo, who is here to study anaesthetic techniques, is head of a team of eight doctors in the General Hospital, Sao Paulo, who specialize in anaesthesia. Dr. Moacyr Alvaro is one of Brazil's leading ophthalmic surgeons, and will see something of the work of eye hospitals in London.

Dr. John Charles Wootton, part proprietor and medical superintendent of Haydock Lodge, Haydock, Lancs., a nursing home for mental patients, successfully appealed on Nov. 5 against conviction and a £50 fine at Newton-le-Willows because forms claiming priority milk were incorrect. The Liverpool County Quarter Sessions Appeals Committee quashed the conviction with costs.

Surgeon Rear-Admiral Sir Gordon Gordon-Taylor has been honoured by the award of the Legion of Merit, Degree of Commander, by the President of the United States of America.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a general increase in the prevalence of measles 499, scarlet fever 161, whooping-cough 124, paratyphoid 67, and diphtheria 36.

Notifications of scarlet fever showed the largest rises in Yorkshire West Riding 42 and Staffordshire 32. There was an increase in the incidence of diphtheria in Lancashire 15; almost an eighth of the total cases of diphtheria were notified in Liverpool C.B. The increase in cases of whooping-cough was mainly confined to the Midlands; the largest local rise was Warwickshire 35 and the largest fall was Lancashire 36. The most notable increase in the notifications of measles was Durham 166, and 54 further cases appeared in Montgomery, Llanfyllin R.D., where 21 and 24 cases were reported in the preceding two weeks. The only return of any size for cases of dysentery was London 18 (Lewisham 9). Notifications of paratyphoid continue to reflect the outbreak in Sheffield C.B.

In *Scotland* an increased incidence was recorded for scarlet fever 54, acute primary pneumonia 37, and diphtheria 9. A decline was reported for measles 38 and dysentery 16. The largest increases in cases of scarlet fever were Glasgow 17, Dundee 11, and Aberdeen 9. A rise of 15 in the notifications of diphtheria occurred in Glasgow.

In *Eire* the chief variations in the trends of infectious diseases were increases in scarlet fever 19 and whooping-cough 13 and a fall in diarrhoea and enteritis 11.

In *Northern Ireland* the returns showed little variation from those of the preceding week. A further decline was recorded in the outbreak of typhoid in Armagh U.D., where 6 cases were notified as compared with 15 and 25 in the preceding two weeks.

Week Ending November 2

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,187, whooping-cough 1,549, diphtheria 274, measles 3,374, acute pneumonia 485, cerebrospinal fever 40, dysentery 69, acute poliomyelitis 25, paratyphoid 66, typhoid 6.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Oct. 26.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	28	1	18	1	—	35	3	20	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	314	16	92	36	12	576	46	185	60	26
Deaths	3	—	1	—	—	9	—	1	—	—
Dysentery	59	18	32	—	—	247	43	66	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis tetrahgica, acute	1	—	—	—	—	1	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	32	1	2	—	—	52	10	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	52	—	—	—	—	65	—
Deaths	36	4	12	—	2	63	7	19	21	6
Measles*	2,884	105	162	69	7	422	47	71	46	3
Deaths	2	—	1	—	—	1	—	—	—	—
Ophthalmia neonatorum	68	5	20	2	—	49	5	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	89	1	—	—	1(B)	5	—	2(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	436	32	6	1	3	547	54	3	5	1
Deaths (from influenza)*	13	1	2	—	1	16	4	4	—	—
Pneumonia, primary	—	—	190	17	—	—	—	162	20	—
Deaths	—	22	—	13	—	—	29	—	10	2
Polio-encephalitis, acute	2	—	—	—	—	5	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	31	3	5	8	1	27	2	2	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	4	19	—	—	—	3	18	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	160	11	10	2	2	113	8	19	2	3
Deaths	—	1	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,209	103	262	43	40	1,754	145	353	24	43
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	9	1	2	2	12	12	2	—	3	—
Deaths	1	1	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,499	94	143	37	40	1,029	56	75	23	3
Deaths	4	—	—	—	—	1	1	—	1	2
Deaths (0-1 year)	391	45	59	—	18	318	42	48	32	12
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births)	4,157	604	591	—	123	4,223	673	557	171	115
Annual death rate (per 1,000 persons living)	—	—	13.0	—	—	—	—	12.6	11.0	—
Live births	8,883	1403	1097	—	248	5,913	814	826	343	233
Annual rate per 1,000 persons living	—	—	22.1	—	—	—	—	16.5	22.1	—
Stillbirths	265	26	26	—	—	169	18	33	—	—
Rate per 1,000 total births (including stillborn)	—	—	23	—	—	—	—	38	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Owing to a fire at the printers in Dublin it is not possible to publish the return of births and deaths in Eire for the week ended October 26.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Treatment of Polycythaemia

Q.—What is the most recent treatment for polycythemia? Is there any permanent cure?

A.—To reply to the second half of this question first: there is no permanent cure for polycythaemia.

The condition is accompanied by an increase in the viscosity of the blood as well as by a raised blood volume. It is uncertain to which of these the symptoms are to be attributed, but the aim of treatment is to reduce both. Venesection is probably the most commonly used method. Phenylhydrazine serves the same purpose by destruction of red blood cells, but it requires careful administration or a severe haemolytic anaemia may result. Radiotherapy is a third method which aims at inhibiting erythropoiesis. The most satisfactory results have been obtained by irradiating the whole body at a distance of 2 to 2.5 metres from the tube; 30 to 50 r are given daily, and treatment is stopped when the leucocytes fall to 4,000 per c.mm. After a latent period of one to two months the red cell count starts to fall, and a prolonged remission, sometimes of two years, is obtained. (Pierson and Smith, *Amer. J. Roentgen.*, 1940, 43, 577.)

More recently radioactive phosphorus has been employed. This isotope, P^{32} , is concentrated in the bone marrow, where it emits beta-rays and thus inhibits haemopoiesis; it has a half-life of 14.3 days. The average dose is 5 to 10 millicuries, given intravenously as an isotonic solution of sodium dihydrogen isotopic phosphate. Remissions of over two years have been produced. (Erf and Lawrence, *Ann. intern. Med.*, 1941, 15, 276; *Blood*, 1946, 1, 202.)

High Flying for Whooping-cough

Q.—Is the treatment of whooping-cough by high-altitude flight of any value?

A.—A high-altitude flight can have no effect on whooping-cough from the point of view of its treatment as a specific infection. The occurrence of focal areas of lung collapse, which is a serious complication of the disease, might be mitigated by the effect of altitude. The return of the child to normal heights would, however, permit their recurrence, so that any relief would probably be temporary. See also an annotation on this subject in the *Journal* of Dec. 26, 1942 (p. 758).

Plantar Warts and Fungous Infection

Q.—Could you tell me the preventive treatment for (1) plantar warts, and (2) fungous infections contracted in swimming-pools and baths?

A.—Plantar warts are caused by a virus from a patient with warts entering the epidermis of the sole, probably through a small abrasion. Epidemics in communities such as schools can be prevented by the following measures: (1) Removal of carriers. All feet should be examined at weekly intervals; any child with a plantar wart should be banned from barefoot exercise, bathing, etc., until cured. He should be provided with a special bath-mat. The incubation period of warts may be many months, so that the inspection must be continued for six months after an epidemic has apparently ceased. (2) Children with warts on other parts of the body should also be treated.

(3) In the event of an epidemic, barefoot exercise should be stopped and slippers should be worn in changing-rooms. (4) The insides of all shoes should be examined for nails, etc., which might damage the skin of the sole. The arrest of an epidemic of warts by the removal of a carrier is described by McLaughlin and Edington (*Lancet*, 1937, 2, 685).

The only satisfactory way of avoiding the risk of fungous infections at swimming-pools is to wear bathing-shoes. It is improbable that paddling the feet for a few minutes in hypochlorite or other antiseptic solution does more than satisfy the local health authorities. Rubbing in Whitfield's ointment before bathing is more effective but rather messy and carries some risk of dermatitis. In the event of an epidemic, careful search should be made for carriers. These should be intensively treated and provided with their own bath-mats and forbidden to walk about barefoot. The transmission of infection was the subject of a questionnaire to American dermatologists (*J. invest. Derm.*, 1940, 3, 523). Opinions varied from those who said precautions were unnecessary to those who even swabbed the bath out with carbolic acid.

Haemospermia

Q.—In young men what are the causes of haemospermia other than malignant disease, chronic granulomata, and venereal disease?

A.—Haemospermia in young men is not at all uncommon and may be compared with epistaxis. It is probably due to congestion of the parts and possibly rupture of a small blood vessel; it seems probable that the bleeding may also occur in the neighbourhood of the verumontanum during a period of sexual stimulation. Another cause to be borne in mind is prostatic-vesiculitis, especially when due to tuberculous infection. Few textbooks on surgery even mention the condition: see Romanis and Mitchiner, *Science and Practice of Surgery*, J. and A. Churchill, Ltd., 1941, 2, 960.

Wilson's Disease and Rh Incompatibility

Q.—Kernicterus and certain types of infantile cirrhosis have been shown to be late results of Rh incompatibility between mother and child. Has Wilson's disease any connexion with the development of maternal Rh antibodies?

A.—The answer to this question is not yet known with certainty. No large series of cases of Wilson's disease has been published with details of the blood groups. Juvenile hepatic cirrhosis and kernicterus may both result from iso-immunization of the mother due to Rh incompatibility, but, while it is an attractive speculation which has occurred to many workers on Rh problems that Wilson's disease (hepato-lenticular degeneration) might have a similar aetiology, there is no proof in favour of this hypothesis and the available evidence is against it. Wiener and Brody (*Science*, 1946, 103, 570) have reported three cases of Wilson's disease in which they failed to detect evidence of iso-immunization of pregnancy, and they give it as their opinion that this is not the origin of Wilson's disease.

Carey Coombs Murmur

Q.—Is the Carey Coombs murmur in acute rheumatism due to accentuation of the normal third heart sound? Is it definitely indicative of a subsequent mitral stenosis or organic mitral disease? How long after this murmur does the diastolic murmur of mitral stenosis arise? Does myocardial failure often develop in rheumatic hearts which show no evidence of valvular disease?

A.—The Carey Coombs murmur is a soft, short mitral diastolic murmur which appears during the course of active rheumatic carditis and which cannot be attributed to mitral stenosis. Carey Coombs thought it was due to stiffening of the mitral cusps, and commented on its development in the later stages of active carditis and on its persistence. Bland, White, and Jones (*Amer. Heart J.*, 1935, 10, 995), however, reported on its not infrequent disappearance as the patient recovered from the acute attack, and presented necropsy evidence indicating that it was very doubtful if the murmur could have been attributed to mitral valvulitis—the macro-

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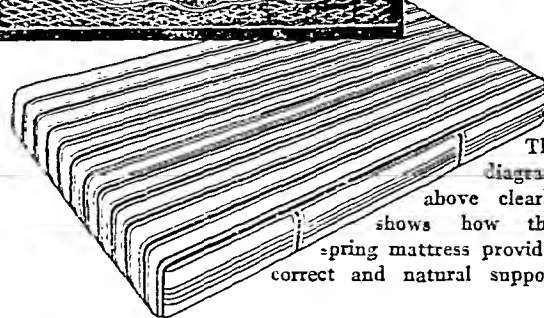
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Fig. 1.

he had numerous sequestra from the fracture site, and when everything else had healed the ulcer remained at the inner side of the junction of the middle and lower thirds of the leg. On the 30th October he was admitted to hospital. The skin around the ulcer for at least 2 in. was found to be of poor quality. Radical excision of ulcer and surrounding area of unstable skin was performed.

A cross-leg flap from opposite calf was sutured into the defect. The raw donor area was covered with thin razor graft, dressed with tulle gras

(Jelonet). Previously applied 'Gypsona' plaster boots were then joined with additional 'Gypsona' bandages.

After three weeks the plaster was removed and three days later the flap was divided. In two months the flap was completely healed and the patient discharged.

The details and illustrations above are of an actual case. T. J. Smith & Nephew Ltd., manufacturers of Elastoplast,



Fig. 3.



Fig. 2.

are privileged to publish this instance, typical of many in which their products have been used with success, in the belief that such authentic records will be of general interest.

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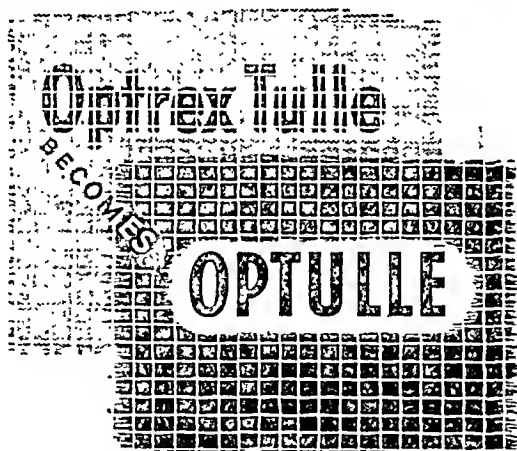
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pic lesions were sometimes trivial. They thought that it might depend upon left ventricular dilatation.

This murmur is not an accentuated third heart sound, though Carey Coombs stresses its frequent association with an accentuation. Nor is it theoretically "definitely indicative" of subsequent mitral stenosis or organic mitral disease; but in practice it usually is so, not only because Carey Coombs's explanation may still be correct in many cases, but also because its occurrence denotes an attack of rheumatic carditis of some severity from which the mitral valve is unlikely to escape.

The diastolic murmur of mitral stenosis is said to take two to five years to develop after the attack which first caused mitral valvulitis. Mitral stenosis rarely arises without a preceding mitral systolic murmur, but may do so. Heart failure very rarely, if ever, develops in a case of rheumatic heart disease owing to no evidence of a valvular lesion.

Preparing for Lactation

Q.—Is the use of stilboestrol ointment advisable in preparing nipples for lactation?

A.—It is very difficult to say whether any particular ointment or other remedy is of real value in the preparation of nipples for lactation. Claims are made for many substances, but these are rarely based on controlled observations. Stilboestrol ointment has been tried out in some centres, but has been more often used for the treatment of cracked nipples during the puerperium than the preparation of the nipples during pregnancy. Since one of its actions is to promote the growth of epithelium its use for the former purpose appears more rational.

There would be no harm in the inquirer carrying out a clinical trial, but it should be borne in mind that, even though the results appear to be good, it will have to be shown that the effect is due to the ointment itself, or rather its stilboestrol content, and not to the massage incidental to its application. Nowadays there is a widespread scepticism as to the value of any of the special preparations advised for the nipples during pregnancy, and the tendency is to advise no treatment other than the regular washing away of dried crusts of secretion from the mouths of the ducts, and gentle manipulation to ensure that the nipple stands well out from the surrounding skin.

Vitamin E in Angina Pectoris

Q.—In an American weekly it is reported that a Canadian doctor has had great success in the treatment of angina with large doses of vitamin E. Is this report accurate?

A.—Vogelsang and E. V. Shute (*Nature*, 1946, 1, 772), studying the effect of high-dosage vitamin E (α -tocopherol acetate) in purpura,¹ noted the good influence of this factor upon coronary heart disease. "A study of a series of cardiac patients, carried out with the help of Mr. Floyd Skelton and Mr. Wilfrid Shute, suggests (a) vitamin E in large dosage (200 to 400 mg. 'Ephynal' Hoffman-LaRoche) has no apparent effect on normal hearts, even after administration for many months at a time; (b) its effect upon patients having congestive heart disease and the anginal syndrome is marked; it increases exercise tolerance and diminishes or abolishes anginal pain during the period of its administration; its diuretic effect² is pronounced. The effect of vitamin E upon coronary pain may be produced by a direct action on the coronary vessels or by influencing the metabolism of the heart muscle. The first possibility is suggested by an older observation³ on the effect of vitamin E in dilating the local capillaries in senile vulvitis. Work on the purpuras raises another possibility, too. Small haemorrhages into the walls of the coronaries⁴ or into the heart muscle itself may produce such pain. It is now clear that such extravasations may be either prevented or reabsorbed by means of vitamin E. When vitamin E was given in large doses over long periods of time some patients complained of cardiac irregularities. These were relieved by reducing the medication to low levels."

The successful treatment of angina pectoris with large doses of vitamin E awaits further confirmation. There is not much more available evidence on the point, but Bruger (*Proc. Soc.*

exp. Biol., N.Y., 1945, 59, 56) seemed to show that this vitamin increased the deposition of cholesterol in the aorta of cholesterol-fed rabbits. Until there is much more evidence indicating benefit from the use of vitamin E in angina pectoris, such treatment is not advised.

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- 2 Shute, E. V. (1945). *Canad. med. Ass. J.*, 52.
- 3 — (1942). *J. Obstet. Gynaec. Brit. Emp.*, 49.
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Pseudo-reaction in Schick Testing

Q.—The usual explanation of a pseudo-reaction in the Schick test is given as "sensitivity to bacterial protein." How does this bacterial protein get into the toxin filtrate? Is the protein not more likely to come from the growth medium?

A.—The pseudo-reaction in the Schick test is an allergic reaction, the incidence of which increases with increasing age of the tested community. It is almost certainly a reaction to the diphtheria toxin rather than to the breakdown products of the whole organism, although of course there will be small amounts of bacterial protein in the toxin filtrate. Comparative tests have shown that the pseudo-reaction which is elicited by the injection of Schick toxin corresponds to the Moloney test, which follows the intradermal injection of diluted toxoid, usually 0.2 ml. of a 1/200 dilution. In such a dilution the toxoid is the only foreign protein likely to be present in any appreciable amount, and will therefore be responsible for any reaction elicited. This allergic phase seems to occur when the individual is in the transition stage between susceptibility and immunity to diphtheria, and those giving the reaction probably do not need to be artificially immunized. The suggestion that the allergic reaction is due to proteins in the culture medium is negated by the virtual absence of allergic reactions among troops immunized with tetanus toxoid. The few cases of allergic reaction that have been reported following injections of tetanus toxoid were apparently associated with the protein of a particular peptone that was used early in the production of the toxoid.

Chemoprophylaxis of Respiratory Infections

Q.—I have read recently that in the U.S. Army sulphathiazole was given as a prophylactic against the secondary infections associated with respiratory diseases and that a reduction in incidence resulted. Is this correct?

A.—During the war large-scale trials in the control of respiratory infections by the use of small doses of sulphadiazine (not sulphathiazole) were undertaken in American training units. Very often the main contributor to respiratory infections in these Army camps was streptococcal pharyngitis, and sulphadiazine in doses of 1 g. daily seemed to cut short outbreaks of streptococcal infection, while the incidence of other less well defined respiratory infections was in some instances also reduced. However, an unfortunate sequel was that certain epidemic strains of haemolytic streptococcus became sulphonamide-resistant, and in subsequent years outbreaks of infection due to these drug-fast strains caused a lot of trouble. In this country the use of small doses of sulphonamide to prevent secondary infections after measles or influenza has been advocated, but again there is the risk of inducing drug resistance in the secondary bacterial invader, which is usually the haemolytic streptococcus. It is perhaps wiser to withhold sulphonamides until there is some indication of a secondary bacterial infection—for example, otitis media—and then to treat the infection at this early stage with therapeutic doses of the drug. The risk of reactions from small prophylactic doses is slight, and rheumatic patients have taken doses of 1 to 2 g. of sulphanilamide for many months on end without toxic effects. Sulphathiazole is more likely than sulphanilamide or sulphadiazine to produce toxic or allergic reactions.

For discussion on the chemoprophylaxis of bacterial infections see the *M.R.C. War Memorandum No. 10*, 2nd edit., London, 1945, and refer also to a leading article in the *Journal* of Jan. 13, 1945 (p. 50).

INCOME TAX

Board and Lodging of Locumtenent

N. F. asks "What amount per week can be claimed as a professional expense in respect of board and lodging of locum, living at my house?"

* The only sound basis is a proportion of the total expense of running the private, as distinct from the professional, portion of the house, together of course with the cost of food, etc. Such expenses vary so much between practices that it is impossible to offer any guidance as to an actual weekly amount.

Service in India

Z. X. was on service in India from 1943 to 1946. In 1944-5 he was married and had one child. He has an income of £227 arising from securities in this country.

* If Z. X. can claim to have been a "resident" in this country although personally absent (e.g., if he maintained his wife in a residence here) he can claim the full allowances against the income from securities, as the Indian pay is outside the scope of the United Kingdom tax. If he cannot claim as a "resident," he is entitled to claim in respect of a proportion only of the normal allowances, the proportion being determined by the ratio of the income from securities to the Indian earnings. In reply to a further question we are not aware of any book now available on income tax for medical practitioners and we advise Z. X. to consult his local inspector of taxes, preferably by appointment.

Amount Payable

N. M. E. quotes amounts of income and asks what tax will be payable for 1943-4, 1944-5, and 1945-6.

* Assuming that the whole amount of the life insurance payments are allowable the tax apparently due on the basis of the particulars given are: 1943-4, £103; 1944-5, £115; and 1945-6, £130.

Assistant's Car Transactions

A. C. is an assistant in a country practice. When he joined the R.A.M.C. in 1940 he sold his car for £7; he has just bought another car for £405. His principal proposes to make him a car allowance of £50 a year.

* For the year 1946-7 A. C. should claim an "initial allowance" of 20% of £405=£81, and "depreciation allowance" for the half year to April, 1947, of 25% of £405, i.e., 1/2 of £101=£51, £132 in all. He must of course set against this any sums he receives by way of car allowances, but can deduct the running costs, including licence, insurance, etc. Some adjustments may be required if the car is used for private purposes as well as for work as assistant. No advice can be given with regard to the amount of the car allowance paid by the principal; that is a matter for settlement between the two parties, taking into account the ordinary remuneration.

P. Q. has been acting as an assistant in general practice for three years and has received a car allowance from her employer of £50 a year. She bought a car in 1939 for £130 and sold it on July 9, 1946, for £320, buying another car for £x. She has had little or no wear-and-tear allowance on the old car. What claim can she make for 1946-7?

* She is entitled to base the gross claim on (a) "initial allowance," 20% of £x, (b) "wear-and-tear allowance"—i.e., 25% of £x per annum—i.e., three-quarters of 25% of £x for 1946-7, and (c) running costs, including licence, insurance, repairs, petrol, etc. From the total of these amounts must be deducted a "balancing charge" in respect of the old car, £320-£130=£190 and the £50 car allowance. The difference will be claimable as an expense of carrying out the duties of the assistantship, subject, perhaps, to some further reduction for the private use of the car if it is so used.

Car Transaction—Cost of Maid

K. M. (a) started work as an assistant (with no car allowance) on Oct. 10, 1946, having bought a car in September, 1946; (b) he has to live at the surgery and to employ a maid for dealing with callers and the telephone; otherwise the maid would not be necessary. What can he claim?

* (a) An "initial allowance" of 20% of £300=£60, and a wear-and-tear allowance of 25% of £300 per annum—i.e., say, half of £75—i.e., £37. Total, £60 plus £37=£97. In addition he can, of course, claim the running expenses, licence, etc. If the car is used for private purposes some restriction of the total costs and allowances will probably be claimed by the Revenue. (b) A claim for a proportionate part of the cost of the maid will be allowed, on the basis of an estimate of the time spent on the "professional" part of her work to the total.

LETTERS, NOTES, ETC.

Artificial Limbs for Women

Mr. C. R. HOWARD writes: Regarding the points in the design of the modern artificial limb raised by your correspondent, "L.S.S.W." (Sept. 21, p. 438). (1) The lack of security in movement of abduction is either due to incorrect use of the limb or lack of confidence, as a patient with a ten-inch stump should be able to achieve this without undue effort providing body weight is taken on sound limb. (2) Ability to dance on an artificial limb is purely a matter of confidence. The number of people that can do this bear out the statement, and it does not depend on any particular type of suspension or limb. (3) The triangular shape of bucket was adopted especially for the fleshy type of stump, to remodel stump and prevent rotation. (4) Making an artificial limb to pair with the sound limb is a complex problem, since the sound limb changes shape with the use of the muscles, also there have to be allowances for inclusion of mechanical joints. (5) The symmetrical shape of the knee is necessary because of the rigid materials used. Any variation from a circle allows a gap between the edge of shin and the knee, which is a trap for clothing, and can not only cause damage to clothing, but any clothing getting caught up can throw the person backwards and easily cause an accident. (6) Regarding adjustability to various shoe-heel heights, one has to know limbs to consider this point and know the mechanical disadvantages which operate with all types of limbs. Also, one of the most necessary improvements required in artificial limbs is that of raising the centre of gravity, to give a limb that can be used with less muscular effort. Therefore, any extra gadget or additional weight in the region of the foot and ankle is contraindicated. (7) The most justified criticism of the present limb is the glitter of the enamel. This is one point that should be, and could be, overcome in a comparatively easy manner, by using matt finish enamel or matt rubber surface, which would also have the advantage of deadening mechanical noise.

Effects of Penicillin Lozenges

Dr. A. D. BELLIOS (Wimbledon) writes: Within the last month I have had two cases of gingivitis following the use of penicillin lozenges in children. Each case was precisely similar. Both were mild cases of tonsillitis with pyrexia. I prescribed mist. acetylsal. and penicillin lozenges. Within two or three days both children were normal so far as the tonsillitis was concerned, but their gums became alarmingly swollen and fleshy, and bled easily. I assumed at the time that I was dealing with a streptococcal gingivitis and ordered a penicillin paint made up with magnesium hydroxide. This was used every three hours, and the penicillin lozenges continued. Both cases cleared up on this treatment in about five days.

Dr. E. J. BRADLEY (Margate) writes: I recently had penicillin treatment by inhalation: first 800,000 units spread over ten days; then 1,000,000 units concentrated into five days. On both occasions soreness, dryness, and cracking of the lips and nostrils were produced. The tongue also became sore and tender, but no actual ulcer appeared. There was considerably more irritation while using penicillin made by one firm than with that made by another; and incidentally there is a marked difference in the smell of the two brands.

Herpes and Varicella

Dr. GEORGE ARMOUR writes from Woodhall Spa: I submit the following unusual clinical case of herpes associated with chicken-pox in two contacts in a remote, isolated Lincolnshire farmstead. Mrs. X developed herpetic vesicles on the right anal margin with a few slight scattered lesions on the right buttock (corresponding to the distribution of the right inferior haemorrhoidal nerve) on Oct. 7, 1946. On Oct. 23 her son aged 32 developed widely distributed chicken-pox, and on the following day her other son aged 23 developed an even more widely distributed similar rash. The house is very remote and completely isolated, and being harvest-time none of the occupants had left the purlieu of the farm and no contact had been possible except through occasional tradesmen. On careful inquiry no case of chicken-pox could be traced within a radius of fifteen miles. The period of incubation appears most significant.

Missing Medical Books

Mr. A. J. JOHNSTON-WILSON has written from the Department of Printed Books, British Museum, W.C.1, with reference to the severe losses suffered by the British Museum from enemy action. The section containing medical books was the one most seriously affected. The losses include both foreign and English works and are particularly serious among books published in the late part of the last century and the early part of this century. Mr. Johnston-Wilson would gladly inform any member who has books which he is willing to give to the British Museum whether they are among the losses and particularly required. One of the publications wanted is *Historic Notes on Canadian Medical Lore*, being lecture memoranda published in Toronto in 1906.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 16 1946

THE NATIONAL HEALTH SERVICE: REPORT OF NEGOTIATING COMMITTEE

A.—A SUMMARY OF THE NATIONAL HEALTH SERVICE ACT

1. The Act places a general duty upon the Minister of Health to promote the establishment in England and Wales of a free, comprehensive health service designed to secure improvement in the physical and mental health of the people, and the prevention, diagnosis, and treatment of illness.

The Act deals only with the main structure of the service. Its detailed administration will be governed by Regulations to be made by the Minister under the powers which the Act confers upon him.

The main provisions of each part of the Act are summarized below.

Part I. Central Administration

2. The Minister of Health is given general responsibility for the organization of the service. To provide the Minister with professional and technical guidance there will be established a Central Health Services Council and Standing Advisory Committees.

The function of the Central Council is to advise the Minister upon such general matters as it thinks fit relating to the services provided under the Act or any services provided by local health authorities in their capacity as such authorities, and upon any questions referred to the Council by the Minister relating to those services.

3. The Council will consist of 6 ex-officio members, and 35 other members appointed by the Minister. The ex-officio members are the persons holding for the time being the offices of

President, Royal College of Physicians, London ;
President, Royal College of Surgeons, England ;
President, Royal College of Obstetricians and Gynaecologists ;
Chairman, Council of British Medical Association ;
Chairman, General Medical Council ;
Chairman, Council of Society of Medical Officers of Health.

The appointed members are:

(a) 15 medical practitioners, of whom 2 are to be selected for their knowledge of mental illness and mental defectiveness ;

(b) 5 persons with experience in hospital management (not medical practitioners) ;

(c) 5 persons with experience in local government (not medical practitioners) ;

(d) 3 dental practitioners ;

(e) 2 persons with experience in mental health services ;

(f) 2 registered nurses ;

(g) 1 certified midwife ;

(h) 2 registered pharmacists.

Before appointing these 35 members the Minister is required to consult such organizations as he may recognize as representative of the persons specified in paras. (a)-(h) above.

4. The Minister may, after consultation with the Central Council, by order vary the constitution of the Council.

5. The Minister is empowered to set up standing advisory committees to advise him and the Central Council on special aspects of the service. These committees will consist partly of members of the Council and partly of persons who are not members of the Council, and will be appointed by the Minister after consultation with the Council and with such representative organizations as the Minister may recognize.

In addition, the Central Council itself may appoint committees and the standing advisory committees may appoint subcommittees, and these bodies may include persons who are not members of the Council or standing advisory committees, as the case may be.

The function of a standing advisory committee is to advise the Minister and the Central Council upon such matters as it thinks fit relating to the services with which the committee is concerned, and upon any questions referred to it by the Minister or Central Council relating to those services. The committee may advise the Minister direct provided that it also informs the Central Council of the advice it has given, and the Council may express its views on that advice to the Minister.

6. The Central Council will make an annual report to the Minister on its work and that of the standing advisory committees, and the Minister is required to publish the report to Parliament, unless there is any reason of public interest for not doing so, when he may withhold it, in whole or in part, after consultation with the Council.

7. The Central Council will elect a chairman from its members. The chairman of a standing advisory committee will be elected by the committee. These bodies may regulate their own procedure.

Part II. Hospital and Specialist Services

8. It is made the Minister's general duty to provide hospital and specialist services of all kinds, including general and special hospitals, maternity accommodation, tuberculosis sanatoria, infectious diseases units, provision for the chronic sick, mental hospitals and mental deficiency institutions, accommodation for convalescent treatment and medical rehabilitation and all forms of specialized treatment. The services of specialists are to be available not only at hospitals, but also at health centres, clinics, and, if necessary on medical grounds, at the home of the patient.

Transfer of Hospitals to Minister

9. The ownership of the present public and voluntary hospitals, teaching and non-teaching, will pass to the

Minister. The existing premises and equipment and other assets, including, in the case of non-teaching hospitals, endowments, will be transferred to the Minister, together with existing liabilities. In the case of teaching hospitals, which are those hospitals so designated by the Minister, the endowments will be transferred to the new Boards of Governors.

Endowments

10. The Minister is to set up and administer a new hospital endowments fund, to which there will be transferred the endowments of non-teaching hospitals, with the exception of endowments of a capital nature given between the passing of the Act and the appointed day, which will be vested in the appropriate Hospital Management Committee. The disposal of the moneys in this fund is to be the subject of regulations made by the Minister. Broadly, these regulations are to provide that the fund shall be used, first, for discharging existing debts and liabilities attaching to the voluntary hospitals concerned. Secondly, the capital value of the fund is to be apportioned among the regional hospital boards and hospital management committees constituted under the Act. The income of each portion will then pass to those boards and committees to be used at the discretion of those bodies, subject to such general conditions as may be prescribed. A Regional Board or Hospital Management Committee will also be empowered to draw on its portion of the capital for any purpose which the Minister approves. The Minister, Boards of Governors, and Hospital Management Committees are required to secure so far as is reasonably practicable that the objects of the transferred endowments and conditions attached to them are not prejudiced.

11. The Regional Boards, Boards of Governors of teaching hospitals and Hospital Management Committees are empowered to receive gifts or legacies and to hold property on trust for purposes relating to hospital services, including research.

12. If necessary for the purposes of the new service, the Minister may acquire, either by agreement or compulsorily, hospitals other than those transferred to him under the Act, together with their equipment.

Any medical institution which may be set up in future can be acquired by the Minister if required for the purposes of the new service.

Administration

13. The Minister, while assuming general responsibility for these hospital and specialist services, will entrust their administration to Regional Hospital Boards, and to Boards of Governors in the case of the teaching hospitals.

The Minister will, by order, constitute Regional Boards and determine the areas over which their jurisdiction will extend. So far as practicable, these areas or regions must be based on University Medical Teaching Centres.

14. The function of the Regional Hospital Board is to undertake on behalf of the Minister the general administration of the hospital and specialist services in the region, subject to the Minister's general regulations and to such particular directions as he may give.

15. Each Regional Board is required to appoint, in accordance with a scheme to be approved by the Minister, local Hospital Management Committees, one for each large hospital or related group of hospitals forming a reasonably self-contained hospital service unit. The function of the Hospital Management Committee is to control and manage, on behalf of the Regional Board, a hospital or group of hospitals in accordance with regulations and such directions as may be given by the Minister or the Regional Hospital Board.

16. The *Regional Hospital Board* is to consist of a chairman appointed by the Minister and such other members so appointed as the Minister thinks fit, including:

(a) Persons appointed after consultation with the university with which the provision of hospital and specialist services in the area of the Board is to be associated;

(b) persons appointed after consultation with such organizations as the Minister may recognize as representative of the medical profession in the said area or the medical profession generally;

(c) persons appointed after consultation with the local health authorities in the said area; and

(d) persons appointed after consultation with such other organizations as appear to the Minister to be concerned.

The original members of the Board are also to include persons appointed after consultation with such organizations as the Minister may recognize as representative of voluntary hospitals in the area. It is laid down that at least two members of the Board shall be persons with experience in mental health services.

17. A *Hospital Management Committee* is to consist of a chairman appointed by the Regional Hospital Board, and such other members so appointed as the Board thinks fit, including:

(a) Persons appointed after consultation with any local health authority in the area;

(b) persons appointed after consultation with any Executive Council in the area;

(c) persons appointed after consultation with the senior medical and dental staff employed at the hospital or the hospitals in the area;

(d) persons appointed after consultation with such other organizations as appear to the Board to be concerned.

Although exercising functions on behalf of the Regional Hospital Board, the Hospital Management Committees will be legal entities and may sue or be sued in their own right.

Teaching Hospitals

18. The Act makes special provision for teaching hospitals. A teaching hospital is defined as any hospital or group of hospitals which appears to the Minister to provide for any University facilities for undergraduate or post-graduate clinical teaching, and which after consultation with the University concerned the Minister has designated as a teaching hospital.

19. The Minister is to constitute for each teaching hospital (or group) its own Board of Governors which will be responsible generally for administering the hospital on the Minister's behalf. The Board of Governors will consist of a chairman appointed by the Minister and such other members so appointed as the Minister thinks fit and of those members

(a) not more than one-fifth shall be nominated by the university with which the hospital is associated;

(b) not more than one-fifth shall be nominated by the Regional Hospital Board for the area in which the hospital is situated;

(c) not more than one-fifth shall be nominated by the medical and dental teaching staff of the hospital; and

(d) other persons shall be appointed after consultation with such local health authorities and other organizations as appear to the Minister to be concerned, including, in the case of the original members of the Board of Governors of a teaching hospital designated before the appointed day, the governing body of any voluntary hospital comprised or to be comprised in the teaching hospital.

Medical and dental schools are not to be transferred to the Minister or to the Board of Governors of the teaching hospital with which they are associated. The governing bodies of these schools will continue to own and administer their property and the Act provides for the transfer of any existing hospital property held for school purposes to these Governing Bodies.

Private Accommodation in Hospitals

20. The Minister is empowered to provide separate paid accommodation at hospitals within the service for private patients who are prepared to pay the whole cost of private maintenance and attendance. Specialist and general practitioners who are members of the staff of a hospital within the service, whether in an honorary or paid capacity, will be able to treat private patients in such accommodation and to charge fees subject to a maximum scale which will be fixed by regulations made by the Minister. Where there are single rooms or small wards in hospitals the Minister is empowered to make them available to patients who wish to buy greater privacy by paying the extra cost of the accommodation involved. The provision of such accommodation for private patients is subject to the over-riding right of other patients to be admitted to it without payment if medical considerations urgently require it.

Hospital Staff

21. The staffs of all hospitals in the service will be in the employment of the Regional Boards or Boards of Governors of teaching hospitals, as the case may be. Regulations will be made by the Minister governing the qualifications, conditions of service and remuneration of all classes of hospital staff. Before making these Regulations the Minister will consult organizations representing the staffs concerned. Special Regulations are to be made relating to the appointment of hospital medical and dental officers. These Regulations will require the advertisement of vacancies and the constitution of Advisory Appointments Committees to make a selection of candidates from whom the appointments will be made by the Regional or Teaching Hospital Board.

Ancillary Services

22. The Minister is authorized:—

- (1) to provide a bacteriological service (including laboratories) for the control of the spread of infectious disease;
- (2) to provide a blood transfusion service;
- (3) to conduct or to assist research relating to the causation, prevention, diagnosis or treatment of illness or mental defectiveness.

Boards of Governors of teaching hospitals, Regional Hospital Boards, and Hospital Management Committees are also authorized to conduct research.

Part III. Health Services provided by Local Health Authorities

23. The provision of the services listed below will be a statutory duty of local authorities which for the purposes of this part of the Act are the County and County Borough Councils and are designated "local health authorities."

(a) *Health Centres*.—The provision, equipment and maintenance of health centres and of the necessary staff other than medical or dental practitioners;

(b) *Maternity and Child Welfare*.—The functions of existing welfare authorities which are not County or County Borough Councils will be transferred to the local health authorities, with a power of delegation for child-welfare only parallel to that empowered by the Education Act, 1944. The specialist and institutional aspects of maternity will be the responsibility of the regional hospital board;

(c) *Domiciliary Midwifery*.—A domiciliary midwifery service. Local health authorities will become the local supervising authorities under the Midwives Acts. The section of the Midwives Act, 1936, which enables the Minister to prescribe conditions subject to which fees are to be payable to medical practitioners called in by midwives, is amended to empower the Minister to prescribe conditions as to the qualifications of such medical practitioners;

(d) *Health Visiting*.—The provision of health visitors for home visiting for the purpose of giving advice as to the care of young children, persons suffering from illness and expectant or nursing mothers, and as to the measures necessary to prevent the spread of infection;

(e) *Home Nursing*.—Provision for the attendance of nurses on persons who require nursing in their own homes;

(f) *Vaccination and Immunization*.—Arrangements for persons in the area to be vaccinated against smallpox or immunized against diphtheria. The local health authorities will have power to do the same for other diseases and a duty to do so if directed by the Minister. The present law on compulsory vaccination is repealed. In making their arrangements local authorities are required to give medical practitioners providing general medical services under the Act the opportunity of providing these vaccination and immunization services;

(g) *Ambulance Services*.—The provision of ambulances and other means of transport.

24. In addition, local health authorities will be empowered to provide home help services and to make arrangements "for the purpose of the prevention of illness," and for the care and after care of persons suffering from illness or mental defectiveness.

25. Each local health authority is required within a specified period to submit to the Minister its proposals for carrying out the requirements of the Act. The proposals must also be conveyed to the Regional Boards and Boards of Governors, to the Executive Council, to any voluntary organization which is providing similar services in the area and to every local authority whose area forms part of the area covered by the local health authority. Any of these bodies may make recommendations to the Minister for modifying the proposals, provided that copies of such recommendations are sent to the local health authority. The Minister may approve the local health authority's proposals with or without modifications, and it will be the duty of the authority to carry out the scheme as approved.

Statutory Health Committees

26. Local health authorities will be required to appoint statutory health committees and to refer to them all matters relating to the discharge of their functions under the Act other than the power to borrow money or to levy rates. The health committee may establish subcommittees at their own discretion and appoint by co-option non-members of the committee or subcommittee, subject to the proviso that a majority of the committee or subcommittee are members of the authority.

Part IV. General Medical and Dental Services, Pharmaceutical Services, and Supplementary Ophthalmic Services

Executive Councils

27. This part of the Act covers personal health services provided by general medical practitioners ("general medical services") and dentists and the supply of drugs, medicines and appliances. The duty of arranging for the provision of these services is placed upon new local bodies to be called executive councils, one of which will be established for the area of each county or county borough; at the Minister's discretion a single executive council may be established for the area of two or more local executive councils. The executive council is to consist of thirteen members appointed by the Minister and local authorities and twelve appointed by the professions as follows:

(a) A chairman and four members appointed by the Minister;

(b) eight members appointed by the local health authority for the area of the executive council;

(c) seven members appointed by the Local Medical Committee;

(d) three members appointed by the Local Dental Committee;

(e) two members appointed by the Local Pharmaceutical Committee.

28. The Minister has power to vary the constitution of an executive council or to establish a joint committee for the area of two or more executive councils to exercise some but not all of the functions of an executive council.

29. The main function of the executive council is to enter into contract with general medical practitioners, with dental practitioners, and with pharmacists for the provision (at a health centre or otherwise) of general medical, dental, and pharmaceutical services in accordance with regulations to be made by the Minister. The regulations are to include provision for

(a) the preparation and publication of lists of persons who undertake to provide these services;

(b) conferring a right on any person to choose the medical or dental practitioner by whom he is to be attended, subject to the consent of the practitioner so chosen and, in the case of medical services, to any prescribed limit which may be placed on the number of patients to be accepted by any practitioner;

(c) the distribution or allocation among medical practitioners who enter into contract with the executive council of persons who desire to obtain general medical services but who do not choose a medical practitioner or have been refused by the practitioner chosen;

(d) the issue of medical certificates.

30. Executive councils are also required to make arrangements with medical practitioners and opticians having the prescribed qualifications for sight-testing and the supply of optical appliances. Those services are referred to as "supplementary ophthalmic services" and their provision by executive councils is without prejudice to the ophthalmic services, clinic and other, to be provided by regional boards as part of the hospital and specialist arrangements. The Minister, however, is empowered to abolish the supplementary scheme administered by the executive councils as soon as he is satisfied that adequate ophthalmic services are available through the hospital and specialist service provided under Part II of the Act.

31. The Minister has wide powers to make regulations with regard to the procedure of executive councils, including the appointment of committees, which may consist wholly or partly of members of the council, and the delegation of functions to such committees.

Control of Distribution

32. Only medical practitioners who are engaged in medical practice (otherwise than as paid assistants) are entitled as of right to provide general medical services under the Act. This right is conditional upon the practitioner making application before the appointed day* to the executive council of any area in which he is practising to be included in the list of practitioners undertaking to provide general medical services for persons in that area.

33. After the appointed day any doctor who wishes to join the public service for the first time or, if he is already in it, to go to and practise in a new area will be required to obtain the consent of the Medical Practices Committee—a new central body appointed by the Minister. This body is to consist of a chairman (a medical practitioner appointed by the Minister) and eight other members of whom six shall be medical practitioners and at least five of whom are actively engaged in medical practice. The only ground for refusal of the Medical Practices Committee's consent is that the number of practitioners undertaking to provide general medical services in the area or part of it concerned is already adequate.

34. When a practice becomes vacant or when, in the opinion of the Medical Practices Committee, there is a need for additional practitioners in a particular area and the

number of applicants exceeds the number of vacancies, the Medical Practices Committee will select the person(s) whose application(s) is (are) to be granted and will refuse the other applications. Before making its selection the Medical Practices Committee is required to consult the executive council concerned and that body, before expressing its views on the person(s) to be selected, is required to consult the Local Medical Committee for the area (i.e., the Committee recognized by the Minister as representative of the local medical profession). Although the Medical Practices Committee is precluded from refusing the application except on the ground that there is an adequacy of practitioners, it may grant an application subject to the condition that the applicant is excluded from practising in a specified part or parts of an area.

35. The medical practitioner whose application has been refused or granted conditionally has a right of appeal to the Minister. The Minister may, if he allows the appeal, direct either that the application shall be granted in addition to the applications already granted or that it shall be granted instead of such one of those applications as the Minister may specify. The Medical Practices Committee and, in appeal cases, the Minister are to have regard to the wishes of an applicant to practise with other practitioners in an area, to any desire expressed by existing practitioners to take an applicant into practice, and special regard to family relationships.

Prohibition of Sale of Medical Practices

36. Section 35 of the Act makes it unlawful to sell the goodwill or any part of the goodwill of the practice of a doctor entering the public service on or after the appointed day. Thereafter, a practitioner buying or selling such goodwill is liable to criminal proceedings and, if found guilty, to imprisonment of up to three months and/or a fine up to such amount as will secure that he derives no benefit from the offence and a further amount of £500. This prohibition, however, does not cover the case of a medical practitioner whose name has ceased to be on the list of any executive council and who practises in the area of an executive council in whose list his name has never been entered.

A prosecution for an offence under this section can only be instituted by or with the consent of the Director of Public Prosecutions and a person so charged will be entitled to trial by jury at Quarter Sessions or Assizes.

37. There are enumerated in this section of the Act a number of transactions, any one of which is deemed for the purposes of the Act to be the sale of the goodwill of a medical practice. For example: (1) if an assistant is employed for substantially less remuneration than his services "might reasonably have been expected to be worth" and subsequently becomes a partner of his employer, an offence is committed; (2) if doctors in the service are in partnership and agree to share in unequal proportions the income of the partnership they will be liable to be prosecuted unless it is held that the partner who takes less than the other(s) is receiving substantially less than his services might reasonably have been expected to be worth at the time when the agreement was made; (3) a doctor's widow who sells his house to a practitioner for substantially more than the sum the house might have fetched if it had not been used for practice purposes commits an offence.

38. Subsections 9 and 10 of Section 35 of the Act give a medical practitioner or his personal representative an opportunity of ascertaining in advance whether a proposed transaction in the opinion of the Medical Practices Committee involves the sale of goodwill. If this Committee considers that the transaction does not involve the giving of any consideration in respect of goodwill it is required to issue to the applicant a certificate to that effect. Where a transaction results in a person being charged with an offence under this section of the Act, it is a defence to the charges to prove that the transaction was certified by the Medical Practices Committee unless the Court holds that the applicant for the certificate failed to disclose to the

* "Appointed day" means such day as His Majesty may by Order in Council appoint, and different days may be appointed for the purposes of different provisions of the Act.

Committee all the material circumstances or made any misrepresentation—in which case the Court may disregard it.

Where a medical practitioner practises in partnership, the term "goodwill" is to be considered as referring to his share of the goodwill of the partnership practice.

Compensation

39. The Act makes it unlawful to sell the goodwill of the practice of a doctor entering the public service after the appointed day. Doctors who join the service at the outset will be entitled to compensation in respect of the loss incurred through being unable thereafter to sell their practices. The doctor who because of age or infirmity or both does not enter the service on the appointed day will be entitled to compensation just as if he had entered. Doctors who join the service after the appointed day will not qualify for compensation.

The practice of any doctor who dies or retires from practice between the passing of the Act and the appointed day, which has not been sold in the meantime, will qualify for compensation. If compensation is paid the practice will be regarded as having come within the service at the appointed day.

40. The aggregate amount of compensation for which provision is made in the Act is £66,000,000 and this sum will be apportioned between England and Wales on the one hand and Scotland on the other. The sum

(a) is based on the Government's estimate that 17,900 principals will enter the National Health Service;

(b) will not be subject to increase if in fact more than 17,900 principals so enter;

(c) will be subject to reduction if the number of principals so entering is below 17,700; the reduction for each principal in defect of 17,700 to be 1/17,900 of £66,000,000.

41. Regulations will govern the detailed method of apportioning the global sum among the doctors entitled to compensation and the manner and times at which it is to be claimed and paid. The Minister is required to consult such organizations as he may recognize as representing the medical profession before making these regulations. The regulations are to provide that as a general rule compensation will not be paid until the retirement or death of the medical practitioner concerned, whichever first occurs. In the meantime interest on the compensation due at the rate of 2½% per annum will be paid in respect of the period from the appointed day until the time when the compensation is paid. In exceptional circumstances the compensation payment may be made earlier and the Minister has made it clear in his White Paper (Cmd. 6761) and in public announcements that the exceptional circumstances will include cases where hardship (e.g., through outstanding debts in connection with the practice) would otherwise arise.

Pharmaceutical Services

42. Executive councils will make arrangements for the supply of drugs, medicines, and appliances to persons in their area who are receiving general medical services, if ordered by a medical practitioner rendering those services. It appears that a patient will not be able to obtain drugs, medicines, and appliances under this arrangement unless they are ordered by a practitioner who has joined the service.

General Dental Services

43. All dental practitioners who undertake to provide general dental services under the Act will be in contract with an executive council. Their position will be generally analogous to that of medical practitioners on the executive council list save that there are no provisions with regard to the prohibition of the sale of goodwill or compensation for that loss; neither does the clause regulating the distribution of medical practitioners who enter the service apply to dental practitioners who enter the service.

Disqualification of Practitioners—the Tribunal

44. A special tribunal is to be set up to investigate cases where representations are made either by an executive council or, if the tribunal thinks fit, by any other person that the continued inclusion of any doctor, chemist, dentist, or optician in the lists drawn up by the executive council would be prejudicial to the efficiency of the service. The tribunal will consist of a chairman, who must be a practising barrister or solicitor of not less than ten years' standing, appointed by the Lord Chancellor, and will in each case include a member of the same profession as the person who is the subject of the inquiry and one other member. The "other member" will be appointed by the Minister after consultation with such associations of executive councils as he may recognize as representative of those bodies. The "professional" member will be one of a panel of six persons appointed by the Minister after consultation with such organizations as he may recognize as representative of the several professions concerned. The panel will consist of a medical practitioner, a dental practitioner, a registered pharmacist, a medical practitioner practising as an oculist, a sight-testing optician and a dispensing optician. Regulations will provide that the practitioner who is the subject of an inquiry shall have the opportunity of being heard in person, of being represented by counsel, solicitor or otherwise, of calling witnesses and producing other evidence, and of requesting that the hearing shall be in public.

45. The tribunal is bound to inquire into a case in which representations are received from an executive council, but where representations emanate from any other source the tribunal has discretion as to whether an inquiry should be held. Where the tribunal is satisfied that the continued inclusion of a person in any list to which the representations relate would be prejudicial to the efficiency of the service, it will direct the executive council concerned to remove from that list the name of the doctor, dentist, chemist, or optician. Where the tribunal so decides, a similar direction can be applied to all lists in all areas. The practitioner concerned may appeal to the Minister from any direction of the tribunal and the Minister may confirm or revoke that direction. When a practitioner's name is removed from the list or lists in question, he is disqualified for inclusion in any list to which the direction relates until such time as the tribunal or the Minister directs to the contrary. A practitioner who has already been disqualified from participation in the present National Health Insurance Scheme and whose disqualification has not been removed before the appointed day will not be entitled to participate in the new service.

Powers of Minister where Services are Inadequate

46. If the Minister is satisfied, after such inquiry as he may think fit, that the services provided by doctors, dentists, or chemists in any particular area are not adequate, he is empowered to take such steps as he considers necessary to secure an adequate service.

Postgraduate Courses

47. The Minister is empowered to arrange with universities and medical and dental schools for the provision of refresher courses for doctors, dentists, and others in the service and to contribute towards the cost of these services and the expenses of practitioners attending them.

Disputes

48. Any dispute arising under this part of the Act or under any regulation made under this part of the Act, whether between an executive council and a person receiving services or between an executive council and a local health authority as to the conduct of a health centre, is to be referred to and decided by the Minister.

Part V. Mental Health Services

49. The Act transfers to the Minister of Health the present administrative functions of the Board of

Control in regard to mental health, the Board retaining only its quasi-judicial functions connected with the liberty of the subject. The general transfer of hospitals to the Minister includes the present mental hospitals and mental deficiency institutions. The main mental treatment and mental deficiency services are to be part of the new hospital and specialist arrangements under the Act. Local health authorities, however, are given responsibility for the ascertainment of mental defectives and their supervision when they are living in the community, and for the initial proceedings for placing under care those who require treatment under the Lunacy and Mental Treatment Acts.

Part VI. General

50. This part of the Act deals with financial arrangements and miscellaneous administrative matters, the more important of which are set out below:

(a) Finance

Except that certain charges may be made for the provision and renewal of appliances and for accommodation in private wards the service will be free to all who care to use it. The Exchequer will be responsible for the full cost of the hospital and specialist services and of the general practitioner, dental, ophthalmic, and pharmaceutical services together with the cost of central administration and will also pay approximately one-half of the cost of the various services to be administered by the local health authorities.

(b) Default Powers of Minister

If in the Minister's opinion any of the various bodies constituted under the Act have failed to carry out any of their functions under the Act or to comply with any of the regulations or directions he may, after inquiry, declare that body to be in default and direct them as to the time and manner in which the default is to be remedied.

(c) Qualifications, Remuneration, and Conditions of Service of Officers

These will all be governed by regulations to be made by the Minister.

(d) Superannuation

The Minister has power to make regulations granting superannuation benefits on a contributory basis to officers of the various bodies constituted under the Act and to medical practitioners and dental practitioners providing general medical or dental services.

(e) Transfer and Compensation of Officers

The Act requires regulations to be made providing for the transfer to the appropriate authority under the new service of officers employed immediately before the appointed day by hospitals, insurance committees, and local authorities. In the case of honorary officers of a hospital, the position is obscure as the transfer of these officers is subject to such exceptions and conditions as the Minister may prescribe. Compensation will be subject to certain exceptions or conditions to be prescribed to officers whose functions are transferred and to be provided by the Bill if they were previously employed whole-time and suffer loss of employment or discontinuation of emoluments or of superannuation rights which is shown to be directly attributable to the Act. The amount of compensation and the basis of its ascertainment are not specified in the Act but are to be settled by regulations.

Regulations and Orders

51. A wide field remains to be covered by Regulations and Orders which the Minister is empowered to promulgate by the Act. All Regulations to be made under the Act are subject to Parliamentary control, but unless there is provision to the contrary Orders are not subject to Parliamentary control. Parliamentary control is exercised in two ways:

(1) by affirmative resolution; regulations subject to this are ineffective until the House has positively approved them;

(2) by negative resolution; regulations subject to this, though required to be laid before Parliament immediately they are made, become operative at once and, unless Parliament within forty days resolves that they be annulled, have statutory effect as if they were incorporated in the Act.

52. Of the Act's 80 clauses and 10 schedules, 40 confer on the Minister the power to make regulations or orders. The only regulations in the National Health Service Act which require an affirmative resolution of Parliament before they become operative are those dealing with (i) superannuation and (ii) the transfer and compensation of officers of hospitals, local authorities, and insurance committees.

53. Among the matters, many of them of fundamental importance, to be settled by regulations which do not require an affirmative resolution are:

(a) the control and management of the Hospital Endowments Fund;

(b) the functions of Regional Hospital Boards, Boards of Governors of Teaching Hospitals, and Hospital Management Committees;

(c) the appointment of medical and dental staffs of hospitals;

(d) the arrangements to be made by executive councils with doctors, dentists, opticians, and pharmacists for the provision of services to patients;

(e) the functions of executive councils in relation to filling vacancies in medical practice and the procedure for applications to the Medical Practices Committee and for appeals to the Minister;

(f) the extent to which executive councils shall consult with Local Medical, Pharmaceutical, and Dental Committees;

(g) the apportionment of the compensation global sum and the manner and time at which claims and payments are to be made;

(h) the procedure of the tribunal dealing with the disqualification of practitioners;

(i) the arrangements for the use of health centres by medical and dental practitioners;

(j) the qualifications, remuneration, and conditions of service of officers;

(k) the appointment, tenure of office, and payment of:

(i) members of the Central Health Services Council and standing advisory committees;

(ii) members of Regional Hospital Boards, Hospital Management Committees, Boards of Governors of Teaching Hospitals and of committees of those bodies and the procedure of those bodies;

(iii) members of executive councils and of committees of those councils, their officers and procedure;

(iv) members of the Medical Practices Committee;

(v) members and officers of the Tribunal;

(l) the recovery of charges for certain appliances and special dental treatment;

(m) grants to local health authorities;

(n) payments to Regional Hospital Boards, Boards of Governors, executive councils, and other bodies.

54. Orders are administrative acts of the Minister and do not come before Parliament in either of the ways applicable to Regulations, unless the Act so specifies.

The only Orders which the Act specifies as being subject to a negative resolution are those

(1) varying the constitution of the Central Health Services Council;

(2) determining the areas for which the Regional Hospital Board will be responsible;

(3) amending or repealing local acts and charters which are redundant or inconsistent with the Act.

55. The matters on which the Minister has power to make Orders which are not subject to Parliamentary review include:

- (a) the constitution of standing advisory committees of the Central Health Services Council;
- (b) the constitution of Regional Hospital Boards;
- (c) the designation of hospitals as teaching hospitals and the constitution of Boards of Governors;
- (d) the constitution of joint boards for the areas of two or more local health authorities;
- (e) the constitution of a single executive council for the areas of two or more local health authorities;
- (f) the variation of the constitution of a local executive council;

B.—THE PROFESSION AND THE ACT

56. Prior to the publication of the National Health Service Bill, the Negotiating Committee of the profession formulated and published a series of principles in which were expressed in general terms the basic tenets of the profession on the subject of the organization of the country's medical services. These principles are as follows:

I. The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full-time salaried servants of the State or local authorities.

II. The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards, and knowledge, the individual doctor retaining full responsibility for the care of the patient, freedom of judgment, action, speech, and publication, without interference in his professional work.

III. The citizen should be free to choose or change his or her family doctor, to choose, in consultation with his family doctor, the hospital at which he should be treated, and free to decide whether he avails himself of the public service or obtains the medical service he needs independently.

IV. Doctors should, like other workers, be free to choose the form, place, and type of work they prefer without governmental or other direction.

V. Every registered medical practitioner should be entitled as a right to participate in the public service.

VI. The hospital service should be planned over natural hospital areas centred on universities in order that these centres of education and research may influence the whole service.

VII. There should be adequate representation of the medical profession on all administrative bodies associated with the new service in order that doctors may make their contribution to the efficiency of the service.

57. An examination of the Act in relation both to these principles and to more detailed expressions of policy reveals wide divergences between the provisions of the Act and the principles of the profession.

58. The profession is opposed to any development which tends to convert its members into full-time salaried servants of the State or local authorities. Government speakers have confirmed that a full-time salaried service is their objective, although they admit that such a service is inconsistent with free choice of doctor and not practicable at the present time.

59. Under the proposals of the Act consultants and specialists will become salaried officers of regional bodies appointed by the Minister, undertaking all their hospital work in hospitals owned by the State. General practitioners, no longer owning the goodwill of their practices, will be, to an extent yet to be determined, salaried employees of the State through local executive councils.

60. The profession has urged that there should be proper co-ordination and correlation of the country's medical services, both centrally and locally. Central departmental responsibility for health services remains divided amongst a number of different departments. Locally, the Act estab-

(g) the constitution of a joint committee for the area of two or more executive councils for the purpose of exercising some, but not all, of the functions of the executive council;

(h) the termination of the arrangements for the provision of supplementary ophthalmic services by an executive council;

(i) the exercise of default powers against local health authorities and any of the bodies constituted by the Act—the various hospital bodies, executive councils, and others—if they are not carrying out their functions or failing to comply with any regulations or directions relating thereto;

(j) the acquisition compulsorily of land required by the Minister for the purposes of the Act.

lishes not one but three administrations with insufficient co-ordination between them.

61. The hospital provisions, although creating what the profession has long desired—a powerful regional organization—may tend to destroy local interest and initiative and so affect adversely the capacity of a hospital for innovation and experiment, its power to attract nursing and other staff and the confidence of the local people in their local hospital.

62. In the field of general practice the profession has expressed the views:

(1) that general practitioners should retain the goodwill of their practices;

(2) that there should be no governmental control over doctors in regard to the areas in which they practise;

(3) that, except where special circumstances justify it, remuneration should be by capitation payments in proportion to the number of persons on a doctor's list.

The Act provides for the abolition of the custom of buying and selling general practices and for the establishment of a machinery of negative direction over the movement of general practitioners, while the profession maintains that the ownership of goodwill is essential to the continued freedom of the general practitioner. This abolition is regarded as a first and substantial step to a State salaried service while the system of "negative direction" which is proposed is an unjustifiable and unnecessary interference with the freedom of the doctor. Any necessary improvement in the distribution of doctors can be achieved on the existing basis of general practice.

63. The abolition of the custom of buying and selling practices creates more problems than it solves. An inevitable consequence of abolition is that the sale of practices for which compensation is paid should be illegal. But in addition to such prohibition the Act contains a series of definitions of offences so wide in their scope and so abstruse in their terminology as to be likely to be unjust in their application, despite the provision for some measure of protection by registration.

64. Though it appears to be contemplated that practitioners will work in partnership, such partnership will involve the risk of prosecution in every case in which the partners agree to share the income in unequal proportions, unless they obtain in advance a certificate from the Medical Practices Committee. The Act gives no guidance as to the basis upon which the services performed by any partner should be estimated or as to the factors which may properly be taken into account, except that regard is to be paid to the circumstances at the time when the agreement was made.

65. In the case of an assistant who subsequently succeeds to the practice of his principal, the principal is deemed to have sold the goodwill of his practice to the assistant, if the remuneration paid to the assistant was substantially less than his services might reasonably have been expected to be worth.

66. Even though the global compensation sum of £66,000,000 includes no allowance for the loss of goodwill in relation to doctors' houses, a practitioner who sells

his house to another practitioner with the knowledge that it will be used for practice purposes is liable to prosecution and, if convicted, to heavy fine and imprisonment if the purchase price is "substantially in excess" of the price which might reasonably have been expected if the house had not been used for practice purposes. It is impossible to foretell what interpretation a court might place on the words "substantially in excess." If premises are conveniently situated for a medical practice and have been used for a medical practice for many years a valuation of the premises upon the footing that they have never been so used would present a difficult problem to an expert valuer, and an even more difficult problem to a medical practitioner. A practitioner's widow or other personal representative (e.g., the Public Trustee or a Bank) would be confronted with similar difficulties when disposing of his house, bearing in mind that the most likely purchaser would be another medical practitioner.

67. Doctors who do not join the service by the appointed day will not qualify for compensation. The general practitioner must make this decision at the outset, before he has an opportunity of learning the wishes or inclinations of his patients. If he stays outside the service he may lose all his practice goodwill and will forfeit for ever his title to compensation. His patients will be penalized, as medicine and appliances will not be provided free under the Act to those patients who are not under the care of a doctor who has joined the service. It is difficult to reconcile this with the claim advanced in the Government White Paper that "all the service, or any part of it, is to be available to everyone. . . ."

68. The Minister's expressed determination to introduce a salary element in the remuneration of all general practitioners, whether special circumstances justify it or not, is further evidence of movement towards a full salaried service. A registered medical practitioner will not be able as of right to enter the new service.

69. The Act involves an excessive concentration of power in the hands of the Minister. He will appoint the Central Health Services Council and its committees. He will appoint the Regional Hospital Boards who will in turn appoint the Hospital Management Committees. He will determine by Regulation a wide variety of issues including mode and amount of remuneration. He will determine the issue of the continuance of a practitioner in the general medical service without a right of appeal to the Courts. The majority of Regulations the Minister makes will become law from the moment he makes them, subject only to their annulment by a Prayer in the House of Commons. He will deal with many important subjects by Orders which are not subject to Parliamentary control.

70. The profession has for years been pressing for a really satisfactory health and medical service. Although the constructive proposals of the profession are reflected in certain sections of the Act, yet in many important respects it is in substantial conflict with the views hitherto expressed by the medical profession, both in such general terms as in the statement of principles and in the more detailed terms of the expressions of policy of the representative professional bodies. The independence of medicine is at stake.

THE PLEBISCITE

We print below the letter being sent this week to every member of the medical profession by the Secretary of the B.M.A.

The Negotiating Committee was established to present to the Government the views of the medical profession as a whole on the medical services of the future. It consists of representatives of the British Medical Association, the English Royal Colleges, the Scottish Corporations, the Society of Medical Officers of Health, the Medical Women's Federation, the Association of Non-Teaching Voluntary Hospitals, and the Society of Apothecaries. This Committee has now sent to its constituent bodies a full report on the present position,

including a factual summary of the National Health Service Act and a commentary on the Act in the light of the views expressed by the organized bodies of the profession. The Committee, in transmitting this report, has asked its constituent bodies whether it is desired that the Negotiating Committee should proceed, if so invited, to discuss with the Minister of Health the regulations and orders to be made under the Act.

The Council of the British Medical Association has decided to put this question to every member of the medical profession for decision by plebiscite. In addition to the form of plebiscite, it sends you a copy of the Report of the Negotiating Committee referred to in the paragraph above. It urges every member of the profession to study the Report of the Negotiating Committee, to record an answer to the question put on the form of plebiscite, returning the form to me in the enclosed envelope within the next fortnight. It is appreciated that members of the profession over-seas will need a longer period of time. The results of the plebiscite, classified so as to show the voting of different groups of the profession, in different age groups, will be reported to the Negotiating Committee and published in the medical press. Whatever your views, please record your vote.

The Council of the Association believes it may be helpful to record briefly the decisions of the Representative Body of the British Medical Association on some of the more important issues. They are as follows:

1. There should be no control over doctors with regard to the choice of area in which they wish to practise. (Carried by 214 votes to 2.)
2. The transference of hospitals to State ownership is not approved. (Carried by 210 votes to 29.)
3. It is essential to the freedom of the patient and the profession that doctors should retain the goodwill of their practices. (Carried by 229 votes to 13.)
4. The remuneration of general practitioners should be by capitation payments in proportion to the number of persons on a doctor's list. (Carried by 209 votes to 8.)
5. Any doctor while practising privately either as a specialist or in general practice must enjoy the same privileges and rights and have all the facilities for treating his patients as are now held by all registered practitioners. (Carried unanimously.)

The divergences between these expressions of policy and the provisions of the Act are discussed in Part B of the Report of the Negotiating Committee.

The National Health Service Act does not require any doctor to enter the new service. Members of our profession, collectively or individually, are free to determine whether, in their view, the service created by the Act is one which they should enter or not. The issue immediately before the profession is whether it should or should not enter into discussions on the regulations, and this is the one which the Council of the Association puts to the profession as a whole for determination.

Yours faithfully,
CHARLES HILL.

HEARD AT HEADQUARTERS

Full Resources

The Council, at its meeting last week, set up a strong committee to consider the position of practitioners who, while desiring to act in full loyalty to the Association, are embarrassed by heavy financial commitments which make it particularly difficult for them, on the Association's request, to give up contract practice. It is above all things desired that the question in the plebiscite should be answered simply according to the views and convictions of the practitioner, uninfluenced by considerations of particular personal difficulty. The Council had specially in mind the middle-aged man with family and educational responsibilities. It is, of course, unlikely that in the event of "hostilities" there will be any catastrophic cessation of income, seeing that two-thirds of general practice, taking the country all over, is non-insurance practice and that even insurance practice in some

form or other must continue. But in every fight there are casualties, and here some will occur among the class just named who are not as fully armoured against adversity as others. All who enter a fight expect some loss, but what it is desired to guard against is exceptional loss falling upon a few.

The reassuring statement was made by the Treasurer and fully endorsed by the Council that in case of need the full resources of the Association would be available. The Emergency Guarantee Fund is fed from three sources: the guarantees of the National Insurance Defence Trust, of the British Medical Association, and of individual guarantors. Dr. Dain, at Exeter, drew the applause of his audience when he said: "We could to-morrow morning, if it were wanted, spend up to a million pounds." The committee is to examine and report on ways and means of assisting individual practitioners incurring hardship as a result of following the advice which may be given by the Association in connexion with the National Health Service.

A Busy Council

The November meeting of the Council was one of the busiest of recent years. There were several important debates, and several committees were set up to carry matters further. One committee was set up to investigate the provision for the care of the elderly and infirm—in two words, the chronic sick. Another was given the task of formulating for submission to the Ministry of Education proposals for the revision of the scale of fees for the medical treatment of school-children. The "closed shop" and the general question of trade unionism and the profession were assigned to another special committee. A fourth committee, as stated above, was the "hardship" or "ways and means" committee. Two important reports, one of them on the reform of the General Medical Council and the other from the Psychiatry and Law Committee recommending the abolition of corporal punishment, came on late in the day, and, a division of opinion developing on both these subjects, it was considered expedient to adjourn them to an extra meeting of the Council to be held on the second Wednesday of December. By that time it should be possible to announce the first results of the plebiscite.

Those Milk Certificates

Milk is the most innocent of fluids, but it has proved on many occasions to be highly controversial. Debates on clean milk have been marked by more acerbity than debates on apparently far more contentious subjects. At the Council meeting the question of milk came forward from a new angle—namely, the statement of the Ministry of Food given in the *Journal* of Nov. 2 concerning priority certification. Dr. F. Gray raised the question and pointed out that according to this statement it seemed to be assumed that one out of every three milk certificates issued by practitioners was dishonest. An odd thing that the same body of doctors who were issuing certificates honestly and competently during the war should, after the end of hostilities, go "haywire." A more likely explanation was that the people of this country, as long as the war lasted, hesitated to make their often rightful claims, but since the end of the war they had not had this hesitation, and practitioners, when medical reasons justified the claim, could do no other than endorse it. The real trouble, said Dr. Gray, was the incompetence of the Ministry of Food, which had miscalculated the amount of milk required both for priority and for ordinary consumers, and he protested against the profession's being made the scapegoat for a Government department. This feeling was endorsed by the Council in a resolution, but it was also urged strongly that there should be no cutting down of the needful ration for the sick and that the old also should have concessions.

Good Leadership

After presiding over a Council meeting lasting eight hours, Dr. Dain, the chairman, travelled to a large meeting of West Country practitioners at Exeter to address the first medical gathering following the passing into law of the National Health Service Act. He spoke for an hour in a large hall crowded in every part. The applause was hearty and no dissident or

doubtful voice was raised. Indeed, the proposer of the vote of thanks confessed that he himself had been a critic of the leadership of the Association, but he had now come round completely to an intense admiration for it as a result of what had taken place during these recent controversial months. Dr. Dain, he said, had been patient where patience was necessary, had been firm on crucial points, and, while alive always to the interests of the profession, had consistently related them to the wider interests of the public, with which they were not in disharmony.

Honour to Whom Honour . . .

Two men who have given long and outstanding service to the Association are to be recommended by the Council to the Representative Body for election to the Vice-presidency of the Association. They are Dr. J. C. Matthews and Dr. H. W. Pooler. Their names will be a worthy addition to a list which at the moment numbers fifteen and includes several famous veterans. Some well-known names also appear among the honorary secretaries who have recently relinquished office after distinguished service and have received the thanks of the Council. They include Dr. W. Paterson, Dr. Balfour Barrow, Dr. John Hunter, and Dr. J. Lewin, of the Willesden, Winchester, City of Edinburgh, and West Norfolk Divisions, and Dr. O. T. J. Clayre and Dr. F. A. Roper of the Southern and South-western Branches.

Names and Addresses

The new *Annual Handbook* of the B.M.A. for 1946-7 is again a miracle of compression. It contains everything the Branch or Divisional secretary needs to know, including the names and addresses of his 365 fellow secretaries, and while it gives this and a large amount of other information, it fits neatly into the pocket without spoiling the shape of the coat. Since the last edition a number of new officials have taken their place at headquarters, including two assistant secretaries, as well as the staff of the abstracting service, and their names are here set out. Another useful list is the names and addresses of the deans for postgraduate education for demobilized medical officers. In addition to this there is much about the membership of the Association, the rates of subscription, the constitution, and a list of the Association's publications, which now include seven special quarterly journals. Although the book is primarily for secretaries of Divisions and Branches, copies will be sent to individual members on request for as long as supplies are available.

Association Notices

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows: an Ernest Hart Memorial Scholarship, of the value of £200, a Walter Dixon Scholarship of the value of £200 and four Research Scholarships, each of the value of £150. These Scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State Medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession. Each Scholarship is tenable for nine months, commencing on Feb. 1, 1947. A Scholar may be re-appointed for not more than two additional terms. A Scholar is not necessarily required to devote the whole of his or her time to the work of the research, but may hold a junior appointment at a university, medical school, or hospital, provided the duties of such appointments do not interfere with his or her work as a Scholar.

Conditions of Award. Applications

Applications for Scholarships must be made not later than Saturday, Dec. 28, 1946, on the prescribed form, a copy of which will be supplied on application to the Secretary of the

Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants are required to furnish the names of three referees who are competent to speak as to their capacity for the research contemplated.

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Irido-cyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

Diary of Central Meetings

NOVEMBER

19. Tues. Undergraduate Subcommittee: (Film Committee), 2 p.m.

Meetings of Branches and Divisions

DORSET DIVISION

The 1946 B.M.A. Lecture was given to the Dorset Division by Mr. D. G. Wilson-Clyne on "Breech Presentation" on Oct. 24. About 40 members attended and Mr. Clyne was congratulated on the interest and clearness of his exposition.

GIBRALTAR BRANCH

The annual report of the Gibraltar Branch Council for 1945-6 says that the activities of the Branch have continued unabated. Seven meetings were held at the Colonial, Military, and King George V Hospitals, with a good average attendance of members and guests. At six of these papers were read and clinical cases demonstrated, and one was devoted to medico-political matters. A resolution expressing the confidence of the Branch in the efforts of the Council of the Association to negotiate with the Government over the National Health Bill was passed and conveyed to headquarters. Representations were successfully made to the Gibraltar Government to stop the illegal practice of ophthalmology by a foreign medical practitioner in the colony. The first post-war annual dinner was held at the Rock Hotel and was attended by a large number of members and guests.

Branch and Division Meetings to be Held

BERKS, BUCKS, AND OXFORD BRANCH.—At the Nuffield Institute, Oxford, Wednesday, Nov. 27, 3.30 p.m. Meeting of Branch Council. Agenda: Address by Dr. Agnes Kelynaek, Assistant Secretary, B.M.A.

KENT BRANCH.—(1) At County School for Boys, Hayes Lane, Bromley, Thursday, Nov. 21, 8 p.m. Discussion: National Health Service Bill. The speaker will be Dr. H. Guy Dain (Chairman of B.M.A. Council). (2) At Foresters Hall, High Street, Canterbury, Sunday, Nov. 24, 3 p.m. Discussion: National Health Service Bill. Mr. A. L. Abel will be the main speaker. All medical practitioners are invited to attend both these meetings.

NORTH OF ENGLAND BRANCH.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Thursday, Nov. 21, 7.15 p.m. Clinical Demonstration by Dr. J. R. Murray: The Differential Diagnosis of Early Schizophrenia. 8.45 p.m., address by Dr. R. Cove-Smith: Juvenile Rheumatism as a Social Problem.

SUNDERLAND DIVISION.—At the Sunderland Royal Infirmary, Thursday, Nov. 21, 3.30 p.m. Annual Address by Sir Stanford Cade: Present Day Therapy in Malignant Disease. 7.30 p.m. Annual Dinner.

WEST MIDDLESEX DIVISION.—At Myllet Arms Hotel, Perivale, Sunday, Nov. 17, 3 p.m. Dr. A. Maerac: The Referendum. All practitioners in the area of the Division are invited.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—Thurs., 8 p.m. Dr. McAuley: Anaesthetic Problems in Severe Cases.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, Leicester Square, W.C.—Tues., 5 p.m. Dr. W. N. Goldsmith: Acneiform Eruptions.

MANCHESTER UNIVERSITY: PHYSIOLOGY THEATRE.—Tues., 4.15 p.m. Lloyd Roberts Lecture by Prof. Michael Polanyi, F.R.S.: The Foundations of Academic Freedom.

DIARY OF SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Erasmus Wilson Demonstrations, Tues., 5 p.m. Mr. J. T. Chesterman: Specimens Illustrating Intestinal Obstruction. Thurs., 5 p.m. Mr. V. Zachary Cope: Actinomycosis.

ROYAL SOCIETY OF MEDICINE

Section of Pathology.—Tues., 4.30 p.m. Laboratory meeting Westminster Hospital School of Medicine, S.W. Demonstrations: Prof. R. J. V. Pulvertaft: 1. Leisegang rings and antiseptics. Bacteriolysis and antiseptics. Dr. J. G. Humble: 3. Chloroform Specimens and spectra. 4. Heterotopic bone marrow in the lumen of the kidney in leukaemia. (a) Chronic myeloid leukaemia; Sub-acute lymphatic leukaemia. Dr. M. Haines: 5. Tuberculous selerosis. Dr. Hewitt: 6. Formation of optically active bodic bacterial cultures. Dr. E. Geal: 7. Demonstration of technique culturing *E. histolytica*. Dr. A. Morgan and Dr. G. Lumb: 8. Case of multiple aneurysms. Dr. P. Hansell: 9. The application of photography to pathology. Dr. D. Bunn and Dr. N. F. MacLagan: 10. Flocculation tests with electrophoretically separated serum proteins. Dr. A. Barham Carter and Dr. MacLagan: 11. Liver function tests in diseases not primarily hepatic. Dr. N. F. MacLagan: Liver function tests in jaundice; 13. Faecal urobilinogen estimations. Dr. MacLagan and V. R. Wheatley: 14. Determination of urinary pregnandiol. Dr. J. Eden: 15. Urinary pigments and creatinine relation to basal metabolic rate.

General Meeting of Fellows.—Tues., 5.30. Ballot for election to the Fellowship.

Section of Proctology.—Wed., 8.30 p.m. Presidential address by Mr. A. Hedley Whyte: Proctology—past and present.

Section of Dermatology.—Thurs., 5 p.m. (Cases at 4 p.m.).

Section of Epidemiology and State Medicine.—Fri., 2.30 p.m. Discussion: Modern methods in the control of airborne infections. Opener: Dr. Robert Cruickshank. Followed by Dr. O. H. Lidwell, Mr. F. Courtney Harwood, and Dr. Joyce Wright.

Section of Paediatrics.—Fri., 5 p.m. (Cases at 4.15 p.m.).

EUGENICS SOCIETY.—At Royal Society's Rooms, Burlington House, Piccadilly, W.—Tues., 5.30 p.m. Prof. Tage Kemp (Director of the University Institute of Human Genetics, Copenhagen): Fifteen Years' Experience of Negative Eugenics in Denmark. All interested are invited to attend.

HUNTERIAN SOCIETY.—At Apothecaries Hall, Mon., 8.30 p.m. Discussion by Messrs. H. N. Linstead, M.P., A. Mortimer, and J. S. Walsley and Dr. G. H. Day: That the Advertisement of Proprietary Medicines is a Menace to the Public.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—Fri., 9 p.m. Dr. Maedonald Critchley: Sir William Gowers, A Biographical Study.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At London School of Hygiene and Tropical Medicine, Keppel Street, W.C.; Thurs., 8 p.m. Laboratory meeting. Various demonstrations will be given.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At West London Hospital, Hammersmith, W., Fri. (Nov. 15), 8.45 p.m. Clinico-Pathological Meeting.

POSTGRADUATE NEWS

A postgraduate course in cardiology will open on Thursday, Nov. 21, at 3.30 p.m., at the Liverpool and District Hospital for Diseases of the Heart, 34, Oxford Street, Liverpool.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTHS

BUNDER.—On Oct. 28, 1946, at 48, Holland Park, W.11, to Margaret (née Sweeney), M.R.C.S., L.R.C.P., wife of Rudolf Bunder, a son.

CORR.—On Oct. 25, 1946, at the North Lonsdale Nursing Home, Barrow-in-Furness, to Patricia (née Wheller), wife of Lieut.-Col. J. H. C. Corr, R.A.M.C. (No. 50 Civil Affairs Unit, Labuan, North Borneo), a son.

LESLIE.—On Nov. 1, 1946, at Philadelphia, U.S.A., to Kathryn (née Sobey), wife of Dr. James Watt Leslie, a daughter—Patricia Isobel.

PRIOR.—On Nov. 1, 1946, at 1, Dudley Street, Grimsby, to Eileen Mary (née Goronwy), wife of John R. Prior, a daughter.

DEATHS

HERAPATH.—On Nov. 4, 1946, Charles Edward Kynaston Herapath, M.C., M.D., of Bristol, dearly loved husband of Phyllis.

MUNRO.—On Oct. 20, 1946, at Woodlands, Nettleworth, Durham, Hector Munro, M.B., C.M. (Aberdeen), aged 78 years.

PROCEEDINGS OF COUNCIL

A report of the Proceedings of Council on Nov. 6 will be published in the Supplement of Nov. 23.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 23 1946

PHYSIOLOGICAL REST*

WITH SPECIAL REFERENCE TO ARTHRITIS AND NERVE LESIONS AND
TO THE MANUFACTURE OF APPLIANCES

BY

NORMAN CAPENER, F.R.C.S.

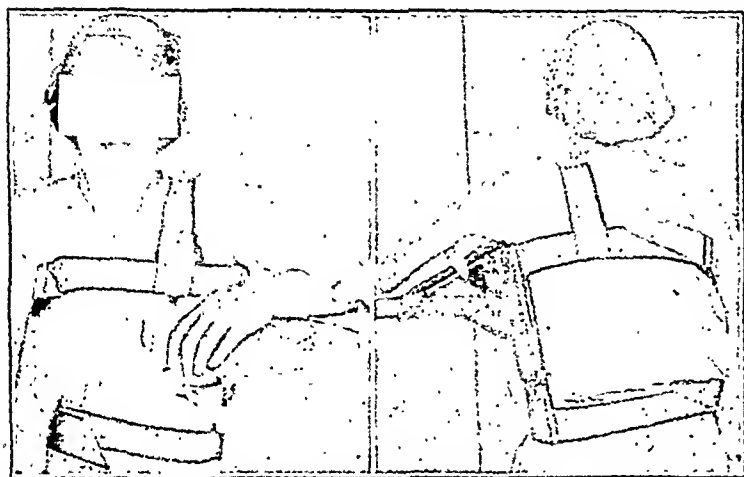


FIG 1.—Shoulder platform splint—physiologically unsatisfactory.

In this country during the nineteenth century the outstanding exponents of the use of rest in the treatment of disease were John Hilton and Hugh Owen Thomas. The former in his Arris and Gale Lectures of 1859-61 coined the phrase "physiological rest," which following Hunterian teaching he called "natural therapeutics." Hilton aimed at dissociation of physiological activity from a diseased or injured limb. He emphasized the dependence of both growth and repair upon rest. Hugh Owen Thomas (1876) completed Hilton's argument by showing how rest should be used. Thomas is known to many as the designer of numerous splints that go by his name. But more important than this were the principles he taught for their application.

In this century Robert Jones achieved for Thomas the acceptance which was so largely denied him during life. Thomas overstated his case, yet for the conditions of his day the emphasis was needed just where he placed it, namely, upon "rest—enforced, uninterrupted, and prolonged." Conditions of medicine, as of life in general, have changed. Though Thomas's views need modification, he has important lessons for us now. While neither Hilton nor Thomas was an orthopaedic surgeon in the restricted modern sense, the ideas which they taught have resulted in the establishment of orthopaedics as a differentiated (not necessarily "specialist") field of medicine and surgery. In the aseptic evolution of technical

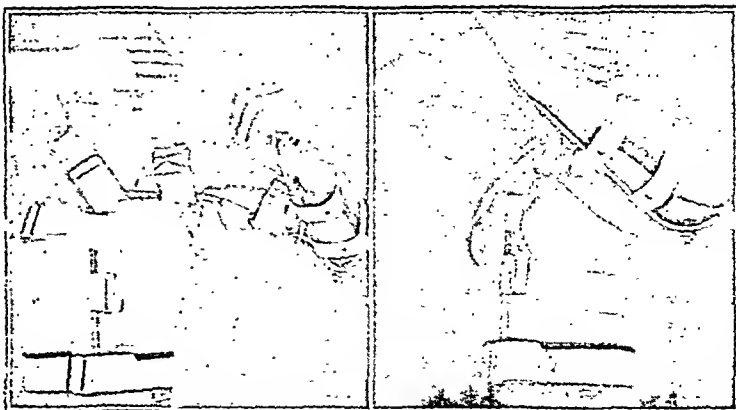
surgery it has been the appreciation of the meaning of physiological rest which has provided the orthopaedic principle. ("The ultimate basis of the existence of something."—O.E.D.)

Definition

Physiological rest as we understand it to-day is a controlled process, giving immobilization—while safeguarding functional restoration—of a part or the whole of the body in the position most favourable for the biological processes of growth and repair to the maximum extent required for these processes in the particular disease or injury being treated. Physiological rest is not necessarily absolute or uninterrupted rest, though for some period it may be so. Its purposes are to promote healing by reducing the local physiological demands of the limb, by avoiding the aggravation of pathological processes, and by bringing to bear upon the lesion the whole general metabolic resources of the patient.

It must be arranged so as to prevent the deforming influences of uncontrolled or unbalanced muscular activity, of muscular atrophy, and of gravity. Relaxation and restriction of muscular activity is modulated according to the disease. In some conditions rest will alternate rhythmically with movement, the relation of one to the other varying inversely as healing proceeds. While pathological conditions are being relieved by rest, no extrinsic pathological factors should be introduced. Local treatment must be planned within the most favourable general background for physical and psychological health.

FIG 2.—The adjustable Littler-Jones abduction splint. (Wingfield-Oxford type.)



* Abstracted from an Arris and Gale Lecture delivered at the Royal College of Surgeons on Jan. 3.

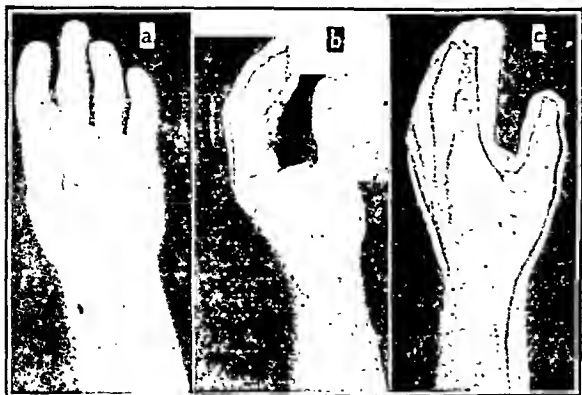


FIG. 3.—(a and b) The physiological position for the hand.
(c) A plaster moulded splint in this position.

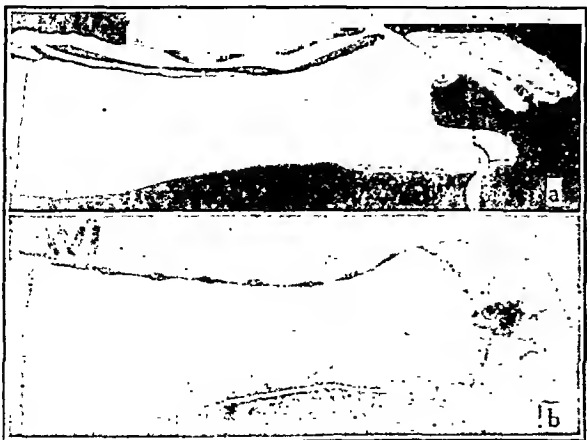
The local positions and their duration vary according to the different conditions being treated. Physiological rest in some form is an important requirement in the treatment of such varied conditions as fractures, dislocations, acute and chronic arthritis, tuberculosis, osteomyelitis, peripheral nerve injuries, infantile paralysis, burns, and the lacerated hand; but each calls for particular modifications, all of which are covered by the definition as stated. In chronic deforming arthritis in particular there is scope for improvement—for a clearer realization of what could be done to relieve local disease, to improve general well-being, to prevent deformity, and to maintain or restore function. Furthermore, in all fields there is need for better knowledge of splint design, construction, and usage.

Arthritis

Whatever may be the cause of chronic deforming arthritis, it is necessary to emphasize the interrelation of the morbid change in joints with the spasm and atrophy of muscles, and conversely of the contributory effects of deficient muscular activity upon joint degeneration, and, furthermore, the aggravation that the local process provides for the whole constitutional disease. Therefore, no matter what medical or physical therapeutic measures are applied, most joints affected with arthritis pass at various times through phases of activity which require immobilization.

While joints are acutely inflamed the most perfect immobilization is necessary and must be carried out until the inflammatory process has subsided and muscle spasm is relieved. The subsidence of pain and the diminution of local tenderness, swelling, and irritability are important guides. Defects in the application of rest are, first, not giving adequate attention to the posture in which the joint is placed; secondly, not guarding against the ill effects of movement, friction, pressure, constriction, traction, and gravity; thirdly, imperfect timing of the duration or modification of rest and, consequently, failure

FIG. 4.—Preparation of a semi-permanent block leather or plastic splint suitable for arthritis of the wrist or basal thumb-joints. (a) Plaster-of-Paris mould cut before removal. (b) Finished splint prepared on a metal casting.



adequately to safeguard the maintenance or restoration of function when permissible.

For every normal joint there is a physiological position which is optimal for the average needs of the limb—a position in which its controlling musculature is able to exert its power to best advantage, a position in which muscles are poised for function and where none of the flexible capsular tissues is being stretched. The "physiological positions" of limbs are completely different from the so-called "anatomical positions," which merely provide standards of convenience and, clinically, are almost always unsuitable and indeed undesirable for treatment. The physiological position is not a fixed one but varies within a moderate range generally near the middle of the normal range of movement of the joint. The optimal position for the treatment of arthritic joints—modified from this physiological position—must be not only suitable for the pathological and therapeutic requirements but also such that if stiffness or ankylosis occurs it shall be in a position which will be best for function. In other words a nice compromise must be established between the optimal position for muscular competence and the later possible requirements of joint posture. These positions are enumerated in the following list:

Table showing the Optimal Positions for the Treatment of Arthritic Joints

Joint	Position	Remarks
Shoulder	Abduction 45° Flexion 30° External rotation 15°	Prevents stiffness in adduction; aids deltoid function; safeguards capsular integrity. The position is favourable for function in ankylosis
Elbow	Extended to about 100°	Safeguards the function of the elbow flexor muscles. If ankylosis is likely to occur modifications of the position recommended must be made according to the wishes of the patient, guided by his social circumstances and occupation. Where both elbows are involved one should be treated at a smaller angle
Forearm	Mid prone-supine position	Favours the restoration of either movement. If ankylosis occurs compensation for loss of pronation can be gained by abduction of the shoulder. Stiffness in supination is objectionable
Wrist	Extension 30°	The angle is measured upon the dorsum of the radius and of the third metacarpal
Digits and thumb	All joints flexed about 25° Abducted and opposed moderately	The hand as a unit is held in the position of semi-grasp, the thumb practically continuing the line of the lateral border of the radius, the phalanges of all digits in the position of natural relaxation—e.g., that assumed when the normal hand is loose at the side of the body. Capsular and ligamentous stretching is avoided. The vicious position of metacarpo-phalangeal hyperextension is avoided
Spine	Normal curves maintained	Flexion as well as torsion of the lumbar spine to be avoided
Hip	Abduction only of sufficient amount to compensate for true shortening Rotation nil Flexion 20°	In arthritis extreme degrees of true shortening of a lower extremity are unlikely to be found. Flexion permits sitting, if there is compensatory movement in the lumbar spine
Knee	Flexion 15°	Avoids posterior capsular stretching and resultant hyperextension instability. The competence of the quadriceps is adequately safeguarded
Ankle	Right-angle	If ankylosis appears inevitable the foot should be plantar-flexed 5° to 10° in men and a few degrees more in women to facilitate walking in high-heel shoes
Tarsal joints	Neutral as to inversion or eversion	While the arches of the foot should be preserved, it is better, should ankylosis be inevitable, to err in the direction of eversion, for the weight-bearing surface exposed to the ground is less likely to be troublesome than if the foot is inverted or everted
Toes	Maintain flexion of M.T.P. joints and extension of I.P. joints	Preserves intrinsic muscular activity; avoids metatarso-phalangeal subluxation and metatarsal pressure points

In my view these positions are worthy of acceptance universally as the standard "physiological positions." During the chronic stages of arthritic disease rest may still form a very important accompaniment of whatever other treatment is given. Here, however, there may be the added need to correct deformity. Finally, rest may even be used with the object of obtaining complete fixation or ankylosis of a joint, an end which may also be aided, of course, by surgical means.

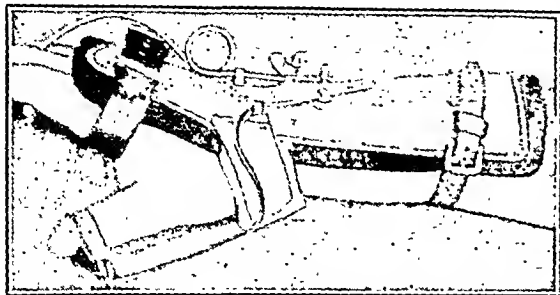


FIG. 5.—Brian Thomas extensor appliance (Exeter model).

Lower Motor Neurone Lesions

All that has been said about muscular competence in arthritic disease applies also in the treatment of nerve lesions whether peripheral or poliomyelitic. There is indeed in the muscular phenomena associated with poliomyelitis a striking similarity to the muscular condition in arthritis. In the past it would appear that too great emphasis has been given to placing paralysed muscles in positions of greatest shortening, to the detriment of joint efficiency and of muscular re-education. An intermediate position is far better. Knowledge of the normal mechanism of maintaining physiological tonus (the simplest and gentlest type of reflex skeletal muscular activity) suggests this. Studies of the changes in denervated muscle (Tower, 1939; Bowden and Gutmann, 1944) indicate the same need, as well as the advisability of maintaining relative rest in good positions rather than absolute rest. The positions already listed are those suitable for the treatment of an extensive lower motor nerve lesion as in poliomyelitis. Even in the treatment of any individual peripheral nerve lesion the relevant positions indicated would be compatible with adequate protection of the paralysed muscles and suitable for muscular re-education. In nerve lesions the application of rest and support is associated where possible with substitution devices for replacement or assistance of deficient muscles.

Design of Orthopaedic Appliances

Physiological rest is far more than the fixation or splinting of limbs. It is perhaps unfortunate that the word "splint" has come to mean an immobilizing device, for originally a "splint" was something that permitted rather than restricted movement. In mediaeval times the movable sections of suits of armour—for example, at the elbow or knee—were called "splints."

Appliances are used for the following purposes: (a) Support; to oppose gravity. (b) Immobilization or limitation of movement. (c) The correction of deformity. (d) The mobilization of joints. (e) The substitution of defective muscular action. Appliances must be designed so as to fulfil these purposes with maximum comfort and convenience. This involves lightness and accessibility; smoothness of anatomical fit; adequate

FIG. 6.—Adaptation of same appliance for finger flexion deformities—e.g., ischaemic or arthritic.

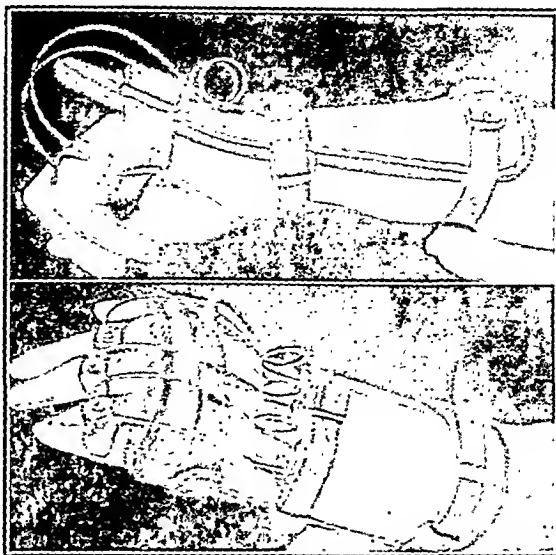
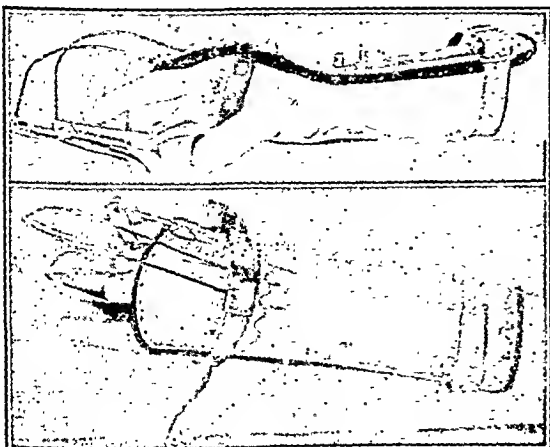


FIG. 7.—Further modification of springs having "push" action for the treatment of metacarpo-phalangeal stiffness.

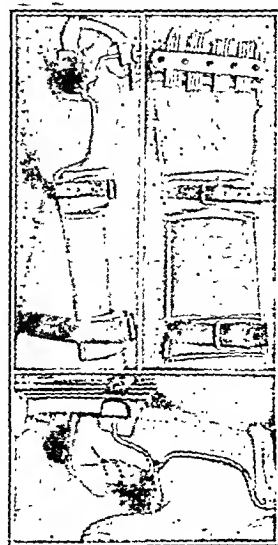
strength; simplicity of construction; and economical and speedy manufacture. Surgical appliance making has been in the past, and still is, in the hands of commercial craftsmen who have done splendid work, yet who are often divorced from adequate medical guidance. Control by the surgeon is greatly needed, and in order to bring the maximum good to the majority modern methods of manufacture should be more readily applied.

The greater mobility of populations necessitates the production of apparatus using standard parts which will receive servicing in one part of the country as in another, as in the case of the motor-car. In surgical appliance making there should be less conservatism.

Improved efficiency and economy could be achieved by an increased use of regionalization, and the setting up of workshops or the development of industries using similar materials with standard designs for certain appliances or portions thereof and with standard schedules for measuring and ordering. Standardization need not be an obstacle to initiative and advancement.

The wedding of mechanical efficiency to comfort in use is often a serious problem. The Thomas bed-knee splint, in spite of various later useful modifications, still remains as finally used by its inventor, a supreme example of the solution of this problem. Makeshift appliances are a particular anathema in orthopaedics, and with them "fitness for purpose" is "more honoured in the breach than the observance." There should be no excuse for the application to patients of appliances in the unhygienic, much-used, second-hand state so frequently found. Good plaster-of-Paris technique has made this unnecessary. Indeed, for most short-term requirements plaster-of-Paris, properly applied, provides the almost ideal material and the most readily available instrument of physiological rest. It is not necessary here to discuss this at length, although an illustration of the use of plaster in the treatment of arthritis in the hand is given.

FIG. 8.—A new device for the treatment of flexion contractures of the interphalangeal joints, using multiple strips of window-curtain springs.



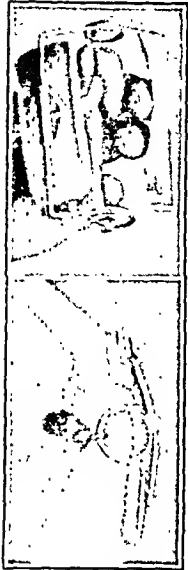


FIG. 9.—The ulnar intrinsic spring splint.

elbow by means of a curved slotted rod with a bolt and nut permitting 90° variability in rotation. This appliance can be worn under the outer clothes and is equally suitable for wearing outside. Though in the model illustrated numerous straps are shown which distribute the weight of the apparatus, very few of these are essential. The lower part of the frame where it encircles the pelvis, instead of being made of metal rod, is fashioned from mild steel flat strip suitably padded to distribute pressure over a wide area. In some of the earlier versions of this Oxford modification pressure was experienced beneath the elbow, generally on the medial epicondyle or against the ulnar nerve. This difficulty has been overcome in a later model by dipping the framework downwards at this point. Here, therefore, is an appliance giving relative immobilization, and it is readily adjustable with splint benders because it is made of mild steel, thus making it possible to correct deformity. It is available for one side of the body only. Its chief defect is the presence of disagreeable vertical rods at the back and front of the trunk.

The Shoulder

A common appliance is the abduction splint used in the treatment of the stiff shoulder, in conditions due to neurovascular drag across the first rib, and for the support of the limb in injuries to the forearm and hand, etc. It is valuable in the correction and mobilization of deformity and for the support and re-education of weakened muscles. It is common to see the adaptation for these purposes of unsatisfactory appliances. In the one illustrated (Fig. 1) there is a mere platform with little adjustment: it fits merely where it touches and is uncomfortable and inconvenient.

The "Littler-Jones" frame (Fig. 2) is an improvement but in its original form did not provide a truly physiological position and lacked adjustability. At the workshops of the Wingfield-Morris Orthopaedic Hospital, Oxford, a great improvement was effected by division of the main frame at the elbow-joint and the addition of a forearm splint, articulating with the main frame beneath the

The Hand

In many ways the hand is at last receiving better care, particularly in fractures, wounds, and burns. The lessons from these fields should with modifications be applied to the treatment of arthritis. Various first-aid appliances of sheet metal are available, but none so far produced is satisfactory. In acute lesions of the interphalangeal joints, each digit has its own problems and must be treated very often individually. Plaster-of-Paris, which still supplies the most satisfactory material for immediate support, requires precision in application, and should have as much care devoted to it as a surgeon would expect to give to the application of a plaster jacket or spica.

I illustrate (Fig. 3) the physiological position for the hand and a plaster splint which with careful interdigital moulding will give some measure of individuality to the digits. The hand provides an example of the use of plaster moulds from which hard casts (Fig. 4) may be prepared upon which plastic material, such as leather or synthetic resins, may be moulded for more permanent appliances.

The problems of arthritis in the less acute states bear certain resemblances to those problems seen in peripheral nerve and vascular injuries, in which stiffness and deformation occur, the latter largely due to defective muscle balance and capsular contracture. Improvements in appliances for the hand have been made as the result of experiences with peripheral nerve injuries during the war. Some are illustrated (Figs. 5-9). To one particular splint I want to draw attention because it involves a principle which though not new could be applied probably to many other problems throughout the body. We are familiar with appliances which replace to some extent the toe-raising spring for paralytic drop-foot, and the M.R.C. elastic extensor appliance for radial-nerve palsy. In the recent war Brian Thomas (1944) applied the principle in a modified form, with a spring-wire elevator applied to a dorsal metal plate upon the forearm and wrist (Fig. 5). Mr. A. M. Hendry (1945) has applied the principle of adding springs to appliances

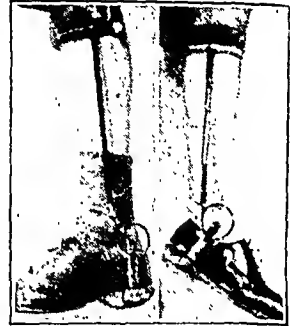
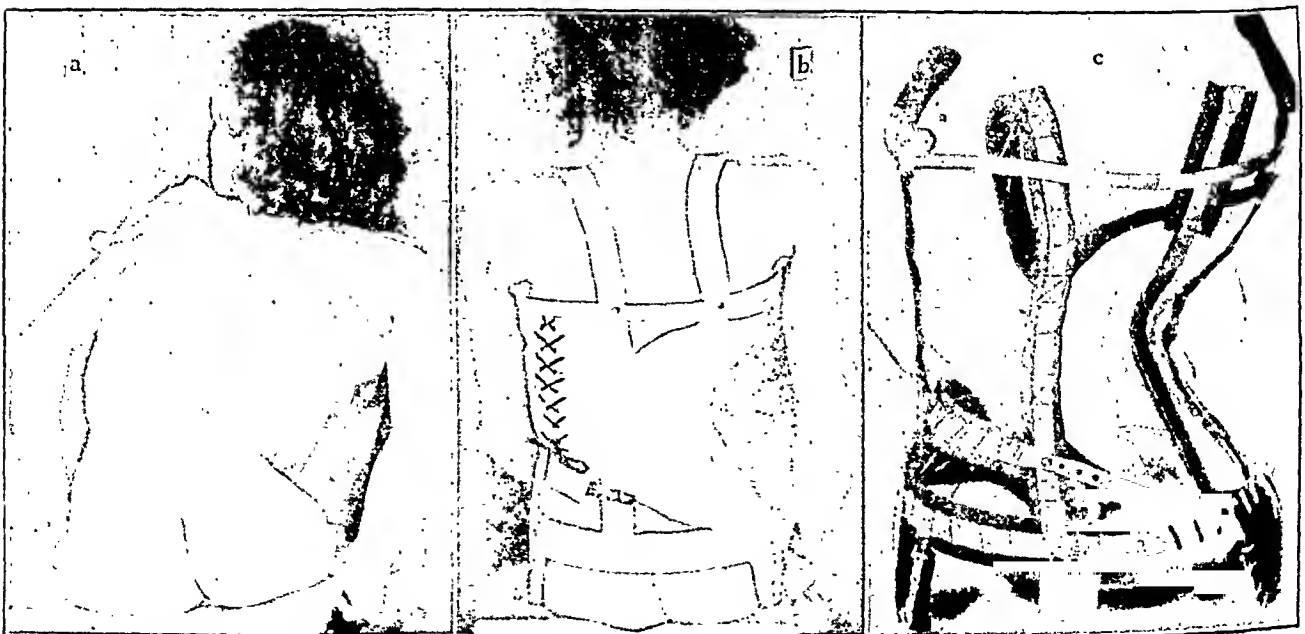


FIG. 10.—A coiled spring toe-raiser for drop-foot, and a similar device reversed and acting as a plantar flexor spring for calf-muscle paralysis.

FIG. 11.—(a) Paralytic scoliosis showing inability to sit without support. (b) The same patient with true spinal support taken from seat. (c) The same appliance in the course of manufacture.



for the replacement of intrinsic muscular activity in ulnar paralysis. In the ulnar splint illustrated (Fig. 9) the whole appliance is converted into one complete spring. The device is simple to make and apply, and has mechanical advantages in action: One advantage of all these appliances is the relative freedom of the palmar aspect for working purposes. A similar idea can be employed in the foot where, instead of an added spring, steel uprights of an ordinary short-leg appliance are converted into springs for the purpose of replacing either the dorsi-extensors or the plantar flexors of the foot (Fig. 10).

The Spine

The purpose to be achieved by a spinal support is essentially the limitation of movement. It is impossible for any appliance to limit all spinal movement. It is impossible to apply any force upon the exterior of the trunk in an ambulant patient so as to effect any material corrective influence upon structural defects. Support, however, for spinal deformity can be given to a considerable extent, as is shown in one case illustrated—a woman suffering from very severe paralytic scoliosis who, with an appliance, has been able to sit unaided with confidence and to manage her household affairs (Fig. 11).

This appliance illustrates the complexities of manufacture, the craftsmanship involved, and the need for close co-operation between craftsman and surgeon. The essential features are a spring steel pelvic band with spring steel uprights, two at the back and one at each side, the side struts supporting crutches for the axillae. These are joined by padded shoulder straps across the front of each shoulder to the back of the central posterior uprights. Pressure upon the pelvis is distributed through curved mild steel bands moulded above the iliac crests, and with downward extensions at the side of each hip to the seat. The support is strengthened by a moulded sheet of duralumin fitting into the concavity beneath the right ribs. Although such an appliance is not suitable for mass production, great benefit would accrue from standardization of some of its parts—e.g., in the provision of the special screws which are used and which, under present conditions, have to be made individually by hand on a power-driven lathe.

A simpler type of spinal "support," which is merely a brace to limit movement and assist muscular action, is the modified Taylor support made of leather-covered spring steel (Fig. 12). The advantages of this support are: simplicity of manufacture and convenience; the close relation of its uprights to the posterior surface of the spine, which controls antero-posterior movement; the firm hold at its base through the almost encircling steel band round the truss line; and the use of a suprapubic abdominal pad. Furthermore it is readily adjustable in shape by the use of bending irons. It is useful in the treatment of postural defects and adolescent kyphosis, in the convalescence of cases of tuberculosis of the spine, and in the after-care of spondylitis.

The Knee

In acute stages of arthritis of the knee nothing is better than a well-applied, cellulose-lined, long-leg guarding plaster, which can be split as soon as, on clinical grounds, the condition appears to be subsiding. It is then available as a removable splint for the rest of the programme of rehabilitation. A wedging plaster also provides a convenient method of treating flexion deformity while permitting general activity and ambulation. In the later treatment of arthritis of the knee a variety of appliances are available, all applicable to many other pathological and traumatic conditions—e.g., the Thomas weight-relieving calliper.

There is, however, frequently need for an apparatus which permits flexion. Such appliances would be used more often if they were readily available. Here is a particular field for standardization in the interests of mass production, cheapness, and efficiency. One type of joint is shown (Fig. 13) with a locking device to maintain the appliance rigidly in extension when the patient walks. It requires the highest form of craftsmanship as at present made. Such an appliance often has a particular disadvantage—namely, that when it is flexed to a right-angle for sitting the sharp upper angle of the lower section, upon which the lock depends, causes a sharp upward projection which is liable to tear the patient's clothes. This difficulty has been overcome in the splint illustrated by placing the joint

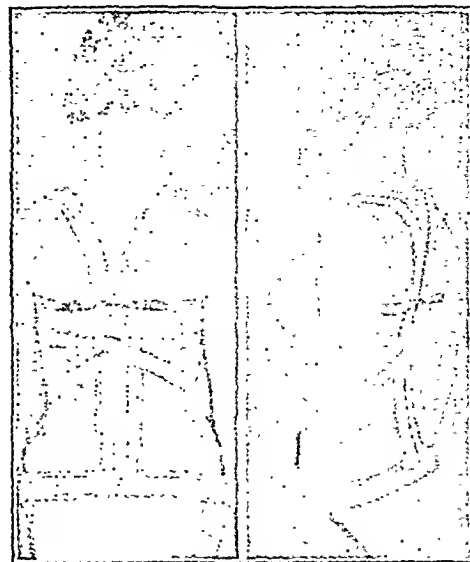


FIG. 12.—The Taylor spinal brace limiting flexion.

within a circular expansion of iron-work with an eccentric joint, so that the sharp upward angle disappears within the circle when the knee is completely flexed.

This appliance (Fig. 14) is made of hand-forged mild steel, the joint surfaces being case-hardened, so as to minimize the effects of friction. There is no reason why its parts should not be made in the rougher stages by the process of drop-forging from prefabricated dies. A suitable die would be expensive to a degree that few workshops would contemplate. If, however, some measure of uniformity could be decided upon throughout all the regional workshops of the country, perhaps with the aid of a large consumer such as the Ministry of Pensions, then a very important practical solution would be found.

Rest in Bed

Sending a patient to bed is the commonest form of rest used in treatment. As almost universally applied it is unphysiological. Bed treatment is only really properly understood and carried out in the care of the really ill patient. For the chronic sick it is sadly misused. The depression of the chest, the compression of the abdominal viscera, long-standing flexion of the lumbar spine, extension of the knees—these are a few of the common defects of the chronic case allowed to sit up in bed. Improvement in our beds for the chronic sick is much needed, but a good deal can be done to make it physiological by providing suitable support and by giving frequent changes to complete recumbency; by improving abdominal tonus and respiratory excursion; by the metabolic stimulus of fresh air, adequate diet, and a proper fluid intake; and by psychological care and occupation. Thus suitable conditions might be provided for the care of individual joint mechanics and for the associated medical treatment of the disease. The Hippocratic principle that the doctor should "do no harm" should be interpreted widely to include the prevention of such results of decubitus as the not uncommon development of renal calculus in orthopaedic patients. In applying physiological principles to the treatment of patients in bed we see the commonest illustration of the principle of physiological rest.

Materials

The work of appliance manufacture is at present hampered by shortage of certain materials, particularly in the grades required. A hope for the future is that recent metallurgical and engineering developments and new plastics will help to solve many of our problems. Of the metals used for splint framework, ferrous compounds are still the commonest, and wrought iron and steel are usual. Steel preponderates, and there are many different qualities for our purposes, ranging from tough malleability to rigid hardness, from mild steel to spring steel.

There seems to be some misunderstanding of the use of iron and steel in splint construction and this appears to have originated with the work of H. O. Thomas. The conditions of manufacture of his day justified his view-point. Mild steel, made possible by the Bessemer process, was not available until the end of Thomas's life. What he wanted was a metal frame with malleability and just sufficient rigidity to maintain the position but not interfere with the surgeon's ability to mould it with bending irons. Wrought iron was the only suitable material—steel as then known (1876–1891) was far too hard and rigid. This does not apply to-day, and yet there are those who advocate

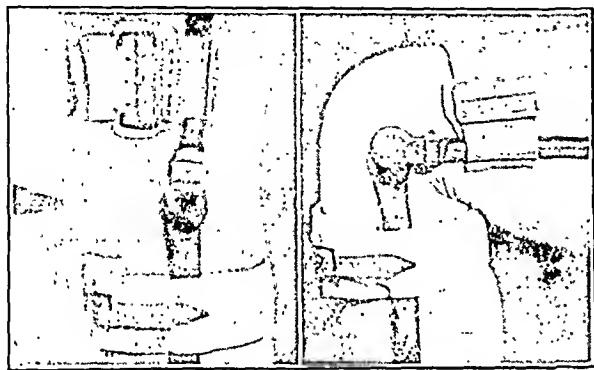


FIG. 13.—The jointed knee calliper.

the use of wrought iron, strangely, for the purpose of its supposed "rigid, unyielding" nature and "not of steel, which would alter in shape under pressure" (McMurray, 1937).

Experimentally it can easily be shown that a mild steel rod, of equal calibre to one of wrought iron, has sufficient malleability and is far superior in rigidity. This may seem a small point, yet the recent war has shown that surgical appliances

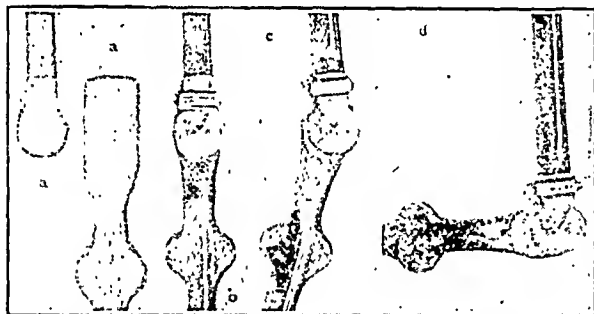


FIG. 14.—Jointed calliper locking device. (a) The rough hand forgings. (b) The finished joint locked. (c) Semi-flexed, showing the locking spike disappearing within the circle. (d) In further flexion; complete disappearance of spike. Note eccentric movement which permits this and provides easing of pressure upon the calf band in flexion.

have to be made on occasion by people previously inexpert and who should be guided in the use of the most readily available materials if these are superior to those less easily obtained.

Lightness is a consideration of importance, and the use of duralumin has been advocated. Unfortunately, to provide adequate strength it must be relatively bulky, and it will not stand up to friction. Consequently in jointed appliances the moving surfaces must be faced with hard steel. The result is that appliances thus made are scarcely, if at all, lighter than those carefully forged from mild steel. Processes not yet fully explored are the use of tubular metals and electric welding.

Covering materials provide a difficulty at present owing to the scarcity of supply, particularly of leather. Here in any case improvements are needed in the use of materials which can be moulded upon curved apparatus without folds and which at the same time will be non-irritant to the skin. Perspex and polyvinyl chloride offer possibilities which are beginning to be used (MacGowan, 1943). A noteworthy example is in the work at the Royal National Orthopaedic Hospital at Stanmore reported by Scales and Herschell (1945) and Cholmeley (1946).

Summary and Conclusions

In discussing the present-day change in orientation upon the therapeutic use of rest I have attempted to define our conception of Hilton's term "physiological rest." I have emphasized Thomas's teaching that the surgeon must know how to apply rest physiologically and must also have an intimate knowledge of splint construction and management. In describing a few methods and appliances used in arthritis and nerve lesions I have tried to show some of the difficulties and to indicate the general lines for future research and practical improvement. Apart from improved design and materials, the co-operation of regional surgical workshops (with some measure of standardization) should lead to greater economy and efficiency as well as comfort for the patient. The amount of standardization need not thwart enterprise or originality.

Those of us who consider improvements in design should maintain an attitude of humility. The human form has not altered during the past hundred years. Before the modern advancement of surgical technique many great minds had devoted themselves to this subject. Study of the old masters (Bonnet in particular) reveals how far they had got. Most "new" ideas have been thought of before. Advance chiefly will come in the utilization of new manufacturing processes and new materials.

It is to be hoped that in the museum of the Royal College of Surgeons there may be established a collection, not of "museum pieces" but of well-proved basic surgical appliances with suitable illustrations of their use. Such a section could be of great teaching value.

In any discussion of orthopaedic appliance making acknowledgment should be given to the originality and skill of commercial craftsmen such as Critchley, Ernst, and many others. In addition, I would like to thank my assistants who have helped in the production of this paper; Mr. H. Salz, M.R.C.S., Miss E. L. Burrow, S.R.N., Miss M. Green, Mr. A. Reaney, M.S.R., and above all Mr. F. W. Suler (a "master-craftsman") of the Orthopaedic Workshops, the Princess Elizabeth Orthopaedic Hospital, Exeter.

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SOUTH PACIFIC BOARD OF HEALTH

A South Pacific Board of Health, with headquarters in Suva, is established under an agreement which has been signed by the Prime Minister of New Zealand and the Governor of Fiji and High Commissioner for the Western Pacific High Commission. The adoption of a long-range policy of progressive alignment of the medical and health services of Fiji and the Western Pacific High Commission and those of New Zealand and the Dominions' island territories was one of the recommendations made in the Wait-Lambie report on medical services in Fiji. The agreement gives practical effect to this policy, and is the result of negotiations which have been in train since the publication of the Wait-Lambie report early in 1944. It applies to Fiji, the British Solomon Islands Protectorate, the Gilbert and Ellice Islands Colony, Western Samoa, Cook Islands, and the Tokelau Islands. The Board, which will be advisory, will assist the participating administrations in the more effective control of disease and the promotion of health in their territories, and will co-ordinate research and the compilation of statistics on the incidence of disease, with particular reference to the maintenance of standardized quarantine procedure. The Board will also assist in the selection, posting, training, and service conditions of the medical staff.

The agreement contemplates the establishment of a medical centre in Fiji, including a new central medical school and nurses' training school. The secondment of New Zealand nurses to Fiji and other territories will be arranged by the Director, Division of Nursing, New Zealand.

EFFECT OF CERTAIN SOCIAL CONDITIONS ON THE HEALTH OF SCHOOL- CHILDREN

BY

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The school-children from Salford included in the vitamin-feeding test in 1943-4, already reported (Bransby *et al.*, 1946), numbered 891. Data covering a wider field and involving a larger number of children were, however, obtained; these were found on examination to be of some interest, being concerned with the relationship between home, family, and economic conditions on the one hand and the rate of growth, certain medical and dental conditions, and school attendance on the other. Involved in this analysis were 2,945 children, 5 to 14 years old, attending 23 elementary schools in Salford, and 82 boys evacuated from Salford to Whiteacre camp school, in Lancashire. They were weighed, measured, and medically examined early in 1943 and again one year later. The weighings, measurements, and medical and dental examinations were carried out in the same way as for the vitamin-feeding test. In addition, information obtained from data collected in Stoke-on-Trent, where the vitamin-feeding test was also carried out, relating absence from school with certain social conditions, is also included. It was the intention to present as full a set of results for Stoke as for Salford, but unfortunately the bulk of the Stoke results were destroyed by accident in the wartime drive for salvage.

Social Conditions and Absence from School

The social matters inquired into were home and economic conditions—each of which was graded good, fair, or bad—the number of children in the family, and absence from school and the reasons for it. Classification of the home conditions was made by individual teachers who knew the children well. In Salford there are few schools with a mixed population of high and low income groups, so the grading into economic groups was a fairly easy matter for the teachers. A sample check of the gradings was made by experienced health visitors, and it was found that their independent judgment corresponded well in the main with that of the teachers.

Clinical and Dental Examinations

The clinical conditions recorded were those which might in some way be affected by the general state of nutrition or specific vitamin deficiencies. The examination consequently was not a complete medical examination covering every aspect of health. The clinical examination paid attention to: state of nutrition (good, fair, or poor), round shoulders, pot-belly, lordosis, winged scapula, knock-knees, bow-legs, scoliosis, deformed chest, physique, obesity, chest rales and cough, ear discharge, goitre, angular stomatitis, cheilosis, pityriasis sicca, pallor of mucous membrane, styes, blepharitis, simple conjunctivitis, phlyctenular conjunctivitis, circumcorneal infection, transverse ridging of nails, nails bitten, brittle nails, coarse and dry hair, impetigo, boils, chilblains, other sepsis, seborrhoea, follicular keratosis, and dryness of the skin. At each examination the conditions were graded 0, 1, 2, or 3, according to their presence and severity.

The dental conditions taken into account were: general tone of the gums and the presence of gingivitis, haemorrhage, tartar, mottling, and caries. The extent of mottling, haemorrhage, tartar, and caries was graded 0, 1, 2, and 3, and gingivitis 0, 1, 2, 3, and 4, in the manner of King, Francklyn, and Allen (1944). The general tone was graded "firm" or "flaccid." All the teeth present in the mouth were examined and graded individually for caries and mottling, and the average caries and mottling per tooth present were calculated. The

examination for general tone of the gums, gingivitis, haemorrhage, and tartar was limited to the regions $\frac{21112}{21112}$, each of these teeth being examined and graded individually.

For the clinical conditions the data of the boys and girls were analysed together; for the dental conditions the data were analysed for boys and girls separately in the age ranges 5-7, 8-10, and 11-13 years.

The average incidence of the above clinical and dental conditions was calculated in children grouped according to the number of children in the families to which they belonged, home conditions, economic conditions, and nutritional grade. Two criteria were used to ascertain if the social circumstances and nutritional classification had any effect on the incidence of the clinical and dental conditions—the trend and consistency of the results, and formal tests of significance of the difference between the best and the worst groups of each of the three social classifications.

Results

To avoid the presentation of a large number of tables a statement of results is here given.

Clinical and Dental Conditions

The incidence of the following clinical and dental conditions increased with worsening social conditions; the figures in parentheses show the extent to which the incidence of the condition among children in bad home or economic conditions or belonging to large families exceeded the incidence among children in good home or economic conditions or belonging to small families. Ranges are given for the figures (in parentheses) because they relate to the three factors, home and economic conditions and number of children in the family, and also breakdowns, according to sex and age. The percentages for all these breakdowns fall, for each of the clinical conditions mentioned, within the ranges given: impetigo (40-60%), sepsis (56-276%), angular stomatitis (36-128%), pityriasis sicca (14-28%), coarse and dry hair (50-400%), dryness of the skin (20-64%), round shoulders (4-71%), deformed chest (37-156%), tartar (75-167%), gingivitis (6-287%), and general conditions of the gums (0-250%). The incidence of caries increased among boys (11-22%). The gradings of nutrition and physique also worsened with decline in social conditions. The incidence of transverse ridging of the nails, which was at one time suggested as a criterion of poor nutrition, decreased with worsening social conditions. For the other particulars there was no discernible variation with social conditions.

Growth

Table I shows the number of children in the various sex, age, and social groups. The heights and weights of children of corresponding ages in good economic conditions, good home conditions, and belonging to families with one or two children were practically the same, and conform to those given in Table II. In Table III, for boys and girls of the age groups 5-7 years, 8-10 years, and 11 and more years, are given the differences in height and weight between those in (1) good and bad home conditions, (2) good and bad economic conditions, and (3) belonging to families with one and two children and families with six or more children.

TABLE I.—Number of Children in Various Sex, Age, and Social Classes

Age (years):	Boys			Girls		
	5-7	8-10	11+	5-7	8-10	11+
Home conditions:						
Good	189	315	193	184	250	246
Fair	179	346	248	185	265	155
Poor	45	29	17	35	44	20
Economic conditions:						
Good	124	157	158	105	142	177
Fair	170	362	214	185	262	158
Poor	119	171	86	116	152	87
Children in family:						
1, 2	207	307	214	191	231	183
3, 4, 5	173	293	187	179	246	189
6 or more	33	90	57	35	78	52

The heights and weights of children in bad economic or home conditions or belonging to large families were consistently less than those of children in good home or economic conditions or belonging to small families. Thus children in good home conditions were 1.7-2.6 in. (4.32-6.60 cm.) taller and 2.0-9.3 lb. (0.91-4.22 kg.) heavier than children living in bad home conditions, children in good economic circumstances were 0.6-1.4 in. (1.52-3.55 cm.) taller

TABLE II.—Approximate Height and Weight of Children with Good Home or Economic Conditions or Belonging to Small Families

Age (years):	Boys			Girls		
	5-7	8-10	11+	5-7	8-10	11+
Height (in.) ..	45.4 (115.3)*	50.6 (128.4)	55.2 (140.2)	45.3 (115.0)	50.1 (127.2)	55.8 (141.7)
Weight (lb.) ..	46.9 (21.27)	59.0 (26.77)	74.8 (33.93)	45.7 (20.73)	57.2 (25.95)	76.3 (34.61)

* The figures in parentheses in Tables II-IV represent the metric equivalent—height in centimetres, weight in kilogrammes.

TABLE III.—Effect of Social Conditions on Initial Height and Weight

Age (years):	Boys			Girls		
	5-7	8-10	11+	5-7	8-10	11+
Height:						
H.C. good minus bad (in.) ..	2.5 (6.35)	1.7 (4.32)	2.6 (6.60)	2.3 (5.84)	1.7 (4.32)	2.3 (5.84)
E.C. good minus bad (in.) ..	0.9 (2.29)	0.6 (1.52)	0.9 (2.29)	1.1 (2.79)	0.8 (2.03)	1.4 (3.55)
No. of children: 1, 2 minus 6+	1.8 (4.57)	0.8 (2.03)	1.0 (2.54)	1.4 (3.55)	1.1 (2.79)	0.6 (1.52)
Weight:						
H.C. good minus bad (lb.) ..	3.8 (1.72)	3.8 (1.72)	9.0 (4.08)	3.4 (1.54)	2.0 (0.91)	9.3 (4.22)
E.C. good minus bad (lb.) ..	1.6 (0.72)	0.5 (0.23)	2.5 (1.12)	0.5 (0.23)	2.3 (1.04)	5.6 (2.54)
No. of children: 1, 2 minus 6+	3.6 (1.63)	2.0 (0.91)	6.6 (2.99)	1.3 (0.59)	2.4 (1.09)	2.0 (0.91)

H.C. = Home conditions. E.C. = Economic conditions.

and 0.5-5.6 lb. (0.23-2.54 kg.) heavier than those in poor economic circumstances, and children in small families were 0.6-1.8 in. (1.52-4.57 cm.) taller and 1.3-6.6 lb. (0.59-2.99 kg.) heavier than those belonging to large families.

TABLE IV.—Effect of Social Conditions on Height and Weight During a Year

Age (years):	Boys			Girls		
	5-7	8-10	11+	5-7	8-10	11+
Height increases:						
H.C. good minus bad (in.) ..	-0.21 (-0.53)	-0.01 (-0.025)	0.18 (0.46)	-0.21 (-0.53)	0.05 (0.125)	0.23 (0.58)
E.C. good minus bad (in.) ..	0.22 (0.56)	0.12 (0.30)	0.69 (1.75)	0.20 (0.51)	0.25 (0.64)	0.48 (1.22)
Weight increases:						
H.C. good minus bad (lb.) ..	0.47 (0.21)	-0.56 (-0.25)	2.95 (1.36)	0.97 (0.44)	0.60 (0.27)	4.33 (1.96)
E.C. good minus bad (lb.) ..	-0.13 (-0.06)	-0.70 (-0.32)	1.83 (0.83)	1.02 (0.46)	-0.82 (-0.37)	2.88 (1.31)

H.C. = Home conditions. E.C. = Economic conditions.

Table IV shows the annual height and weight increases of boys and girls aged 5-7 years, 8-10 years, and 11 or more years, grouped according to home conditions and economic conditions. In good economic conditions the growth of children was better in all six age groups by 0.12-0.69 in. (0.30-1.75 cm.) than that of children in bad economic conditions, but there was no consistent difference between weight increases, except for boys and girls of 11 years in good economic circumstances, whose increase was 1.83-2.88 lb. (0.83-1.31 kg.) better than for similar children in poor economic circumstances. On the other hand, the children living in good home conditions did not grow in height any better than those in poor home conditions, but the weight increase was better in five out of the six groups by 0.47-4.33 lb. (0.21-1.96 kg.).

TABLE VI.—Absenteeism, Days per Child, due to Various Causes according to Sex and Age

Age (years):	Stoke-on-Trent						Salford					
	5-7		8-10		11 or more		5-7		8-10		11 or more	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Cause of absence:												
Respiratory ..	7.6	10.2	5.6	7.9	4.0	5.5	13.3	15.8	11.8	12.2	9.9	14.3
Skin ..	5.4	3.7	1.4	2.4	1.8	0.9	2.3	2.7	1.8	1.8	2.5	1.7
E.N.T. ..	2.4	4.6	1.2	1.4	1.8	2.6	2.6	4.5	2.7	3.7	2.7	4.1
Gastro-intestinal ..	0.7	0.7	1.0	1.3	1.3	1.8	2.5	2.9	2.5	2.6	2.5	3.2
Eyes ..	0.1	0.5	0.2	0	0	0.3	0	0.1	0.2	0.2	0.1	0.2
Infections ..	8.9	6.3	2.7	1.1	1.1	0.8	7.9	7.3	2.3	2.3	1.8	2.0
Unspecified ..	10.2	11.2	2.7	6.4	3.8	5.9	2.0	3.0	2.1	3.0	2.2	3.5
Injuries ..	1.2	0.5	1.2	1.3	0.9	0.7	2.7	1.8	1.5	1.4	1.6	1.3
No illness ..	4.4	5.7	7.2	2.9	6.7	4.3	11.3	12.1	11.5	12.1	14.0	14.2
Total ..	40.9	43.4	23.2	24.7	21.4	22.8	44.6	50.2	36.4	39.3	37.3	44.8

Absence from School

All practicable steps were taken to ensure that the reasons absence from school were accurately recorded. Both in Stoke and in Salford the services of the health visitors or school nurses were used in checking the reasons given for absence. The absences were grouped into the various categories listed in Tables V and VI, collaborators in Stoke and Salford, and this may have caused some lack of uniformity and account in part for the differences found between the two areas. Consequently comparison between the results for these towns can only be made with caution.

Table V shows, for boys and girls living at home in Stoke and Salford, the number of days' absence from school for various causes and the percentage of the total absenteeism due to each cause, and Table VI shows the absenteeism of children grouped according to sex and age.

TABLE V.—Absenteeism, Days per Child, due to Various Causes

Cause of Absence	Stoke-on-Trent		Salford		Cam Scho
	Boys	Girls	Boys	Girls	
Number ..	510	410	1,561	1,384	
Respiratory ..	5.2 (21%)	7.4 (26%)	12.0 (30%)	13.9 (31%)	2.1
Skin ..	2.4 (9%)	2.1 (7%)	2.2 (6%)	2.0 (5%)	1.1
E.N.T. ..	1.7 (7%)	2.6 (9%)	2.6 (7%)	4.1 (9%)	2.1
Gastro-intestinal ..	1.1 (4%)	1.4 (5%)	2.5 (7%)	2.9 (7%)	1.1
Eyes ..	0 (0%)	0.2 (1%)	0.1 (0%)	0.2 (0%)	0
Infections ..	3.1 (12%)	2.2 (8%)	3.7 (9%)	3.7 (8%)	0
Unspecified ..	4.7 (18%)	7.3 (26%)	2.1 (5%)	3.2 (7%)	1.1
Injuries ..	1.1 (4%)	0.9 (3%)	2.0 (5%)	1.5 (3%)	0
No illness ..	6.4 (25%)	4.1 (15%)	12.2 (31%)	12.7 (30%)	13.4
Total ..	25.7	28.2	39.4	44.2	23.6

Table V reveals that in Salford respiratory conditions and causes other than illness each accounted for about 30% of the total absenteeism, the other 40% being due to the remaining seven causes. In Stoke, absenteeism due to respiratory conditions was 21.26% and causes other than illness 15.25%. In Salford, absence due to unspecified illness amounted to 18.26% compared with 5.7%. The discrepancy may have been due to the grouping of the various illnesses into different categories in the two localities. Total absenteeism comprised about 12% of the possible school attendance in Stoke and 18% in Salford.

Sex and Age

Girls had somewhat more absenteeism—about 10% in Stoke and 15% in Salford—than did boys. The incidence both of respiratory and of E.N.T. conditions was consistently greater for girls than for boys.

Absenteeism was greater among young children than among older ones. Thus for children aged 5-7 years, compared with those aged 11 or more, absence was about 5 days (15%) greater in Salford and about 20 days (90%) greater in Stoke. Absence due to infectious disease was considerably greater among young than among older children, and the younger had a somewhat higher incidence of respiratory complaints. In Stoke the incidence of unspecified illness was also much greater among young than among older children. Older children in Salford were somewhat more often absent owing to causes other than illness—about 35%, compared with about 25% of total absence for younger children—but the difference was not so marked for Stoke.

Social and Economic Conditions

In Salford the number of children in the families had no effect on absenteeism, but among children with bad home conditions absenteeism was 30 to 40% greater than among those with good home conditions, owing to some extent to a greater incidence of skin conditions, but mostly to absenteeism from causes other than

iness. Among children in good home conditions 25% of the total absenteeism was due to causes other than illness; among children in poor home conditions the proportion was 36 to 41%.

Nutrition

Children graded as of poor nutrition in Salford had about 15% more total absenteeism and absenteeism due to illness than had children of good nutrition, while in Stoke the differences between children with good and those with poor nutrition was 30 to 40%. Absenteeism among boys living in Whiteacre camp school was considerably less than that of boys living at home at Salford—total absenteeism being 23.6 days, compared with about 37 days—and that due to illness 9.4 days, compared with about 24 days for boys aged 14 years in the two localities. The relatively high absenteeism through causes other than illness was due to the fact that the children lived in the camp school and occasionally visited relatives and friends. The difference in the sickness rate of the Salford children from that of the camp school children was due almost entirely to absence from respiratory conditions; this averaged about 12 days for the Salford boys and 2 days for the Whiteacre camp school boys.

Discussion

Analysis shows that there is a relationship between on the one hand social conditions as represented by home and economic conditions and the number of children in the family, and on the other hand the health of the Salford children as represented by the somewhat limited range of conditions noted at the clinical examination and by the growth data—the poorer the social conditions the worse the health levels. Yudkin (1944), in a study of the nutritional condition of children in Cambridge, found that children in a school in a fairly poor district, compared with those in a school in a comparatively well-to-do district, were on the average 0.8 in. (2.03 cm.) shorter, and 6 lb. (1.18 kg.) lighter, and had 2% less haemoglobin and a grip 1.25 kg. weaker. The absenteeism data suggest that social conditions did not affect absence from school due to illness, although with worsening home conditions there was a substantial increase in absence due to causes other than illness. It is important, however, to note (a) that absenteeism among children graded "poor nutrition" was considerably greater, both in Stoke and in Salford, than among those graded "good nutrition"; and (b) that there was a general lowering of the nutritional grading with worsening social conditions. Further, the average number of days' absence through illness among the camp school children was 9.4, compared with about 24 for boys living in Salford and about 14 for boys living in Stoke. It is also noteworthy that total absenteeism in Salford was about 65% greater than in Stoke, and that due to illness about 3% greater. The amount of absence due to illness, particularly respiratory conditions, appears to vary considerably from locality to locality, and the point arises as to how much of this is due to bad environment. It is not suggested that figures for the camp school children, extending as they do over one year only, represent the long-term morbidity rate of children living under such conditions, but the difference between them and the figures for Stoke and Salford at least suggests some association between morbidity of children and their living conditions.

Summary

Data of 2,945 children aged 5-14 years attending day schools at Salford, and of 82 children living in a residential camp school, were analysed to show the relation between home, family, and economic conditions on the one hand and rate of growth, state of health, and school attendance on the other. Information obtained from data collected in Stoke-on-Trent relating absence from school with certain social conditions is also included.

An increase in the number of children in the family and worsening home and economic conditions were associated with a reduced rate of growth and state of health. Absence from school was not related to family size, but increased with worsening home conditions and state of nutrition. There was greater absenteeism among young boys than among older children and among girls than boys.

Absence from school from all causes and from illness was greater at Salford than in Stoke-on-Trent, and absence in both localities was greater than that in the residential camp school, which suggests that environmental factors were at least in part responsible for absence from school and for child morbidity.

We wish to express our thanks to the parents of the children participating in the test and to the staffs of the Education and Health Departments of Stoke-on-Trent and Salford for collecting the experimental data. Thanks are also due to Mr. S. H. Quayle,

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THE EVALUATION OF BARRIER CREAMS

BY

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The ability of barrier creams to prevent deleterious substances reaching the skin of operatives has been amply proved in practice, and it can be asserted that the so-called "invisible glove" produced when these preparations are properly applied has done much to limit the incidence of dermatitis. Much has been written and spoken about the principles which must be obeyed if a satisfactory barrier cream is to be arrived at. Some formulators have included substances with the idea of increasing the scope of these preparations, but sometimes these additions are based on premises which are either hypothetical or, at the best, ill-founded. Others have attempted to medicate them, but whether in doing so the product has an added value as a protective cream is quite another matter. Although it may be that in theory a universal elixir could be made, the experience of those whose job it is to produce an article of real worth leads to the sound belief that it is always better to keep the product as simple as possible and to concentrate on making one which is as perfect as it can be to fulfil the essential requirements.

Barrier creams are expected to form a barrier against deleterious substances. That is the essence. They are not supposed to be cure-alls for any local erythema. They must be easy to apply and they must leave a coherent film which is impervious to extraneous substances. But they must be comfortable in wear. They should not produce a feeling in the mind of the user that the part anointed is encased; the invisible glove should preferably be imperceptible. Neither should the film be tacky or greasy so that it can contaminate any article which has to be handled; it is very important that articles handled should not slip from the grasp. Naturally, too, the film must be flexible so that it does not crack or form fissures. A case can be made out for the inclusion of substances which can neutralize or render inert specific irritants, but although in some instances this is advisable, and indeed desirable, the efficiency of a film of barrier cream to do this cannot be other than of a low order. If it is remembered that a proper film is only about 10 to 20 μ in thickness it will quickly be appreciated that the amount of neutralizing agent per square centimetre of skin surface is very small. Such additions cannot, therefore, deal with more than traces of the irritant; they are really useful only when the irritant is highly toxic even when present in minute quantities. Finally, in view of the general reluctance of people to take prophylactic measures, the interest of the user has to be titillated, and this can be done in no small measure by making the cream pleasant in appearance and texture. A minute trace of an odoriferous principle is a useful addition provided that it does not lead to the scenting or perfuming of the product which is to be handled.

Owing to the diversity of industrial processes and products it is not possible to make one cream which can give protection against everything. Neither is it a practical proposition to make individual creams for every specific hazard. The compromise is to classify the known deleterious substances into groups. Investigation suggests that four types of barrier cream are necessary, and the four classes of hazard are: (1) irritant dusts; (2) aqueous materials; (3) solvents and oils; (4) aqueous and oil-containing substances. Barrier creams which will give protection against the first class must produce a coherent film which adheres well to the skin and which will prevent the dust

penetrating or gaining access into the hair follicles and sweat ducts. The film must be non-tacky and non-greasy. Barrier films which are to give protection against the second class must produce a flexible water-repellent and water-resistant film, free from tackiness and greasiness. Protection against solvents and oils—class 3—can be obtained only if the film is composed of oil-insoluble materials. Provided this is accomplished and the requirements as to adherence, flexibility, and non-tackiness are fulfilled, a satisfactory protective barrier can be produced. The fourth class is probably the one which raises most difficulties, since the two main components, water and oil, are diametrically opposed in their properties, and their simultaneous presence makes the formulation of an efficient barrier cream difficult. However, by a careful compromise creams can be made which, when allowed to dry out into a film, have a reasonably high resistance to both water and oil.

The measurement of the efficiency with which a barrier cream prevents deleterious substances from producing dermatological rashes or oedemas can be carried out in a number of ways. The most logical one is the clinical experiment; but, with this form of appraisal, reliable estimations of value can be obtained only as a result of the statistical analysis of a large population. The inherent difficulties in mass clinical trials are too numerous and well known to be described here, although it is to be borne in mind that such tests are, in the long run, the final arbiters of efficiency.

The quick assessment of value demands some form of laboratory procedure of a somewhat empirical nature. When the conditions under which the film of barrier cream has to fulfil its functions are considered, it is immediately obvious that to devise an apparatus in which all these conditions—such as flexibility, resistance to friction, adherence to a non-rigid base which is subject to varying degrees of moisture on one side owing to perspiration, etc.—are imposed becomes wellnigh impossible. Even if such an apparatus could be designed it is most unlikely that answers free from ambiguity would be produced. It is really far better to use simple tests and simple apparatus which, while functioning in quite an artificial way, are more likely to yield consistent results. Provided that the artificiality is realized and that no attempt is made to read into the answers anything more than the test professes to do, then such means of evaluating barrier creams are justified and of considerable value.

Qualitative Tests

One of the means of testing consists in spreading the barrier cream on a suitable glass surface and allowing it to dry into a film. This film is then carefully taken off the glass and immersed in the liquid against which it is supposed to be a barrier. By comparing the times taken for the film to disintegrate the comparative efficiency of creams can be assessed. This method was advocated in a "Memorandum on the Prevention of Industrial Dermatitis," with special reference to the use of barrier substances, Form 330, December, 1942, issued by the Factory Department of the Ministry of Labour and National Service. It is not very easy, however, in all cases to produce films which can be peeled off a sheet of glass, and in the experiments which have been carried out the film was allowed to remain on the glass while being treated with various reagents.

This method has been used for a number of commercial creams of different manufacture. In order to identify the creams they have been numbered as follows:

- | | |
|--|--------------------|
| 1. Barrier against fine dusts and for handling dry materials | } Made by firm "A" |
| 2. Barrier against aqueous liquids | |
| 3. Barrier against oils and solvents | |
| 4. Barrier against both oils and water | |
| 5. Barrier against non-aqueous material | } Made by firm "B" |
| 6. Barrier against aqueous solutions | |
| 7. Barrier against non-aqueous material | } Made by firm "C" |
| 8. Barrier against aqueous solutions | |

Under the test the films made from Nos. 3, 5, and 7 rapidly disintegrate, especially if the test liquid be either acid or alkaline. No. 1, although not claimed as water-resisting, is definitely better than either 6 or 7, while No. 4 is remarkably resistant to solutions of acid. No. 6, which is claimed to be

water-repellent, breaks down quickly when subjected to the test. It is to be noted that when a film is not stable to the solvent becomes opalescent in a short time; the onset of the opalescence is a fairly good indication that the film is absorbing the liquid and will soon disintegrate. Carried out under standard conditions of time and temperature, this test is very useful, but the results can easily be vitiated if care is not taken to make the films as nearly as possible all of the same thickness.

Another qualitative method is merely to shake up some of the cream with aqueous solutions. If the cream is truly water repellent it will not disperse in the aqueous solution. If it is partially resistant to water it will not fully disperse, whereas if its resistance to water is poor it will wholly disperse. By this means differentiations can be made between the various creams and it has been found that creams Nos. 5 and 7 do not stir up at all well under this treatment. On the other hand, No. 1 cannot be dispersed in the aqueous solutions, while both No. 2 and No. 4 show a resistance to dispersion which indicates that they possess resistance to water. This method can show quite considerable differences between acid and alkaline solutions. In general the acid solutions, as is perhaps to be expected, prevent dispersion of the creams, and all the creams, especially Nos. 2 and 6, have some resistance to acids. In respect to alkaline solutions the only satisfactory cream is barrier cream No. 2. This method cannot be used for testing the resistance to non-aqueous solvents, since all the oil-resistant creams are obverse emulsions—i.e., water is the outside phase and the cream therefore cannot mix with oils.

Another method of investigating the resistance of the film to water followed the method described by Grant for measuring the degree of water-resistance of paper. The method consists in sprinkling the surface of paper with a small amount of icing sugar to which has been added 0.5% of "rhodamin 6G". The paper is floated on the surface of some distilled water at the surface examined under ultra-violet light. As soon as the dyestuff becomes wetted it shows a bright fluorescence, and the time taken for this to occur can be noted. The method does not, however, give a very sharply defined end-point, the fluorescence growing in intensity rather than appearing suddenly. At the same time the results are also subject to the variations in the thickness of the film; but if a rough allowance be made for this by repeating the observations several times, the creams can be differentiated one from another. In Table I figures are given for average results of a number of barrier creams, together with the time taken for the moisture to penetrate the untreated paper. In these experiments the writing-paper or typing-paper was used for the membrane and not filter-paper.

TABLE I.—Rate of Penetration of Water through Films of Barrier Cream, using the Fluorescence of a Dyestuff in the U.V. as a Measure of Penetration

Cream Used	Time Taken for Fluorescence to Appear
Blank: paper only	14 seconds
Barrier cream No. 1	21 "
" " No. 2	121 "
" " No. 3	19 "
" " No. 4	75 "
" " No. 7	17 "
" " No. 8	25 "

It will be noticed that this method differentiates between No. 2 and No. 3 creams, which, when tested by direct measurement of the volume of water penetrating a direct film of the cream (see Table IV), indicated that No. 3 had a higher resistance to penetration. It should be borne in mind that the ultra-violet light will detect extremely small amounts of moisture on the upper surface of the film, the least trace causing solution of a minute quantity of the dyestuff, which is the strongly fluorescent. The test certainly seems to place the creams in the order which would be expected.

It is also possible to measure the resistance of the barrier film in a rough quantitative way by allowing a drop of a solution of dye to fall on to the surface of a piece of typing-paper which had previously been coated with the cream and allowed to dry. Ordinary red ink was used as the dye solution, and the drop was allowed to remain on the surface for exactly for

nutes, when it was dried off by means of a piece of filter-paper. Drops of the ink were placed on typing-paper and allowed to remain on for varying lengths of time, ranging from 2 to 4 minutes, when they were blotted off. The series of its showing on the reverse side of the paper was used as the standard to compare against the colour obtained on the reverse of the paper when barrier creams had been used. In this way it was possible to assess the resistance of the film of barrier cream. The results are given in Table II. In expressing the results the permeability of the untreated paper has been taken as 100, and the depth of shade produced when the barrier cream is present is expressed as a percentage of this. Thus a figure indicates low permeability.

TABLE II.—Percentage Permeability of Films of Barrier Cream as Determined by the Penetration of a Solution of Eosin

Cream	Percentage Permeability
No. 1	85
No. 2	30
No. 3	80
No. 4	10
No. 5	70
No. 6	10
No. 7	70
No. 8	20

It is to be noted that when this test is carried out some creams cause the drop of ink to spread out a little, whilst in others the size of the drop does not alter in the four minutes for the test. Creams Nos. 5 and 7 cause the spot to read considerably. This is due to the low contact angle between the ink and the film, and it is suggested that this may be a defect in the creams when it occurs.

Quantitative Tests : pH Value

There is abundant evidence that creams with a high degree of alkalinity can, of themselves, cause irritation of the skin of many people. The Medical Branch of the Factory Department of the Ministry of Labour is well aware of this. It must be realized, however, that to define the pH value of a cream is no means simple, as obviously it will depend on the state of dryness of the cream when the determination is made. To attempt to determine the pH value of a pasty material is not easy, and accordingly it was decided to dilute the creams with an equal quantity of distilled water before making the determination.

In a comparatively rough way the pH value of creams can be determined by direct spotting with an indicator, but the results obtained must always be treated with some little reserve owing to the error of the indicator itself. All the creams, except Nos. 2 and 6, have been examined by diluting with an equal part by weight of distilled water and measuring the pH value of the mixture by means of a glass electrode. Table III gives the pH values for a number of creams as determined by this method.

TABLE III.—pH Value of Barrier Creams diluted 50/50 (Glass Electrode)

Cream	pH
No. 1	7.7
No. 3	8.0
No. 4	8.0
No. 5	9.3
No. 7	9.8
No. 8	9.1

NOTE.—It is impossible, of course, to determine the pH value of barrier cream No. 2, which is a reverse emulsion. The pH value of the dispersed water, however, is approximately 7.0. In the same way it was not possible to determine the pH value of barrier cream No. 6, as it does not mix with water.

It is to be noticed that Nos. 5, 7, and 8 have very high pH values and must be condemned on this ground.

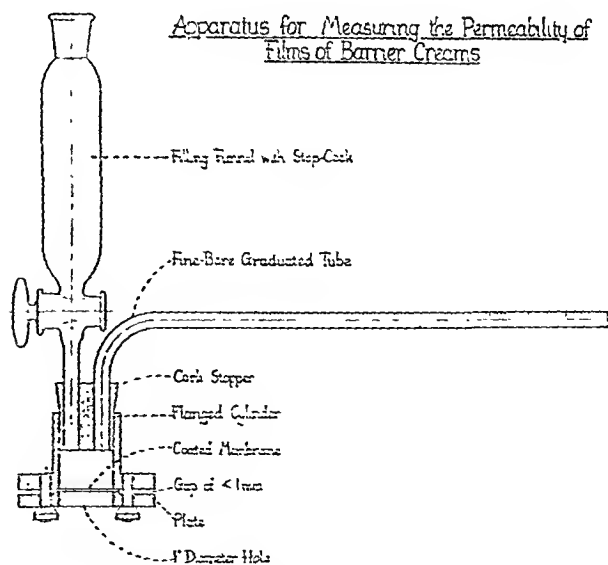
Permeability Tests

Although the above methods of examination give results which enable reasonable comparisons to be made, it was felt that something of a more practical character was desirable. For the first experiments it was considered that, ideally, thin horizontal "splits" of sheepskin—the form known commer-

cially as flywing skiver—would form the best membrane on which to spread the creams, but owing to the close texture of the skin itself, and the fact that when it became wetted with water the skin fibres themselves swelled so that the membrane became less and less permeable to moisture, the time taken to carry out a test was so long that this material had to be abandoned. After experimenting with other materials, such as "cellophane," writing-paper, and typing-paper, the conclusion was reached that for laboratory work it was better to have a very permeable material, so that the resistance produced by the presence of a film of the barrier cream made a large alteration in the rate at which the liquid could penetrate the membrane itself. Filter-paper was found to be suitable, especially, the type known as "Whatman No. 5," which, although a little rough on the surface, was sufficiently hard and rigid not to break down when wetted or during the application of the cream.

The method adopted originally consisted in applying a small quantity of the cream by means of the finger to the filter-paper, which had previously been weighed. It was found that one application did not usually produce a continuous film, and later two or three layers were rubbed on, the film being dried between each application. After drying, the disks of filter-paper were weighed, the difference between the dried weight of the filter and the dried weight of the filter plus cream being taken as a measurement of the thickness of the actual film, the area of course being constant. A further improvement of the method was to stain the filter-paper with red dye, "rhodamin," and then to dry before applying the barrier creams. By this means it was possible to see more clearly where the film was thinnest, so that in the second or third applications these parts could receive a little more of the cream than the other portions. This led to a substantial improvement, although perfection was not achieved.

The films were then placed in an apparatus which consists of a plate and a flanged cylinder of phosphor bronze, machined so that the surfaces fit perfectly together (see Diagram). In the centre of the plate there is a hole of 1 in. (2.5 cm.) diameter—i.e., equal to that of the bore of the flanged cylinder—and the two parts are fastened together by means of six thumbscrews, the coated membrane being thus securely held and forming the septum through which the experimental liquid is to pass. The cylinder is closed by means of a tight-fitting



cork through which two orifices are bored. The apparatus is filled by means of a small separating funnel which passes through one of the orifices, and water or other liquid is admitted until it runs out of the graduated tube, which passes through the second hole in the cork. As soon as the apparatus is full the cock of the separating funnel is turned off and the passage of water through the membrane is measured by observing the reading of the meniscus in the graduated tube at different time

intervals. The graduated tube is calibrated in hundredths of a millilitre. The membrane is placed in the apparatus with the film side uppermost. The machined surfaces are made so that when the membrane is secured the metal surfaces beyond the area of the coated membrane are at least 1 mm. apart; otherwise, when the film is breaking down, end-effects come into play through capillary action in between the two phosphor-bronze surfaces that tend to vitiate the results.

Experiments to investigate the effect of the thickness of the film did not lead to any really satisfactory results, although, in general, the rate of penetration became less the thicker the film. This lack of uniformity in the experimental figures has been attributed to the lack of evenness of the film. Various attempts have been made to overcome this difficulty, and apparatus has been made with sintered glass in place of filter-paper, the sintered glass being fused into a tube and ground off dead level with the end of the tube. This tube was placed inside a wider metal tube and the height adjusted so that the surface of the sintered glass was approximately one-fifth of a millimetre below the top surface of the outer metal tube. This space was then filled with cream and wiped level by means of a straight-edge. It was found that the films obtained by this means were quite regular; but, unfortunately, the cream did not always adhere to the sintered glass, and peeling could occur when the disk and film were treated with water. It was obvious that sintered glass was not an ideal surface, and experiments have now been carried out which suggest that satisfactory films can be spread on filter-paper, using a microtome, in which the filter-paper is dropped into the hole of the microtome to an adjusted depth, the space filled with cream and wiped off with a straight-edge using the top surface of the microtome as a guide. A piece of apparatus on these lines is being made so that filter-papers of suitable size can be coated.

It was found that in order to get figures with any meaning at least six tests had to be made with each sample of cream, rejecting those figures which were violently different from the general run of the other determinations. In calculating the permeability figures an attempt was made to compensate for the variations in the actual amount of cream on the filter. In the absence of accurate data for the relationship between the permeability and the actual thickness of the film, it was assumed that the volume of liquid transmitted was inversely proportional to the weight of the cream per unit area of the filter. It was realized that this relationship was not a straight-line function, but was probably a function to some power of the thickness. Nevertheless, by multiplying the volume of liquid transmitted by the weight of the cream the figures for different films came closer together and did permit some general comparison to be made between the different creams, especially when it is borne in mind that the calculated values contain a not inappreciable error.

The difficulties in obtaining a uniform film have led to the carrying out of a large number of experiments which, in the long run, had to be rejected, but by using tinted paper and applying the cream in three portions a series of figures has been obtained showing the differences between a number of barrier creams, the data being given in Tables IV and V. The method of expressing the results was to take the arithmetic mean of the volume of water or liquid as determined by the reading on the graduated tube for a number of membranes coated with the same cream. The readings were taken at intervals of fifteen minutes, and the amount which penetrated in successive periods of fifteen minutes was divided by fifteen to bring it to the rate per minute; this value was then multiplied by the average weight of the film per standard area. The weight figure was used as an indication of the volume of the film and, although the specific gravity of the creams may vary slightly, no notice was taken of this variation except in the case of barrier cream No. 2, which contains no fillers and which has a specific gravity considerably less than that of the others. The figures of No. 2 are therefore calculated back as though the dried cream has a specific gravity of 1.6, which is approximately the specific gravity of the other creams when dried to a film.

It will be seen from Table IV that of the creams which are designed to resist the penetration of water No. 4 is the most efficient. Next comes No. 2. Nos. 6 and 7 are not satisfactory.

It is interesting to note that No. 3 cream shows a very low water permeability, although it is designed to prevent oil penetrating. The reason for this anomalous behaviour is that it contains hydrophilic colloids which imbibe water without, necessarily, allowing liquid water to pass through. It will be appreciated that this type of cream will give very low figures when used in the apparatus, although it is quite unsuitable:

TABLE IV.—Rate of Penetration of Water through Films of Barrier Creams

Cream	Ml. $\times 10^{-5}$ of Water Transmitted per Minute per Unit of Cream during					
	First 15 min.	Second 15 min.	Third 15 min.	Fourth 15 min.	Fifth 15 min.	Sixth 15 min.
No. 1	310	141	78	104	97	95
No. 2	104	81	79	73	71	56
No. 3	174	96	70	52	40	33
No. 4	200	115	48	34	30	15
No. 5	340	90	59	44	34	31
No. 6	970	770	670	410	334	261
No. 7	310	208	190	190	166	181
No. 8	274	173	142	115	104	81

a protection for the skin against water. Films composed of hydrophilic colloids such as gelatin, etc., will allow water to diffuse but will not easily transmit water in bulk. It is also worthy of note that cream No. 5, which gives such a low permeability to water, is the one which is advocated as protection against oils and non-aqueous materials, whereas cream No. 6, which is recommended as a water-repellent, appears to be the worst of the whole range. Cream No. 4 has only a medium resistance to water. It is probable that the poor results given by creams Nos. 5, 6, 7, and 8 are due to the large amount of soap which is their main constituent and there is no doubt that the film produced when the cream dries can readily be re-emulsified by the addition of water. It would appear that in formulating creams Nos. 1, 2, 3, and efforts have been made to produce an emulsion with the minimum amount of emulsifying agent so that the danger of the dried material being re-emulsified when coming into contact with water would be at a minimum.

In testing creams for their resistance to oil and solvents on white spirit has been used. Other solvents should, of course, be tried if the barrier action is to be assessed for any particular set of works conditions. Only those creams were tested which are claimed to be protectors against oils, and the experimental results are given in Table V.

TABLE V.—Rate of Penetration of White Spirit through Films of Barrier Creams

Cream	Ml. $\times 10^{-5}$ of Oil Transmitted per Minute per Unit of Cream during					
	First 15 min.	Second 15 min.	Third 15 min.	Fourth 15 min.	Fifth 15 min.	Sixth 15 min.
No. 3	194	108	68	62	57	60
No. 5	172	132	130	152	125	119
No. 7	178	120	120	101	89	72

With regard to the oil permeability, it will be seen that barrier cream No. 3 is superior to either of Nos. 5 and 7, and especially to No. 5.

Conclusions

The experimental work recorded above indicates that laboratory tests can be used in order to evaluate the quality of the different types of barrier cream which are on the market. In drawing this inference from the experimental work, however, we are aware that the *in vitro* testing cannot simulate, in all details, what actually happens when the barrier creams are applied to the skin and are subjected to the stresses imposed during manual work. At the same time, from the experience which has been gained by the use of some of these creams under actual working conditions, it can be stated that the laboratory tests have been well substantiated and those creams which failed under the laboratory conditions also failed when used in the factory.

It can be recommended, therefore, that medical officers, and those engaged in industrial welfare, can gain a very good indication of the value of the various preparations on the

arket before they go to the extent of introducing them to workers. It is to be borne in mind that it is not logical to y that because a particular preparation stood up to the boratory tests it must, *ipso facto*, be an excellent cream as a rrier against dermatitis-producing substances.

Summary

Means of testing the efficiency of barrier creams have been scribed of both a qualitative and a quantitative character. It s been shown that there are a number of simple tests which can e rough evaluations of the value of these preparations.

Where a more quantitative assessment is desired the apparatus d methods described in the paper are put forward as means ich enable the assessments to be made in a more precise manner. It is to be stressed, however, that the final arbiter of quality must t on the clinical testing of the creams.

AN AID TO THE MEASUREMENT OF VENOUS FILLING IN THE NECK IN CONGESTIVE HEART FAILURE

BY

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linicians a hundred years ago were aware that the jugular ins became engorged when the heart failed, but the henomenon attracted no special attention. It was left to ewis (1930), of our generation, to point out the practical alue of this sign in diagnosis. It is due to his wise insis- nce that inspection of neck veins now takes its place alongside adiac auscultation as a routine part of clinical examination.

Lewis indicated that a rough but adequate estimate of venous ressure (i.e., pressure within the right auricle) could be made by oting the vertical height of the blood column in the external igular veins above the "zero level" represented by the "angle f Ludwig." The angle does not, of course, correspond anatomically to the vena cava opening which lies behind the ight sternal border at the level of the third interspace, but is convenient for measurement and in practice suitable. Examination of a number of normal subjects confirms Lewis's tatement that venous filling extends to an average height of cm. below the horizontal plane of the angle when the subject s supine, but with increasing inclination of the trunk the zero evel approaches this plane. As patients with congestive failure ill seldom be examined in the recumbent position the error is ikely to be small and the vertical height of the blood column ove the angle can be taken as a true measure of the increased enous pressure.

Absolute measurements of venous blood pressure can be ade, but even the newest and neatest instrument, called by ts designers (Winsor and Burch, 1943) a "phlebomanometer," uffers the inevitable disadvantage that a needle has to be ntroduced into a vein. Measurement of intra-auricular pres- ure by cardiac catheterization will hardly be claimed as a edside manoeuvre even by the greatest enthusiast. The state of the neck veins therefore remains the clinician's principal guide to venous pressure.

It is the usual practice to measure increased venous filling with one horizontal and one vertical ruler; accurate measure- ments by this means, however, demand an unusually skilled eye, and experience shows that two persons attempting the same measurement seldom agree; the record of day-to-day readings in the same patient therefore loses much of its value. On the other hand, if comparable measurements can be made there is much to be learned from serial records, in particular as an index of the response of congestive failure to treatment. For example, in a case where digitalization is achieved by the intravenous route a record of venous pressure over a period of an hour may be most illuminating.

A simple measuring instrument (Fig. 1) which eliminates the personal errors inherent in the ruler method has been designed. It consists of a vertical pillar graduated in centimetres and millimetres, with a pointed rubber-covered base; sliding on the

pillar is a horizontal arm which by means of a rack-and-pinion can be raised or lowered on turning a wheel. The arm, which is accurately maintained at a right-angle to the pillar, bears upon its upper surface a small spirit-level.

To make a measurement (Fig. 2) one hand holds the instru- ment by the knob at the top of the column and the pointed base is placed upon the manubrio-sternal angle; the other hand, by rotating the wheel, raises or lowers the arm until its lower edge is aligned with the level of the top of the blood column in the vein, at the same time maintaining the bubble in the spirit-level at the central mark. The instrument is then lifted and the height of the arm read off the scale on the pillar; this neces- sarily represents the vertical height of the blood column above the sternal angle irrespective of the angle of inclination of the patient.

The actual measurement can be made single-handed in a few moments. There can, however, be no economizing on time spent in identifying the level of venous filling. Lewis himself advised that the neck should be examined in a "thoughtful manner." Experience confirms the soundness of this counsel. A measurement made after a cursory inspection is likely to be entirely false. The pitfalls which may ensnare the careless are many, but once recognized they can be by-passed and measure- ments made with confidence.

Without wishing to stress the difficulties unduly, it may be helpful to indicate briefly the common sources of error. The level to which the veins are filled may be obvious, but in a fat patient or where the veins in their upper course run deeply

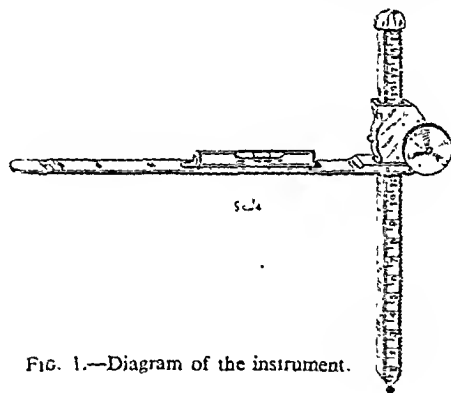


FIG. 1.—Diagram of the instrument.

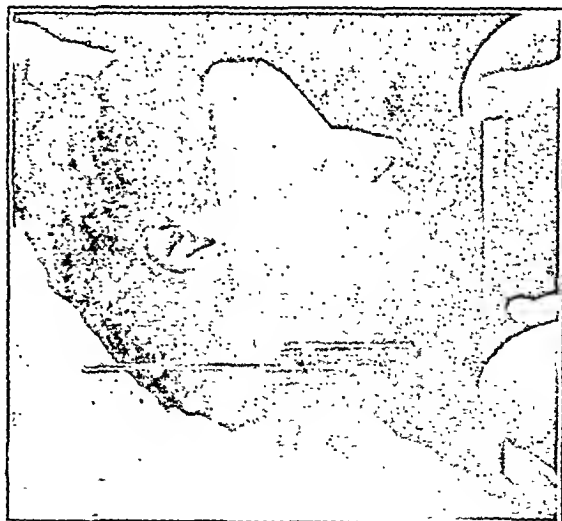


FIG. 2.—The instrument in use.

this is not the case. On the other hand, in a thin subject the veins may be easily visible throughout their course and some difficulty be experienced. Lewis advised that the vein should be obstructed at the base of the neck by light finger-pressure and the level noted to which the blood column fell on release.

This may be helpful, but in my experience the best clue is the level of venous pulsation at the top of the blood column. On close scrutiny this can usually be ascertained. For example, in a case with congestive failure the blood column may appear to end at the posterior border of the sterno-mastoid muscle owing to pressure of the bulging muscle-belly, whereas the level of venous filling is in fact higher, as indicated by the presence of venous pulsation. Individual veins may be full because they are obstructed by muscle pressure at the root of the neck; contracting platysma, on the other hand, will obliterate the vein. Both difficulties are quickly resolved by altering the position of the head and by proper relaxation of the neck. Permanent venous obstruction is most commonly due to thyroid enlargement and, less commonly, to lymph nodes, mediastinal tumours, thrombosis of the vein, etc. Obstructed veins do not pulsate, and show no variation with change in the patient's position; unequal filling of various veins examined is a clear indication of obstruction. Deformities of the thoracic skeleton, such as severe kypho-scoliosis with increased depth of chest, will cause inaccurate measurement if the patient is semi-recumbent; in more erect positions the error becomes progressively less.

With these possible difficulties in mind it is advisable, on the first occasion at least, to make the examination and measurement according to a set routine. The patient should recline upon an adjustable back-rest, with one vertically placed pillow supporting the head and shoulders. Oblique illumination is helpful, as shadows upon full veins and areas of venous pulsation facilitate their recognition.

The external jugular veins, being largely superficial in their course, are the easiest to observe, but where they are visible other veins, such as the anterior jugular, may be used to confirm the level of venous filling. The minimal level (i.e., in inspiration) should first be identified with the patient lying midway between the vertical and the horizontal. A measurement is taken and confirmed by examination of the veins on the other side; if there is a discrepancy a mistake has been made. After this, by adjusting the back-rest, the head and shoulders should first be raised and then lowered below the original position and further measurements made; these should all closely agree, and the average figure can then be accepted as the measure of venous pressure.

The instrument can be obtained from Messrs. Chas. F. Thackray, Ltd., Park Street, Leeds.

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Medical Memoranda

Kidney Tumours in a Child and her Grandmother

The occurrence of an embryonal tumour of the kidney in a child 2½ years old and of a hypernephroma in her grandmother, aged 67, must be rare enough to be worth recording.

CASE REPORT

The Child.—Jean X., aged 2½, was seen in January, 1944, giving a history of slight haematuria two months previously. Examination showed a tumour occupying the whole left side of the abdomen and reaching across the midline anteriorly and to within two finger-breadths of the pubis. A diagnosis of Wilms's tumour was made and a pre-operative course of deep x-ray therapy was started. A maximum tumour dose of 3,150 r in 22 days was given to the left abdomen (B.J.). The mass regressed to one-third of its original size, and nephrectomy was performed (Mr. C. C. Holman) on Feb. 22. The tumour measured 12×11×8 cm. Macroscopically normal kidney structure was seen at the upper pole of the mass, which contained large cystic areas. The pathological report (Dr. H. I. Coombs) on the specimen was as follows: "The histology has been profoundly changed by the radiation, but numbers of small tubules and structures containing invaginations of stroma suggesting primitive glomeruli can be seen. These are separated by dense fibrotic stroma, but scattered foci of more primitive 'mesenchymal' tissue characteristic of a Wilms's tumour are also present."

The child made an uneventful recovery, and a post-operative course of deep x rays to the abdomen and mediastinum followed, 1,700 r being administered in 21 days. Apart from whooping-cough in November, 1944, she was well until February, 1945, when

mediastinal metastases were shown on an x-ray film. These appeared with further x-ray treatment. The child's condition improved temporarily. She died on July 21, 1945, eighteen months from the beginning of treatment.

The Grandmother.—Jane X., aged 67, is the paternal grandmother of Jean. She was first seen in January, 1946, suffering from pro haematuria. She said she had had similar haematuria three and five years previously. Examination showed a large mass the right loin extending nearly to the midline anteriorly and below the level of the umbilicus. Nephrectomy was performed by one of us (A. R. B.) on Feb. 8, 1946. Convalescence was uneventful, and she left hospital on Feb. 26. The pathological report (Dr. R. M. Heggie) was: "Histologically the tumour subm presents the classical features of a hypernephroma showing characteristic large cells and delicate vascular stroma. The arrangement of the epithelium is of the solid type." When last seen, in July, there was no sign of recurrence and she was doing housework.

COMMENT

Without inferring any significance in the occurrence of relatively rare tumours in child and grandparent, one can help wondering whether Nicholson's assertion (see Stan Cade's *Malignant Disease and its Treatment by Radium*, 1 p. 910) that "Wilms's tumours . . . are malformed kidneys does not find substantiation in these cases. It seems also worth mentioning that but for the follow-up clinics held at this hospital and the National Radium Commission registration cards, coincidence would not have been found, as the most persistent history-taking in the case of the elder patient did not provide any information of kidney disease in the family.

We are indebted to Mr. C. C. Holman for permission to mention the case, and to Drs. H. I. Coombs and R. M. Heggie for the pathological report.

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A Case of Refractory Anaemia

Cases of pernicious anaemia which are refractory to parent liver therapy are occasionally encountered and have been classified by Davidson *et al.* (1943). A year after the introduction by Davis *et al.* (1943) of proteolysed liver for the oral treatment of megalocytic anaemias Davis and Davidson (1945) reported on its effectiveness in the treatment of refractory anaemias, particularly those with megaloblastic erythropoiesis. The following case illustrates how a typical Addisonian pernicious anaemia was treated successfully with oral proteolysed liver when it had failed to respond to parenteral liver extract.

CASE REPORT

A married woman aged 68 was first seen at the Nelson Hospital on April 24, 1945, having suffered from breathlessness, palpitation and swelling of the ankles for five months. On examination she showed the usual manifestations of severe anaemia, and her blood picture was typical of pernicious anaemia: haemoglobin, 40%; cells, 1,670,000 per c.mm.; colour index, 1.2; white cells, 5,000 per c.mm.; a blood film showed anisocytosis, megalocytosis, poikilocytosis. She was referred back to her own doctor, who gave her intramuscular injections of "hepatab" 2 ml. three times a week for six months and then every ten days until she returned a year later. Her condition improved at first but was followed by a gradual deterioration. The only blood count during this period (on May 19) showed no response to the liver.

She was seen again on May 16, 1946, having felt progressively worse since the previous Christmas, and was admitted three weeks later. On examination she presented the characteristic clinical picture of pernicious anaemia, with brown pigmentation, jaundiced smooth tongue, enlarged liver, and palpable spleen, and with congestive heart failure superadded. A full blood count on May 16 showed: red cells, 950,000 per c.mm.; haemoglobin, 25%; colour index, 1.3; reticulocytes, 3%; a blood film showed marked anisocytosis and poikilocytosis, with a few normoblasts, macrocytes and ghost cells.

Urine examination revealed no abnormal deposit or organisms. There was no free acid in the fasting gastric juice or after injection of histamine. Red cell fragility, normal. Van den Bergh reaction direct, negative; indirect, 4 mg. per 100 ml. The specimen obtained on sternal puncture was not rich in cellular material, but the primitive red cells were of megaloblastic type. Hippuric acid test: 3 excreted after two hours (normal, 50%). The fat content of dried faeces was normal. A barium meal followed by screening showed a normal stomach and duodenal cap. No occult blood present in the stools, and the Wassermann reaction was negative.

To check the potency of her previous liver injections the patient was given "anahaemin" 2 ml. intramuscularly on May 20, but there was no reticulocyte response. On May 24 the treatment was changed to one tablespoonful of proteolysed liver by mouth; marmite daily. Her clinical condition improved satisfactorily; she was discharged five weeks after the commencement of treatment. The evening temperature ranged between 100° and 102° F. (37° and 38.9° C.) during the first week after admission, 99° and 100° (37.2° and 37.8° C.) during the second week, and was normal at the third week. Her blood counts showed marked and rapid progress; after the first three weeks of treatment the haemoglobin

increased by 31%, and the red cells by 2,300,000 per c.mm. there was no apparent reticulocyte response. She was re-examined as an out-patient on July 3, when she felt well. The jaundice had vanished, the filiform papillae had appeared on her tongue, there were no signs of cardiac failure, the liver and spleen were no longer palpable. The result of latest blood count (July 22) was: haemoglobin, 80%; red cells, 10,000 per c.mm.

With thanks to Dr. A. J. Beard for permission to publish this case, and Dr. J. M. for the laboratory investigations.

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Chicken-pox Eruption Treated with Benzyl Benzoate

During the early part of this summer a fairly extensive outbreak of varicella occurred in this district. I had noticed during the latter part of my service in the R.A.M.C. that pruritic skin eruptions, of whatever nature, were very largely treated empirically with benzyl benzoate, and with considerable success, at any rate so far as the itching was concerned. Accordingly, remembering how unsuccessful the usual applications habitually proved, it was decided to use benzyl benzoate in the itching pustules in this epidemic, and 16 cases in all were treated with it. It is not too much to say that it acted as a charm, and by controlling the scratching may have done nothing to shorten the convalescence. While this is too small a series on which to base any firm conclusions, the results were striking enough to make it seem worth while recording them, in the hope that they will be confirmed by others who may give treatment a trial.

The method was as follows: A complete application of the emulsion was made to all the affected areas, except the hairy part of the scalp, on successive days. For the scalp lot. crinoline is used and found to be satisfactory. After treating three or four cases patients were warned that they must not expect relief from the irritation until anything up to 24 hours after the second application, and, by the same token, that the parent failure of the first application was no excuse for omitting the second. Relief occurred on the average in about 24 hours after the second application, and thereafter was complete. The first four cases were advised to continue the application to any fresh pustules or areas where there was still irritation; but it was quickly evident that two applications properly made were sufficient to complete the treatment. It was well recognized that many skins, particularly those of children and the fair-haired, are sensitive to benzyl benzoate. Luckily no complications occurred, and it is thought that experience may show that reaction to the drug is rare except where application has been constantly repeated. The following is a record of the most striking case in the series.

The patient was a male aged 46, who had the most extensive eruption I had ever seen, and was running a temperature up to 2.6° F. (39.2° C.). He was in great distress from the irritation, and very disappointed when he got no relief from the first application. However, he was persuaded to persevere, and the second application was given about 9.30 a.m. on the following day. By that evening he had complete relief, and was so delighted that nothing would stop him plastering himself with the emulsion from time to time, to prevent recurrence, as he thought. He had no further trouble and recovery was rapid.

A brief analysis of the cases is given in the following table.

Case	Sex	Age (years)	First Seen (days from onset)	No. of Applications	Relief of Irritation (hours from 2nd application)
1	F.	6	Day of onset	2+	About 12
2	M.	4	"	2+	" 24
3	M.	10	1	4	" 10
4	M.	8	1	3+	" 12
5	M.	46	1	4+	" 9
6	F.	7	Day of onset	2+	" 6
7	F.	12	2	2	12
8	M.	4	1	2	7
9	F.	4	1	2	6
10	F.	3	Day of onset	2	9
11	M.	13	3	2	10
12	F.	11	1	2	7
13	M.	7	2	2	8
14	F.	19	1	2	10
15	M.	3	Day of onset	2	6
16	M.	4	"	2	8

Bedale, Yorks.

J. H. BEILBY, M.B., B.Ch.

Reviews

PHYSIOLOGY OF FOOD AND NUTRITION

Food and Nutrition. By E. W. H. Cruickshank, M.D., D.Sc., Ph.D., M.R.C.P. (Pp. 326. 16s.) Edinburgh: E. and S. Livingstone Ltd. 1946.

This is a brief survey of the present state of our knowledge on the physiology of food and nutrition written for the general medical reader, although it is so clearly and simply written that the educated layman should have no difficulty whatever in following it. A number of historical anecdotes add to the interest of the book. A prominent feature is a discussion on the impact of the war on problems of national nutrition and a survey of the rationing system. There are chapters on the energy requirements of man, the basic foodstuffs, minerals, vitamins, the planning of diets, and the dehydration and preservation of foods. Each chapter is followed by a short list of references. The book is illustrated by a number of graphs and photographs, one or two of which are poorly reproduced. In the chapter on dental caries the impression is given that lack of vitamins A, D, and C is a contributory factor. There is no evidence that once the teeth are formed human dental caries results from a deficiency of these vitamins. However, this is only a minor criticism of an excellently planned, topical, and very readable book.

THE EMBRYONIC MIND

The Embryology of Behaviour. The Beginnings of the Human Mind. By Arnold Gesell, M.D., Ph.D., Sc.D., in collaboration with Catherine Amatruda, M.D. (Pp. 289; 391 illustrations. 21s.) London: Hamish Hamilton Ltd. 1946.

Dr. Arnold Gesell has extended his observations backwards, so to speak, and his latest book, written in collaboration with Dr. Catherine Amatruda, deals with *The Embryology of Behaviour*. It happened that the World's Fair hospital had a special unit for demonstrating the most modern methods for the care of prematurely born infants and here, during the summer of 1939 and 1940, a hundred babies were admitted (from various hospitals in New York City) with weights ranging from 800 to 2,100 grammes. Gesell's well-known methods of observation (and photographic recording) were adapted for these "foetal infants," as he calls them. His records, together with a study of what is known of the movements of foetuses and the work of such observers as Barcroft on particular problems, enable him to build up a fascinating picture of the development of behaviour, as orderly and documented in many respects as, for example, the story of the development of the heart. That there is a wide variation in the early stages, as in the later, is freely admitted, but a convincing pattern of what is termed in the book's subtitle "the beginnings of the human mind" really does emerge. Much that has been written of intrauterine psychology and even of early postnatal life is singularly unconvincing. This can never be said of Gesell's patient observations, and at a time when the whole field of embryology appears to be enjoying a renaissance it is fitting that this study of the embryonic mind should be included. Good appendices, selected bibliographies, and well-chosen illustrations make this an admirable monograph.

TREATMENT OF DIABETES

The Modern Treatment of Diabetes Mellitus. Including Practical Procedures and Precautionary Measures. By William S. Collins, M.D., and Louis C. Boas, M.D. (Pp. 514; illustrated. \$3.50 post paid.) Illinois: Charles C. Thomas. 1946.

This is a large, comprehensive book on nearly every aspect of diabetes, written by two New York doctors, little known in England as specialists in that subject. It is quite a new, fresh, and interesting production. Its main difference from other American standard textbooks is the profusion of the illustrations and charts, which include many good coloured pictures of clinical conditions, such as gangrene, peculiar to diabetes. In the introductory historical section—an unusual feature—there are portraits of the main innovators from Willis to Banting.

A large appendix on the detailed technique of urine and blood chemical estimations is unusual in a book for general practitioners, and a very detailed section on insulin syringes and injections includes nearly 30 illustrations. Perhaps most interesting is the full description of the Busher automatic injector whereby the timorous can "shoot" themselves with an insulin gun—a neat but time-consuming gadget. It is practically unknown in England but would be useful for many children.

A large chapter of 70 pages is devoted to diseases of the peripheral arteries and all pathological processes, and mechanical devices such as the "paevex" apparatus are described and illustrated in great detail. There is, however, little critical appraisal of their relative virtues and uses, which is not surprising in view of the widespread scepticism brought about by their failure to improve diabetic arteriopathy. There is no justification for including on p. 283 the night cramps of a juvenile diabetic as a form of "claudication."

Though a large part of the book is filled with these elaborations there is room for all the routines of diets, tests, insulin dosage, etc., to be thoroughly dealt with. But very often these vital matters are left on a vague and theoretical basis where the practitioner is likely to be lost. If, for instance, he looks in the index for the initial dose of insulin to give his patient, he is only told that, if the case is moderately severe, he should give 1 unit for every 7 grammes of available glucose in the diet, perhaps 20-30 units a day; and if it is a severe case, 1 unit for every 2 grammes available glucose, perhaps 100 units a day. This is not very practically helpful, and what is the poor doctor to do faced with the infrequent diabetic? It is well recognized that no one can predict the necessary dose of insulin, that it is a matter of trial and error, and simple rules are necessary for the beginning of treatment. But, minor criticisms apart, this is a book which every diabetician must read, otherwise he will miss much.

RHEUMATIC DISEASES

Symposium on Rheumatic Diseases. Medical Clinics of North America. New York Number. (Pp. 730; 115 illustrations. 75s.) London: W. B. Saunders Company, 1946.

This is the May number of the well-known *Medical Clinics of North America* which are issued by subscription six times a year. The foreword is written by Prof. Russell L. Cecil of Cornell University who points out that World War II has lent special significance to this disease group, which formed a major problem within the field of internal medicine. The American Army established three special hospitals for rheumatic diseases where unusual opportunity was presented for their study, and several of the papers in this volume are from these centres, of which the chief was the Army and Navy Hospital, Hot Springs, Arkansas.

Hench and Rosenberg contribute a long paper on recent advances in the treatment of rheumatic fever with special reference to sulphonamide prophylaxis and intravenous therapy. From their studies they conclude that the former constitutes a notable advance in the control of rheumatic fever, while vaccine prophylaxis is of uncertain value and is not to be recommended. They evaluate the methods of controlling airborne streptococcal infection and reiterate the value of conservative views on the employment of rest in this disease.

The problem of dosage in the administration of gold salts for rheumatoid arthritis is exhaustively discussed by Prof. Cecil, who confirms the wisdom of the modern tendency to reduce dosage and to spread it over a longer period. X-ray therapy is discussed in some detail by Dr. Richard Freyberg, and the recognition and management of gout by Dr. John Lansbury of Temple University. The scope of physical therapy in chronic arthritis is admirably reviewed by Dr. Kovacs, and the contribution which the orthopaedic surgeon can make in this field is set out in succinct and interesting fashion by Prof. Irvin Balesweig of Cornell. Among other matters dealt with are the cholesterol content of urine in arthritis, toxic hepatitis during gold-salt therapy, Still's disease, menopausal arthritis, and the susceptibility of the host in rheumatic fever.

The format of this volume is uniform with others in the series; they are easy to read, and provide an up-to-date summary of their subjects so far as the United States is concerned. A certain number of references to British work will, however, be found in the bibliographies which follow each chapter.

Notes on Books

Motor Disorders in Nervous Diseases, by Drs. ERNST HERZ and TRACY J. PUTNAM, is published in New York by the King's Cro Press. This small book is really an illustrated guide to the examination of the motor signs of disease of the central nervous system. The authors have carefully omitted everything else, as it is primarily meant for use with a series of cinematograph films of disorders of movement which they have made. Most of the 250 illustrations are stills from these films, and some of them are serial strips taken from them. Although they are technically excellent they are poor substitutes for direct observation of a patient, or even for a moving picture itself. Paralysis agitans loses everything in a photograph, the trigeminal nerve is a poor thing without its sensory roots, and an account of the examination of motor functions alone makes an unsatisfactory approach to neurology. As a descriptive syllabus to the set of films, for which it was intended, the book is no doubt admirable, but, except in so far as it presents aspects of neurology already available in comprehensive textbooks, it does little to supplement clinical teaching at the bedside. Copies can be had from the Oxford University Press, London, at 20s.

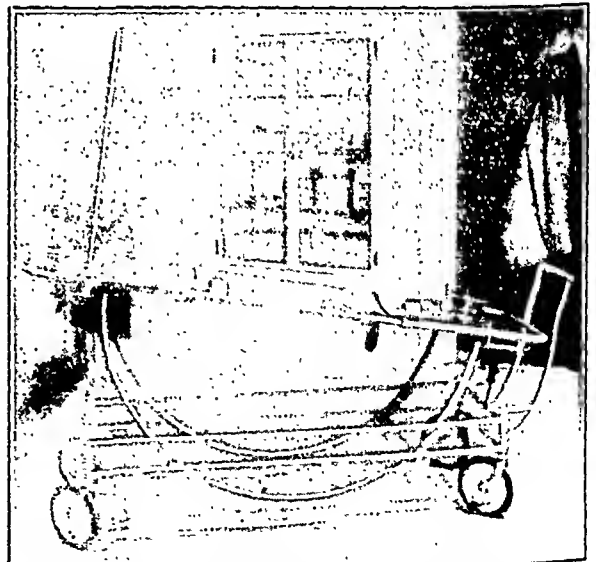
Road Accidents and Alcohol, being the Rae Memorial Lecture, 1946, by Dr. WILLIAM M. FAIRLIE, has been published with addenda as a 6d. pamphlet by the National Temperance League, 33, Bedford Place, W.C.1. The lecturer was divisional surgeon to the Metropolitan Police for 23 years, and the gist of his well-presented argument will be found in two sentences on p. 12: "The question arises what amount of alcohol, if any, is it safe for the motor driver to take? There can be but one answer to this—NONE."

Preparations and Appliances

TIP-UP HOSPITAL TROLLEY

Dr. C. E. D. H. GOODHART writes from St. Helier Court Hospital, Carshalton, Surrey:

There are many occasions when a theatre trolley which can be made to tip is of the greatest value. The trolley shown in the accompanying photograph was designed in conjunction with Mr. Selleck, our engineer, to whom our grateful thanks are due. It was made in the hospital's workshops of 1 in. conduit and tinned sheet steel. It embodies the following features.



The weight of the patient causes the trolley to bed down on rubber cushions, from which it is released by depressing a foot pedal, when tilts of up to 30° in either direction can be obtained. To prevent the patient sliding off, two leather straps and adjustable shoulder-pieces are provided. The latter when not in use are locked away under the trolley. Finally, a movable rod with a hook has been added, from which a bottle containing blood, etc., can be suspended.

I wish to thank Dr. Miller, our pathologist, for his kindness in taking the photograph.

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HEALTH SERVICE IN RHODESIA

Southern Rhodesia is the latest British colony to contemplate a National Health Service. It is not much more than fifty years since the first British doctors entered the Mashonaland plateau, accompanying the pioneer column of the British South Africa Company, and established the first hospital at Salisbury. Now the colony is seeking a service, based somewhat on the model foreshadowed by British legislation, with Minister of Health, National Health Board, Regional Health Councils, Area Health Committees, and the rest of them. In the young and expanding country south of the Zambesi health services have "just grow'd." The State, there as elsewhere, has come into the picture to fill the gaps when these obtruded themselves. Much excellent work has been done for the Africans by Christian missions. For the Europeans, and indeed for the Africans too, other voluntary work has had a different derivation—namely, the State lotteries, which have subsidized bilharzia research, built a hospital for nervous diseases at Bulawayo, established an orthopaedic service, and organized blood transfusion. The State has furnished free curative services for the obviously needy, especially, of course, the African population, and for Europeans it has maintained Government medical officers in areas which could not support a private practitioner. The State runs nearly all the hospitals in Southern Rhodesia, and, with very minor exceptions, all the maternity homes.

The difficulty is the inadequacy of medical service for the African population. For every European there are about 20 Africans, and, while the curative services for the Europeans may be adequate, those for the Africans are fantastically deficient. Even in twenty years' time, when, under the long-term proposals now being put forward, there will be a European full-time Government medical officer in every native district, assisted by one or more fully qualified African doctors, there will still be only one medical man to perhaps 20,000 Africans. In some districts at present there is one doctor to 50,000 or 100,000 potential patients—an impossible situation even if the population were mainly healthy. Domiciliary treatment for Africans is practically non-existent, and even out-patient treatment at hospitals is largely provided by orderlies who sort out the cases for the visiting doctor. Thousands of sick Africans never see a doctor at all.

A Government Commission, under the chairmanship of Prof. C. F. M. Saint, has been inquiring into the provision of an organized National Health Service in conformity with the modern conception of "health," and has submitted its report (a summary of which appeared in our

Supplement of Oct. 26) to the Legislative Assembly of Southern Rhodesia. The first principle it lays down is that the State must accept responsibility for the health of the African. This being accepted, it seems difficult to exclude the remaining 5% of the population. Whatever the financial arrangements of the service, the cost must be borne mainly by the better-to-do, and to leave these persons out of benefit would mean that they paid twice, once in the form of taxation, and again for such service as they might personally need. Again, if these people were left out of the scheme it would be immediately branded as an inferior service. For the African population there can be no economic alternative to a full State salaried service. For the European population the position is different, largely because they have been imbued with the principle of free choice of doctor (though in fact outside the big towns that is largely illusory) and the importance of the doctor-patient relationship. The Commission therefore proposes that curative services be divided into two parts. Surgical and medical treatment in hospitals, and consultant, maternity, x-ray, and laboratory services, will be provided free to everyone by means of a full-time salaried staff, but general practitioner and dentistry services for non-Africans will be left to private practice. They will be paid for by the individual himself up to a certain prescribed maximum each year. The scheme is that a man will pay for his medical services up to 2% on the first £500 of his income, at a slightly higher rate on the second £500, and so on, so that a person with just under £1,000 a year will have to pay £20 for medical services for himself and his family before his personal responsibility ceases and the cost of any further service is met from State funds. The individual will be relieved of excessive costs falling in any one year, and the general practitioner, paid on a fee-for-service basis, will derive part of his income from the patient and part from the State. This plan will make it necessary for the Government to ordain uniform charges for medical services, and there is an implication that if these charges are pitched too high the arguments in favour of a whole-time salaried general practitioner service will be strengthened. Meanwhile to obtain the increased number of Government medical officers who will be necessary the Commission recommends a higher salary scale, which it is thought will attract as many as the colony can afford.

It will be interesting to learn what is the reaction of the Rhodesian general practitioner to these proposals. On the one hand, he will have fewer bad debts and less expense and delay in debt collection, and he may expect some increase of practice, because people will not be deterred to the same extent from coming to the doctor by the possibility of incurring heavy costs. He will also, if another recommendation goes through, have access in certain places to central consulting rooms and equipment. On the other hand, he stands to lose his midwifery practice and the practice he may have been accustomed to carry out at the local hospital. Apparently the question of the general practitioner's following his cases into hospital is a sore one. General practitioners, it is said, have invaded Government hospitals with their private cases, which have been nursed under their orders by Government nurses and

physicked on their prescriptions from Government stocks, and the patient has paid the normal fee to the private doctor and has made only a sub-economic payment to the Government. All that is going to be stopped if the report of the Commission is adopted. The same applies to maternity homes, where cases will be attended by salaried obstetricians. Two members of the Commission of five stood out for the opening of maternity homes to general practitioners, but the majority went the other way. If a patient wants the services of a private practitioner in hospital or maternity home the full economic rates will have to be paid.

Like many good things—and bad things, too—in the British Empire and outside it, the proposals are a compromise. They will please neither the advocates of a full State service nor those who favour unrestricted private practice. They extend the scope of the State, but leave a wide area to non-State agencies. They reduce the burden of medical expenditure falling upon the individual, but they leave him to bear an appreciable part of it. In the field of administration they provide for public participation in health affairs, but executive control in most respects would be left in the hands of the Government. They create regional authorities, but allow the municipalities to continue most of their existing functions. Their finance is planned on generous lines and yet with due recognition of the limited resources of the colony. One line of compromise which does not appear to be mentioned in the report, though it has many examples in the British system, is the part-time employment of private practitioners by local authorities. But the differences in conditions of medical practice between Great Britain and Southern Rhodesia must be borne in mind. To mention one difference only, the system whereby our voluntary hospitals are staffed by physicians and surgeons who give their services without payment, and in return gain experience and prestige which enables them to command a wide practice and high fees, is quite out of the question in the Rhodesian scene.

RUBELLA AND CONGENITAL ABNORMALITIES

The considerable number of reports showing an association between rubella during pregnancy and the subsequent birth of a child with a congenital abnormality leave little room for doubt that such an association exists.¹ The practical and theoretical implications have been fully discussed by Ida Mann, N. McA. Gregg, Swan, and Scholes at a symposium held by the Ophthalmological Society of Australia.² Two questions still remain, however: how frequently does the association exist, and in what proportion of all children thus defective is rubella the cause? Conte, McCammon, and Christie³ have endeavoured to answer such questions by reviewing their hospital records for all cases diagnosed as congenital heart disease, congenital cataracts, deaf mutism, microphthalmia, aniridia, hydrocephalus, and mongolism during the period 1939–44. The survey dis-

closed a total of 120 such cases, and the mothers of them were approached by means of a written question. Sixty-one parents replied—not, perhaps, a very satisfactory proportion—and of these five gave a history of rubella during the pregnancy. In the first (one of twins) the mother had contracted rubella in the seventh month, but in the other the times of occurrence were 2 weeks, 6 weeks, 2 months and 3 months. There were four examples of congenital cataract, four of congenital heart disease, three of cerebral aplasia, and one of mongolism; all had more than one abnormality. To show that the association was more than casual the “rubella case rate” of 4.2% (assuming that mothers who did not reply did not have rubella) was compared with a rate of 0.4%—the author’s estimate from morbidity statistics of the “rate of measles in the female population of the child-bearing age group.” The large disparity between the two figures is additive evidence in support of an association. (The first rate is based upon “actual” mothers, whereas the second is based upon “potential” mothers, so one might conjecture an even greater disparity.) Fox and Bortin⁴ have tackled the same question in a different fashion. During 1942–4, out of a total of 22,226 cases notified as rubella there were 152 where the patient was a married woman. Of 152 of the women who had been followed up 11 were found to have had the disease during a pregnancy—in five before the second month, in four before the fourth month, and in each in the seventh and ninth month. Only one of the mothers, who had rubella during the first month, later gave birth prematurely to a hydrocephalic stillbirth; otherwise all the other children were normal. One interesting case brought to light in the investigation was of a mother who, eight years previously, gave birth to a child with bilateral congenital cataract after a normal pregnancy. On the present occasion when rubella occurred the child was normal.

Such figures permit broad answers to the two questions posed: first, that rubella during the early months of pregnancy has something less than a 10% chance of damaging the foetus; and secondly, that of all such congenital abnormalities in children some 5–10% may have their origin in damage by virus during intrauterine life. One would naturally expect that these results might be capable of extension to other viral infectious diseases; but in a survey of 92 cases of antepartum infection traced by Conte and his colleagues³ only three were examples of virus diseases (rubella, chicken-pox, and mumps), and in none was there any congenital abnormality in the child. As it happened, two out of the three occurred late in pregnancy. Swan reported one case presumed due to mumps and another to influenza, and Rones⁵ has recorded one where the maternal disease was morbilli.

Such work should result in a complete re-examination of the aetiology of congenital defects. The range of the inquiry may well be wide, for about two-thirds of the cases thus far recorded have also been mentally defective. Earlier investigations all seemed to point to the conclusion that extrinsic factors played little part in initiating congenital

¹ *British Medical Journal*, 1945, 1, 635.

² *Trans. Ophthalm. Soc. Austral.*, 1944, 4, 115–145.

³ *Amer. J. Dis. Child.*, 1945, 70, 301.

⁴ *J. Amer. med. Ass.*, 1946, 130, 568.

⁵ *Med. J. Austral.*, 1943, 2, 201.

⁶ *Med. Ann. Dist. Columb.*, 1944, 13, 285.

fects, and that the condition of the germ-plasm at the time of fertilization was the over-riding consideration.⁷ Indeed, in view of the very natural desire on the parent's part to want to blame some environmental factor rather than to admit some apparently inherited imperfection, it seems strange that the effect of a maternal infection escaped notice as a traditional cause. Guerry,⁸ it is true, commenting on a further two cases with congenital glaucoma, alleges that there is "an old-wives' tale well known among the laity to the effect that if a mother has German measles while pregnant it will settle in the baby's eyes." But such superstition seems to have been so deeply buried that it has become quite forgotten. It is, however, abundantly clear that rubella itself does not provide the entire explanation. One is tempted to conjecture that many other intrinsic factors should be included in the range of inquiry and that the recent suggestion that Rh incompatibility may be a cause of mental deficiency⁹ further extends the list of possible exciting environmental factors.

PLEBISCITE SECRET

Everyone who returns the Plebiscite form will sign his or her name on it. A correspondent asks whether these signatures will be confidential, and whether there would be any risk that the Minister or Ministry of Health would have access to the names of those who write "No" on the form. I feel," he writes, "the need for an assurance that the voting will be either in fact secret or if not that any papers, records of names, votes, etc., will be absolutely destroyed immediately after the count, and revealed by no one to anyone." It is possible that other doctors may also have some lurking fear of the consequences that may follow their decision to write either "Yes" or "No" on the plebiscite form. We would therefore assure any who remain in doubt that the voters' names will be kept secret and will not be revealed to any Government Department. When the issue has been settled the Plebiscite forms will be destroyed. It is necessary that the Plebiscite form should be signed, as in university voting, as a safeguard against the risk of duplicate returns.

That the question has been asked in all seriousness is an illustration of the distrust of the Ministry of Health that prevails in the profession and of the fears that medical men have of a service controlled by the Ministry. This distrust is deep-rooted and the result of the profession's experience with the Ministry of Health since 1919. The present Minister cannot be said to have gone out of his way to remove the grounds of this distrust. His attitude of mind was revealed in the cheap jibe about senior members of the profession which he made when recently addressing the British Medical Students Association. If he is to secure that co-operation from the profession which he knows is essential he will have to show himself more appreciative of the wishes and fears of the medical profession than he has been so far. If the majority of the profession say "No" on their Plebiscite forms then the Minister will have no one else but himself to thank for such a refusal to operate the new Health Service Act, because this is what the answer "No" will mean. If the majority say "Yes" the Minister may be assured that very many of those saying "Yes" will be saying it with some reluctance. This "Yes" may become converted into a "No" to the

question, "Do you want to enter the Service?" which may be put to the profession shortly before the appointed day and when the full details of the Service as expressed in Regulations and Orders are known. Once again we urge all doctors to vote and to return their Plebiscite forms.

GALVANISM FOR DENERVATED VOLUNTARY MUSCLES

The influence of electrical stimulation in the treatment of lower motor neurone lesions has been closely studied by Prof. Seddon and his co-workers, in the Department of Orthopaedic Surgery at the University of Oxford. The importance of rest, relative rather than absolute, is dealt with by Mr. Norman Capener in the opening pages of this issue. It is well known that muscle atrophy begins very soon after denervation and that associated with it is fibrosis of the affected muscles. Gutmann and Guttman have shown by animal experiments that galvanism can prevent wasting after denervation provided it is applied soon.¹ Although it is impossible to prevent the atrophy that occurs in the first few weeks after denervation, the muscle fibres remain large and interstitial fibrosis is reduced to a minimum in treated muscle. Furthermore, if re-innervation takes place the maximum functional recovery ensues. If on the other hand the denervated muscles receive no treatment the individual fibres shrink rapidly, fibrosis occurs to a much greater extent than it does in treated muscle, and even after re-innervation the functional recovery may be bad.

Since animal experiments proved to be so promising a clinical assessment of the effects of galvanism on denervated muscle was made by Jackson² working at Oxford. Volumetric measurements of the hand were made, with industrial alcohol, on patients suffering from peripheral nerve lesions. These cases were divided into groups according to the type of lesion and the time which had elapsed between the receipt of the injury and the initiation of treatment. Ninety stimuli, at the rate of thirty per minute, were given with each treatment for six days a week in the treated cases. These were compared with a similar series which received no galvanism. The observations were limited to the period of complete paralysis.

It appears from these investigations that in the first four hundred days a steady loss in volume occurs in untreated muscles, whereas in those receiving galvanic treatment wasting is almost completely prevented except during the first hundred-day period. Moreover there is some evidence to show that even during those hundred days galvanism tends to minimize wasting. It can therefore be concluded that the course of wasting as it occurs in human muscle resembles that found in experimental animals, and that the sooner treatment is started after the receipt of the lesion the better. Electromyographic observations have shown that the delay between the appearance of motor units in a muscle and the first flicker of voluntary contraction was less in those cases in which galvanic stimulation had been carried out.

Stimulation should be started as soon as possible after denervation even if this involves cutting windows in plaster casts to gain access to areas where it can be applied. Galvanic stimuli should be administered ninety times daily at the rate of thirty per minute, with an interval of one minute between each group of thirty stimuli to permit recovery from any possible muscle fatigue; and this treatment should be applied at least six days a week. For smaller muscles such as those of the hand the value of such measures is not in doubt; where large muscle masses such

⁷ Murphy, D. P., *Congenital Malformations*, Univ. of Penn. Press, 1940, Philadelphia.

⁸ *Amer. J. Ophthalm.*, 1946, 29, 190.

⁹ *British Medical Journal*, 1945, 2, 188.

¹ *Lancet*, 1942, 1, 169.

² *British Medical Journal*, 1945, 2, 485.

³ *Brain*, 1945, 68, 300.

as those of the thigh are involved tolerable doses of galvanism may affect only the more superficial fibres, and this form of therapy will not be so effective.

CANCER CONTROL IN THE U.S.A.

The plan for an accelerated cancer-control programme is provided in a report on cancer facilities and services issued by the U.S. Public Health Service of the Federal Security Agency. Prepared by a committee of the National Advisory Cancer Council, the report contains specific recommendations concerning medical education and control programmes for the disease which to-day ranks second as a cause of death in the U.S. The special committee was appointed in November, 1944, by Dr. Thomas Parran, Surgeon-General of the U.S. Public Health Service, in anticipation of a post-war increase in cancer control activities. The report deals in turn with medical education in cancer, basic elements of a cancer programme, and basic information for use in studying and planning State-cancer-control activities.

The committee recommends more comprehensive and better integrated courses in cancer at medical schools; an increase in the number of centres prepared to give post-graduate training in cancer; and the continuation and expansion of the various kinds of cancer-education activities for practising physicians that have been conducted in a number of communities. It further recommends that the National Cancer Institute should aid in the development of a few cancer centres strategically located geographically, in association with one or more medical centres, and available to any patient regardless of ability to pay. It suggests that such centres would serve as guides in developing plans that could be applied anywhere in the country to give cancer patients the best that medical science has to offer in the way of diagnosis and treatment. Expansion of the research work of the National Cancer Institute is advised, including the training of research fellows and grants to aid research in other institutions. Also recommended is assistance from the Institute to State health departments and other agencies in developing programmes which will provide a State with an adequate cancer service. The report describes the basic elements of such a service as statistical research to determine the extent of the cancer problem; educational activities for doctors, dentists, nurses, and the general public; medical facilities and services, including cancer prevention or detection clinics, tissue diagnostic services, diagnostic and treatment clinics (one for approximately 50,000 population), an adequate number of hospital beds, and facilities for the care of the advanced cancer patient either in his own home or in an appropriate institution. Close co-operation is urged between the National Cancer Institute and voluntary agencies in the development of cancer-control activities. It is further recommended that if present legislation does not give the National Cancer Institute the authority to carry out the committee's recommendations additional legislation and necessary appropriations should be sought.

PERICORONARY NEURECTOMY FOR CORONARY DISEASE

In his Harveian Oration, published elsewhere in this *Journal*, Sir Maurice Cassidy draws attention to the increasing prevalence of coronary disease. In America there has been a similar increase, and the surgery of coronary disease with angina has been the subject of much experimental work.

Sensory disturbances, vasomotor reactions, and mechanical interference with the coronary blood flow all play a part

in coronary disease. Surgical operations have not so far been designed to attack all these abnormal conditions and for this reason have often proved disappointing. Fauteux¹ has recently pointed out that arteriosclerotic disease of the coronary arteries is similar to that of the extremities and has therefore suggested that surgical methods used in the treatment of peripheral vascular disease could be applied to coronary disease.

In cases of senile gangrene ligation of the popliteal vein has proved of value, and in 1937 Gross, Blum, and Silverman² reported experiments showing that occlusion of the dog's coronary sinus increased the blood supply and reduced the incidence of infarction following ligation of a coronary artery.

Since 1939 Fauteux has ligated the great coronary vein in 9 cases of angina pectoris, all with a history of coronary thrombosis. One death followed operation, and one other patient has since died. Of the 7 survivors 3 are alive after five years, and 4 are alive four years after operation. All these patients are at work and enjoying life. Fauteux considers that the coronary venous ligation affects the natural development of a collateral circulation and improves both the nutrition of the heart and its functional capacity. The coronary nervous system is not modified by the ligation, and he feels that a logical extension of the operation should include an interruption of the nerves to and from the coronary vessels. This could be done by what Fauteux calls "pericoronary neurectomy," destroying the nerve branches reaching or leaving the left and right coronary arteries, since these branches are localized behind the pulmonary artery as well as in the nerve plexus over the ascending aorta. Experimental work on dogs seems to show favourable results, and the operation has been performed on one man. This patient, aged 45, had had a coronary thrombosis following attacks of angina. He made a good recovery after operation and up to six months later had been relieved of all anginal pains and had resumed work.

This paper is no more than a preliminary account of pericoronary neurectomy and the work on which it is based. It is clearly not possible to draw any conclusions from it, but the report of further experiences and of a longer follow-up will be awaited with interest.

BARRIER CREAMS

Dermatitis is a national problem, and for some time it has been one of the principal causes of disablement from industrial disease. Any scientific attempt to initiate new, or to improve old, methods for its prevention must receive careful consideration.

Barrier creams have been hailed as the answer to the problem of industrial dermatitis, and they are of value provided that they are well chosen and as well used. But an article in this issue on "The Evaluation of Barrier Creams" (p. 769) may serve to temper enthusiasm with a caution as to the need for ascertaining whether such creams can physically or chemically fulfil the claims that are made for them.

The application of special preparations intended to act as a barrier between the irritants of industry and the worker's skin originated as the result of personal observations by the workmen who long ago used such substances as mutton fat, Fuller's earth, china clay, or soap. It seems unlikely that the primary objective was the prevention of skin affections. More probably the practice arose and grew on account of the relative ease with which the signs of toil, and perhaps staining of the skin, were removed after

¹ *Amer. Heart J.*, 1946, 31, 260.
² *J. exp. Med.*, 1937, 65, 91.

ork was over. This is still one of the main qualities of barrier preparations; and in view of the number of creams which failed to gain a credit or even a pass on the evaluation standards of Sadler and Marriott it is salutary to remember this and to recall that provided it is non-irritating to the skin even an imperfect barrier which is used will be of more value than untouched perfection in the pot.

Recently, in the Patent Fuel Manufacture (Health and Welfare) Special Regulations of 1946, "barriers" were given statutory status by the requirement of the provision "a suitable cream or similar protective substance for the skin." Every works medical officer knows that it is one thing to provide a cream and quite another to ensure its use, and where the provision is voluntary there is nothing but persuasion. This will be undertaken with more conviction if it has been shown that the protective cream provided has the requisite chemical and physical qualities for the task. As Sadler and Marriott point out, the ultimate evaluation must be the measure of success attained in actual practice, and they suggest that this should follow preliminary weeding out of unsuitable preparations by retention tests, many of which could be carried out in a works laboratory or a factory medical department. Even with this scientific approach success in the prevention of occupational dermatitis is doubtful unless the full armour of protective measures is overhauled and reassembled. These measures are well known, and perhaps the most fundamental of them is to prevent, or reduce to a minimum, contact of the skin with the irritant, both by works procedure and by effective removal of irritants from the skin by washing. Medical supervision and nursing services will detect where the cloak of protection is defective. It must be admitted that the whole range of protective measures is of a deceptive simplicity, but nothing short of the concerted effort of management and workers in the daily carrying out of these measures is likely to bring success.

Barrier creams need evaluation not only of their physical and chemical properties but also in relation to other precautionary measures directed towards the prevention of dermatitis. The majority of the barrier preparations in use in industry are of proprietary manufacture, and discussion of the relative merits of named brands is therefore edged with legal hazards. This position may be clarified, however, now that the Pharmaceutical Society of Great Britain has undertaken, at the instigation of the Advisory Panel on Dermatitis in Industry set up by the Minister of Labour, to consider the determination of formulae for barrier preparations suitable for inclusion in the *British Pharmaceutical Codex*. The results of this work are awaited with growing interest.

MALNUTRITION IN FRENCH CHILDREN

A shortage of food supplies in the United Kingdom during the war was not allowed to affect the health of our school-children. Magee¹ has reported that as a result of an enlightened food policy for the whole nation and special allowances of milk and other food in the schools our children actually grew more rapidly and had better teeth than before the war. In other countries, however, where the food shortage was more serious or where rationing schemes were less well planned and conducted the children were not so fortunate. In countries such as Holland, Poland, and Greece they felt at one time or another the sharpest pangs of starvation. In France the situation was less severe, but ample evidence has been gathered showing that suboptimal nutrition caused a reduced rate of growth and an increased incidence of disease.

Dr. Harold C. Stuart,² of Boston, U.S.A., had excellent opportunities for studying the effect of malnutrition on the children in unoccupied France in connexion with his activities from 1942 onwards on behalf of the American Red Cross. He found that children in Marseilles were inferior to children of the same age in Iowa in weight, height, and length and development of their bones as measured by skiagraphy. This was in agreement with earlier statements by Youmans³ that the average food intakes of children in this town were 22% below estimated requirements for their age. In a later publication, however, Stuart⁴ concluded that the causes of the small stature found in about 50% of the French children must have existed before the war. He was unable to decide whether the factors mainly concerned were nutritional or congenital, but deficiencies in calories, animal protein, and vitamin D were suspected.

A recent paper by Dr. Laporte,⁵ also of Boston, is therefore interesting in showing that the dietary limitations imposed by the war had a direct effect on the growth of school-children in Paris. The records of 2,595 children equally proportioned between the sexes were surveyed, and means for the various ages were calculated for the years 1938 and 1944. For boys an average deficit in weight of 6 lb. (2.7 kg.) was found in 1944 as compared with 1938, while for girls the average difference was 3.5 lb. (1.57 kg.). In height the greatest difference for boys was 3.1 in. (7.9 cm.) at the age of 11 years, and for girls 1.5 in. (3.8 cm.) at 7 and 12 years. In support of Stuart's conclusion, however, the average heights for French children, both boys and girls, were less than those of American children even in 1938.

As a minor criticism of Dr. Laporte's studies it may be remarked that the differences in both weights and heights between 1938 and 1944 sometimes varied in a very inconsistent manner. Thus the difference in weight for boys at 6 years was 7.3 lb. (3.3 kg.), at 7 years 0.6 lb. (0.27 kg.), and at 8 years 4.1 lb. (1.8 kg.). Even the large number of subjects examined, therefore, admittedly not equally assorted in regard to age, did not produce the smooth curves which might have been expected in such a study; but these small flaws must not unduly detract from the weight of the evidence as a whole. In view of both stunting of growth and the increased incidence of active tuberculosis during the war years, which is also mentioned by Dr. Laporte, it is obviously desirable that France should strive to put her children's diet on a more adequate basis.

THE ADDISON LECTURE

A former student of Guy's Hospital has given a sum of money to establish what is to be called the Addison Lecture, the first of which will be given in the Physiology Theatre, Guy's Hospital Medical School, on Monday, Dec. 2, by Prof. E. C. Dodds, under the title of "Stories of Endocrine Research." The objects of the Lecture are to commemorate the work of Thomas Addison in endocrinology and to continue in this way the intimate connexion between Addison, Guy's, and one of the growing fields of medicine.

We regret to announce the death at the age of 79 of Dr. J. Shaw Bolton, the eminent psychiatrist, who was for 23 years medical superintendent and director of the West Riding Mental Hospital, Wakefield, and professor of mental diseases in the University of Leeds.

¹ *J. Pediatr.*, 1944, 25, 257.

² *Trans. Stud. Coll. Phys., Philad.*, 1941, 9, 144.

³ *Amer. J. pub. Hlth.*, 1945, 35, 299.

⁴ *Amer. J. Dis. Child.*, 1946, 71, 244.

⁵ *British Medical Journal*, 1946, 1, 475.

CORONARY DISEASE

PASSAGES FROM THE HARVEIAN ORATION*

BY

Sir MAURICE CASSIDY, K.C.V.O., C.B., M.D., F.R.C.P.

For many years I have been especially interested in cardiology, and I have been impressed, like many others, by the increasing prevalence of coronary disease. Even during so short a period as the last twenty years this increasing prevalence seems to be beyond question. In the year 1926, 64,465 persons died in this country of all forms of heart disease. Ten years later this number was almost doubled—126,584, to be exact. The figures for coronary disease are even more startling—1,880 died in 1926, 14,095 in 1936, and 19,496 in 1939. The crude death rate from all causes per 1,000 persons living fell from 22 in the decade 1851-60 to 12 in 1930, and has subsequently remained almost stationary at about that figure. The similar crude death rate from heart disease, and especially from coronary disease, has risen in a spectacular fashion during this period, and particularly during the last twenty years. In the case of coronary disease the figures increase rapidly year by year—48 per million living in 1926, 148 in 1930, 473 in 1939.

Part of this rapidly increasing death rate from coronary disease is no doubt attributable to the increasing age of the population. In 1900 there were 1,750,000 persons over 65 years of age in Great Britain; in 1937 there were over 3,750,000. It is true that the standardized death rate, corrected for ageing, for policy-holders of the Metropolitan Life Insurance Company of New York shows a 70% decline for diseases of heart, arteries, and kidneys in the years 1940-5, as compared with 1911-15. But this astonishing decline in mortality is for ages 1 to 74. When the figures for the different age groups are examined it is clear that the improved mortality affects chiefly persons up to the age of 25, and is no doubt attributable, in part at least, to more efficient treatment of the acute infections which are largely responsible for cardiovascular and renal deaths in this lower age group. Between the ages 35 and 64 the standardized mortality among men shows little or no decline in the past two decades, and there is in fact an increased mortality now as compared with the level reached in the early nineteen-twenties.

The crude death rates in America, without correction for increasing age of population, have increased as they have done in this country: thirty-five years ago cardiovascular diseases accounted for less than one-quarter of all deaths; now they account for nearly a half.

The Increase in Coronary Mortality

Part of this mounting coronary mortality has been ascribed by some to increasing accuracy of certification. But I cannot believe that this can play a very important part. The position here is very different from that in bronchial carcinoma, for example, where accurate diagnosis is largely dependent on refinements of investigation such as are afforded by bronchoscopy and radiography. Angina pectoris is one of the easiest of all diseases to recognize. Its clinical features have been well known to every doctor since Heberden recounted them before this College in 1768. In most cases electrocardiographic and radiographic investigations are superfluous diagnostic aids.

Certainly the clinical recognition of coronary thrombosis has till recently been hidden from us. Though first well described clinically by Herrick in 1912, its diagnosis did not become widespread in America till about 1920. Curiously enough, it was not until 1925 that McNee brought to the notice of physicians in this country the clinical picture of coronary thrombosis as first described by the American cardiologists, and the rapid increase in the certification of deaths from coronary thrombosis since that date must be partly attributable to this. Even so, I have the impression that coronary thrombosis is far more prevalent than it was. Looking through my notes of patients seen twenty or thirty years ago, I come across occasional cases where I failed to recognize the coronary thrombosis which now, on paper, is the obvious diagnosis. But such cases are

surprisingly infrequent. It is interesting to read Mackenzie's notes of Case 112, one of the 160 case records in his book on angina pectoris (1923). He describes this as "one of the most puzzling cases I have met." It is now evident to us that this patient suffered from at least two attacks of coronary infarction the second associated with pericardial friction, and that six months later the consequent myocardial degeneration brought on three attacks of acute pulmonary oedema, the last fatal.

It is odd, too, that coronary thrombosis figures so infrequently in the post-mortem reports of thirty years ago, despite the fact that the very astute morbid anatomists of those days were fully alive to the existence of this condition.

Consider, too, the clinical experience of great physicians of the past. In his book on angina pectoris James Mackenzie states that "380 patients consulted me for angina pectoris." Osler in his *Lumleian Lectures* (1910) says: "It is a disease for seniors to discuss, since juniors see it but rarely; indeed I had reached the Fellowship before I saw a case in hospital or in private practice. During ten years I did not see a case at the Montreal General Hospital and only one case at the University Hospital, Philadelphia. . . . A consultant in active practice may see 10, 15, or more cases in the course of a year and this is about the figure reached in this country by a consultant with recognized cardiovascular leanings." He goes on to say that he has now seen 268 cases, which included 42 "of the mild neurotic or pseudo form." Contrast these figures with those of the modern cardiologist, who counts his coronary patients by thousands rather than by hundreds, and remember that there was but one James Mackenzie, and one William Osler, whereas the modern cardiologist's name is legion. During the ten years 1898 to 1908 Sir Richard Douglas Powell saw 96 cases of angina, 26 of which he classified as vasomotor angina. Surely Osler, Mackenzie, and Douglas Powell were at least as competent to diagnose angina pectoris as are physicians of this generation!

Increasing Prevalence of Coronary Disease

What is the explanation of the increasing prevalence of coronary disease? In an attempt—and I confess at once a vain one—to find some answer to this question, I have analysed the notes of 1,000 cases of coronary disease, including both coronary occlusion and angina pectoris, seen in consulting practice. I have notes of approximately another 1,000 cases which I have not analysed. I was careful to include only those cases where I was reasonably certain that coronary disease was present. And here may I put in a plea for the abandonment of such terms as angina minor, angina innocens, and, worst of all, pseudo-angina? Either the patient has angina or he has not. If he has, we believe that some portion of his myocardium is ischaemic, usually as a result of coronary atherosclerosis with or without a coronary thrombosis or a subintimal haematoma. Syphilis is a rare cause of true anginal pain, and embolism a rarer cause still. A severe anaemia may play a part probably in association with some degree of coronary atherosclerosis, for I have never seen a severe anaemia cause angina in a young subject, though this happens quite commonly in the more elderly. Alastair Hunter, however, has described 12 cases of anaemic angina, of whom ten were women and five were aged 40 or less, the youngest being 31, which certainly suggests that anaemia alone may cause anginal pain.

Anginal pain is sometimes a symptom of rheumatic heart disease, but I have not included such cases in my series because in my experience they do not conform to the clinical picture of the atherosclerotic type, though we know that rheumatic infection may produce somewhat similar coronary changes. I have never seen a coronary occlusion complicate rheumatic heart disease, nor do I feel that anginal pain in a young rheumatic subject has the same serious significance as in the atherosclerotic patient.

We can conceive of the possibility of spasm of a healthy coronary artery producing a localized myocardial ischaemia with consequent coronary pain; but we have no proof that this does in fact ever happen, though we may suspect that an unstable vasomotor control may play a part in the clinical picture of the patient, familiar to us all, who suffers, perhaps for years, from anginal paroxysms of great severity provoked by trivial physical effort, and especially by emotion. Physi-

* Delivered before the Royal College of Physicians of London on Luke's Day, 1946.

examination may be surprisingly negative, and consequently these patients are often regarded as cardiac neuropaths till at last the diagnosis of organic coronary disease becomes only too clear, perhaps as a result of the sudden and unexpected death of the patient.

Some years ago I used to diagnose "vasomotor angina" not infrequently in patients who complained of anginal pain of typical distribution, this pain being provoked by effort, but especially by emotion, without physical signs of organic cardiovascular disease and with a normal electrocardiogram. Sometimes there was evidence of vasomotor instability, such as easy flushing, or Raynaud-like phenomena, or a history of migraine. But increasing experience has convinced me that sooner or later these patients present undoubted evidence of organic coronary disease. If the same amount of effort constantly provokes substernal pain or even discomfort, however slight, and if this discomfort disappears promptly with rest, I think we may assume with confidence some degree of coronary obstruction, however negative the findings may be.

As for that large heterogeneous group of so-called "false angina," we can only speculate as to the explanation of their pain, feeling assured that it is not of coronary origin. Many of them are suffering from a cardiac anxiety state. There is an interesting, and sometimes a diagnostically difficult, group of patients, usually women, who suffer from severe paroxysms of precordial, usually not sternal, pain, which may radiate into the arms, back, or jaws. These paroxysms may be provoked by emotion, or there may be no obvious exciting cause. They come after rather than during effort, and they are usually widely spaced, with periods of robust health without limitation of physical effort between them. The subjects of these attacks, though sometimes temperamental, are often quite stable psychologically. Their symptoms are very real and severe, and may indeed be quite alarming. Possibly these paroxysms may be due to spasm of the oesophagus or the cardiac sphincter. X-ray confirmation of this is obviously difficult to obtain, though I understand that William Evans has made some interesting kymographic observations on this class of case. Diagnosis is made more difficult here by the fact that nitroglycerin gives relief; but perhaps it does so by relaxing gastric or oesophageal and not coronary spasm.

I submit that in the differential diagnosis between true angina and these non-coronary pains careful history-taking is even more important than physical, including instrumental, examination, and that the characteristic and constant relationship between anginal pain and effort is fundamental.

Personal Statistics

Turning now to my own statistics, out of 1,000 cases 779 were males and 221 females, giving a female/male ratio of 1:3.5, which seems to be about the usual ratio found in the literature, though in a recent report from the Mayo Clinic on 3,440 anginal patients the female/male ratio was 1:4.3. This far heavier incidence of angina in males than in females has never, so far as I know, received a satisfactory explanation. In the past no doubt women led a more sheltered life. But certainly to-day no one would contend that men work four times as hard as women; in fact, some might argue that the reverse is true. I have not been able to satisfy myself that the incidence of angina in women has increased of recent years as compared with that in males. If smoking plays an important part in the causation of coronary disease, which I doubt, we should certainly expect a more equal sex incidence during the next ten years or so.

Nor is there any satisfactory explanation of the unquestionably heavier incidence of coronary disease in the non-hospital as opposed to the hospital population.

As to age incidence, my figures are much the same as those of the Mayo Clinic:

	Under 30	30-40	40-50	50-60	60-70	70-80	80--
Females ..	0	1.3%	11.7%	29%	39%	15%	4%
Males ..	0.25%	3.2%	14.6%	33.9%	36%	11.1%	1%

Approximately 70% of all these patients were aged between 50 and 70 at the onset: 58% of women and 48% of men were

over 60 at onset, which confirms the general impression that coronary disease tends to become manifest at a later age in women than in men. In 26 males the age at onset was under 40, in 2 under 30, the youngest being 26. There were only 3 women under 40 and none under 30.

It has become evident that coronary disease in young subjects is not so rare as used to be thought. During the recent war French and Dock have reported 80 cases of coronary disease in American soldiers aged 20 to 36, and Newman 50 cases of coronary occlusion occurring in Service men and women in this country aged 35 or less: 22 of Newman's patients were under 30, the youngest aged 20. At necropsy atheromatous changes were found, in several instances accompanied by extensive calcification. Stolkind reported four personal cases of angina in children, and collected a further 25 cases from the literature. Many of these cases occurred in rheumatic children, and in some the evidence of angina was not very convincing.

Aetiological Factors

Family history plays a notorious part in the aetiology of cardiovascular disease, and it did so in almost exactly half my cases. But this leaves another 50% of patients whose coronary disease cannot be attributed to inheritance.

Stress, mental or physical, is often thought to be responsible for early cardiovascular death, and coronary disease has been brought into the ever-increasing ambit of psychosomatic disease. But do people really work harder or live more strenuous lives than their grandfathers did? I sometimes doubt it. Certainly we eat and drink much less than they did. I have looked carefully through the histories of my patients, and in only 20% of them do I find evidence of subjection to outstanding stresses. Many of them in fact seem to have lived remarkably placid and sheltered lives. Dr. Paul White of Boston, on a recent visit to this country, told us that in the first edition of his book *Diseases of the Heart* a sentence emphasizing the relationship between angina and stress was in italics, in the second edition in ordinary print, and in the third deleted! Nor am I familiar with the "coronary disease personality," as described, at some length, by Arlow.

Tobacco has long been thought to be a factor in the causation of arterial spasm, and there seems to be convincing experimental evidence of this. Numerous workers have demonstrated that the smoking of two cigarettes usually lowers the peripheral skin temperature, diminishes the peripheral blood flow, and raises the systolic, and still more the diastolic, blood pressure. It is said that these changes may occur not only during the smoking of the cigarettes but sometimes for as long as 30 minutes subsequently. This is depressing information to the smoker, but he will be encouraged to hear from Goetz that very similar results are obtained if the subject is alarmed, or asked to do a difficult sum, or even to take a series of deep breaths. Goetz concludes that the driving of a car in traffic would produce more adverse circulatory effects than the smoking of several cigarettes in an armchair at the club!

I always advise sufferers from intermittent claudication to stop smoking, usually without any amelioration of their symptoms. But very occasionally the results are dramatic, and I have seen relapse occur if smoking is resumed. So far as so-called "tobacco angina" is concerned, I have never encountered such a condition, and certainly I have never seen angina cured by stopping smoking. Statistically 17.6% of my coronary patients were non-smokers, 42.6% smoked moderately—i.e., not more than 20 cigarettes a day—39.8% were heavy smokers. As a control I investigated the smoking habits of a small series of non-cardiac cases, and found much the same figures.

Coronary disease persisted for more than twenty years in 11 of my patients, for more than thirty years in 2 of them. The record duration was fifty-two years, in the case of a lady who had her first attack of angina at the age of 30; she was leading quite a busy life at the age of 80, though still liable to angina whenever she walked. She died suddenly at the age of 82.

It has long been known that quite extensive coronary disease is compatible with an active life, and need not necessarily be associated with angina. In fact, this used to be put forward as an argument against the view that angina is due to coronary ischaemia. Coronary occlusion often antedates angina. It did so in 225—i.e., 22.5%—of my cases. Yet before coronary

occlusion can occur there must almost always be coronary disease. Moreover, a remarkably complete functional recovery is possible after a coronary occlusion. One of my patients played vigorous games after a coronary occlusion at the age of 39. He had a second attack at the age of 48, and, against advice, was playing tennis regularly two years later, without any angina. Now at the age of 58 he is at work, plays golf, and mows his lawn without cardiac symptoms.

It is quite common for coronary disease to be entirely latent till sudden death occurs. Prof. Hume of Newcastle tells me that since 1911 he has performed or attended post-mortem examinations on 160 miners who had died suddenly and unexpectedly in the pit or in close proximity to it. The cause of death in each instance was coronary atheroma, and the majority of the men had been working regularly, without complaint, up to the moment of their fatal collapse. Only 40 had premonitory symptoms. In one case there was a clear history of an attack of coronary thrombosis two years previously, after which he had resumed his normal work in the mine and continued it till his sudden death. In approximately 50% of the 160 cases there were old fibrotic scars in the heart muscle.

The explanation of coronary disease without symptoms is presumably that a wonderfully efficient collateral circulation may be formed if arterial obstruction develops sufficiently slowly. As Lowe and Wartman point out, "complete obstruction may, gradually produced, effect no disturbance whatever in the blood supply to the tissue. On the other hand, should the parent vessel supplying the anastomotic circulation become suddenly blocked, the area deprived of blood supply will be much greater than that following blockage of a similar vessel in a normal circulation." Hence, presumably, the sudden fatal attacks in Hume's coal-miners with previously symptomless fibrotic hearts. In this way, too, we find an explanation for the fact that, on the whole, angina in those over 70 runs a more benign course than it does in those under 60.

Relation between Hypertension and Coronary Disease

Investigating this relationship, I classified my cases as having a normal blood pressure where the readings were below 160/100, moderate hypertension those above these figures but below 200/120, gross hypertension where these last figures were exceeded. Throughout the entire series, in 44.6% the pressure was normal, in 33.7% moderately increased, and in 21.7% grossly increased. Excluding those cases in which an existing or recent coronary occlusion was thought to be responsible for a low blood pressure, the figures were: normal tension 30.6%, moderate hypertension 42.3%, gross hypertension 27.1%. So that nearly 70% of my anginal patients without coincident or recent coronary occlusion were hypertensives. These findings surprised me, for I had not realized that the proportion of hypertensives was so high. In a recent paper Fisher and Zukerman say that in the literature hypertension antedating coronary occlusion has varied between 33 and 73%. Of their own 108 cases of coronary occlusion, hypertension antedated the occlusion in 65% of the women and 39% of the men. They point out that though negroes are more prone to hypertension than whites, they show a significantly lower incidence of coronary disease. Nevertheless, one cannot help suspecting that there may be some aetiological factor in common between hypertension and coronary disease. But, unhappily, in spite of all the intensive investigation of hypertension during the last decade, fruitful though it has been, we are still abysmally ignorant of its aetiology: in the words of Harvey, "All we know is infinitely less than all that still remains unknown."

The London County Council allows the staff of its public health and social welfare departments to have free medical treatment at its general hospitals, but not at its mental hospitals. The reason for this restriction is the long-term nature of institutional care associated with mental illness. It is considered, however, that this does not apply to many types of nervous disorder which are in particular dealt with at the Maudsley Hospital, and therefore free treatment is now to be provided there, subject to review in individual cases, as at the general hospitals, when recovery is not affected in twelve months.

DEFICIENCY NEUROPATHIES OBSERVED IN MADRID DURING THE CIVIL WAR (1936-9)*

BY

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Among the 3,116 patients suffering from deficiency diseases studied at the Institute of Nutritional Hygiene in Madrid during the Spanish Civil War we selected 98 cases with serious nervous disorders, as we were greatly impressed with their not showing the slightest signs of any skin symptoms connected with pellagra.

"Painful-feet" Syndrome

The most frequent symptoms in these cases were typical acro-paesthesias occurring mostly in the toes, but also appearing in many cases in the finger tips (patients complained "pins and needles"; "as though I had ants under my nails"). Generally, together with these acro-paesthesias there appeared some much more alarming phenomena—patients complaining of "terrible prickings" and "horrible stabbing pains" in the hands and feet or in other parts of the limbs (calves, thighs and forearms). Sometimes after the appearance of these symptoms or coincidentally there arose what, owing to its close resemblance to the causalgia described by Weir Mitchell, Morchouse, and Keen in wounds of the peripheral nerves, have called *causalgic symptoms*. Some of the more intelligent or self-observing patients began to notice that their feet became peculiarly sensitive to heat and unable to bear it, soon as their feet were placed near a stove they began to complain of "pains, and a very troublesome feeling of discomfort." I found that when night came, and especially when in bed, the feet, which during the day had mostly been "insensible, cold as ice," began to feel "very hot like fire." They go on to feel as though their feet were on hot coals, and to experience an atrocious sensation of burning which obliged them to move their feet out of the bed and let the cool air of the room to them, to walk barefoot on the floor, or to wrap their feet in cloths wrung out of cold water. At the height of their illness the patients presented a special sensitiveness of the skin of affected parts, so that in addition they could not bear the slightest touch on them. But patients also complained of acute sensation of cold in the extremities often alternating with these causalgic sensations ("my feet and legs are cold," "my feet are like ice"). Often this sensation of cold became painful, and they spoke of "cold pains inside the feet." Some described the succession of these phenomena very graphically ("I feel as you do when you put your hands into snow; first I feel very cold about the feet, and then they become warmer and warmer, until I can't bear the heat of them any more, and they burn me").

Other Symptoms

These signs of "painful feet" were predominant, but all of the following, discussed in greater detail by Peraita and Grande (1941), were observed in this series: adynamia, depression, lacrimation, insomnia, forgetfulness, reduced acuity of special senses, perianal erythema, hair and nail loss, girdle sensations, amenorrhoea, impotence, polyuria, changes in mucous membranes and in the motor functions of the gastro-intestinal tract, micturition, and sweat regulation. It was interesting to contrast the rarity of peripheral motor defects and cardiac and skin lesions with the frequency of both cutaneous and proprioceptive sensory changes. Little classical pellagra was observed but no beriberi, and while neither purified vitamin B nor nicotinic acid was effectively curative of the nervous lesions success was obtained with 90 g. dry yeast daily by mouth.

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* Abridged for publication.

HOSPITAL SURVEY

NEWCASTLE AND THE NORTH-EAST

he latest volume of the Hospital Survey of England and Wales* covers the north-eastern counties, Northumberland, Durham, and part of North Riding—an area roughly coterminous with the influence of the Newcastle School of Medicine. The surveyors were Sir Hugh Lett, now President of the British Medical Association, and Dr. A. E. Quine, of the Ministry of Health.

These Surveyors consider that the area forms a natural medical province, and propose its division into five districts based on Newcastle, Sunderland, Middlesbrough, Darlington, and Durham, in each of which districts there could be a full range of hospital facilities, with the possible exception of a very few highly specialized subjects, all the hospitals in each district forming a combined service. They are of the opinion that the Hartlepoons should combine for hospital purposes with Sunderland or Middlesbrough, and that Gateshead, Tynemouth, and South Shields should come in with Newcastle.

A dearth of consultants is noticed in this hospital region, particularly in obstetrics and gynaecology, paediatrics, dermatology, nervous diseases, and psychiatry. In medicine, outside Newcastle, there are only two physicians whose practice is purely consultative—one in Sunderland and the other in Middlesbrough. The financial aspect calls for consideration, for there is not enough private practice in the area to support a large addition to the number. The Surveyors suggest that all recognized consultants engaged in the future hospital service should be offered payment on a part-time or whole-time basis.

Medical Centre at Newcastle

Newcastle has a first-class teaching hospital in the Royal Victoria Infirmary, the centre of medicine in the north-east, and with the prospect of close association with special hospitals in the city and the development of large special departments in the municipal general hospital Newcastle should take an even higher place as a medical centre than in the past. The proposed construction of a Hospitals Centre at Newcastle, which would include the infirmary and six special hospitals on one site, is regarded as a plan worthy of all encouragement. These hospitals together would provide about 900 beds, but to make them as they stand would result in an ill-balanced aggregate. The Surveyors consider that it would be better to forecast a Hospitals Centre of 1,250 beds, with provision for immediate extension by 250 if this seems advisable when the buildings are nearing completion. This would provide for a large number of acute sick from the Newcastle district and at the same time would be adequate to meet the needs of the medical school and of a consultative centre.

Other Parts of the Region

In the Darlington district there is a single hospital—the Darlington Memorial—modern and well built, which could be developed as a district hospital. In the other three centres—Sunderland, Middlesbrough, and Durham—it is recommended that certain hospitals should join together and by close co-ordination of their work form a united district hospital of at least 600 beds (except Durham, which could hardly sustain that number), staffed by consultants whose work could not be confined to in-patients but should include regular attendance in the out-patient department, charge of beds at associated hospitals, and visits to cottage hospitals.

At Sunderland a united general hospital of 800 beds is recommended, to be provided by the reconstruction of the Royal Infirmary, by additions to the children's hospital, and by the enlargement of the Monkwearmouth. The municipal hospital, already partly modernized, should proceed with its plan of reconstruction and enlargement, with such modifications as may be made after discussion with the United Voluntary General

Hospital. At Middlesbrough it is not thought that any of the existing hospitals are suitable for the extension and enlargement required to give the necessary services of a large general hospital for the district, and it is recommended that a new hospital be built to replace North Ormesby Hospital and the North Riding Infirmary. At Durham, as an interim measure, every effort should be made to secure Dryburn E.H.S. hutted hospital, and this and the Durham county hospital should form one complete general hospital for the district. As a long-term policy one general hospital should be established in the Hartlepoons, with 350 to 400 beds for the acute sick, and a chronic sick section in addition. It should replace the Cameron, Howbeck, and Hartlepoons hospitals, which in the meantime should pool their resources to form one hospital service with three branches.

Intermediate and Cottage Hospitals

The Surveyors urge that hospitals intermediate in size between district and cottage hospitals, such as the Victoria Jubilee Infirmary at Tynemouth, Ingham Infirmary at South Shields, and the Stockton and Thornaby Hospital, and possibly some of the municipal hospitals, should be in close association with the district hospitals, with the placing of their beds and out-patient departments in charge of consultants drawn from the district hospital's staff. Cottage hospitals, in the Surveyors' view, serve a useful purpose, and in this area the great majority are equal to the demands made upon them. The objections to the performance of operations in these hospitals cannot be very strongly sustained if the operating theatre is well equipped, the nursing good, and the accessory services satisfactory, and if skilled assistance is within easy reach in the event of emergencies. But the primary function of these hospitals should be to provide accommodation for patients who can receive efficient treatment from general practitioners.

Taking the area in general, the number of beds for the chronic sick is adequate, though there are difficulties in some rural areas. It is recommended that consultants from the district hospitals should pay regular visits to the chronic sick wards or hospitals.

"The mass of clinical material that these patients provide offers a wide field for clinical research which, if cultivated, would produce a greater knowledge of the diseases of old age and a better understanding of certain other diseases, especially in their later stages, and so lead to further advances in the treatment of all who may be affected by them."

Accident and Orthopaedic Services

The Surveyors call for an extension of the fracture clinic organizations to cover all injuries. This means raising the status of the accident service of the hospitals by making it a department with a visiting surgeon in charge. First-aid work is reported as excellent, but it is suggested that the first-aid station or team at the factory or pit should be an outpost of the hospital and in close touch with it so that the first-aid may be in conformity with the principles practised at the hospital. A hospital with an accident department should also have a rehabilitation department. The view is taken that the treatment of injuries from the survey area is over-centralized at the Royal Victoria Infirmary, Newcastle, where, so far as teaching is concerned, 50 or 60 beds for fractures and orthopaedic cases would be enough. The Surveyors recommend that two general hospitals, one at Durham and the other in the neighbourhood of Bedlington or Ashington (Northumberland), should treat in their accident departments injuries occurring locally which are at present sent to Newcastle. The accident services of Victoria Jubilee Infirmary, Tynemouth, and Queen Elizabeth Hospital, Gateshead, will no doubt be developed. It is also recommended that the five towns of South Shields, Sunderland, the Hartlepoons, Middlesbrough, and Darlington should each have an accident department, and that in each of the three counties there should be an orthopaedic scheme in which the hospitals and local authorities would combine.

Further sanatorium accommodation will be needed in the area in the near future, and a closer association between the tuberculosis service and the general hospitals is urged.

"Extreme specialization in tuberculosis and its detachment from other diseases of the chest and from general medicine is not without

* Ministry of Health. *Hospital Survey. The Hospital Services of the North-eastern Area*. London: H.M. Stationery Office, 1946. 1s. net.

its dangers. The separation of this prevalent disease from other branches of medicine has become so pronounced that general physicians now have relatively little opportunity of studying it and its treatment, and the time has come when the position should be reviewed."

As for infectious diseases hospitals, the Surveyors recommend as a long-term policy the provision of a few large institutions, each serving a wide area. The smaller hospitals should gradually go out of use. On maternity accommodation the two Surveyors take rather different views. One of them considers that provision might be made in town areas for 40 to 50% of expected births (15-19 beds per 1,000 births), and the other that planning should be on a more generous scale, providing for 60% of expected births, with antenatal beds in the proportion of one to three lying-in beds (30 beds per 1,000 births). They agree that in each hospital district there should be a principal maternity unit with antenatal and postnatal clinics. Maternity homes in the smaller towns and villages, where the atmosphere is homely rather than institutional, meet a definite need, and more of them should be provided.

DELAY IN SUPPLY OF SPECTACLES

The Faculty of Ophthalmologists recently appointed a sub-committee, upon which the manufacturing opticians were represented, to investigate the causes of the delay in the supply of spectacles. The meeting proved informative and useful and the results of its deliberations were considered by the Council of the Faculty on Oct. 11. It is anticipated that in twelve months' time the accumulation of orders which is the cause of the present delay will have been dealt with and deliveries will be back nearly to normal, but it was agreed to publish six suggestions for the consideration of prescribing surgeons and opticians in the meantime. The Council of the Faculty considers that the carrying out of these suggestions would result in an immediate amelioration of the situation and submit them with confidence. The suggestions put forward are as follows:

- 1 Except in cases of genuine medical urgency, avoid priority orders.
- 2 Unless there are good reasons for the contrary, avoid prescribing 1/8 powers, and 1/4 powers over 4D.
- 3 In the lower ranges, covering the "stock powers," prescribe the lenses, except in the case of bifocals, which are more easily obtained in toric form.
- 4 Avoid ordering tinted lenses wherever possible. When ordered, give alternative tints.
- 5 Where possible, indicate on the prescription that a variation of 1/4D up or down is permissible. It is suggested that this should be done by the sign " ± 0.25 " on the prescription.
- 6 Avoid prescribing prisms unless really necessary. All prescriptions including a prism, other than those that can be dispensed by decentration, demand special grinding.

WELFARE OF OLD PEOPLE

During the present century public conscience has been more and more concerned with the living conditions of its old people, a fact which is largely due to the pioneering work of the voluntary social service organizations. With the passing of the National Insurance Act and the promise to reform the Poor Law, much of this work has rightly been transferred to the statutory authorities. But a great deal remains in the voluntary field.

Work of the Voluntary Agencies

In 1943 the London Council of Social Service, realizing that the hardships of war fell heavily on the old people, who despite their amazing fortitude were the least able to put up with them, set up a committee to deal with evacuation problems, home help schemes (before these were introduced by local authorities), special meals services, and a country rest home. During the flying bomb period, when old people were not among the official categories that could be evacuated to billets, a group of voluntary organizations was formed which was able to get large numbers away from the Metropolis.

To-day there are 28 local Old People's Welfare Committees in the London area, their work being co-ordinated by the London Council of Social Service, whose advisory services are always at their disposal. Periodical meetings are arranged for pooling information and recommending common action. The London Council has taken steps to bring together the associations which run resident hostels for the aged. Consultations of this kind are a useful stimulus and help to maintain standards.

Another part of the London Council's work is research. Investigations are just being completed into special housing facilities: old people, the provision of "home helps," and old people's clubs. The results of this research will be made available to both statutory and voluntary bodies concerned with the welfare of old people in Greater London. Not only do they constitute a most useful survey, but also are a means of pooling information and ideas; they reveal a vast amount of voluntary effort on behalf of old people—and by the old folk themselves. There are, for example, in the London area alone over 100 old people's clubs, with a total membership of about 10,000. Their chief object is to provide social activities (from table games to summer outings, or "window boxes to craft work), thus counteracting loneliness, the most distressing feature of old age. Many incorporate welfare services in addition. Old People's Welfare Committees arrange friendly visits to old people in their homes—the simplest and most warmly welcomed form of service. They undertake shopping for old people who find "lining up" too much for them. They arrange special meal services, either in centres where a cheap meal can be bought in pleasant surroundings, or by a mobile canteen service for invalids. They operate clubs and residential hostels.

The London Council of Social Service, which is the principal co-ordinating organization for voluntary bodies in London, has its counterpart elsewhere in the regional offices of the National Council of Social Service, does not regard this work as of emergency character. It is "long term" and necessary to fill the gaps which invariably exist in statutory provision. The Council considers that a crucial test of the quality of a civilization is the way in which it treats its old people, and with the rapidly increasing number of old people in this country it regards this as one of the most important of its many social service activities. Its office is at Bayley Street, Bedford Square, W.C.1.

VICTOR HORSLEY MEMORIAL LECTURE

The Victor Horsley Memorial Fund, which was raised in 1919 to commemorate the services of Sir Victor Horsley to Science and the Empire, is devoted to the giving of a lecture triennially in London entitled the "Victor Horsley Memorial Lecture." The invitation of the Trustees (the Presidents for the time being of the Royal Society, the Royal College of Surgeons of England and the British Medical Association, the senior physician of the National Hospital for the Paralyzed and Epileptic, Queen Square, the senior surgeon of University College Hospital, and Mr. Stanley Robinson, son-in-law of Sir Victor Horsley) the seventh lecture will be delivered by Dr. F. M. R. Walshe, F.R.C.P., F.R.S., physician to the National Hospital, and physician-in-charge, Neurological Department, University College Hospital, in the Lecture Theatre, National Hospital, Queen Square, W.C., on Wednesday, Nov. 27, at 5 p.m. The title of the lecture is "The Contribution of Clinical Study to the Physiology of the Cerebral Motor Cortex," and the chair will be taken by Sir Alfred Webb-Johnson, Bt., P.R.C. Admission to the lecture is free on presentation of visiting card.

The midge in Scotland may not be a carrier of infection but its biting propensities make it a serious source of irritation both to the Scottish people and to many tourists. With this in mind the Secretary of State for Scotland in 1944 asked his Scientific Advisory Committee, whose chairman is Sir Alexander McGregor, to advise whether there were suitable repellents which could be used against midges, and whether there were safe methods of destroying them in their breeding grounds. A subcommittee, with Prof. F. A. E. Croft as chairman, was set up and the services of Dr. Ewen Cameron were secured for controlling the field work. In the first place, a matter of urgency, an empirical investigation into repellents was undertaken in the summer of 1945. An interim report, *Control of Midges* (Edinburgh: H. M. Stationery Office, 2d.) gives an account of the work of the subcommittee, which was able to produce and recommend a formula for a midge repellent, which was made public in good time for the midge season of 1946. The preparation found most effective was dimethyl phthalate (D.M.P.), the repellent used against the mosquito during the war. Tests were also carried out with home-made veils constructed from stout, wide-meshed hospital gauze. When impregnated with D.M.P. they gave complete protection so long as the midge attack lasted; but unimpregnated veils gave no protection whatever.

Reports of Societies

WARTIME RESEARCH IN TROPICAL DISEASES

The annual meeting of the Research Defence Society was held on Oct. 23, Prof. A. V. HILL presiding, when the fifteenth Stephen Paget memorial lecture was delivered by Prof. HAMILTON FAIRLEY on "Wartime Research in Malaria and other Tropical Diseases of Military Significance."

He said that while many of the advances in knowledge of chemotherapeutic control of tropical diseases and chemical control of insect vectors had been obtained from experiments on human volunteers, the fundamental work which placed the new agents at the disposal of medicine was initially made possible only by large-scale animal experiments. New antimalaria drugs had to be tested in the first instance on birds infected with different species of bird malaria, and the toxicity of insecticides such as D.D.T. and dimethyl phthalate on animals. During the early campaigns against the Japanese in 1942-3 casualties from sickness were from five to thirty times as common as battle casualties; malaria and dysentery were as serious a menace as the enemy.

Chemotherapeutic Control of Malaria

Before the war the knowledge of the protection afforded by regular small doses of antimalaria drugs to individuals not previously infected with malaria (non-immunes) was inadequate. Quinine had been extensively used as a suppressant in the first world war, with results which, though useful, were far from satisfactory. In 1943 at a medical research unit at Cairns, Northern Queensland, 850 healthy volunteers were experimentally infected with sporozoite-induced malaria. During the three years of the investigation the drugs studied included quinine, plasmoquine, sulphadiazine, atebtrin (mepacrine), chloroquin, aludrine, and others. It was shown that quinine in certain daily doses was not a satisfactory suppressant in jungle warfare, and that drugs of the sulphadiazine group were not suitable suppressants in New Guinea, as they failed to suppress benign tertian infections. On the other hand, excellent results were obtained in 1943 with Cairns volunteers who had received one tablet (0.1 g.) of atebtrin on every day of the week for four weeks prior to exposure to infection, during the period of exposure, and for 23 days after the last infective bite (New Guinea strains). In volunteers infected with malignant tertian malaria atebtrin was shown to be acting not by preventing infection, but by producing radical cure as a result of the destruction of the young asexual parasites soon after they had gained access to the circulation. It was shown that if troops took atebtrin in adequate daily dosage it was possible for them to go into hyperendemic areas of malaria without significant malaria casualties, while blackwater fever and fatalities would not occur.

Consequent on the establishment of a high standard of atebtrin discipline, malaria rapidly came under control. From December, 1943, the malaria rate in Australian troops in hyperendemic areas had fallen from 740 per 1,000 per annum to 26 per 1,000 per annum in November, 1944; with the exception of one A.I.F. division, this low level was maintained throughout the campaigns of 1945. It required a large-scale experiment on human volunteers to convince medical and combatant officers of the extraordinary efficacy of the atebtrin regimen; had it been possible to infect animals with human species of malarial parasites the schizonticidal action of atebtrin in suppressing and curing malignant tertian and suppressing benign tertian might have been demonstrated much earlier.

New Antimalaria Drugs

In the 4-amino quinoline group of compounds, sontochin and resochin (chloroquin) had proved to be essentially schizonticidal in action; they did not discolour the skin, and they yielded therapeutic results comparable with atebtrin. Although effective suppressants, neither was a causal prophylactic. Plasmoquine in large doses acted as a complete causal prophylactic in *P. falciparum* infection, and a partial causal prophylactic in *P. vivax* malaria, but it was too toxic for routine use as a suppressive drug.

Paludrine was shown to be a complete causal prophylactic against malignant tertian infections and a partial one against

benign tertian infections in a dosage of 100 mg. daily. Later it was found that a single dose of 100 mg. given 39-120 hours after heavy infection with *P. falciparum* entirely eradicated the infection before there was time for asexual parasites to appear in the blood. The possibilities of a bi-weekly or even a single dose regimen of paludrine applied to native villages and epidemics in hyperendemic areas opened up an entirely new field in the chemotherapeutic control of this disease, not only because of the schizonticidal effects of the drug, but also because of its extreme potency as a causal prophylactic in single doses of 100 mg. given on the 2nd-6th day following infection.

Other Tropical Diseases

Prof. Fairley briefly reviewed the measures found necessary for the control of "jungle dengue." In Northern Queensland dengue was a disease of towns, being transmitted by the domestic mosquito *Aedes aegypti*. In New Guinea, however, it affected large numbers of troops living in the jungle in the absence of this mosquito vector. Lieut-Col. I. Mackerras and his associates fed four species of mosquitoes on dengue patients in New Guinea and sent them 2,000 miles by plane to Sydney, where they were re-fed on human volunteers. By this means it was discovered that a new vector, *Aedes scutellaris*, was transmitting dengue in New Guinea. The bionomics of this mosquito were carefully studied, and once its habits and breeding places were ascertained rational control measures were instituted. During outbreaks these measures were found to decrease markedly the number of troops affected, and the dengue rate never again reached epidemic proportions in the south-west Pacific.

Carefully controlled clinical and bacteriological investigations in 1941 in the Middle East confirmed the expectations of Marshall that sulphaguanidine would prove a specific cure for bacillary dysentery. Later in New Guinea it was shown that the immediate administration of this drug in full dosage at the onset of diarrhoea aborted the disease under field conditions and eliminated carriers. In 1942 an epidemic of dysentery affected Australian troops fighting over the Owen Stanley ranges. The fate of Moresby lay in the balance. Sulphaguanidine was rushed up by plane to New Guinea and into the forward areas, and the epidemic was controlled within 10 days. In jungle fighting efficient sanitation was frequently impossible, and both in New Guinea and Burma the incidence of diarrhoeal diseases was reduced to an unprecedented low level by the use of this drug in the forward areas. It had the great advantage of not causing renal complications or agranulocytosis, and for this reason could be distributed without medical supervision.

Scrub Typhus

Scrub typhus was a serious disease both in the Pacific and south-east Asia because of its high mortality rate, which approximated to 8%. Two possible measures for its control were developed during the war: (1) the widespread use of dimethyl or dibutyl phthalate as a larval miticide applied to clothing, and (2) inoculation of troops with scrub typhus vaccine prepared from cotton rats. Vaccination was being tested in Burma on a large scale, but hostilities ceased before any definite conclusions could be reached as to its value. On the other hand, definite evidence had been obtained by Major MacCulloch as early as 1943 that dibutyl phthalate rubbed into the clothing by hand would give complete protection to volunteers spending many hours of the day in mite-infested jungles in New Guinea. Though no more effective than dimethyl phthalate as a miticide, it was found to be better retained in clothing, standing up to seven washings. The subsequent widespread use of these anti-mite fluids led to a great reduction in the incidence of typhus in troops operating in the Pacific and south-east Asia.

Finally the lecturer referred to the great value of the new synthetic insecticide, dichlor diphenyl trichlorethane (D.D.T.). During the war D.D.T. had proved of the greatest value in terminating the typhus epidemic in Naples and in the control of both malaria and bacillary dysentery. The final control of many insect-borne diseases had been brought appreciably nearer by the discovery of the astounding insecticidal action of D.D.T. by Müller in the Geigy laboratories at Basle, and by the work of British and American entomologists and toxicologists.

MEDICAL MYCOLOGY

One of a series of meetings in connexion with the jubilee of the British Mycological Society was held at the Royal Institution on Oct. 23, when addresses were given on various aspects of the medical study of fungi. Sir ALEXANDER FLEMING presided.

Dr. C. W. EMMONS, who brought the greetings of the Mycological Society of America, gave the first address, on fungi which caused human disease—a group which was much neglected. Fungous diseases ranged from superficial irritations to deep-seated and systemic fatal mycoses. Medical mycology was not new. Aetiological relationships between fungi and human disease had been known for more than 100 years. In 1839 Schoenlein described the fungus which caused favus, and Lagenbeck the fungus which caused thrush, but very little medical mycological work was attempted. During the last fifty years valuable opportunities had been lost from failure to study more systematically those fungi which caused human disease. The trained mycologist should collaborate with the clinician. Neglect of this field was probably related in part to the phenomenal impetus given to bacteriology by Pasteur, Lister, and Koch, to the fact that the bacterial diseases of man were more common than those caused by fungi, and to the lack of contact between the mycologist and the hospital diagnostic laboratory. The mycoses, with few exceptions, were relatively unknown to medicine. There was now, however, an increasing tendency to recognize fungi among the causes of disease.

In the United States in 1942 out of 1½ million deaths only 359 were attributed to fungi, but in the registration area this was nearly twice as many as the deaths due to paratyphoid fever, undulant fever, smallpox, rabies, leprosy, plague, cholera, yellow fever, and relapsing fever put together.

The Mycoses as a Group

Some of the mycoses, particularly the superficial ones, were not fatal although common, and there were mild forms of some of the generally fatal diseases, so that the true incidence of the mycoses was not known. Coccidioidomycosis, for example, a mycosis once thought to be invariably fatal, was now known to be mild and self-limited in most cases. There was reason to suppose that histoplasmosis also had a mild unrecognized form, but the evidence rested upon analogy and upon a dubious skin test known not to be specific. Since its discovery and description in 1906 by Darling histoplasmosis had appeared rarely and sporadically throughout the world, until up to the present time about 100 cases had been observed, the majority in the eastern part of the United States, and almost all fatal. But the wide occurrence of skin sensitivity to histoplasmin had been interpreted by some investigators as evidence in support of the existence of a mild form of the disease. Histoplasmin was a sterile filtrate of a synthetic broth culture which was injected intradermally, and, in a sensitized individual, produced within 48 hours a localized area of oedema resembling a positive tuberculin test. Such a reaction occurred in laboratory animals infected with experimental histoplasmosis, and in many people who were not ill and had no history of an illness resembling histoplasmosis. The percentage of the general population reacting to histoplasmin varied in different geographical areas. The subject was of great interest because it might offer an explanation of the occurrence of calcified lesions in the lung in persons who apparently had never had tuberculosis. It had been suggested that there was a benign form of histoplasmosis which gave rise to lesions which healed and became calcified.

Some of the superficial fungous infections such as dermatophytosis and secondary moniliasis were extremely common and annoying. The mycoses as a group were more fatal than some important bacterial diseases, and some were more frequent in mild forms than their recognition indicated.

Diagnosis of Mycotic Infections

The diagnosis of mycotic infections, Dr. Emmons continued, rested largely upon the laboratory. Even the superficial skin lesions caused by ringworm fungi might resemble so closely certain dermatoses due to skin irritants or sensitizing chemicals that a demonstration of the fungus in epidermal scales on

microscopic examination or its isolation in culture was necessary in order to make a differential diagnosis. In systemic mycosis the demonstration of the fungus microscopically or by culture was even more important in establishing the diagnosis. Fortunately in dermatophytosis the epidermal scales or infected hair stubs were plentiful and easily obtained, and the laboratory procedures were reasonably effective. Epidermal scale were readily cleared by warming in a drop of 1% sodium hydroxide on a microscope slide. Many media were suitable for the cultivation of pathogenic fungi, but some modification of Sabouraud's agar was commonly used.

The deeper mycoses required slightly different processes. *Sporotrichum* was easily isolated from the subcutaneous abscesses of sporotrichosis by withdrawing pus from a unopened and therefore uncontaminated abscess and spreading it upon agar. *Histoplasma* could be isolated from the circulating blood or from the sternal bone marrow. *Cryptococcus* could be obtained in pure culture from the spinal fluid in cases of meningitis. In pulmonary mycosis, and in case with ulcerative skin and mucous membrane lesions, where secondary bacterial contamination was sure to occur, bacteriological methods of spread and taking pure cultures could be used. Differential media were of assistance. Serological methods of diagnosis, so useful in bacterial diseases, were not commonly used in the mycoses.

The production of antibodies by fungi seemed to be erratic. In American blastomycosis, or Gilchrist's disease, for example Martin had reported that in some proved cases antibodies were not demonstrable. In coccidioidomycosis Smith had observed that the complement fixation titre rose as the disease progressed from the acute respiratory phase to the chronic disseminated granulomatous phase.

Distribution of Parasitic Fungi

Trichophyton rubrum was more prevalent in tropical and subtropical areas than in southern zones. Actinomycosis caused by the anaerobe *Actinomyces bovis*, occurred throughout the world. Sporotrichosis, caused by the single species *Sporotrichum schenckii*, had been reported from the gold mines of South Africa to the plant nurseries of the northern United States. Histoplasmosis was caused by a single species of world wide distribution. In some cases a mycosis appeared to have become naturalized in a new area after its accidental importation. Thus the striking dermatophytosis known as *trichophyton imbricatum*, which was native to certain South Pacific areas, was brought to Central America, probably during slavery days, and now grew in localities there. During a visit to Guatemala I saw classical examples, with partially adherent epidermal scales forming concentric and confluent patterns over the entire body surface.

A few mycoses were restricted in distribution. Coccidioidomycosis was endemic in the arid south-west of the United States and in a similar area in Argentina. North American blastomycosis was a peculiar North American disease, more often seen in the States, though it occurred also in Canada. South American blastomycosis was primarily a Brazilian mycosis, though it occurred in other South American countries. Until more was known about the reservoirs of these diseases and the habitat of the fungi causing them it would be hard to explain these geographical limitations in distribution.

As for nomenclature, there had probably been more invalid names than usual selected, as well as an enormous number of transfers from genus to genus. Many fungi had been repeatedly renamed by investigators ignorant of the earlier literature, and there had been too many exponents of the policy of splitting species on the basis of a slight difference between strains. The variability of fungi was a fascinating subject.

Considered from the point of view of the natural habitat of pathogenic fungi they might be divided into two classes: fungi normally associated with man, and fungi which were within his environment and became pathogenic only by chance. The fungi which were pathogenic to man had well-defined morphological characteristics. By far the commonest was that which caused dermatophytosis; it was easily demonstrated in epidermal scales. In mentioning *Actinomyces bovis* he said that contrary to the often repeated statements that actinomycosis was contracted by chewing straws, the agent had not been isolated from any source other than the human or animal body.

Work on Penicillin

Dr. J. H. BIRKINSHAW, of the London School of Hygiene and Tropical Medicine, followed with an address on recent work on products derived from fungi. British manufacturers, owing to the war, had at first been unable to devote sufficient attention to penicillin production, but the American chemical industry had stepped into the breach. The methods worked out by the Americans had become available to British industrialists. Perhaps the most radical advance was the change from surface culture to submerged culture. The submerged method resulted in a great saving of plant space and of labour and offered fewer chances of contamination. Selection of the most active strain of the mould had received careful attention, particularly since the best strain for surface work was found to be the best for submerged cultivation.

The chemical constitution of penicillin had at last been solved. Certain of the rearrangements which the molecule underwent were very unusual and could scarcely have been deduced from the ordinary reactions of organic chemistry. A minute amount of the pure crystalline sodium salt of penicillin 2 had now been synthesized. Penicillin was produced cheaply by the biological method, however, that chemical synthesis had become more a matter of academic than of commercial importance. Penicillins 1, 2, and 4 did not appear to lend themselves to modification, but penicillin 3 might be so modified as to make it possible to obtain an active derivative. It was synthetic in nature, which would be less rapidly excreted than the wholly natural product.

What was the cause of the long delay between Fleming's original observation and the development of the commercial production of penicillin? It was due to the fact that a further partner was necessary in the research team. The mycologist and biochemist could not determine the therapeutic applications of a fungus product without help from their medical colleagues.

Other Antibiotics

The most promising of the new antibiotics was streptomycin, which had very low toxicity. It had now been obtained in crystalline form. It was too soon yet to say what its value was in tuberculosis, but it seemed to hold out great promise. Among other substances to the structure of which he drew attention was expansin. During the war some Dutch clinicians claimed an expansion a modest success in the treatment of mycotic disease of the skin. There were between twenty and thirty antibiotic products of fungi so far isolated in crystalline form. Lavacidin, a fifth penicillin, had a different group in the side-chain; and notatin, an enzyme, was a very potent antibiotic. Although most of the products were antibacterial some were antifungal as well.

Was any advance on penicillin and streptomycin to be expected? Both required complex organic nutrients in the medium for high yields. This was not of much consequence in the case of penicillin, where the adjuvant was a cheap waste product; it was more important in the case of streptomycin. But the addition of such substances was a confession of ignorance, and the task of identifying them must be undertaken.

Disadvantages of Antibiotics

A potential danger was the development of drug-resistant strains of bacteria. The danger might be minimized by using large doses, but could be eliminated only by ridding the changes in the antibiotics employed. Allergic reactions also were not unknown. Another minor disadvantage of penicillin was that it was a mixture of sodium salts of at least four components. Those proportions varied with the strain and method of culture. In two batches of penicillin of equal potency as standardized against a particular organism, say *Staph. aureus*, the activity against other organisms might differ. The chemotherapeutic efficacy, which depended not only on the activity *in vitro* but on a number of other factors, did vary widely. Thus penicillin 4, owing to its rapid destruction in the body, was probably only from about one-sixth to one-tenth as effective as penicillin 2.* It might ultimately be possible to select the most effective form from the chemotherapeutic range.

* From recent American evidence it appears that penicillin 4 has greater therapeutic efficacy than is here attributed to it.

CLINICAL DISCUSSIONS

A clinical meeting of the L.C.C. Medical Society was held at Dulwich Hospital on Oct. 3, when cases were shown by the staffs of Dulwich and St. Olave's Hospitals. 110 members were present.

Dr. LAWRENCE opened a discussion on two cases of hepatosplenomegaly with ascites and asked for suggestions as to the diagnosis and treatment of the ascites, particularly in one of the patients, aged 31, who required paracentesis of the abdomen every 7 to 10 days. There was fairly general agreement that the results of the Talma-Morison operation were disappointing, but an anastomosis between the portal vein and the inferior vena cava (Eck fistula) might be worth trying. Mr. J. L. STEPHEN showed two cases of gastric polyposis and stressed the importance of gastroscopy in diagnosis.

Dr. E. T. BASSADONE opened a discussion on the treatment of pulmonary infarction, which, especially in post-operative cases, frequently preceded a massive pulmonary embolus. He asked for advice on ligation of veins, usually of the leg, from which the embolus spread. Mr. LEWYS-LLOYD advised against tying the common femoral vein, which usually left a swollen, painful leg, and pointed out that there was uncertainty from which leg the warning embolus had come. He advocated early post-operative exercises and the use of intravenous heparin. Mr. G. F. STEBBING pointed out that the majority of cases of pulmonary embolus came from veins giving no symptoms, and that by the time one could definitely suspect the vein of being thrombosed there was probably little danger of the thrombus moving. Dr. B. GOTTLIEB had treated two cases of venous thrombosis with heparin and was not impressed with the results, and thought it would be better as a prophylactic. Dr. B. BARLING pointed out that a venous thrombosis usually started in the calf and the first sign was a rise in temperature, and suggested that instead of looking to the chest to provide the cause of the pyrexia it might be better to examine the legs.

CURARE IN ANAESTHESIA

The Anaesthetics Committee, jointly appointed by the Medical Research Council and the Royal Society of Medicine, is considering the standardization of curare. There are on the market at present two preparations for use in anaesthesia, one amorphous and one crystalline, but both depend for their activity on *d*-tubocurarine chloride. The co-existence of preparations of different potency is a source of danger and may result in serious accidents. The amorphous preparation "Intocosturin" has in fact about one-quarter the activity of the pure crystalline material.

There is also some evidence of wide difference in the reactions of the patient, depending to some extent on the state of health of the individual at the time. The Committee therefore consider it advisable in the present state of knowledge to base the dose on the individual reaction to an initial small injection rather than on any dose/weight ratio. In the average healthy adult this initial dose could be 10-15 mg. of crystalline *d*-tubocurarine chloride or 40-60 mg. of "Intocosturin."

CONTACT LENS SOCIETY

A new society, purely scientific in object and organization, has been formed for the study of contact lens work in all its aspects. Members may be medical or non-medical, and it is hoped to stimulate interest in the subject among optical workers, doctors, physiologists, and others whose domain touches the question at any point. The secretaries, Mr. A. G. Cross and Mr. G. H. Giles, will be glad to supply information and forms of application for membership on receipt of a request addressed to 65, Brook Street, London, W.1. The first scientific meeting will be held on Jan. 20, at 5.30 p.m., at the headquarters of the British Optical Association, 65, Brook Street. Thereafter it is hoped to hold scientific meetings four times a year, or more often if sufficient material is forthcoming. Membership requires nomination by three members of the Council. The officers of the Society are: President, Prof. Ida Mann; vice-presidents, Mr. F. A. Williamson-Noble and Mr. K. Clifford Hall; joint secretaries, Mr. A. G. Cross and Mr. G. H. Giles; treasurer, Mr. C. H. Keeler. Other members of the Council are: Messrs. J. H. Doggart, G. B. Ebbage, F. A. Juler, Sir Stewart Duke-Elder, Messrs. F. Dickinson, H. B. Marton, G. D. McKellen, and T. Hamblin.

Correspondence

The Plebiscite

SIR,—I have read Dr. Alfred Cox's letter (Nov. 9, p. 707) with interest, especially the last paragraph. Aged 46 now, my recollections of the 1911-12 fight are not very clear, but my impressions are not those of defeat. To give one instance, we gained something in the way of regular consulting hours. Since then our Association has gained much experience in dealing with politicians. The recent "show down" over fees is a good augury for the future. In putting our case for another fight to those who doubt our ability to carry it off, it would be helpful to have a true short history of the events of 1911-13. What points were gained and what were lost? Can Dr. Cox or can you, Sir, supply this? I ask this because I believe that, apart from inadequate remuneration, N.H.I. has been a success. Much of the criticism one hears to-day appears to be unjust and ungracious, and some of it sheer nonsense.

As Dr. Cox points out, the new Act contains one feature at least which is unnecessary and repugnant to most of us. Whether we are "ripe" or not, many of us do not want to be plucked at any price. Sixty-six millions of public money might much more profitably be spent in filling in the gaps in our Health Services where these exist. The training of more nurses in the care of tuberculous patients and deprived children are two glaring examples which would suggest themselves immediately to the unbiased. There must be many others. An initial salary is quite compatible with the sale and purchase of practices (see Spens Report, p. 9). The Association might quite well set up a system of arbitration where the true value of a practice is in dispute. It is a pity that the Minister of Health should be a "managing director controlling all the shares." Mr. Bevan's investing interests are prompted by greed for power. Our individual "vested interests" mean just that small share of power which is freedom and true democracy.

I am, etc.,

R. W. L. PEARSON.

SIR,—The Council has decided, quite rightly, not to advise members how to vote in the plebiscite. Therefore it is as well to be a member of Council that I should be able to draw attention to an obvious and important point. All members of the profession remember what was said at the Annual Panel Conference merely threatening asking for resignations, and, fortified by that, they said "No" to the plebiscite, there will be by the time the new Act under which all would be glad to serve, freedom is guaranteed, and of which the public would be proud.—I am, etc.,

H. M. GOLDING.

G. Scoular (Nov. 9, p. 707) raises a point about the plebiscite which must have occurred to many members of the profession. The question "whether negotiations with the Minister of Health" may lead many reasonable doctors to answer in the affirmative. Such an answer, in these cases, will merely indicate their desire to learn the proposed terms of service before deciding whether they will join the Service or not.

As yet they do not know the minimum and maximum number of patients they may have to attend, the radius beyond which they will not agree to visit patients, the possibility of obtaining a better basic salary, the capitation fee, the age at which they may retire, the arrangements for off-duty time, and so on. It does seem reasonable to seek information on such points before answering the plebiscite question in the affirmative. Such an answer cannot be interpreted as expressing ultimate willingness to join the Service.

Secondly, if the majority of the profession answer in the negative, the B.M.A. will still be impelled to negotiate with the Minister of Health for the sake of those members who do intend to serve as National Health Service doctors.—I am, etc.,

London, N.22

A. J. M. BUTTER.

SIR,—The profession should be grateful to Dr. Alfred Cox (Nov. 9, p. 707) for his letter of advice to the profession this new plebiscite. Is to-day the twilight of our freedom. In the *Sunday Times* of Nov. 10 I see that the Lord Chancellor is quite clear about the attitude of the legal profession on question of their freedom. "We of the legal profession have in the past asserted our freedom and independence from interference of the Crown. To-day we are prepared to assert our freedom and independence from the Executive."

The question for our medical profession is, Are we prepared to take the advice of the Lord Chancellor to the legal profession and assert our freedom from the Executive? I am, etc.,

Horsham.

SYDNEY GORDON TIPPETT

SIR,—It seems to me that a far greater political responsibility lies on our profession than many realize. During the war the course of 90 minutes, we handed over all our cherished liberties and freedoms. We have not got them back. The contrary they become constantly fewer and more restrictive. We have now the opportunity of being the first organized body in the kingdom to call a halt to this ill-considered and doctrinaire coercion that passes for policy, and to cause at least one embryo dictator to reconsider his position and the advisability of listening to reason.

I often wonder how long his liberties can be quietly whittled away before the average Briton will explode into resistance. Some such thought I find also in my patients who ask, "Why are you?" or "Why don't you doctors do something about it?" You are in such an unassailable position." Many deeply concerned in the country's affairs are watching us closely and believe, hopefully. They are looking for a lead. I would further and say that in many countries the world over the course of events in our islands is eagerly watched to see how far the British are prepared to be browbeaten by their politicians. In war we doctors are non-combatants. If in peace we are called upon to be the vanguard of the defence for one will feel honoured. For old men who loved it, and young men who have suffered for it need have no hesitation in combining to fight for our reasonable freedom and integrity. After hearing Dr. Dain it is so clear that we have nothing to lose and everything to gain. So let us do it. And let the result be round on the paper: *responsum negativum*.—I am, etc.,

Teignmouth.

JOHN A. TIPPETT

SIR,—I trust that every member will read the letter of Dr. Alfred Cox (Nov. 9) and give it every consideration. It is a able summary of the situation confronting the profession to-day and it refers also to the effect of the present trend of legislation on the general community which is of supreme and urgent importance. We medical men are principally concerned with the art of healing the sick; but when this art has to be subsidized and controlled by the State whereby both patient and doctor become mere pawns in a political game and the liberty of each individual is threatened, all doctors should realize that in opposing the National Health Service Act they are defending the right of every man to shape his own destiny, which surely is his birthright.

Dr. Cox refers to the history of the fight over National Health Insurance in 1911-12 and states that "the present circumstances are not at all comparable." Here I must disagree. We medical men, who opposed that Act, saw in it the forerunner of the present Act and freely broadcast our opinion at the time and for many years afterwards and warned the profession what would eventuate. I do not wish to enlarge upon this; but the whole measure was blindly adopted from Germany, where it was instituted as a purely political measure for the purpose of enslaving the German people. That was not recognized by the Association as it should have been; but now I hope the majority of the Association fully recognize the seriousness of the situation and the effect such a measure will have on the future welfare of our race. The present time is witnessing the destruction of higher values—the tail is wagging the dog—as in the words of *Ecclesiastes* it might be said—"I have seen servants on horseback and princes walking as servants upon the earth."—I am, etc.,

Edinburgh.

FREDERICK PORTER.

SIR,—The National Health Service Bill has received the Royal Assent in the House of Lords; the British Medical Association has circularized every member of the profession, and we now all have the plebiscite forms before us. At last arrived that crucial moment when the profession must decide once and for all whether it will sell its precious freedom, handed down to it by generations of its forebears, for a mess of pottage—and what a mess!

Part B of the report of the Negotiating Committee is, in my humble opinion, admirably compiled and should clearly demonstrate to every general practitioner that once he accepts a Bill as it stands but merely tries to negotiate for better terms of service, etc., he loses not only his own freedom, but a patient's freedom—in other words, he supports the principle of the "closed shop."

Let us all stand firm and refuse to negotiate with any Minister or Government that shows its contempt for the individual and, what is more, for the profession by its relations with the Negotiating Committee in the past. This is our last chance. If we fail here we can never raise up our heads again to a free and honourable profession. We shall be subject to the whims of any future Minister of Health to vary our terms of service and working conditions. We might as well give up all hope and agree to a whole-time service with a 40-hour week and life in a prefab.—I am, etc.,

East Grinstead.

A. C. SOMMERVILLE.

SIR,—May I, as one of the young practitioners to whom the Minister of Health is so anxious "to give security," add one more letter to those already published on the subject of the plebiscite? In my opinion the majority of the men and women entering the profession of medicine to-day (as always) do so not because it is a safe job but because that is where their interest lies. Many letters have appeared in your columns in the past from Service doctors complaining of the petty strictions and loss of personal freedom to which they were subjected, and although this may be necessary to a degree under these circumstances, it must be avoided at all costs in civilian practice.

Thus I consider that the only answer to the question of negotiation with the present Government is "No" if we are to preserve our freedom and that of our patients. As at the moment I am not a free agent, I beg to sign myself

SURGEON LIEUTENANT, R.N.V.R.

SIR,—With the beginning of the plebiscite each individual doctor is faced with a difficult decision: "To negotiate or not to negotiate on the regulations." To a comparative few the answer will be an incontrovertible "No." Most of these will consist of those retired, senior men near retirement, some who are in salaried jobs, in entirely private practices, or those who have been prominently identified with and advocates of B.M.A. policy. These will say "No" at any price, both to the question of negotiation and that of joining the Service.

Another section of men will say "Yes." Among these will be numbered those who have heavy commitments, unpaid debts, children to educate, and those who are not well up with all that has been written and discussed and has taken place during the past year. Many of these will be doctors working in circumstances or because they prefer it, in isolation. Many men will feel it impossible to say to-day, without further information about terms of service and the inclinations of their fellow doctors, what they are prepared to do in April, 1948. Many will feel it personally safer to say "Yes," with, as Dr. Dain says, the further opportunity of saying whether or not they wish to enter the Service. On the other hand these doctors will be rather intimidated from giving a negative reply because "implicit in such a negative vote . . . is an undertaking, if so advised by the Association, not to enter the Service" (plebiscite form). Their comfort should be the words in [my] italics, as advice to do this will be based on receipt of an adequate majority of negative replies.

Some men in this category may also have been misled by an impression that Mr. Aneurin Bevan, during negotiations on the regulations, may compromise on certain objectionable features of the Act, particularly that of the basic salary. During the discussions in the House of Commons on the negative Lords amendments, the Minister said that he did not want to have

his hands tied on the method of remuneration when he came to discuss matters with the doctors. Also, following a statement by the Lord Chancellor in the Lords when the amendments went back, these crucial items were not persisted in, although Lord Moran and Lord Horder did their best. The Chancellor again gave the impression that remuneration had still to be discussed with the doctors. It should again be emphatically stated that there is no hope whatever that the Minister will, or even can, remove the obnoxious basic salary from the Act. The amount of remuneration is still open to discussion, not the method. Strangely enough this receives no mention in the "Summary of the Act," in the *B.M.J.* In this connexion, some doctors to whom I have spoken in the last few days frankly do not believe that the amount of basic salary can be altered by a stroke of the pen to 100%.

There is, finally, a bulky section of the profession, fully acquainted with the facts and also with heavy responsibilities, who find it difficult to answer "Yes" or "No." Their responsibilities would lead them to answer in the affirmative, while their full knowledge of the implications of the Act and the temperament and mind of Aneurin Bevan make them want to answer in the negative. All such doctors looked hopefully for some more definite leading from the B.M.A., but in vain. They may have good reason for this, in order to get the profession to make a decision without pressure and then stand by it. The answer will more likely be a firm one to a further plebiscite (as I hope) on the question whether or not to enter the Service.

Having analysed the problem as a doctor belonging to the third category, my purpose in writing this letter is to urge the B.M.A. before Nov. 30, by publication of definite inside information about the mind and intentions of him with whom we have to deal, to help us to make what may be the hardest decisions of our lives. This should be done immediately through the columns of the *B.M.J.*, and/or by rapidly called mass or Divisional meetings; and the majority one way or the other will be more decisive if those who answer "No" are also given a later opportunity of saying whether or not they wish to enter the Service if the "Ayes" have it and negotiations do ultimately take place. If the B.M.A. agrees with Dr. Alfred Cox that we, as a profession, are in danger of losing our soul, they should sound the trumpet call with no uncertain sound, "No negotiations." The plebiscite would still give the answer.—I am, etc.,

London, S.W.17

E. GERARD HOUSDEN.

SIR,—A perusal of the plebiscite papers issued by the Association seems to confirm just those fears which I expressed in the letter published in the *Journal* of Aug. 10 (p. 206), namely, that confusion would be created in the minds of a large number of doctors unless the implications of entering into negotiations on regulations are made clear beyond all doubt. In any such discussion the structure of the Act remains unchanged and unchangeable, and the inevitable implication is an acceptance on the part of the negotiators of that structure. To say therefore that discussion does not imply agreement to enter the Service is an empty form of words; for all experience shows that such would be the inevitable result.

So much has been written and said about the Health Service that there is danger that truth may be lost in a fog of rhetoric. It would be tragic indeed if now that it comes to a crucial vote a wrong decision were made through a misunderstanding. It seems a pity that the Association in their final survey have used so much "wrapping" to the "meat." At this late stage therefore I do beg that you will use your columns to bring the issue clearly before your readers and above all briefly and concisely.—I am, etc.,

Derby.

E. D. BROSTER.

Northern Ireland and the Plebiscite

SIR,—We in Northern Ireland are to be asked in the questionnaire whether doctors should negotiate on Mr. Bevan's new Bill. Those of us who signify "No" should realize that we are disagreeing only with the British Bill.

The Northern Ireland Minister of Health, Mr. Grant, a Conservative, who is at present considering an alternative measure, may decide upon: (i) Capitation fee only; (ii) freedom for voluntary hospitals; (iii) right of appeal; (iv) no positive

power of direction; (v) retention of the sale value of practices; and (vi) definite hours of leisure. Then, I think, doctors here could show Mr. Bevan how co-operative they could be with a Bill which satisfies them.—I am, etc.,

Dunzannon.

CONN MCCLUSKEY.

National Health Service

SIR,—I have read with great interest the letters to your *Journal* on the above subject. I should like to comment on one point, namely, the Minister's insistence on the abolition of the buying and selling of practices. The Minister's reason for this is given by Dr. J. R. Salmond (Oct. 12, p. 555): "The Minister states that the sale of practices is abhorrent to him, as it loads the young doctor with debt." This, Sir, is political eyewash! The real reason is that by the abolition of the buying and selling of practices the doctor is handing over his practice to the Government or, more simply, selling his property to the Government, thereby losing his rights and thereby becoming a Civil Servant under complete control of the Government.

Mr. Bevan may offer us 15s. per patient now as a bribe to enter his precious Service, but what is to prevent him from reducing it to 10s. or even 5s. in a year's time or five years' time with some vague political excuse?

One hears people say that the Labour Government is in power and they were given the power by the vote of the people. Are we to be ruled by the vote of a people that cannot think for itself and whose only information is that derived from the Press, which it seems to swallow hook, line, and sinker, and which throws aside Mr. Winston Churchill immediately after victory?

The general practitioners do not seem to be able to expect any help from the specialists. Lord Moran referred to an "unfortunate dispute that had arisen at the eleventh hour" between the Minister and the general practitioners. What does his lordship expect? Does he think we are so gullible and have so little intelligence as to be willing to suffer the dictatorship of Mr. Aneurin Bevan? Does he think that the chartered accountant or lawyer or anybody else that can think for himself is going to be dictated to by some such person as Mr. Bevan? The general practitioners must not be led up the garden path by this clever political eyewash which seems to be blinding the specialists. We must refuse to negotiate with Mr. Bevan so long as he insists on the abolition of the buying and selling of practices, unless and until we desire to become Civil Servants.—I am, etc.,

Marfield.

HUGH TATÉ.

SIR,—In the original Beveridge report, but conveniently omitted from the abridged version and confirmed in the recent debate in the House of Lords by the Lord Chancellor together with an implied and gratuitous insult, control of certification is stated to be essential. In the past we have frequently fought against the encroachments of the State on personal liberty both at home and abroad; the most recent being the last war. This is a Christian country with its inevitable emphasis on the individual and the family. In Fascism, National-Socialism, and Communism the emphasis is on the abnegation of individual freedom and its substitution by a Dictator State. Past correspondence showed that refusal to accept the Service is a strike. It can only be a strike after accepting service. An ancient and honourable profession, going to the very heart of individual and intellectual freedom for a pittance under an alien creed? One may be sure that the first, will not be the last of these encroachments on liberty. May I suggest that the issue is not for debate to be on negotiation, but a simple "Yes" or "No" to the basic principle, Do we accept service under the National Health Act with its inherent infringement of liberty?—I am, etc.,

W. M. RICH.

Training of the Specialist

SIR,—As a recent ex-student of Prof. Harry Platt I read with special interest his excellent letter (Sept. 28, p. 472) on the training of the specialist. The final sentence of this letter read, "The universities also have their part to play by demanding evidence of such a standard of training before they recognize

any individual as a clinical teacher." This brings to notice an important matter of medical reform, especially for the student. I had hoped that in the future better facilities would be given for the teaching of medicine to the man with the calling this somewhat arduous task rather than place the whole medical teaching in the hands of the specialist whose clinical ability remains undoubted but whose teaching ability may be short of the minimum required. I should like to suggest that in the future medical teachers should be chosen not on pure clinical merit alone but for their general characteristics as well. Surely some of our best and most esteemed general practitioners could be asked to give their help in giving to the student medicine at least an inkling of the vastness of medicine practised outside hospitals? After all "the general practice medicine" is the real foundation stone of specialization, this is impracticable I should like to suggest that teachers chosen from those who, apart from their hospital appointments, have spent considerable time in general practice.—I am, etc.,

Taunton and Somerset Hospital.

HUMPHREY THOMAS

Demobilized Specialists

SIR,—At the risk of harping back on a closed subject I should like to put forward a point of view that seems to have been missed from previous correspondence relating to demobilized specialists.

I cannot agree with Lord Moran and others (July 27, p. 1) that the R.A.M.C. officer who attained graded specialist rank during the war should be given special help to continue his specialty. Should this facility be granted it would be at the expense of the medical officer who "risked his neck" in field units. In my experience it was not the best type of officer who filtered into the general hospitals. The doctor who knowingly sacrificed clinical experience to serve at great personal hardship and risk with field medical units will, because of the force of character, make the better specialist if given the chance. It was always possible to volunteer for service with a field unit during the war, if one was physically fit. Therefore medical officers in hospitals were in many cases either physically fit or disinclined for "active service." Neither category I think is specially suited for priority help to attain the higher ranks of our profession. I should like to propose therefore for no official recognition being granted to the fortunate men who attained graded specialist rank during the war.—I am, etc.,

Haifa, Palestine.

J. S. MCKENZIE POLLOCK.

Postgraduate Education

SIR,—In his thoughtful letter (Oct. 5, p. 510) Mr. John Staworthy referred to the kindness and assistance shown him by medical colleagues since he came here, as a stranger, thirty years ago. I would be grateful if you would allow me to voice a similar tribute on behalf of the doctors of another Dominion and to stress how much Australian medicine owes to the gracious reception given to medical visitors from the Antipodes.

My introduction to this facet of medical liaison was in 1911 when postgraduate work had to be found quickly for the medical officers of the Australian Army whose return to their own country was delayed by transport difficulties. On putting the problem before the late Sir J. MacAlister, at the Royal Society of Medicine, his answer was, "If you will find the men we will find the teachers and the facilities." The Fellowship of Medicine was founded early the following year and mainly through its help a large number of our medical men were able to work in the United Kingdom for periods varying from three months up to two years. They carried the gospel back with them to Australia, and their enthusiasm led in 1921–2 to the formation of the Postgraduate Committee in Melbourne, to which Mr. Stallworthy refers. There is now a committee of this nature in each of our capital cities, the one in Sydney being a very live one.

In a recent issue of the *Medical Journal of Australia* the committee announced courses in diseases of women, a twelve weeks' course for general practitioners, courses for Parts I and II of the Master of Surgery, of the diplomas of women's diseases of ophthalmology, of laryngology and otorhinology, and for candidates proceeding to the diploma of psychological medicine.



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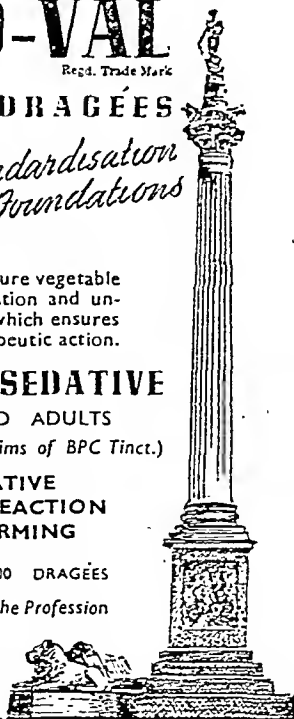


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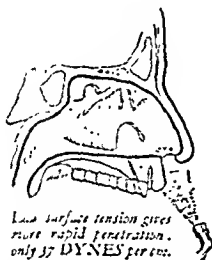
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milar courses are being run in Melbourne. Examinations for a primary F.R.C.S. and M.R.C.O.G. are to be held in Australia early next year, and certain of the courses listed above are designed to be suitable for candidates taking these examinations. This action emphasizes the value which is attached to the demand for, British diplomas. In the years between the wars many Australian medical graduates came to the United Kingdom to work and were warmly welcomed. Everyone was helpful and many of these visitors are now on the staffs of our teaching hospitals.

The end of World War II produced a similar position to that which obtained in 1918. Scores of young medical men who had gone straight from hospital into uniform were being mobilized and were anxious to get back to full clinical work again. Australian universities, general hospitals, and post-graduate committees did all they could, but a considerable number of the applicants wanted to come here, and higher authority encouraged this view. Maj.-Gen. S. R. Burston, D.G.M.S., of the A.I.E., made a special trip home to study the position at first hand and was well received. There were two difficulties: (a) placing men here when they came, and (b) finance to enable them to come. Sir Francis Fraser and his staff undertook the placing, providing numbers were limited at first. The Nuffield Foundation announced their medical fellowships for medical men from the Dominions and India, and the Australian Red Cross made a generous money donation. This fine gesture of the Nuffield Foundation has evidently escaped Mr. Stallworthy's notice. Recent letters do not support a suggestion that "many men are asking why they should cross the world for training, which they may or may not be able to obtain, when they have the assurance of obtaining it much more easily and cheaply nearer home." The number of applicants for the official schemes far outnumber the places available, and many disappointed men are making their own arrangements to come. The official nominees are carefully elected with a view to providing the teachers and research workers of the future, and as such they will mould medical opinion in the years to come. Of necessity there must be a number of men who from one cause and another will have to do their postgraduate training in their own country, but present indications suggest that many of the Australian teachers of the future will have worked, in one capacity or another, north or south of the Tweed. What is valued most is the opportunity to gain an insight into British methods of teaching and the "ideals," for want of a better word, which inspire medical practice in the United Kingdom. Personal contact is necessary for this. The man who describes a trip to this country as "going home" will make every endeavour to do so, whether it be for postgraduate work or for some other laudable reason.

In conclusion, may I support warmly the suggestion in the last paragraph of Mr. Stallworthy's letter regarding the co-ordination of postgraduate units here and overseas and all that this entails. British visiting doctors can be sure of a warm welcome in Australia whether they go out on official or private errands, to lecture to postgraduate classes, or to conduct examinations. In addition to the benefit derived from the interchange of views, such visits enable the hosts overseas to make some little return for the kindnesses which have been extended to them or their friends when in the United Kingdom.—I am, etc.,

JOHN H. ANDERSON.

Ruthin, N. Wales.

Smallpox in the Vaccinated

SIR,—I am glad that Dr. J. Ross Innes (Nov. 2, p. 668) thinks my comments are "most helpful and sound." As I have received far more kicks than halfpence for the views about smallpox and vaccination which I have tried to put over during my professional life it is naturally pleasant and gratifying to receive occasional commendation. For the same reason it is nice to know that Dr. H. Angell Lane, a public vaccinator, approves of my recommendation of "little and often" as the best policy for protecting anti-smallpox staff.

When he states, however, that in the early years of the century I was "claimed by the Anti-vaccination Society as their chief supporter in the medical world" he is, I think, drawing upon his imagination rather than upon facts. It is true that I have often been quoted by *The Vaccination Inquirer*, the

official journal of the National Anti-vaccination League, but that is easily explained, for I have never hesitated to draw attention to facts which told against vaccination as well as to those which told in its favour. I have never attended a meeting of the League, but I once offered to deliver a lecture before them if they would allow me to do so, which offer I may say was politely declined. Moreover, in everything I wrote or spoke about smallpox and vaccination I always tried to make my faith in the efficacy of vaccination to (temporarily) protect the individual quite clear, and it was in the early years of the century (in 1903) that I gave a practical proof of the strength of this faith by taking my wife and two young children into the Leicester smallpox hospital and photographing them by the bedside of a severe confluent case of major smallpox. I told the anti-vaccinists that in denying the power of vaccination to protect the individual they were beating their heads against a stone wall. At the same time, however, I quite admit that I have given the anti-vaccinists credit for several important contentions, which lapse of time has I believe shown to be correct, and which at that period were hotly disputed by ardent pro-vaccinists, e.g., that it was not infant vaccination which was banishing smallpox from this country; that infant vaccination was not necessary for the effective control of smallpox; that vaccination ought to be regarded as a serious operation which was not infrequently attended by serious after-effects, and that therefore compulsory infant vaccination ought to be abolished. To-day, I think, all these contentions will be generally conceded, or at least not seriously disputed, but we ought in fairness to recognize that it has been largely due to the steady and untiring propaganda of the National Anti-vaccination League—apart from the inexorable logic of events—that this great change in public opinion has been brought about.—I am, etc.,

Leicester.

C. KILLICK MILLARD.

Classification of Psychological Disorders

SIR,—With reference to my paper in the *Journal* of Aug. 31 (p. 289), Sir Charles Symonds (Sept. 21, p. 436) has raised some queries in relation to the chronic problem of classification. By not differentiating between anxiety neurosis and anxiety state I have conformed with modern views—see official *Nomenclature of Diseases*, 1931, *Army Classification of Psychiatric States*, 1942, and *Textbook of Psychiatry*, by Henderson and Gillespie, page 423 *et seq.* The latter authorities refer to the special Freudian interpretation of anxiety neurosis, but many other parts of the text do not differentiate between "neurosis" and "state." The same lack of differentiation is apparent in the numerous papers on psychotic breakdown in war, where the terms anxiety neurosis and anxiety state have been freely used, although the term anxiety "neurosis" does not appear in the official military nomenclature. It is obviously significant of the very nature of the problem that most textbooks describe but do not exactly define these conditions.

To economize space on a controversial subject, I would suggest that many further points are best answered by restating some generally accepted principles: (1) The same trauma may produce very different psychiatric reactions in different people; (2) many psychotic patients show neurotic symptoms during the course of their illness; (3) psychiatric illness is rarely entirely due to reactive or endogenous factors; (4) neurotic patients may develop psychosis. As a rule, therefore, there is no "either/or" in the matter; one has to diagnose the predominating pattern of illness, deciding whether this pattern is chiefly depressed in the psychotic or mainly anxious in a neurotic sense. Similarly, psychotic depression or anxiety neurosis (or state) may be mainly reactive or mainly endogenous, hence the considerable inquiry entailed in psychiatric case-taking.

To return to the chief subject of the paper—electric convulsive therapy rather than classification—it should be emphasized that observation of the reaction of the patients showed that it was most necessary to decide whether depression of a psychotic type prevailed as opposed to anxiety, obsessions, or other neurotic symptoms. A certain amount of depression often occurred as a secondary feature in the primarily neurotic clinical picture (i.e., neurotic depression), but the important point for the therapeutic result was correct diagnosis of the prevailing reaction type. Tables (2), (3), and (4) showed that

with the usual E.C.T. frequency of treatment there was considerable difference in the result between these main types, not to mention other responses. The presence of "anxiety neurosis" or of "anxiety state" was of academic rather than practical interest.

It follows that occasionally one will meet a patient in whom psychotic and neurotic factors appear evenly balanced. Such cases are often recent, and more common in the general hospital psychiatric population than in mental hospitals. The decision on therapy may be difficult; hence my remarks on the therapeutic test. Generally speaking, the patients' response to E.C.T. was consistent with the accepted textbook symptomatic classifications, even if it did at times show up one's own diagnostic mistakes.—I am, etc.,

Sutton.

D. E. SANDS.

Priority Foods

SIR,—It amazes me that the Food Rationing Advisory Committee did not think of the milk rationing modifications suggested in this *Journal* by Mr. A. Staveley Gough (Oct. 12, p. 551) and Dr. Lindsey Batten (Oct. 26, p. 626) and in the *Daily Telegraph* of Nov. 8 by Dr. Ellis Parkinson. The cancellation of the meat and cheese rations for all persons suffering from any of the classified diseases except active tuberculosis would certainly effect a considerable economy without harming anyone by greatly reducing the number of claimants.

A reduction in the allowance of priority milk from one pint to half a pint daily could and should often be made. This could surely be safely left to the discretion of the patient's medical attendant. Is there no hope that these suggestions may even now be made to the Minister of Health for his consideration and action?—I am, etc.,

London, S E 12

E. M. LYNTON-LOW.

The Milk Ration

SIR,—The basic ration of milk has come down to two pints (1.14 litre) a week. The minimum priority allowance (except for sick children not attending school) is seven pints (4 litres) a week. It is not reasonable to expect a worker, on the first day of his return to work, to be able to adapt himself to the sudden reduction from seven pints to two pints per week—or to make this sudden adaptation on any other day. Many people, working or aged, get along quite well on an allowance of three and a half pints (2 litres) a week, but not on two pints, especially when this reduced quantity is imposed suddenly after a priority of seven pints.

I suggest that a priority category giving a claim to three and a half pints a week would be welcomed by doctors; that no patients in need of milk would suffer; and that much priority milk could be saved for general distribution. Other sensible suggestions for reductions in priority amounts have been made. By means of this new category a great saving could be made, yet no individual need necessarily have his quantity of milk reduced unless his doctor approves.—I am, etc.,

Crowthorne

H. D. FORBES FRASER.

Legal and Medical Insanity

SIR,—I have read with much interest the various letters in the *Journal* on this important matter. There is, to the informed, a great difference between the two forms of insanity, and if the McNaghten (the name is spelt variously) Rules are given careful study it is impossible to see where they fail to fulfil their object.

The rules are summarized briefly as follows. (1) Every man is presumed to be sane and to possess a sufficient degree of reason to be responsible for his crimes, until the contrary be proved to the satisfaction of a jury. This is one of the presumptions of law just as a man is presumed innocent till found guilty. Furthermore the law of England makes juries the judges of fact, and under our judicial system it is the function of a jury to decide after hearing evidence on the matter to say whether an insane person falls within these rules. (2) To establish a defence on the ground of insanity, it must be clearly shown that, at the time of committing the act, the party at the time was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or (if he did know that) not to know that what he was doing was morally wrong. (3) If the accused was conscious that the act was one which he ought

not to do and if that act was at the same time contrary to the law of the land, he is punishable. The test is the power of distinguishing between right and wrong in regard to the particular act committed. (4) Where a criminal act is committed by a man under some insane delusion as to the surrounding facts, which conceal from him the true nature of the act he is doing, he will be under the same degree of responsibility as if the facts were as he imagined them to be.

The words "nature and quality of the act" in No. 2 do not mean the physical act and the morality of the act respectively, but apply alone to the physical character, and were not intended to distinguish between the physical and the moral aspects of the act (*R. v. Codere* 12 Cr. App. R. 21). These rules have been the subject of much consideration and criticism by both medical and legal writers (Stephen, *Hist. Cr. Law*, pp. 124-186; Mayne, *Ind. Crim. Law*, 4th edition, pp. 169 *et seq.*; Wood-Renton in *Lunacy*, pp. 885-914), and Dr. J. A. McCluskie (Oct. 12, p. 555) once again revives the old discussion. I am very surprised to see that Dr. McCluskie asks what is meant nowadays by the words right and wrong; even with the modern trend of living the dictionary meaning of these words has not altered. Surely he does not think it right to kill? Murder, after treason has from time immemorial been regarded as the most heinous crime; and even the learned judge has not a discretion in the punishment once the jury have returned a verdict of "Guilty." He is bound in the absence of a defence of insanity having been established to impose the death sentence.

It would take many pages of your paper to go into this subject at length, but those of your readers interested might read *R. v. Hay* 1899 16 Cape of Good Hope Reports (Sup Ct.) 290; and *R. v. Jessamine* 19 Canadian Crown Cases 214 where in the former case it will be seen that South African (Cape) Law was laid down stating that the capacity to distinguish between right and wrong is not the sole test. Lord Bramwell's apt test is surely the correct one: "They would not have yielded to their insanity if a policeman had been at their elbow," and analysis of the McNaghten Rules surely fits into this saying. Moral insanity as a defence is not yet accepted in England as falling within the McNaghten Rules while insane impulse (kleptomania) is often put forward as a defence in courts of Petty Sessions to charges of petty theft as these courts do not possess the power of ordering an accused person "to be kept in custody as a criminal lunatic." No is a defence of unconscious automatism familiar in our courts unlike Continental tribunals. If careful study is given to the McNaghten Rules a psychiatrist must surely realize where the line is drawn between legal and medical insanity.—I am, etc.

C. J. DE VERR STOUTT, M.D.,

London, E.C.4.

Barrister-at-Law.

Amoebiasis in Italy

SIR,—Dr. Graham Hayward's interesting article on amoebiasis in Italy (Sept. 28, p. 457), which I have just studied in detail raises several points of interest. The low incidence of bacillary dysentery (104 cases out of 4,601 admissions from June, 1944 to June, 1945) indicates highly successful preventive medicine such as could hardly be expected during the course of an operational campaign. With regard to amoebiasis he points out that in the Burma theatre and in India depressing results followed the standard courses of treatment in contrast to the disease in Italy. The reasons for such results in India and Burma were obvious to any officer who was engaged in the practice of medicine out there. While standard courses of treatment (consisting of emetine injections, E.B.I., "quinoxyl" (chiniofon), and carbarsone) were circulated to all medical units, E.B.I. was unobtainable in Assam and Burma during the whole of 1944 and 1945 while I was serving there. Nor was "quinoxyl" available in sufficient quantities. It is true that E.B.I. was used in certain base hospitals in India, but for case of amoebiasis arising in the campaign none was obtainable at the front. Moreover, while I was serving in a large military hospital in India in 1943 for six months E.B.I. was not available. This state of affairs prevailed in spite of repeated reports of physicians who were responsible for the treatment of cases. I myself mentioned the deficiency in all my official reports and in personal conversation with high administrative officers. Nor could I discover any real reason why, at a time when emetine was being manufactured on a large scale from *ipecaeuana*, E.B.I. could not be manufactured in addition.

ention these points because it is well known that relapsing cases of amoebiasis invalided to this country from India and Burma have frequently proved to be especially resistant to treatment.

As Dr. Hayward points out, the relapse rate has been high when repeated inadequate courses of treatment have been given. I regret that such was the state of affairs for the Burma theatre and to a great extent also in India where the usual courses consisted of injections, carbarsone, and "quinoxyl" retention nemata. It is of the utmost importance that no discredit should be associated with the work of medical officers in the Far East, even under the most severe handicaps on account of the efficiency of E.B.I., which was quite outside our control. Most of us were familiar with authoritative opinion on the treatment of amoebiasis before we ever embarked for the Far East.—I am, etc.,

Windsor.

PHILIP H. WILLCOX.

Posterior Dislocation of the Shoulder

SIR,—Dr. A. McEwen Smith's account of a case of posterior dislocation of the shoulder joint (Nov. 9, p. 694) prompts me to emphasize a point in dealing with these cases which may be important. My experience is confined to three cases, but it is interesting that, of these, two should have been sent to me because reduction was unstable and one to a colleague for recurrent posterior dislocation.

The first patient had several reductions performed by various methods, and each time the joint was felt to click into position, but, as soon as the arm was brought across the chest, re-dislocation occurred. The posterior displacement was not appreciated at this time. When the patient came under my care six weeks had elapsed since injury, and the head of the humerus was plainly felt lying posterior to the glenoid. Reduction was accomplished, not without difficulty, and the arm was immobilized in plaster in ninety degrees abduction and external rotation with the elbow well back: this was the only position in which the joint was stable.

The second case, seen within a few days of injury, presented similar features, in that reduction was easily accomplished by traction in abduction, but re-displacement occurred as soon as the arm was brought into the position for a sling. A shoulder spica, with the arm in abduction and external rotation, was applied and worn for six weeks. Neither case had any associated fracture and both patients were young men. In both the functional result was good a few months later, and as far as is known neither developed a recurrent dislocation.

The early history of the third case was somewhat obscure, but it is certain that treatment was not by a plaster spica in the abducted position. The point to be remembered in treatment is that the position of the usual arm sling is the position of dislocation. Although reduction was apparently stable in Dr. Smith's case, the torn posterior joint capsule has been placed on the stretch during healing. Fortunately the sling was worn only for two days in this instance. In view of the apparently high incidence of recurrent dislocation following posterior displacement of the head of the humerus, it would be interesting to know the final result of Dr. Smith's case.—I am, etc.,

W. R. D. MITCHELL.

Ashby Parva.

Lactal Duct Obstruction

SIR,—A possible cause of obstruction to the outflow of breast-milk, such as might lead to a breast abscess, is suggested by the following case.

A primipara, two months after childbirth, with lactation fully established, suddenly developed a painful swelling in the area of one sector of the breast. The nipples were of the depressed and furrowed type, and in the position on the nipple corresponding to the affected sector of breast was what appeared to be a blister the size of a pin-head. There was no obvious inflammation, nor before the swelling arose had there been any pain on suckling. Massage of the breast, compression of the lactal sinuses, and the use of the breast-pump were all unsuccessful in overcoming the obstruction. When the "blister" was pricked six ounces of milk were easily expressed and the swelling disappeared.

The condition recurred twice in an adjacent sector of the same breast, a week and a fortnight later. On these occasions there was no obvious "blister," but careful examination with a high-powered hand lens showed a minute fluctuant area slightly paler than the rest

of the nipple, and the same treatment was again successful. The obstructing membrane in each case seemed to be epithelium that had bridged over the furrow at the bottom of which the duct opened.

Had no active treatment been given it seems at least possible that breast abscesses might have resulted. Since on the last two occasions the cause of the obstruction was discovered only by careful search with a lens, one wonders whether this condition may possibly be the cause of breast abscesses more commonly than is realized.—I am, etc.,

Leyburn, Yorkshire.

VERNON R. PICKLES.

Digital Traction

SIR,—Like Mr. E. G. Slesinger (Nov. 9, p. 709) I have used the method of nail traction in the treatment of fractured phalanges many years ago. When I was house-surgeon under Schnitzler in the years 1929–34 that method was one of the stock methods at that department (Wiedner Krankenhaus, Vienna). I am, however, unable to state what publication caused Schnitzler to use and to teach that method or when and where it might have been published first. Quite likely it was in *Guy's Hospital Reports* quoted by Slesinger. We too found it usually possible to perforate painlessly the free edge of the nail for our purpose.

The nail traction proved useful in many cases, but occasionally we observed one undesirable effect: under the continuous traction the nail loosened, and although by that time the fracture was sufficiently consolidated not to suffer any ill effect, the patients eventually lost the nail and had to put up with the discomfort of it after the original trouble caused by the fracture was got over.

I think that the very occasional occurrence of losing a nail should not necessarily lead to the method being discarded altogether, but I do think that it is well worth keeping the possibility mentioned in mind and perhaps forewarning the patient. In any case I thought it should be mentioned in this correspondence.—I am, etc.,

Gillingham.

K. F. POLLACZEK.

Penicillin-Sulphathiazole Snuff for Nasal Sinusitis

SIR,—Like Dr. J. Ross Macmahon (Sept. 14, p. 403) I have had chronic nasal sinusitis for many years, and like him I have at long last found an effective remedy. Had I thought of penicillin-sulphathiazole powder earlier I should have been spared a very painful third operation which has left annoying sequelae.

The trouble began in 1929 probably provoked by surface diving in deep water. On one occasion water completely filled my sinuses and poured out as from a tap when I lent my head forward to dry my hair. By 1935 persistent catarrh led to investigation which revealed a chronic infection of the left antrum. Lipiodol instillation followed by x ray showed a grossly thickened lining membrane. An anastomosis was performed, but unfortunately closed over soon afterwards. Symptoms persisted and in 1936 the anastomosis was re-opened and enlarged by another E.N.T. surgeon. Lavage was advised and I did this daily with benefit. Crusts of pus blocked the opening whenever I desisted for a few days. In 1939 I met a third E.N.T. surgeon who assured me that lavage was out of date. He advised me to sniff up 1/2% ephedrine in normal saline. Performed daily this enabled the antrum to empty its contents completely about three-quarters of an hour after treatment, and thereafter it usually gave little or no trouble for the rest of the day. The discharge evacuated, however, remained purulent. Moreover the ephedrine solution itself soon became infected from the dropper—a tendency which is little publicized and the prevention of which requires special methods.

In 1945 I had a disastrous case of sepsis following a clean operation. I vowed that I would either get my nose put right or give up surgery. I repaired to the second E.N.T. surgeon and begged him to do something more for me. A Caldwell-Luc operation was accordingly performed. All went well for two days, then a severe infra-orbital neuritis began and continued to give me agonizing pain for nearly a month. I began to wonder whether it was ever going to cease. I feel myself lucky to be left with nothing more serious than some local hyperaesthesia. After this radical procedure the discharge dried up within 2 or 3 months. However, with the first cold it returned and persisted. It was then that I thought of penicillin-sulphathiazole powder. I had some prepared, 250 (later 2,500) units per gramme, and I sniffed a little up my left nostril every morning, with my head over to the left to encourage it to enter the antrum. I tipped a little on to the back of my hand, avoiding

contamination of the contents of the bottle. The results of this simple procedure were a great improvement on lavage or ephedrine. The discharge soon became clear and then decreased in amount. After a while I stopped treatment, but the infection recurred within a few days, and this experience has been repeated on a number of occasions. My wife knows at once when I have not been taking my "snuff" regularly because the smell of the infection returns quickly. This presumably means that the infection is being controlled rather than eliminated. I therefore intend to try taking the snuff twelve-hourly. I shall also test the effect of four daily injections of half a million units of penicillin which Maemahon found effective.

In commenting on the effectiveness of this powder I must emphasize the lack of symptoms of hypersensitivity to the sulphathiazole after almost daily use for over two years. Perhaps I have been fortunate. I am not aware whether the nasal mucosa is as liable as the skin to develop sensitivity. I must add that I have tried this snuff upon a relative who has chronic sinusitis. It was without effect, probably owing to lack of drainage. However, in cases where permanent drainage has been secured I feel confident in recommending trial of this remedy, especially to my surgical colleagues to whom—and to whose patients—this disease is such a curse.—I am, with your permission, writing as—

A SURGEON WITH SINUSITIS.

Clicking Ears

SIR,—The case of clicking noises in the ears reported by Dr. Elliott Emanuel (Nov. 2, p. 652) prompts me to describe a similar case I saw in a Service general hospital in England in 1941.

The patient, a British soldier 21 years of age, was evacuated from Dunkirk nine months previously. He complained of a noise in his right ear which he said was like an alarm clock ticking. True enough a noise, like enough to an alarm clock, could be heard at a distance of two to three feet (60 to 90 cm.) away from the right ear. The noise could also be heard, a little more distinctly, from the front of the patient if he allowed the mouth to open slightly. Wide opening of the mouth, or the use of the tongue depressor, abolished the noise; the tickings recurred on closing the mouth again. No movement of the drumhead was to be seen. There was no defect of hearing. The Eustachian tubes were patent. Clonic movements of the soft palate were seen through the slightly opened mouth. These clonic movements were synchronous with the ticking noises. The clonic movements were abolished by wide opening of the mouth or by the use of the tongue depressor.

The absence of any movement of the drumhead is against the theory that the sound is due to the effect of contraction of the *tensor tympani* muscle on the drumhead. The sound is probably originated at the mouth of the Eustachian tube caused by the spasmodic opening of its lips.—I am, etc.,

Liverpool

G. A. MOULDEN.

"Cord Round the Neck"

SIR, I wish to confirm Dr. L. R. C. Agnew's observation concerning the significance of the advance and retreat of the caput at the end of the second stage of labour. The time comes when one expects the head to be born with the next pain. The pain comes, but the caput advances no more than it did with the previous pains. Then the pain passes and the caput, instead of remaining at the vulva, passes back into the vagina. It appears to recede from one to two inches (2.5–5 cm.).

Many years ago when attending such a case the nurse said to me, "I bet the cord is around the neck." I took the hint and delivered with forceps. The cord was round the neck. It was with pardonable pride the nurse said, "I was right, doctor. I have often noticed it before." I have often noticed it since. It also occurs with a short cord, but then a cord round the neck is also a "short" cord. In these circumstances it is easy to understand how a baby can be born dead. With a contraction the length of the uterus shortens and the baby's head is able to descend until the cord is fully stretched. It can advance no further. When the pain passes off, the uterus relaxes and pulls upon the cord; the cord in turn pulls the baby back into the vagina. If the cord is short there is little risk to the baby, but if the cord is round the neck then that portion which is round the neck is gradually tightened and may not relax. So the circulation is reduced or finally stopped.

When, in an apparently normal case, the head advances and retreats as described, I consider that the diagnosis of cord round the neck rather than short cord should be made, and the baby should be delivered at once. To wait for foetal heart signs may prove to be too late. If the cord cannot be released at once by the usual methods it should be cut between forceps—not between ligatures, as time is precious to the baby.—I am, etc.,

Clones.

M. G. KIRKANS.

SIR,—While we were very interested to read the letter from Dr. L. R. C. Agnew (Nov. 2, p. 668) describing his case of "cord round the neck," we do not agree with his treatment. We feel that time does not allow for the difficult procedure of ligaturing and dividing the cord *in situ*. Under the circumstances he describes we prefer to perform a monolateral episiotomy straight away under light ether anaesthesia, reinforcing it with a few drops of chloroform for the more resistant patient. If she has not delivered herself by the time the forceps are sterilized, we proceed to instrumental delivery, severing the cord en route as need be. If the child is not breathing, we give, simultaneously with the artificial respiration, half an ampoule of "coramine" (nikethamide) direct into the heart, and the remainder of the ampoule goes into the muscles of the thigh.

It is surely not necessary to attempt the refinement of diagnosis of "cord round the neck," nor to attempt the difficult procedure of cord ligature and severance *in situ*; in any case if this is done forceps should be applied immediately afterwards. Time, even to seconds, is the governing factor in the production of a live baby, and when the modern midwife sends in these circumstances, we know we have to get on with the delivery without delay. The modern midwife expects results too.—We are, etc.,

E. LEWIS BUTLER.
SARAH BUTLER.

Birmingham, 23.

Work of the Government Lymph Establishment

SIR,—In your issue of Oct. 26 there occurs an article on the "Work of the Government Lymph Establishment from July, 1898, to June, 1946" by my ex-colleague Dr. Fremlin who retired from the active staff in 1930. From that date until his untimely death in November, 1945, Lieut.-Col. Stevenson, C.I.E., was solely responsible for the Establishment and was ably assisted throughout by Dr. Butler, M.B.E., who carried on until lymph manufacture by the Government was finally abandoned at the end of June, 1946. Stevenson and Butler held office at the most critical period in the history of the establishment, and to them alone belongs the credit for the maintenance of supplies in 1939–46.—I am, etc.,

Ministry of Health, S.W.

J. R. HUTCHINSON.

Medical Research under "Field" Conditions

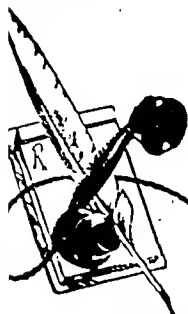
SIR,—There is a growing tendency in medical research nowadays to investigate disease either in the laboratory or on the patient in hospital. It would seem, therefore, that little or no attention is being paid to the influence of environment upon disease.

The veterinary surgeons have, for some years, been aware of the influence of environment upon disease and have made intensive studies of animal disease under "field" conditions. I would suggest, therefore, that we extend our activities beyond the two compartments now used—namely laboratory and clinical pathology—and develop a new branch of "field" investigation of disease in the patients' own homes, in their workshops, in their offices—in fact under conditions approaching as near as possible to the environmental normal.—I am, etc.,

Runcorn, Cheshire.

JOHN H. HANNAN.

The Council of the Royal Institute of Public Health and Hygiene has sent to the Press a tribute to the Corporation of the County Borough of Croydon, to the chief officers concerned—the M.O.H. (Dr. Oscar M. Holden) and the borough engineer and surveyor—and to the superintendents of the Corporation's hospitals, for their magnanimity in accepting for practical instruction a large number of doctors during their training at the Institute for the D.P.H.



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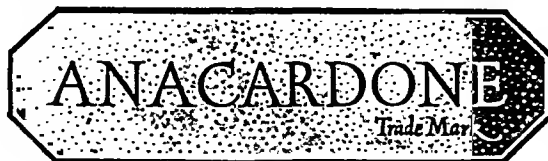


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Sore and
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(See reports, *Brit. med. J.* (1944) i. 531—
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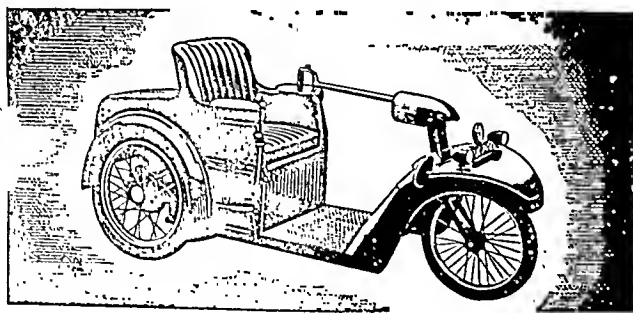
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NAME OF DISEASE	STAGE OF DISEASE		RESULTS		
	ACUTE	CHRONIC	GOOD	FAIR	POOR
CHRONIC ULCERATIVE COLITIS	22	58	20 acute 54 chronic	1 acute 1 chronic	1 acute 3 chronic
AMEBIC COLITIS.....	4	2	...	...	4 acute 2 chronic
BACILLARY DYSENTERY	2	2	2 acute 6 chronic	2 chronic	...
GIARDIA LAMBLIA	2	6	2 acute 6 chronic	2 chronic	...
PARATYPHOID	2	2	2 acute	2 chronic	...
DIENTAMEBA FRAGILIS	2	...	2 acute	...	...
TOTAL NUMBER OF PATIENTS	30	70	24 acute 60 chronic	1 acute 5 chronic	5 acute 5 chronic

*J.A.M.A. 129: 1080-1083 Dec. 15, 1945

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The compound maintains a high concentration in the gastrointestinal tract. Its bacteriostatic action markedly alters the bacterial flora and results in a profound reduction of *Escherichia coli*, *clostridia* and related organisms.

The compound is indicated in the treatment of ulcerative colitis, regional ileitis, as a supplement to therapy of amebiasis, giardiasis, and paratyphoid infections, and as an adjunct to intestinal surgery. Supplied in 0.5 Gm. compressed tablets in bottles of 50, 100, 500 and 1,000.

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Obituary

ARNOLD LYNDON, O.B.E., M.D.

Vice-President, British Medical Association

The death of Dr. Arnold Lyndon, which took place on Nov. 14, in his 86th year, removes from the British Medical Association a prominent member who inspired much affection among his colleagues and who would, but for ill health, have taken even a higher place in its central affairs. He was at one time Deputy Chairman of the Representative Body, but had to withdraw from offering himself for re-election.

Arnold Lyndon qualified in 1885. His student career was highly successful. He took first-class honours in *materia medica* at the Intermediate Examination in Medicine of the University of London in 1884. In 1888 he took the M.D. After serving as house-surgeon and ophthalmic house-surgeon at St. Bartholomew's, where he had won the Brackenbury Surgical Scholarship, and as house-surgeon at the Royal Orthopaedic Hospital, he settled in practice at Hindhead on the border of Surrey and Hampshire, where he built up a high reputation as a general practitioner. He was also consulting medical officer to the Haslemere and District Hospital and an insurance practitioner on the Surrey and Hampshire panels. He threw himself into many local activities, being specially interested in the educational museum at Haslemere, formerly maintained by Sir Jonathan Hutchinson and now a Hutchinson memorial. During the war of 1914-18 he was medical officer and organizer of the Grayshott Auxiliary Hospital, Hindhead, and for his work there he received the O.B.E. In a wider field one of his great interests was Epsom College, of the Council of which he was a member for many years, and he was an earnest propagandist on behalf of that charity. While resident at St. Bartholomew's he had been an enthusiastic member and at one time President of the Abernethian Society. He was an active member of the Medical Defence Union, for many years a councillor, and also a member of the Standing Joint Committee of the Union and the London and Counties Medical Protection Society.

Arnold Lyndon's work for the British Medical Association began in the Surrey Branch, of which he was president in 1922, and honorary secretary for eight years. He had also been joint honorary secretary of the Guildford Division. He was in the best sense of the word a "local man," always keenly interested in the peripheral organization of the Association, with an eye for its weaknesses and its potential strength. Nothing pleased him more, while a member of the Organization Committee, than to analyse the figures of membership of the Divisions and Branches and to strengthen the local organization wherever it showed signs of weakness. He became a representative in 1920 and so remained, with one intermission, until 1931. It was in 1927 that he was elected Deputy Chairman of the Representative Body, and he served in that capacity until 1929.

A position in which he displayed exceptional zeal and ability was as chairman of the Ethical Committee, where his skill in the adjustment of the personal difficulties which often come before that committee was well exemplified. In 1931, on his retirement from the chairmanship of his Local Panel Committee, which he had held for 19 years, and from the honorary secretaryship of the Surrey Branch, Dr. Lyndon was presented with a handsome silver rose bowl and a cheque subscribed for by his colleagues. The testimonial expressed the sense of his unflinching courtesy and suavity, and these were his outstanding characteristics. His membership of the Council extended from 1922 to 1935, and during that time his principal work was done on the Ethical and Organization Committees. On the latter he was chairman of the Grants Subcommittee, a work after his own heart, and he seemed to have at his fingers' ends the necessary particulars with regard to all the Branches and Divisions in the kingdom. Other committees on which he served for shorter periods were the Journal Committee, the Finance Committee, the Public Health Committee, and the Committee on the Peripheral Organization of the Association. The Charities Committee enlisted his special interest, and here his long experience of Epsom College was of great value.

N. E. W. writes :

The present generation of practitioners in Surrey can have little knowledge of the amount of work Lyndon put in on their behalf. He held every position in the Division, on the Branch Council, and on the Local Medical and Panel Committee in which he could render service to his colleagues. His wisdom and experience were recognized by all, and he seldom had any difficulty in bringing a meeting round to his point of view. No slipshod or ambiguous resolutions ever got past Lyndon. He always insisted on the decision of a meeting being expressed in precise and unequivocal terms. Ill health prevented him from continuing all his activities, but he remained treasurer of the County Local Medical Committee to the end, and attended a meeting as recently as two months ago. His particular interest was the benevolent side of the work of the committee, and he was their trusted adviser as to how the considerable sum raised for charitable purposes should be distributed. Others will have written of Lyndon's many other activities, but it is fitting that Surrey should pay a tribute to Arnold Lyndon and express its gratitude for the services he rendered.

HARRY ROBERTS, L.M.S.S.A.

The death of Dr. Harry Roberts on Nov. 12 has taken away a man of uncommon talents, with a personality all his own. He was a good doctor to countless poor people, a clear thinker who wrote very well on many topics, a stimulating companion, and a loyal friend. He was a practising sociologist long before "medical sociology" was spoken of or "social medicine" received a name. His gift for arranging the week's work enabled him to put every hour to the best use and to combine the life of a busy East End practitioner with authorship of high quality, the pursuit of many intellectual tastes, and the cultivation of his garden and orchard.

Harry Roberts came of West Country yeoman stock. He was born at Bishop's Lydeard, Somerset, on Sept. 30, 1871, and was educated at Queen's College, Taunton, at University College, Bristol, and at St. Mary's Hospital, London, and qualified in 1895. After a few months spent in teaching elementary science he began work as a general practitioner in Cornwall; but, though he loved the countryside and liked driving about behind a horse, the mental stagnation of the neighbourhood was more than he could bear. So he came to London, not, however, to practise in the centre or the West End, where he could rub shoulders with educated people every day, but to put up his plate in Stepney, at a good house amid the enveloping slums. In 1909, when this East End practice was being built up on novel lines, Neil Lyons wrote a book about it called *Sixpenny Pieces*, which in a rather jaunty and florid way took Harry Roberts as the central figure ("Dr. Brink") for a series of vignettes of life in a very poor and rough quarter of London before the coming of the National Insurance Act. The work went on after 1912 and the practice grew, the senior partner spending many week-ends away from 63 Harford Street at his country house at Hawkey, near Liss in Hampshire, where he read and wrote and gardened and talked with congenial friends. Some seventeen years ago, when Roberts was still actively running his well-organized treatment centre, the firm came into collision with the London Insurance Committee on a charge of "excessive prescribing"; they were fined £100 notwithstanding tributes from the referees to the admirable ideals of the four doctors and the "high efficiency of the treatment given by them in a poverty-stricken neighbourhood." The case dragged on and Roberts fought it with persistence and skill in argument. The Minister upheld the penalty, but those who knew what Harry Roberts was doing for the poor of Stepney felt that justice had not been done—far from it.

He was a frequent contributor to the leading reviews and occasionally wrote for medical journals. Many of his social, political, and philosophical articles reappeared in book form. He also published books on the history and practice of gardening and on everyday hygiene and psychology.

Dr. GEORGE ALEXANDER WILLIAMSON, who has died in retirement, twice held office at Annual Meetings of the B.M.A.—as secretary of the Section of Tropical Medicine at Aberdeen in 1914, and as vice-president of the Section of Services and Tropical Medicine at Aberdeen in 1939. He was born at

Inverness in 1871, son of Alexander Williamson, J.P., and was educated at the Royal Academy and College, Inverness, and at Aberdeen University, graduating M.A. in 1889, M.B., C.M. in 1893, and M.D. in 1899. He took the Liverpool D.T.M. in 1906 and the D.P.H. of Aberdeen (with honours) in 1910, and received the Certificate (with distinction) of the Liverpool School of Tropical Medicine. After holding house posts at Elgin and Inverness he became District M.O. for Cyprus in 1895, and retired from the Colonial Medical Service in 1911. Returning to Scotland he became lecturer in tropical medicine at Aberdeen University, and during the war of 1914-18 served with the Egyptian Expeditionary Force with the rank of major, R.A.M.C.(T.A.), and was mentioned in dispatches. Dr. Williamson published several papers on tropical diseases and had been medical officer and lecturer on hygiene at the Aberdeen Training Centre under the National Committee for Training of Teachers.

We regret to announce the death of Dr. ANDREW BROWN MURRAY, of Banff, who had been chairman of the Banff, Moray, and Nairn Division of the B.M.A. and represented it at ten Annual Meetings; he was also president of the Northern Counties of Scotland Branch in 1938-9. Dr. Murray studied medicine at the University of Glasgow, graduating M.B., C.M. in 1897, and was then in turn house-surgeon and house-physician at Greenock Royal Infirmary and Fever Hospital, and assistant medical officer to the Metropolitan Asylums Board. Settling in practice in the north of Scotland, he became medical officer of the parish of Banff and Boyndie, and visiting physician to Chalmers' Hospital, Banff. He had been Provost of the Royal Borough of Banff, and J.P. for the county since 1919. He was at one time a keen Territorial officer, reaching the rank of major, R.A.M.C.(T.A.), and receiving the Territorial Decoration. He was also vice-president of the Banffshire Field Club and a member of the County Education Authority for some years.

Dr. HUGH DAVENPORT LEDWARD, who died on Oct. 19 after several years of incapacity through illness, aged 68, was the son of the late H. D. Ledward of Bowdon, Cheshire, in which town he went to school. Thence he entered Trinity College, Cambridge, where he was placed in the First Class of the Natural Science Tripos in 1899. The following year he gained the University Scholarship at St. Bartholomew's Hospital, London, and qualified M.R.C.S., L.R.C.P., in 1902, becoming M.B., B.Ch.Camb. a year later. He was house-surgeon to Sir D'Arcy Power at that same hospital, and house-physician at the Brompton Chest Hospital. When Letchworth Garden City was in its infancy he settled there in partnership with Dr. Norman Macfadyen, and remained there from 1905 until his retirement for health reasons in 1936. In 1916-18 he served in the R.A.M.C. with the 60th General Hospital at Salonika and elsewhere. To all his friends he was endeared by a modest, quiet disposition which by no means prevented widespread recognition of his professional abilities at Letchworth, where he is still affectionately remembered. In 1910 he married Miss Lilian Grace Gibb, who survives him: their only daughter died in childhood; their son is Dr. A. D. Ledward, now practising at Sandwich after service during the recent war. Dr. Ledward joined the British Medical Association in 1908; he was secretary of the Section of Medical Sociology at the Annual Meeting of 1913, and chairman of the East Herts Division, 1922-3. He was a member of the Representative Body in 1912 and 1913.

We regret to announce the death of Col. GEORGE A. TROUP, M.D., C.M., D.P.H., on Oct. 24, at his native village of Rhynie, Aberdeenshire, where he and a brother had resided together in recent years. He was educated at Gordons College, Aberdeen, and after graduating in medicine at the University there joined his cousin, the late Dr. P. J. S. Nicoll, in 1894 in private practice at Romford Road, Stratford, London. Later, in addition he was appointed a consulting physician at Queen Mary's Hospital for the East End, which position he held for many years. After the death of his partner in 1926 Dr. Troup lived for a time at Wanstead, but later moved to Loughton in Essex. It was soon after his complete retirement from practice in 1940 that he took up residence in Rhynie where, as a Trustee of the Nicoll Hospital in particular, but in other matters of local interest too, he found pleasure and interest in affording help and guidance. Col. G. A. Troup, T.D., served in the R.A.M.C. in Gallipoli and Palestine with distinction, was mentioned in dispatches, and became an A.D.M.S. He was appointed a Deputy Lieutenant for the County of Essex, and it is believed that his interest and work for the Territorial Association subsequent to the War of 1914-18 led to his receiving that appointment, which, however, he resigned on leaving the county for Scotland. He had a kindly disposition and was held in very high esteem by his patients and fellow medical practitioners,

and it is known too that during his long career in the Army Medical Service he held the confidence of those with whom he served.—A.L.

Surg. Lieut.-Cmdr. W. F. VIRET, D.S.C., who was demobilized in December, 1945, died at Bradford on Oct. 23 after a short illness. He had served in the Royal Navy for 10 years. The second son of the late Dr. B. P. Viret, of Bradford, he was 36 years of age and had been educated at Bradford Grammar School, Leeds University, and University College Hospital, London. He qualified in 1935 and entered the Navy after a period spent as house-physician at Leeds General Infirmary. During the early part of his naval career he served on a river gunboat on the China station and in the recent war he was first attached to a destroyer engaged in the Channel patrol. Later he went to the Mediterranean as Surg. Lieut.-Cmdr. in the cruiser H.M.S. *Aurora* and saw a great deal of active warfare. In 1944 he was awarded the Distinguished Service Cross for conspicuous bravery and devotion to duty. After demobilization in 1945 he went into practice with his brother and sister-in-law (Drs. R. P. and Elizabeth Viret) at Shipley, Yorks. In 1940 he married Penelope Mary Downes and had a son and a daughter. A colleague writes: Wilfrid Viret was a man of sterling character, wide sympathies, and sound judgment. He was vigorous in mind and body and therefore it is all the more tragic that he should have been struck down by a sudden, fulminating infection. The country can ill afford to lose a man so devoted as he was to his profession, his patients, and his family.

Dr. JOHN SOUTTAR MCKENDRICK, who died on Oct. 31, held office as President of the Royal Faculty of Physicians and Surgeons of Glasgow in 1939-40. He was born on March 5, 1874, son of John Gray McKendrick, emeritus professor of physiology in Glasgow University. From Kelvinside Academy he entered the University in 1891 and graduated M.B., C.M.Glasg. with high commendation in 1896, proceeding M.D. with first-class honours and the University gold medal three years later. He was elected F.R.F.P.S. in 1902 after holding resident posts at the Western Infirmary, where subsequently he served as a member of the visiting medical staff for many years. In the early part of his career Dr. McKendrick was assistant to the professor of medicine, Sir Thomas McCall Anderson, and assistant lecturer in practical physiology in Glasgow University under his father. During the war of 1914-18 he was physician to Bellahouston Red Cross Hospital. The Royal Society of Edinburgh elected him a Fellow in 1900, and he was a member of the Association of Physicians of Great Britain and Ireland. He contributed papers, mainly on clinical subjects, to this and other medical journals. He had been a member of the British Medical Association for 42 years.

It will be difficult (writes K. P. H.) for the non-official medical fraternity of Assam to become accustomed to the fact that FREDERICK MCCOMBIE, who died in Shillong at the end of July, is no longer with us. He was, without any question, the doyen of the profession here, having spent the whole of his working life in Assam and having been accorded every honour possible to a non-official. He qualified M.B.Lond. in 1904 after a brilliant career at King's College, which he entered with a Clothworkers' School Exhibition, and immediately came out to India as assistant to Dr. Gregerson of Tinsukia, Assam. Within a very short time he had shown his scientific interest in tropical medicine by publishing a paper in 1906 on the then almost unknown method of treatment of cholera by saline injections. On his chief's death (he was murdered by the Abors when on a hunting expedition) he succeeded to the practice and remained in the area for the rest of his life. In 1912 he became B.S.Lond. and M.R.C.S., L.R.C.P., and took his M.D. in tropical medicine and the D.T.M.&H. of Cambridge. About this time he helped to found the Assam Branch of the B.M.A., in which he took an interest to the very end. He was President of the Branch on many occasions, his last period of office being during the year 1944, and chairman of the Assam Valley Division on even more. His happiest moments were probably those when he was associated with his colleagues at meetings of the Association, where his sane and sound counsel was always sought. He was also for many years a keen member of the Assam Valley Light Horse, being promoted to the rank of Lieut.-Col. and receiving the Volunteer Decoration. The confidence placed in him by his fellows was shown by his membership over a long period of the Assam Medical Council, of which he was an elected member. "Freddie" never married, but many in Assam will mourn his loss. He never spared himself to help his younger colleagues and he salted any criticism with his typical dry humour. He was what he wanted everyone else to be—a good B.M.A. man—and Assam will not know his like again.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a Congregation held on Nov. 2 the following medical degrees were conferred:

M.D.—M. A. Rushton.
M.B., B.Chir.—J. W. Ker (by proxy).

UNIVERSITY OF LONDON

The title of Professor of Morbid Anatomy and Histology in the University of London has been conferred on Dr. Robert Wilfred Scarff in respect of his post at Middlesex Hospital Medical School, as from April 1, 1946.

Pathological appointments held for at least six months in the laboratories of the public health service at Colindale, Cambridge, Oxford, and Cardiff have been approved for the purposes of admission to the M.D. examination, Branch II (Pathology), but the matter will be further considered in the session 1950-1.

The University of London Conservative and Unionist Graduates Association is reorganizing after seven years of suspension and will hold its first post-war general meeting at King's College, Strand, W.C., on Saturday, Nov. 30, at 11 a.m. Mr. R. D. Milne, M.A., 15, Avenue Road, Highgate, N.6, is acting hon. secretary until a new appointment is made.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council on Nov. 8 the following appointments were made: *Lecturer in Pharmacology*, D. R. Wood, B.M., B.Ch.; *Research Fellow and Tutor in Therapeutics*, J. F. Goodwin, M.D., F.R.C.P.; *Research Assistant in Medicine*, Margaret H. Miller, M.B., Ch.B.; *Demonstrator in Pathology*, J. D. Hopewell, M.B., Ch.B.; *Part-time Demonstrator in Physiology*, Ursula S. Gray, M.B., Ch.B.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

Sir Arthur MacNalty, K.C.B., D.M., will deliver the FitzPatrick Lectures on Tuesday, Dec. 10, and Thursday, Dec. 12, at 5 p.m., at the College. Subject: "The History of State Medicine in England." (1) From the Accession of Queen Victoria to the General Board of Health. (2) The Medical Department of the Privy Council.

At a quarterly comitia of the College, held on Oct. 31, with the President, Lord Moran, in the chair, Sir Archibald Gray, Dr. Macdonald Critchley, Sir Lionel Whitby, Prof. A. A. Moncrieff, and Dr. Janet Aitken were elected Councillors.

It was agreed that an International Congress of Medicine should be held in Sept., 1947.

It was also decided that there should be an organization of the Members of the College with provision for meetings and the election of two representative Members to serve on the Council.

Reports were received and approved from the Paediatric Committee and the Committee on Dermatology.

On the nomination of the Council the following were elected representatives of the College: Dr. C. M. Hinds Howell on the committee of management of the Conjoint Board; Dr. F. S. Langmead on the Central Midwives Board; and on the Standing Joint Committee of the three Royal Colleges, the President, Sir Leonard Parsons, Dr. H. E. A. Boldero, Dr. W. G. Barnard, and Sir Allen Daley. Dr. C. M. Hinds Howell, Dr. M. E. Shaw, Dr. J. B. Harman, and Dr. J. C. Hawksley were elected representatives on the Committee of Reference, and Dr. Hinds Howell and Dr. Harman on the Central Medical War Committee. Dr. John Parkinson was elected the representative of the College on the committee of management of the Canadian Red Cross Memorial Hospital, Taplow.

It was announced that Prof. G. Selby Wilson had been appointed Milroy Lecturer for 1948, his subject being "The History, Design, and Purpose of the National Public Health Laboratory Service."

Mr. Francis M. Stent was appointed secretary of the Examining Board.

The following, having satisfied the Censors' Board, were elected Members of the College:

R. A. Andrew, M.D., B. Antonious Bactor, M.B., Major J. P. Baird, M.B., R. A. M. C., Margaret R. Becklake, M.B., J. F. Bolton Carter, M.B., A. S. V. Burgen, M.B., A. D. Charters, M.D., S. Chaudhuri, M.B., C. J. M. Clark, M.B., P. Corridan, M.B., P. J. N. Cox, B.M., W. S. McR. Craie, M.D., J. P. Crawford, L.R.C.P., F. E. Crawley, M.D., F. W. Dickson, M.B., K. W. Donald, M.D., R. G. Evans, M.B., Mary Farquharson, M.B., R. Fletcher, M.B., S. Grieve, M.B., L. G. Hannah, M.B., J. N. Harris-Jones, M.B., A. R. Harrison, M.B., B. E. Heard, M.B., M. S. R. Hutt, M.B., R. J. Isaac, L.R.C.P., A. H. James, B.M., B. Lees, L.R.C.P., M. I. Levin, M.B., R. B. Lucas, M.D., J. Luder, M.B., Fl. Lieut. D. H. Mackinson, M.M., R. A. F. V. R., R. B. Martin, M.D., Lieut.-Col. A. N. T. Meneces, M.B., R. A. M. C., G. El D. Nor el Din, M.D., B. D. Patel, M.B., P. D. Sarnan, M.B., I. Schirre, M.B., Esther E. Simpson, M.B., Jean V. Simpson, M.B., A. J. Singh, M.D., B. C. Sinha, M.B., Y. G. Sofer, M.B., G. S. C. Sowry, M.B., C. A. Storr, M.B., G. B. Stratton, L.R.C.P., W. St. C. Symmers, M.B., M. Symons, M.B., R. B. Terry, M.B., A. J. Thomas, M.B., J. Vallance-Owen, M.B., C. E. Van Rooyen, M.D. (in absentia), R. P. Varin, M.D., A. G. W. Whitfield, M.B., A. W. Williams, M.D., D. I. Williams, M.B., G. M. Wilson, M.B., L. Wolman, M.B., C. Zahra Neumann, M.D.

Licences to practice were conferred upon the following 114 candidates (including 22 women) who had passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the necessary by-laws of the College:

Ruth Ainsworth, T. W. Backhouse, W. O. Backus, P. T. Ballanyne, P. J. Banks, B. W. Barras, J. H. Beaton, R. W. Bell, P. L. Berger, P. G. Bevan, I. A. Blackmore, R. W. Booth, R. W. A. Bottoms, W. I. H. Bourne, L. W. Bowen, P. A. Boxall, T. Brandl, D. S. N. Brierley, F. B. Briggs, M. H. Brook, Brenda M. Buck, P. J. Burdon, Yvonne B. Capon, Sybil C. Capper-Johnson, P. J. Chapman, Patricia Chippindale, H. E. Christensen, L. W. Clarke, P. W. Clemeats, R. A. Cocks, J. F. Cogan, W. A. D. Combe, A. T. Cook, D. C. Cooke, H. S. Coulsting, Mary Creevey, T. Crisp, D. W. J. Cullingford, H. Dasch, A. J. A. Dawes, R. A. Dawes, K. R. Dempster, R. D. Eastham, W. McC. Edgar, G. B. Elliott, Kathleen A. Elliott, Audrey T. Evans, I. A. Falner, J. Fairlie, Joyce Faulkner, M. E. Fearnley, E. C. Fleming, L. Ford, R. H. Fox, H. H. Frank, Margaret A. Gee, J. H. H. Gibbon, A. W. Guffman, Jean F. Gordon, W. V. Graham, G. J. Hadfield, A. A. Hall, P. S. Hall, J. L. Harris, J. B. Hearn, Erica W. Higsons, A. H. Jennings, Gwyneth M. V. Johns, R. F. D. Horn, B. B. Jakeman, J. L. Jenman, J. R. Leslie, H. M. Lyons, H. J. Johns, H. G. Mather, D. McK. Maxwell, P. R. H. Moleworth, Nestor G. Moron, G. O. Morse, J. E. Owen, P. N. Porritt, Alice M. Pandrill, J. H. S. Perrett, T. L. Pilkington, N. C. D. Pizey, P. N. Porritt, Eva M. Raybould, B. F. Richards, D. A. Richards, Betty Scotter, S. Silbermann, M. Silverberg, J. P. A. M. Skene, Gwendolen D. Smith, Margaret T. Smith, Patricia E. Smith, M. J. Squires, B. H. Storey, M. Strobe, W. Wagland, H. Walters, L. G. R. Wand, G. B. B. White, A. MacR. Whittington, K. L. Williams, P. H. Williams, T. B. Williamson, Audrey J. Worman.

Diplomas in Ophthalmic Medicine and Surgery, in Tropical Medicine and Hygiene, and in Physical Medicine were granted, jointly with the Royal College of Surgeons of England, to the successful candidates whose names were printed in the report of the meeting of the Royal College of Surgeons of England in the *Journal of Oct. 26* (p. 630).

Diplomas in Child Health were granted, jointly with the Royal College of Surgeons of England, to the successful candidates whose names were printed in the report of the meeting of the Royal College of Surgeons of England in the *Journal of Oct. 26* (p. 630) and to H. G. Farquhar, E. Kahn, Margaret Munro, and A. M. Young.

Diplomas in Medical Radiotherapy and in Medical Radio-Diagnosis were granted, jointly with the Royal College of Surgeons of England, to the following successful candidates:

MEDICAL RADIO-THERAPY.—S. Curwen, R. F. Hendlass, C. L. Lewis, T. McK. Robb, W. R. Ward.

MEDICAL RADIO-DIAGNOSIS.—J. Aspin, R. F. Ashwin, A. T. Aylmer, W. M. Forster, S. Haase, H. A. R. Hamilton, W. S. Holden, F. L. Ingram, S. J. Johnson, A. M. Jones, D. R. Mailand, J. H. Middlemiss, K. D. F. Morie, E. H. Mucklow, C. Pickard, R. A. Reynolds, W. H. T. Shepherd, T. Stephanides, G. H. Thomas, M. R. Tomlinson, H. J. Trenchard, P. Watts, W. J. R. Wyness.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A Commonwealth Travelling Professorship

The following announcement was made by the President, Sir Alfred Webb-Johnson, at the Buckston Browne Dinner at the Royal College of Surgeons on Nov. 14:

A prominent New Zealand industrialist has made an anonymous gift to the Royal College of Surgeons of England for the endowment of a Commonwealth Travelling Professorship. The endowment will provide an income of about £2,000 a year, and the benefaction is to be known as a gift from "A New Zealand Family." A Commonwealth Professor will be appointed each year and will generally be a prominent physician, surgeon, or scientific worker resident in Great Britain or in Australia or New Zealand. The appointing authorities are also empowered, however, to elect as a professor a distinguished teacher from one of the other Dominions. The professor will be required to travel from the country where he or she is ordinarily resident to Great Britain, or to Australia and New Zealand, and to any other Dominion of the British Commonwealth, for the purpose of assisting in the advancement of medical science either by lecturing, teaching, or engaging in research. It is hoped that the institution of this professorship will not only lead to the establishment of closer links between scientific workers in the Dominions and in the older seats of learning and centres of research, but that the people of all nations will benefit. It is also hoped that it will be an important contribution to Imperial unity.

General Annual Report

The general annual report for the year ending July 31, 1946, has been printed for the Council and gives a record of the work of the College in its various departments during that period. As was announced in the annual report for 1944, the Council is applying for a grant for a Supplemental Charter to enable the College to expand its activities and effect reforms in its administration. During the year 86 Fellows, 581 Members, and 98 Licentiate in Dental Surgery were admitted after passing the College examinations. Prof. F. Wood Jones assumed office as Sir William H. Collins Professor of Human and Comparative Anatomy at the beginning of 1946. The pathological specimens have been returned to the College, and the reorganization of the collection has been continued under Prof. R. A. Willis, the Sir William H. Collins Professor of Pathology. The return of evacuated books and the

re-equipment of the main book-stack, with its shelving, were completed early this year. The rearranging of the books returned from the country continues, and a start has been made with the repair and rebinding of the historical collections. Considerable success has been achieved in making good the gaps in wartime periodicals from America, France, and neutral countries. The return of the laboratories of the College from evacuation at Finchfield, Essex, was completed in August, 1945, but the disturbance caused in the laboratories by war damage repairs and the urgent needs of the other scientific departments made necessary a further evacuation of the Department of Experimental Research, and the Bernhard Baron Professor and his staff obtained hospitality in the Department of Physiology at Cambridge. Since May, 1946, Prof. John Beattie has been in Germany as head of a group of workers who are investigating further the problem of famine oedema. The policy of the College to provide postgraduate education has been considerably expanded, and a course of 69 lectures on anatomy, applied physiology, and pathology was arranged for September-October, 1946. For the first time in the history of the College the assets stand at over one million pounds. A third grant of £100,000 from Sir William H. Collins was the principal increase of capital which has enabled the College to reach this notable point and to further the work of the scientific departments. The restoration fund stood at £141,000 on Aug. 1, 1946, including recent gifts from America, Australia, and New Zealand.

The Buckston Browne Dinner

At the annual dinner of Fellows and Members held at the College in Lincoln's Inn Fields, the President made the announcement printed above concerning the Commonwealth Travelling Professorship. He also read a message received from the King assuring the College of his interest in its many activities and saying that the new professorship should be of great benefit to medical science throughout the Commonwealth and Empire. In a letter on the same subject the Prime Minister wrote that one of the means by which the British peoples could remain in the foreground of medical science was by exchange of ideas and knowledge. Sir Alfred Webb-Johnson, in a general welcome to the guests, said that this was a domestic occasion endowed by Sir Buckston Browne, one of the best and most lovable of men and a great benefactor of the College. Addressing the Minister of Health he asked: "Can we get together and talk over the extraordinary activities of the Government and see if we can make sense of them?" And he told of a long visit paid by Mr. Aneurin Bevan to the College and the keen interest he showed in its work. The benefactions received by the College were a great inheritance for great ends. The work was already expanding in many directions, and in September of this year the attendances at lectures were no fewer than 9,000.

During the evening the Honorary Medal, instituted in 1802 and awarded only twenty times before, was handed by the President to Sir Alexander Fleming, F.R.C.S., whom Sir Heneage Ogilvie, Senior Vice-President, introduced in a felicitous speech. Replying to a toast to the guests Lord Addison, F.R.C.S., Secretary of State for Dominion Affairs, expressed his admiration for the enterprise now shown by the College and spoke of London's unique opportunity for postgraduate teaching. Mr. Bevan, who followed, said that he need not make a speech at this family affair, but he was impressed by the graceful symbolism of the New Zealand gift, which seemed to him even more important than its content, and he paid a tribute to Sir Alfred Webb-Johnson's great work for surgery and interest in young men. The High Commissioners for New Zealand and for Australia also replied to the toast.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a quarterly meeting of the College, held on Nov. 5, with the President, Dr. D. M. Lyon, in the chair, Dr. A. MacA. Gillespie (Edinburgh), Dr. A. M. MacDonald (Edinburgh), Dr. R. A. Miller (Edinburgh), Dr. G. O. Horne (Edinburgh), Dr. R. J. Kellar (Edinburgh), Dr. G. D. Maleolm (Bridge of Earn, Perthshire), and Sir Andrew Davidson (Edinburgh) were introduced and took their seats as Fellows. Dr. H. J. Parisi (Pettis Wood, Kent), Dr. P. V. Pritchard (London), Dr. R. C. Wood (Edinburgh), Dr. P. N. Bardhan (Ferozepore, Punjab), Dr. H. M. D. Shepherd (Shanklin, I.O.W.), Dr. J. A. Malloch (Edinburgh), Capt. J. W. D. Goodall, I.M.S., Major J. Mackay-Dick, R.A.M.C., and Dr. D. M. Anderson (Braintree, Essex), were elected Fellows of the College.

Drs. A. Rabinowitz (Johannesburg), A. Brinks (Germiston, S.A.), W. Henderson (Edinburgh), J. H. D. Millar (Edinburgh), R. H. M. Ross (Darlington), L. S. Prasad (Bihar, India), N. S. Gordon (Edinburgh), G. H. Armitage (Cummock, Ayrshire), M. M. Whittet (Glasgow), Elizabeth M. Hislop (Edinburgh), and I. Wang (Edinburgh), were elected Members of the College.

The Cullen Prize, 1946, was awarded to Lieut.-Col. W. F. Harvey, C.I.E., F.R.C.P.Ed., I.M.S. (ret.). The Hill Pattison-Struthers bursaries in anatomy and physiology were awarded to M. C. Berenbaum and J. Jackson. The Hill Pattison-Struthers bursary in clinical medicine was awarded to Dr. J. L. Quartey-Vandercuije.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

The following candidates have been approved at the examination indicated:

DIPLOMA IN OBSTETRICS.—T. M. Abbas, J. S. Atbury, R. H. O. Bannerman, A. Barker, A. P. Bates, T. C. Beard, A. V. G. Bibby, J. M. Bowen, S. Burke, D. J. Burnett, Diana Butler, P. H. Cardew, T. E. A. Carr, Betty J. Clymo, C. K. Cole, N. K. Crooke, T. K. Davies, Ruth M. Dearing, Janet M. Done, Kathleen A. Drury, R. C. Dwyer, C. T. F. Ealand, W. S. R. Fenton, H. Flack, Mary Francis, W. K. Frewen, Kamel Girgis, Mary E. Goodson, A. H. Grenz, G. E. R. Hamilton, Emily G. Hamlyn, J. R. Hassan, Lore M. Hasslaeher-Traub, J. J. Hayward, Mary A. Hewett, Monica M. Hogben, F. L. E. Hugh-Musgrave, E. D. Hull, G. A. Humphreys, J. B. Joyce, Christine Kirby, T. H. Lawton, Constance G. Lee, Joan M. Levett, Kathleen V. Lodge, E. L. Loewenthal, Alison J. McNairn, Kathleen M. A. Millard, V. V. Mohile, J. A. O'N. Mulcahy, N. J. S. Nathan, A. D. Newsholme, Rosalind M. L. Nicol, J. M. Norman, R. T. Norman, Rache Jacob, W. B. O'Brien, J. J. O'Donoghue, J. J. F. O'Sullivan, W. H. Phillips, G. T. Pitts, G. E. Prendiville, R. W. K. Purser, Jean F. Ramsay, Mary J. Reading, J. S. Redfern, T. F. Redman, B. C. M. Reed, E. Ridehalgh, F. L. Robertshaw, T. W. Roddie, J. V. Rose, Helen M. Russell, H. E. Rutherford, L. C. Rutter, J. A. Sadler, J. C. T. Sanctuary, Eleanor M. Sawdon, K. B. Scott, H. N. Skelton, Margaret E. A. Slater, S. A. Swanson, J. M. Thomas, R. R. Trussell, C. M. F. Walters, P. de S. Wijesekera, D. M. Wilkins, J. Wills, B. W. Wood, M. R. Woods.

SOCIETY OF APOTHECARIES OF LONDON

On Thursday, Nov. 28, at 8 p.m., the Master, Wardens, and Court of the Society of Apothecaries of London will present the Society's gold medals in therapeutics to Sir Alexander Fleming and Sir Howard Florey in recognition of their work on penicillin. The presentation will be followed by a soiree for the members of the Society.

Medical News

Abstracts of World Medicine and Abstracts of World Surgery. Obstetrics and Gynaecology will make their first appearance in January, 1947. These two new journals are being published monthly by the British Medical Association, the first at an annual subscription of 3 guineas and the second at 2 guineas. Applications for subscription should be sent to: The Publishing Manager, *British Medical Journal*, B.M.A. House, Tavistock Square, London, W.C.1.

The Family Planning Association (69, Eccleston Square, London, S.W.1) has arranged a Medical Conference to be held at Gas Industry House, Hyde Park Corner, S.W., on Sunday, Nov. 24, at 10.30 a.m., when medical officers from a county council and from a borough council will open a discussion on "The Experience of some Local Authorities in providing contraceptive advice within the terms of the Ministry of Health Memoranda"; this will be followed by a discussion on "Clinical Problems in Contraceptive Technique and the Atypical Case." At 2.30 p.m. "Developments in the treatment of Sub-Fertility and their application to Clinics" will be discussed. A film, made in the United States, entitled "Studies in Human Fertility" will be shown at the end of the conference.

The Medical Society for the Study of Venereal Diseases will hold a general meeting at 11, Chandos Street, Cavendish Square, London, W.1, on Nov. 30, at 2.30 p.m. Dr. J. A. W. McCluskie will give an address on "Cardiovascular Syphilis."

The Edinburgh University Club of London has arranged to hold a reception at the May Fair Hotel, London, on Thursday, Dec. 5, 6.30 to 8 p.m., in honour of the Principal, Sir John Fraser, Bt., and Lady Fraser. Any member who has not received a notice by Nov. 25 is requested to get in touch with the Hon. Secretary at 12, Wimpole Street, London, W.1.

A meeting of the Scottish Group of the Association of Industrial Medical Officers will be held at the Institute of Hygiene, University of Glasgow, on Wednesday, Dec. 11, at 3 p.m., when there will be a symposium on "Occupational Medicine" by Prof. T. Ferguson and assistants. All medical practitioners interested are invited to attend.

At a meeting of the court of directors of the Society for Relief of Widows and Orphans of Medical Men, held on Oct. 9, with Dr. R. A. Young, President, in the chair, the death of a member was reported and two new members were elected. The death was also announced of a widow who had received £1,261 in relief since 1932. The half-yearly accounts to June 30 which were presented showed that £1,940 had been given to widows. It was reported that the widow of a member had applied for relief and a yearly grant of £60 was voted. It was decided to make a Christmas present to the widows. A donation of £31 5s. was received from the Bovril Medical Agency. Members who have been demobilized should send their new addresses to the secretary, as until they have paid the arrears of subscriptions their membership is suspended. Membership is open to any registered medical man who, at the time of his election, is residing within a twenty-mile radius of Charing Cross. Relief is granted only to the widows or orphans of deceased members. Full particulars may be obtained from the secretary of the society at 11, Chandos Street, Cavendish Square, W.1.

The London Irish Medical Golf Society will hold its annual general meeting and dinner at the Charing Cross Hotel on Thursday, Nov. 23, at 7.30 p.m.

The opening of the Dublin office of Burroughs Wellcome and Co. at 18, Merrion Square was celebrated on Nov. 12 by a dinner attended by the Lord Mayor of Dublin and by leading members of the medical, dental, veterinary, and pharmaceutical professions. It was presided over by Mr. Leslie G. Matthews, who said that the office was intended to place the scientific and technical resources of the Wellcome Foundation, Ltd., more readily at the disposal of the company's customers in Ireland. Dr. H. J. Parish (clinical research director of the Wellcome Foundation) welcomed his medical colleagues, who included Prof. J. W. Bigger (Dean of the Faculty of Physic, Dublin University), Prof. J. M. O'Connor (Dean of the Faculty of Medicine, National University of Ireland), Dr. Bethel Solomons (President of the Royal College of Physicians of Ireland), Dr. Andrew Ryans (President of the Irish Medical Association), and Dr. J. Deeny (Chief Medical Adviser, Department of Local Government and Public Health of Eire).

The London Medical Exhibition, which has been resumed after a wartime break, attracted considerable interest this week at the Royal Horticultural Hall. There was a display of the products of over one hundred firms which was supplemented by the exhibition of medical films. Every variety of drug, appliance, and book was on view and reflected the current interests and recent advances in medicine. The film shows, illustrative of some of the best in this rapidly expanding field of educational aid, were well attended. The publications of the British Medical Association were well represented. At a time when degrees and diplomas are of such interest to medical graduate and undergraduate alike it is to be regretted that there should be such a shortage of paper for recent medical books whose variety, format, and contents continue to bring credit to British medicine throughout the English-speaking world.

Plans for a new cancer hospital in New York, to cost nearly £750,000, have been completed. It will be known as the James Ewing Hospital for Cancer. The hospital will be twelve stories high and will contain laboratories, offices, classrooms, and wards. It will be administered by the City of New York.

Dr. Otto May, F.R.C.P., who died on Aug. 15, 1946, left £38,117 gross, with net personalty £37,580

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* an increase was recorded in the notifications of measles 490, whooping-cough 50, and dysentery 10. A decrease was reported in the number of cases of diphtheria 40, paratyphoid fever 23, and scarlet fever 22.

Measles is prevalent in only a few counties, and almost one-third of the total notifications were reported from the counties of Lancashire and Durham. The largest rises during the week were Lancashire 175, Middlesex 101, Northumberland 100, and Kent 52; the largest fall was Sussex 40. The only appreciable variations in the incidence of scarlet fever were a fall in Yorkshire West Riding 37 and a rise in Lancashire 20. The rise in the incidence of whooping-cough was most marked in Lancashire 54 and Yorkshire West Riding 29; the only decreases of note were Devonshire 24 and Derbyshire 23. Although a relatively large decrease in cases of diphtheria was recorded for the whole country the notifications in London were more than doubled by an increase of 18, giving the highest total for the metropolis since the middle of April. The only large returns for dysentery were London 15 and Yorkshire West Riding 11. The decline in the notifications of paratyphoid was due to a decrease in the outbreak in Yorkshire West Riding, where 51 of the 66 cases were notified; 38 cases of paratyphoid were notified in Sheffield C.B., and the origin of this outbreak has still not been established.

In *Scotland* infectious diseases were more prevalent, and the rises included measles 60, scarlet fever 51, whooping-cough 45, and pneumonia 17. Dundee had 130 of the 222 notifications.

In *Eire* the only changes of note were increases in whooping-cough 19 and diphtheria 11 and a decrease in diarrhoea and enteritis 9. The incidence of diphtheria 47 was the highest since April.

In *Northern Ireland* there were a further 25 cases in the outbreak of measles in Belfast C.B.

Week Ending November 9

The notifications of infectious diseases in *England and Wales* during the week included: scarlet fever 1,323, whooping-cough 1,590, diphtheria 314, measles 3,987, acute pneumonia 601, cerebrospinal fever 46, dysentery 65, acute poliomyelitis 21, paratyphoid 30, typhoid 5.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 2.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	40	2	13	—	1	35	2	20	2	—
Deaths	—	—	—	—	—	—	1	1	—	—
Diphtheria	274	34	95	47	8	585	32	188	93	23
Deaths	3	1	1	—	—	4	—	5	—	—
Dysentery	69	15	36	—	—	211	40	89	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	1	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	56	10	—	—	—	51	6	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	43	—	—	—	—	50	—
Deaths	31	2	8	—	4	52	7	21	13	4
Measles*	3,374	119	222	54	32	496	32	52	105	4
Deaths	2	—	—	—	—	1	—	—	—	—
Ophthalmia neonatorum	63	7	16	—	—	61	5	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	66	2 (B)	1 (B)	—	—	6	1 (B)	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	485	30	6	2	2	458	28	5	3	1
Deaths (from influenza)†	12	1	2	—	1	13	2	—	2	—
Pneumonia, primary	—	27	207	24	8	—	29	189	13	6
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	2	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	25	1	1	6	—	24	1	—	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	2	13	—	—	—	4	6	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia‡	117	7	11	1	2	146	6	9	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,187	86	313	49	41	1,819	149	317	25	49
Deaths	3	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	1	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	6	2	—	5	5	9	—	1	3	2
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	1,549	83	188	56	37	1,041	82	62	28	5
Deaths	8	1	1	—	1	5	3	—	—	—
Deaths (0-1 year)	341	40	60	—	19	334	36	61	30	23
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,373	654	620	123	4,209	593	595	177	102	—
Annual death rate (per 1,000 persons living)	—	—	13.6	—	—	—	13.5	11.4	—	—
Live births	8,920	1382	1060	260	6,641	862	800	355	276	—
Annual rate per 1,000 persons living	—	—	21.3	—	—	—	16.0	24.8	—	—
Stillbirths	273	38	45	—	—	185	22	29	—	—
Rate per 1,000 total births (including stillborn)	—	—	41	—	—	—	35	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the week ended Nov. 2.

Letters, Notes, and Answers

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ANY QUESTIONS?

Buffalo's Milk and Tuberculosis

Q.—It is commonly believed that buffalo's milk is safer than cow's milk from the point of view of tuberculosis. Is this correct?

A.—Judged by experimental inoculation, there is no reason to believe that the Indian water-buffalo, which is found throughout India, Burma, and the East, and is used to some extent in the West Indies, is any less susceptible than the ordinary cow. On the other hand, in its native locality the buffalo does not seem to be exposed to any great extent to the risk of tuberculous infection, and what little information there is available suggests that in most parts of the world the incidence of tuberculosis in the buffalo is very low indeed. The chances, therefore, of finding tubercle bacilli in buffalo's milk must be small. There are some exceptions, however, since it is reported that in Egypt tuberculosis in buffaloes appears to be by no means infrequent; in fact, 60% of the buffaloes slaughtered in the Alexandria abattoir in 1937 showed macroscopic lesions of this disease.

Basal Anaesthesia

Q.—What exactly is a basal anaesthetic?

A.—A basal anaesthetic is a drug used to maintain a constant basal level of anaesthesia below which the depth is varied by the addition of another agent. The commoner term "basal narcotic" indicates the level usually considered desirable. This definition applies to nitrous oxide when used with, say, ether or intermittent injections of thiopentone, as well as to drugs having a prolonged action (bromethol, pentobarbital) which are given in a single dose. It is not applicable to the short-acting barbiturates when used for induction of anaesthesia—their action is more comparable to that of ethyl chloride before ether.

D.D.T. and Raw Vegetables

Q.—With the wider use of D.D.T. to prevent parasites attacking vegetables, and in view of the fact that it is not destroyed by ordinary washing, is it likely to cause toxic manifestations if large quantities of raw vegetables are eaten? Is it affected by boiling? Has D.D.T. any action on protozoa or on worms?

A.—D.D.T. is far less toxic to man than other insecticides (such as nicotine, lead arsenate, etc.) which have been in use for many years without danger to vegetarians. Because of its high toxicity to insects, only low concentrations are used in field applications. It is not affected by boiling water, but ordinary rinsing is likely to leach off a good proportion of the residue. Like any organic chemical, D.D.T. in excess is toxic to all forms of life; but it is specifically deadly to insects, crustacea, and certain other arachnids. Protozoa and worms are comparatively unaffected by it.

Penicillin and Normal Saprophytes

Q.—To what extent does penicillin affect the symbiotic bacteria? If it destroys them, is there any lowering of resistance to intestinal or, in the female, to genital infections?

A.—By symbiotic bacteria the questioner presumably means the normal saprophytic flora of the body. Most of these micro-organisms are entirely unaffected by penicillin administered

systemically in ordinary doses. The drug does not reach the skin or the intestine. In the latter situation most of the normal bacteria are in any case resistant to penicillin. In the mouth however, most of the species are penicillin-sensitive and may be affected by very large doses given systemically, or by sucking penicillin pastilles. It has been observed that after such treatment the suppression of normal types is followed by the appearance of penicillin-resistant organisms, such as coliform bacilli, which are not normally found. It is possible that such a transformation of the flora may occasion harm but there is no clear evidence of this. We know of no observations on similar effects resulting from local treatment in the female genital tract; systemic treatment would be unlikely to cause any such change.

Infestation of Stored Flour

Q.—I have been advised not to lay in a store of flour because it may become "mity" or "weevilly"? What are these "insects"?

A.—"Mity" flour is due to infestation with *Tyroglyphus farinae*. The larval nymph of this mite is common in dust especially in grain stores, and is spread from place to place on flour sacks. It may be carried about on flies and clothing and can survive for many months. "Weevily" flour is due to infestation with the larval stages of certain beetles, especially *Calandra granaria*, which feeds on, and lays its eggs in, grain.

Infectiousness of Infectious Diseases

Q.—When do the infectious fevers become infectious? For instance, is a child who is developing mumps liable to infect other children during the whole twenty-one days of the incubation period?

A.—This question cannot be answered dogmatically. The "infectiousness" of a fever is, in the first place, dependent upon the ability of the host to liberate organisms. In some diseases the organisms multiply superficially and, as it were, never leave the portal of entry. In such cases the host will be infectious from the time he receives the organism. Scarlet fever, tonsillitis, diphtheria, and meningococcal meningitis would fall into this category. In other diseases it is considered that the organisms multiply internally and are thus only able to be liberated when the infection is about to become manifest. Thus, measles, rubella, whooping-cough, and mumps become infectious towards the end of the incubation period as the virus begins to reappear in the oronasal secretions. Again, in chicken-pox and smallpox the primary infection is of the upper respiratory passages and the virus can be liberated towards the end of the incubation period. The evidence of the duration of the incubation period in smallpox contacts would suggest that smallpox is most infectious just before the rash makes its appearance.

In the second place, the "infectiousness" of a fever will depend on the amount and virulence of infecting agent that the host can liberate. Looked at in this way the case of mumps which developed after an incubation period of twenty-one days would show an absence of infectivity during the greater part of the early incubation period; during its last few days infectivity would gradually increase to become greatest during the onset of the disease, thereafter disappearing in a rapid diminuendo.

Exercise Tolerance

Q.—Is there any standard exercise tolerance test? If so, will you please give details?

A.—The standard test, which has been used widely since its introduction by Sir Thomas Lewis in relation to his work on "effort syndrome" during the 1914-18 war, is to make the patient step up on to a suitable stool or chair, 18 in. (45 cm.) high, twenty times during a period of about one minute, recording the heart-rate before, immediately afterwards, and subsequently at one-minute intervals, until the resting rate is resumed, or for five minutes. In normal healthy subjects, emotionally stable and at ease, the heart-rate returns to the resting level within one minute.

It should be clearly understood that this test is frequently abnormal in anxious, nervous subjects, and especially in those with an anxiety state, and it is often normal in patients with

established heart disease with good myocardial reserve. It is therefore of limited practical value in clinical medicine. On the other hand, it is very helpful where a combination of physical fitness and mental stability is required—e.g., in the selection of pilots, commando troops, and so on.

Use and Abuse of Pituitary Extract

Q.—(a) It is categorically stated in most textbooks that posterior pituitary extract ("pituitrin") should never be used in the first stage of labour, but its use is widely recommended in certain cases of accidental haemorrhage during the first stage. Can you explain this contradiction? (b) Can oxytocin ("pitocin") be given to induce labour in cases of rupture of the membranes prior to the onset of labour where there is no disproportion or malpresentation?

A.—Although the authors of some textbooks are not always consistent in their statements about the use of posterior pituitary extract before and during labour, the inconsistency is often more apparent than real. The dangers of giving such oxytocics are to both the mother and the child, and these should be borne in mind when considering this problem. Giving posterior pituitary extract may result not only in "contraction ring" formation, extensive cervical tears, and ruptured uterus, but also in death of the child from intrauterine asphyxia (when the placental circulation is impeded by violent and sustained contractions) and from intracranial injury. When the patient is not in labour and the uterus is relatively quiescent a violent response to pituitary extract is less likely than if labour has begun. Therefore those who advise against its use in the first stage of labour may still think it proper to give it to induce labour. Even for this purpose, however, it is falling into disfavour.

When the membranes have ruptured and a good deal of liquor has escaped the danger to the child is increased. This is true even when the membranes are ruptured artificially, and not many would regard it as safe to use oxytocin in such circumstances. Nevertheless the membranes are not as a rule ruptured artificially unless the foetal head is already low in the pelvis and the cervix is taken up and the prospects for easy delivery are good. When the membranes rupture prematurely of their own accord it often means that the presenting part is high and not fitting well—there may be a posterior position, etc. In general, therefore, the risks of giving oxytocin in such circumstances are greater than when the membranes have been ruptured artificially.

The case of accidental haemorrhage is a special one. Here it should be recognized that oxytocin is advised only if the uterus is quiet and not contracting. This often means that the power of the uterus to contract is impaired, so there is little chance of a violent response. Moreover, unlike delayed labour, the obstetrician is here faced with a complication which threatens the life of the patient—one where the risks are greater than the risks of giving oxytocin. Again, if the condition is so severe as to necessitate the use of posterior pituitary extract, the child is almost sure to be dead already, and the risk to the foetus from such treatment need no longer be considered.

Re-inoculation with T.A.B.

Q.—Three years ago a patient had the first T.A.B. and tetanus toxoid injections, but never the subsequent ones. What is the present state of his immunity?

A.—After a single injection of a foreign protein acting as an antigen, the cells concerned with the production of antibodies become sensitized so that a secondary injection, after an interval of months, or probably years, will evoke a good response in the way of antibody production. The important factor is that the first injection—the primary stimulus as it is called—should be adequate to prepare the tissues concerned to react to the secondary stimulus. In the case cited, this requirement will have been fulfilled if the first inoculations contained the recommended dosage of T.A.B. vaccine and of tetanus toxoid, and therefore similar injections should be sufficient to stimulate the necessary production of antibodies to give protection. The matter could, of course, be put to the test by withdrawing a sample of blood two to four weeks after injection to find if the serum contains a high titre of agglutinins to the typhoid

and paratyphoid bacilli. If the person is going abroad to an area where enteric is more prevalent than it is here, he should be advised to have a further injection within six months' time.

Inheritance of Hodgkin's Disease

Q.—A male patient, aged 30, has Hodgkin's disease. What is the likelihood of any future offspring being affected? He has had one healthy child conceived before the disease was apparent.

A.—There is no likelihood of Hodgkin's disease being transmitted from the father to his child. One case is on record, although it is not above criticism, of maternal transmission. The number of authenticated instances of two or more cases in the same family are very few. It is safe to say that the disorder is neither hereditary nor communicable. There is no reason to anticipate that the child would be affected in any other way.

INCOME TAX

Car Transactions

W. G. is employed by a local authority and receives a car allowance. He sold his car in September, 1946, and bought another for £346 (including tax). The car allowance does not cover the full costs of running the car, including periodical replacement.

* He is entitled to an initial allowance of 20% of the cost of the car excluding the tax (the tax ranks as an expense), and wear-and-tear allowance for 1946-7 at 25% per annum on the same figure. As against that he will have to bring in any income tax profit on the sale of the old car and, of course, any excess of the car allowance over the running costs. Some restriction may be due for private use of the car.

R. L. has been in general practice for some years. He bought car "A" in 1940 for £200 and car "B" in 1942 for £120. Car "A" was sold in October, 1946, for £475; car "B" will be sold shortly and replaced by car "C" to cost £x.

* The liability for the current financial year will not be affected, but in calculating R. L.'s liability for the year to April 5, 1948, he can claim in respect of car "C" the "initial allowance" of 20% of £x, and the wear-and-tear allowance of 25% of £x. He will, however, be liable to a "balancing charge" on car "A" (apparently £475-£200=£275), and similarly as regards car "B" if a profit should be realized on the sale of that car—vice versa if a loss should be incurred.

J. R. holds an appointment as a medical superintendent. He sold his car in 1944 when serving in the R.A.M.C. His duties now necessitate the use of a car and he has purchased one for £500—presumably after April 5, 1946. What can he claim?

* Nothing can be claimed in respect of the old car. Assuming that the necessity for using a car arises in the performance of the duties of the appointment, and not, for instance, in travelling from his residence to the hospital, he can claim in respect of the new car for 1946-7 (a) the initial allowance of 20% of £500=£100, and (b) depreciation at 25% per annum of £500 for the period from the date when the car was brought into use to April 5, 1947.

Private Use of Car

X. Y. Z. runs two cars for professional and private use; his coupons are partly "basic" and partly "E" coupons. How can he deal with a request to indicate the proportion of professional to private use?

* Assuming that both cars are used for both purposes and that records of the professional and private use are not kept, the only way of dealing with the request appears to be to estimate the respective mileages. Clearly no precise figures can be substantiated, but inspectors of taxes are aware of the difficulty and generally a reasonable figure is accepted without further evidence.

Cost of Locumtenent

R. W. employed a locumtenent during his summer holiday, providing "board and lodging for himself and his wife . . . equal to those of a first-class hotel." He asks what is the maximum amount that can be claimed as expenses.

* The admission of a claim to deduct the cost of a locumtenent's services is based on practice rather than on any specific rule of law. R. W. might claim to deduct the general expenses of the establishment less some allowance for the fact that his own personal effects, etc., remain on the premises, but it is possible that the Revenue may contend that the claim should be limited to the additional cost of the establishment incurred by reason of the employment of the locumtenent.

LETTERS, NOTES, ETC.

Ichthyol

Surg. Lieut. G. B. HOPKINS (Portsmouth) writes: I note a reference to ichthyol in the *Journal* of Oct. 12 (p. 562), in response to a question upon the action of ung. ichthyol upon inflammation. The answer appears to follow the lines of the standard pharmacological textbooks, even that excellent and critical tome by Goodman and Giltman, *The Pharmacological Basis of Therapeutics*. The unanimity of the subject matter relating to ichthyol may be construed in two ways: it may be largely correct, or it may represent an uncritical textbook survival. A chemist friend of mine several years ago queried a possible relationship between ichthyol and the sulphonamides; this suggestion merits consideration. Ichthyol is obtained by neutralizing with ammonia the sulphonated product of the destructive distillation of a bituminous schist, formerly obtained from Tuscany, and now from wider areas of southern Europe. The schist is regarded by geologists as having originated by fossilization of sea birds' excreta—an explanation which, though often presented dogmatically, is presumably open to controversy. From a perusal of chemical dictionaries such as Allen's and Thorpe's, and much delving into past numbers of the *Pharmaceutical Journal*, the *Journal of the Chemical Society*, and the *Journal and Proceedings of the Institute of Chemistry*, I came to the conclusion two or three years ago that ichthyol had never been subjected to close chemical analysis, and I was able to find an empirical formula only. Ichthyol contains carbon, hydrogen, oxygen, nitrogen, and sulphur; and these facts, in association with the sulphonating process, which was introduced to increase the sulphur content in the belief that the efficacy of the product lay therein, render it possible that a para-amino benzene sulphonamide derivative may be present. As a student I was dissuaded by one of my professors from swallowing ichthyol and testing for conjugated sulphonamide excretion products. The late Col. Marsh, senior E.N.T. consultant to the Birmingham United Hospital, told me that he was first introduced to the use of ichthyol when he went to Birmingham from Barts., and that he considered it sufficiently useful to prompt him to prescribe it for the rest of his life. The *Index Medicus* gives numerous references, few of which throw any light upon a possible chemotherapeutic action of ichthyol; but I found that Russian gynaecologists had used ichthyol by intramuscular injection for the treatment of pelvic infection. I was unable to follow up this reference. As a matter of historical interest, I should be happy if the above facts and conjectures prompted one of the manufacturing pharmaceutical firms to investigate the chemical composition of ichthyol and its biological action. The topic is one which would have appealed to Sir Walter Langdon-Brown were he still alive. I write entirely from memory and regret that I am unable to give any references.

A Lethal Plastic Bib

Dr. J. H. FODDEN, pathologist to the Royal Salop Infirmary, Shrewsbury, writes: I would like to place on medical record a most tragic and unfortunate happening which determined the death of a three-months-old baby boy. The child had been placed in his cot for sleep, with a clean plastic bib tied loosely around his neck. The bib was small, and was designed to fasten only around the neck with two pieces of tape. It was almost as thin as tissue paper, and just as transparent. When the child was next seen he had been dead some hours. The thin plastic membrane covered his face, almost as completely as his skin. It took up every contour of the eyes, the nose, and the lips. The post-mortem examination which I made showed that the child had been asphyxiated. The bib seemed to become very slightly "tacky" after it had been warmed in my hand for some time. Then when it was placed over the child's face it spread quickly into the position of a close-fitting mask. I am quite sure that myself and my witnesses hope never to see a repetition of such an experiment in similar circumstances. I have the permission and support of Dr. W. B. A. Lewis, H.M. Coroner, Oswestry and District, to make notice of this death through misadventure.

Urobilinogen Excretion in Infective Hepatitis

Dr. M. WINTERNITZ (Prague) writes: The question on urobilinogen excretion in infective hepatitis ("Any Questions," Aug. 10, p. 215) prompts me to a few further remarks and a slight correction of the answer given. The aldehyde test, as it is called for brevity (*recte* Ehrlich's *p*-dimethylaminobenzaldehyde reaction), is used on the Continent not only in infective hepatitis but as one of the routine tests in every urine examination. Its usefulness, however, can only be appreciated if the urobilin metabolism in the human body is well understood. Ubg. (urobilinogen) is formed from bilirubin through the reducing action of the upper intestinal flora. It is partly excreted in the faeces, partly reabsorbed into the portal blood stream. But it is not to any considerable extent excreted into the bile, as your answer maintains, but is reconverted into bilirubin in the liver cells. This can easily be shown by examination of the

duodenal bile, aspirated from a Ryle's tube. Normally the aldehyde reaction is negative, whereas the more sensitive urobilin reaction is weakly positive. Large amounts of Ubg. found in the duodenal contents or in bilious vomits occur with increased haemolysis, with infections of the bile passages by certain bacteria, and with diffuse liver damage, as in Laennec's cirrhosis. The normal urine contains only traces of Ubg.—slightly more after meals. Pathological Ubg.-uria, due to failure of the liver to reconvert Ubg., is found not only in diseases of the liver, such as infectious hepatitis, but in most infectious diseases, particularly lobar pneumonia, scarlet fever, rheumatic carditis. Its absence in certain diseases such as typhoid is of diagnostic importance. The aldehyde test is an important guide in congestive heart failure. In chronic nephritis and malignant hypertension Ubg. is poorly excreted by the kidneys and even normal traces are usually absent. Thus in hypertensive heart failure a strongly positive aldehyde reaction will at once exclude malignant hypertension—important information for contemplated mercurial treatment. The absence of more than traces of Ubg. from urine and faeces in the presence of frank jaundice points to the absence of bile from the duodenum; while its presence excludes complete obstruction of the bile passages. The reappearance of Ubg. in the urine in such cases is a welcome sign of recovery. Incidentally the positive aldehyde reaction must not be confused with the red or pink sediment produced by the reagent in the presence of sulphonamides.

Recent Advances in Anaesthesia

Dr. J. B. GURNEY SMITH (Dunfermline) writes: I have read the article on "Recent Advances in Anaesthesia" by my learned teacher, Dr. C. Langton Hewer (Oct. 12, p. 531), with considerable interest. I was, however, a little surprised to observe that no mention is made of the use of intravenous anaesthesia and the administration of pentothal. I have always imagined that the introduction of this drug into surgical work represented a major advance. I can speak from personal experience, having had it myself, and I recall that I slept for some four to five hours following the operation, and that there was none of the unpleasant post-operative anaesthetic sequelae usually associated with inhalation and spinal anaesthesia. Perhaps Dr. Langton Hewer would be good enough to enlighten me as to how "recent" is pentothal anaesthesia. It certainly seems to have established itself in the modern anaesthetist's armamentarium.

Rail Travel for the Sick

Major F. A. EVANS, R.A.M.C., writes: Recently I made use of a facility which is perhaps not as well known as it might be—namely, the moving of bed-ridden patients by rail. I accompanied an aged relative with complete hemiplegia from Euston to North Wales, using a special saloon with a very comfortable single bed. Settee and arm-chair for the use of the sister in charge, independent accommodation for relatives and luggage compartment, provision of electric kettle, bed-pans, etc., all gave an air of self-contained privacy. Meals, of course, could be obtained from the dining-car. The patient emphasized how perfectly comfortable and contented she had felt throughout the journey.

Disclaimer

Dr. A. KENNETH YOUNG writes from Tarbert, Argyll: I wish to disclaim responsibility for a paragraph on the back page of the *Scottish Sunday Express* of Nov. 10, in which I was quoted under the heading "Milk Revolt by Doctor." This paragraph was intended to represent an interview with me, when, in fact, it was a reconstruction of a letter of mine which appeared in the *Scotsman* a few days earlier and in the *British Medical Journal* later. Following the letter in the *Scotsman* an *Express* reporter telephoned me to ask how I intended to continue supplying priority milk certificates as before, and I explained to him that I should do so simply because I had always adhered rigidly to the requirements of the priority schedule and regulations. He then suggested that I might grant him an interview at a future date, but I told him plainly that such could only be the case if my name was withheld in accordance with professional etiquette. No further interview took place, and the next thing I knew was the somewhat sensational paragraph already referred to. I have already been in touch with the paper concerned and they are most apologetic.

An Error Corrected

Surg. Capt. H. PARRY-PRICE, R.N.V.R., writes: Dr. Langton Hewer has drawn my attention to an error appearing in my recently published book, *Practical Anaesthetics*. On page 69 it is stated, "Hewer says that the mortality in toxic goitre operated upon with auricular fibrillation is 30%." It is quite unnecessary for me to state that this should read 4.7%, and I apologize to Dr. Hewer for attributing such a statement to him.

Correction

In an annotation on "Insects, Mites, and Asthma" (Aug. 31, p. 304) mention was made of a report by "Ordman." This should have been "Ordman," and refers to Dr. David Ordman of the South African Institute for Medical Research.